Congressional Research Service
Informing the legislative debate since 1914

TESTIMONY

Statement of

Ronald O'Rourke
Specialist in Naval Affairs

Before

House Homeland Security Committee
Subcommittee on Transportation and Maritime Security

Hearing on

"Strategic Competition in the Arctic"

July 18, 2023

Congressional Research Service
https://crsreports.congress.gov
TE10084

Introduction

Chairman Giménez, Ranking Member Thanedar, distinguished members of the subcommittee, thank you for the opportunity to appear before you today to discuss strategic competition in the Arctic.

As part of my work as the CRS specialist for naval affairs, I am the head of the CRS Arctic team, the coordinator of the CRS overview report on the Arctic,[1] and the author of the CRS report on the Coast Guard's Polar Security Cutter (PSC) program.[2] The Arctic and PSC reports were initiated in 2010 and 2008, respectively, and have been updated periodically since then, most recently on July 5 and July 10, 2023, respectively. My other periodically updated CRS reports include the CRS report on the defense implications of great power competition, which was initiated in 2014,[3] and the CRS report on U.S.-China strategic competition in the South and East China Seas, which was initiated in 2012.[4] My biography is in the **Appendix** at the end of this statement.

As requested by the subcommittee, my statement focuses primarily on the Coast Guard, and particularly on the PSC program. Portions of this statement are adapted from the PSC and Artic overview reports.

Arctic Geopolitical Environment

The CRS Arctic overview report's discussion of the Arctic geopolitical environment covers the evolution of the Arctic geopolitical environment since the end of the Cold War, the emergence of great power competition (i.e., strategic competition) in the Arctic, the impact on the Arctic of Russia's war in Ukraine, Russian and Chinese activities in the Arctic, and military (including U.S. Coast Guard) operations in the Arctic.[5] The discussion in that report provides a geopolitical context for the material presented below, which focuses on Coast Guard polar icebreakers, Arctic search and rescue (SAR), and a U.S. Arctic strategic seaport.

Coast Guard Polar Icebreakers

Multiple Polar Missions (Not Just Icebreaking)

Within the U.S. government, the Coast Guard is the U.S. agency responsible for polar icebreaking. The Coast Guard's polar icebreakers, however, do not simply break ice—they are multi-mission cutters that conduct a variety of operations in polar waters. U.S. polar ice operations conducted in large part by the Coast Guard's polar icebreakers support 9 of the Coast Guard's 11 statutory missions.[6] The roles of U.S. polar icebreakers can be summarized as follows:

---

[1] CRS Report R41153, *Changes in the Arctic: Background and Issues for Congress*, coordinated by Ronald O'Rourke.

[2] CRS Report RL34391, *Coast Guard Polar Security Cutter (Polar Icebreaker) Program: Background and Issues for Congress*, by Ronald O'Rourke.

[3] CRS Report R43838, *Great Power Competition: Implications for Defense—Issues for Congress*, by Ronald O'Rourke.

[4] CRS Report R42784, *U.S.-China Strategic Competition in South and East China Seas: Background and Issues for Congress*, by Ronald O'Rourke.

[5] See pages 20-44 of the current (July 5, 2023) version of CRS Report R41153, *Changes in the Arctic: Background and Issues for Congress*, coordinated by Ronald O'Rourke.

[6] The 11 missions are marine safety; search and rescue; aids to navigation; living marine resources (fisheries law enforcement); marine environmental protection; ice operations; ports, waterways and coastal security; drug interdiction; migrant interdiction; defense readiness; other law enforcement. The two statutory missions not supported by polar ice operations are illegal drug (continued...)

- conducting and supporting scientific research in the Arctic and Antarctic;
- defending U.S. sovereignty in the Arctic by helping to maintain a U.S. presence in U.S. territorial waters in the region;
- defending other U.S. interests in polar regions, including economic interests in waters that are within the U.S. exclusive economic zone (EEZ) north of Alaska;
- monitoring sea traffic in the Arctic, including ships bound for the United States; and
- conducting other typical Coast Guard missions (such as search and rescue, law enforcement, and protection of marine resources) in Arctic waters, including U.S. territorial waters north of Alaska.[7]

Polar (Not Just Arctic) Operations

The Coast Guard's large icebreakers are called polar icebreakers rather than Arctic icebreakers because they perform missions in both the Arctic and Antarctic. Operations to support National Science Foundation (NSF) research activities in both polar regions account for a significant portion of U.S. polar icebreaker operations.

Supporting NSF research in the Antarctic focuses on performing an annual mission, called Operation Deep Freeze (ODF), to break through Antarctic sea ice so as to reach and resupply McMurdo Station, the large U.S. Antarctic research station located on the shore of McMurdo Sound, near the Ross Ice Shelf. The Coast Guard states that *Polar Star*, the Coast Guard's only currently operational heavy polar icebreaker, "spends the [northern hemisphere] winter [i.e., the southern hemisphere summer] breaking ice near Antarctica in order to refuel and resupply McMurdo Station. When the mission is complete, the *Polar Star* returns to dry dock [in Seattle] in order to complete critical maintenance and prepare it for the next ODF mission. Once out of dry dock, it's back to Antarctica, and the cycle repeats itself."[8] The Coast Guard's medium polar icebreaker, *Healy*, spends most of its operational time in the Arctic supporting NSF research activities and performing other operations.

Required Numbers of Coast Guard Polar Icebreakers

The Coast Guard testified in April and June 2023 that it had recently completed a new fleet mix analysis that concluded that the Coast Guard will require a total of eight to nine polar icebreakers to perform its various polar (i.e., Arctic and Antarctic) missions in coming years:

- At an April 18, 2023, hearing on the Coast Guard's proposed FY2024 budget before the Coast Guard and Maritime Transportation subcommittee of the House Transportation and Infrastructure Committee, the Commandant of the Coast Guard, Admiral Linda L. Fagan, stated: "We recently—I recently signed out a fleet mix analysis that indicates we need

interdiction and undocumented migrant interdiction. (Department of Homeland Security, *Polar Icebreaking Recapitalization Project Mission Need Statement, Version 1.0*, approved by DHS June 28, 2013, p. 10.)

[7] This passage, beginning with "The roles of ... ," originated in CRS Report RL34391 on polar icebreakers and was later transferred by the Government Accountability Office (GAO) with minor changes to Government Accountability Office, *Coast Guard[:]Efforts to Identify Arctic Requirements Are Ongoing, but More Communication about Agency Planning Efforts Would Be Beneficial*, GAO-10-870, September 2010, p. 53.

[8] U.S. Department of Defense, Defense Visual Information Distribution System (DVIDS), "Coast Guard Icebreaker Crew Completes Second Arctic Mission; U.S. Interests in Arctic Domain Depends [sic] on Fleet Recapitalization," press release, October 19, 2018.

eight to nine icebreakers."[9] Admiral Fagan's testimony did not otherwise characterize the results of the fleet mix analysis.[10]

- At a June 21, 2023, hearing before the same subcommittee on the Coast Guard's emerging challenges and statutory needs, the Vice Commandant of the Coast Guard, Admiral Steven D. Poulin, similarly stated: "We were on a trajectory to build the polar security cutters, but we recently delivered to this committee and other committees our fleet mix analysis, and in that fleet mix analysis we concluded that we likely need eight to nine new icebreakers. Some of those will be heavy icebreakers like the polar security cutter that's being built at Bollinger, Mississippi. Others may be Arctic security cutters [ASCs, i.e., medium polar icebreakers]."[11] Admiral Poulin's testimony, like Admiral Fagan's, did not otherwise characterize the results of the fleet mix analysis.

Prior to this new fleet mix analysis, Coast Guard officials had stated that the service in coming years would need at least six polar icebreakers, including three capable of breaking heavy polar ice.[12]

Current Coast Guard Polar Icebreakers

The operational U.S. polar icebreaking fleet currently consists of one heavy polar icebreaker, *Polar Star*, and one medium polar icebreaker, *Healy*.[13] In addition to *Polar Star*, the Coast Guard has a second heavy

[9] CQ transcript of hearing.

[10] Congressional offices seeking further information on the fleet mix analysis may contact the author of this CRS report.

[11] CQ transcript of hearing. The Coast Guard in late 2020 began referring to its envisioned new medium polar icebreakers as Arctic Security Cutters, or ASCs.

[12] The Coast Guard testified in February 2020, for example, that

> The 2010 High Latitude Mission Analysis Report (HL MAR) identified the need for six new polar icebreakers (at least three of which must be heavy) under the assumption that, in the future, the Coast Guard would be required to perform nine of its eleven statutory missions year-round in the Arctic, and meet all icebreaking needs in support of the United States Antarctic Program.
>
> In 2017, the Coast Guard's Center for Arctic Study and Policy completed an addendum to the HL MAR. The objectives were to provide a broad overview of changes in the polar regions over the last seven years and to provide specific information for use in determining potential impacts on mission areas in the polar regions. This addendum provides confidence in the original findings and encourages the sustained reliance on its initial recommendations on the Nation's need for six icebreakers, three of which must be heavy icebreakers.
>
> (Testimony of Admiral Charles W. Ray, Coast Guard Vice Commandant, on "Arctic Security Issues," before the House Homeland Security Subcommittee on Transportation & Maritime Security, February 5, 2020, p. 9.)

In January 2021, then-Commandant of the Coast Guard Admiral Karl Schultz stated publicly that the Coast Guard would ideally like to have a fleet of six PSCs and three new ASCs, for a total fleet of nine PSCs and ASCs. (See Jon Harper, "SNA News: Coast Guard Wants Budget 'Booster Shot,'" *National Defense*, January 13, 2021; Mallory Shelbourne, "Schultz: Nuclear Icebreakers Are Not An Option for Coast Guard," *USNI News*, January 14, 2021; Cal Biesecker, "With More Resources, Coast Guard Sees Need For Nine Polar Icebreakers," *Defense Daily*, January 14, 2021. See also Stew Magnuson, "Coast Guard Ship Modernization Under Full Steam," *National Defense*, March 3, 2021.)

[13] A heavy polar icebreaker generally has more capability for breaking through polar ice than a medium polar icebreaker, which in turn generally has more capability for breaking through polar ice than a light polar icebreaker. In the International Association of Classification Societies (IASC) classifications for polar-class ships, heavy polar icebreakers are equivalent to Polar Class 1 or 2 (PC1 or PC2) class ships, medium polar icebreakers are equivalent to PC3 or PC4 class ships, and light polar icebreakers are equivalent to PC5 or PC6 class ships. PC1 through PC5 are ships capable of year-round operation in all polar waters (PC1); moderate multiyear ice conditions (PC2); second-year ice, which may include multiyear ice inclusions (PC3); thick first-year ice, which may include old ice inclusions (PC4); or medium first-year ice, which may include old ice inclusions (PC5). PC6 are ships capable of summer/autumn operation in medium first-year ice, which may include old ice inclusions. (Source: Requirements concerning Polar Class, International Association of Classification Societies, undated, including Revision 4 of December 2019, Table 1, entitled Polar Class descriptions, p. I1-2.) For a table showing major polar icebreakers of the world organized by PC class, see Table B-1 in CRS Report RL34391, *Coast Guard Polar Security Cutter (Polar Icebreaker) Program: Background and Issues for Congress*, by Ronald O'Rourke.

polar icebreaker, *Polar Sea*. *Polar Sea*, however, suffered an engine failure in June 2010 and has been nonoperational since then.

Polar Star and *Polar Sea* entered service in 1976 and 1978, respectively, and are now well beyond their originally intended 30-year service lives. The Coast Guard in recent years has invested millions of dollars to overhaul, repair, and extend the service life of *Polar Star*, but as a result of its advancing age, the ship's material condition has nevertheless become increasingly fragile, if not precarious. During its annual deployments to McMurdo Station in Antarctica, shipboard equipment frequently breaks, and shipboard fires have occurred.[14] Replacements for many of the ship's components are no longer commercially available. To help keep *Polar Star* operational, the Coast Guard is using *Polar Sea* as a source of replacement parts.

PSC Program

The PSC program was initiated in the Coast Guard's FY2013 budget submission, and envisages the acquisition of at least three new PSCs (i.e., heavy polar icebreakers), to be followed years from now by the acquisition of additional new ASCs (i.e., medium polar icebreakers). The PSC program was previously known as the polar icebreaker (PIB) program. Changing the program's name to the PSC program is intended to call attention to the fact that the Coast Guard's polar icebreakers perform a variety of missions relating to national security, not just icebreaking.[15]

The PSC program is managed by a Coast Guard-Navy Integrated Program Office (IPO).[16] The Navy and Coast Guard in 2020 estimated the total procurement costs of the first three PSCs in then-year dollars as $1,038 million (i.e., about $1.0 billion) for the first ship, $794 million for the second ship, and $841 million for the third ship, for a combined estimated cost of $2,673 million (i.e., about $2.7 billion). A Government Accountability Office (GAO) report that was released on April 20, 2023, and which reports on the status of major DHS acquisition programs as of September 30, 2022, states that as of June 2022, the combined estimated procurement cost of the three PSCs was $2,789 million,[17] which is $116 million (about 4.3%) more than the figure of $2,673 million.

On April 23, 2019, the Coast Guard-Navy Integrated Program Office for the PSC program awarded a fixed-price, incentive-firm contract for the detail design and construction (DD&C) of the first PSC to Halter Marine Inc. of Pascagoula, MS, a shipyard that was owned at the time by Singapore Technologies (ST) Engineering. The DD&C contract includes options for building the second and third PSCs. On December 29, 2021, the Coast Guard exercised a fixed price incentive option to its contract with Halter Marine Inc. for the second PSC. In November 2022, ST Engineering sold Halter Marine to Louisiana-based Bollinger Shipyards. The former Halter Marine is now called Bollinger Mississippi Shipbuilding.[18]

---

[14] See, for example, Richard Read, "Meet the Neglected 43-Year-Old Stepchild of the U.S. Military-Industrial Complex," *Los Angeles Times*, August 2, 2019; Melody Schreiber, "The Only Working US Heavy Icebreaker Catches Fire Returning from Antarctica," *Arctic Today*, March 2, 2019; Calvin Biesecker, "Fire Breaks Out On Coast Guard's Aging, and Only, Heavy Icebreaker," *Defense Daily*, March 1, 2019.

[15] See, for example, Ben Werner and Sam LaGrone, "Coast Guard Renames New Icebreaker Program 'Polar Security Cutter,'" *USNI News*, September 27, 2018. See also Sydney J. Freedberg Jr., "With Funding In Peril, Coast Guard Pushes Icebreaker As 'Polar Security Cutter,'" *Breaking Defense*, October 29, 2018.

[16] A key aim in establishing the IPO was to permit the Navy to share its ship-procurement best practices with the Coast Guard so as to help the Coast Guard reduce the time and cost needed to design and procure the PSCs.

[17] Government Accountability Office, *DHS Annual Assessment[:] Major Acquisition Programs Are Generally Meeting Goals, but Cybersecurity Policy Needs Clarification*, GAO-23-106701, April 2023, p. 50.

[18] See, for example, Sam LaGrone, "Bollinger Closes $15M Acquisition of Halter Marine, New Name: 'Bollinger Mississippi Shipbuilding,'" *USNI News*, November 14, 2022; Cal Biesecker, "Bollinger Completes Acquisition Of Halter Marine," *Defense Daily*, November 14, 2022; Justin Katz, "Why a Small Shipyard Merger Could Signal Bigger Problems for the US Military," (continued...)

The PSC program is using the parent design approach, meaning that the design of the PSC (**Figure 1**) is based on an existing icebreaker design. A key aim in using the parent design approach is to reduce cost, schedule, and technical risk in the PSC program. The parent design is German design for *Polar Stern II* (also spelled *Polarstern II*), a ship that is to be built as the replacement for *Polarstern*, Germany's current polar research and supply icebreaker.

Figure 1. Rendering of PSC Design

Source: Illustration accompanying Sam LaGrone, "UPDATED: VT Halter Marine to Build New Coast Guard Icebreaker," USNI News, April 23, 2019, updated April 24, 2019. The caption to the illustration states "An artist's rendering of VT Halter Marine's winning bid for the U.S. Coast Guard Polar Security Cutter. VT Halter Marine image used with permission."

The PSC program has received a total of $1,881.8 million in procurement funding through FY2023, including $300 million provided through the Navy's shipbuilding account ($150 million each in FY2017 and FY2018), and the remainder provided through the Coast Guard's Procurement, Construction, and Improvements (PC&I) account. The procurement of the first two PSCs is fully funded, and the Coast Guard has started to fund the third PSC. The Coast Guard's proposed FY2024 budget requests $170.0 million in continued procurement funding for the PSC program.

The Coast Guard originally aimed to have the first PSC delivered in 2024, but the ship's estimated delivery date has subsequently been delayed repeatedly. An April 2023 GAO report states that as of August 2022, about 41 percent of the ship's overall design had been completed,[19] raising a question as to how much time the use of the German parent design has in practice saved in designing the PSC. Given the degree of design completion as of August 2022, construction of the ship might begin no earlier than 2024. If so, and if the ship takes at least four years to build, which might be a reasonable estimate for building a lead ship (i.e., first ship in the class) of the PSC's size and complexity, then the first PSC might be

Breaking Defense, November 14, 2022; Sam LaGrone, "Updated: Bollinger to Buy Halter Marine Shipyard, Oversee Coast Guard Polar Security Cutter Program," *USNI News*, November 6, 2022.

[19] Government Accountability Office, *DHS Annual Assessment[:] Major Acquisition Programs Are Generally Meeting Goals, but Cybersecurity Policy Needs Clarification*, GAO-23-106701, April 2023, p. 51.

delivered no earlier than 2028. Admiral Fagan reportedly provided a similar estimate in testimony at a July 13, 2023, hearing on the Coast Guard's budget before the Oceans, Fisheries, Climate Change and Manufacturing subcommittee of the Senate Commerce, Science, and Transportation Committee.[20]

Cost growth in other Navy and Coast Guard shipbuilding programs reported in the Navy's FY2024 budget submission and a June 2023 GAO report includes the following:

- About 10% cost growth since the Navy's FY2023 budget submission in estimated unit procurement costs for Navy Virginia-class attack submarines;[21]
- About 40% cost growth between 2012 and 2022 in the estimated the total program acquisition cost of the Coast Guard's Offshore Patrol Cutter (OPC) program;[22]
- About 51% cost growth since the Navy's FY2021 budget submission in estimated unit procurement costs for Navy John Lewis (TAO-205) class oilers;[23] and
- About 82% cost growth since FY2022 in the estimated unit procurement cost of the Navy's first TAGOS-25 class ocean surveillance ship.[24]

Some of the cost growth shown above may be due to inflation resulting from disruptions to supply chains related to the COVID-19 pandemic, some may be due to optimistic initial estimates of the intrinsic costs for building these ships, and some may be due to other causes. Cost growth in these Navy and Coast Guard shipbuilding programs raises a question regarding the potential for a possibly comparable amount of cost growth to occur in the PSC program due to inflation, underestimation of intrinsic building costs, or other causes. If a substantial degree of cost growth occurs in the PSC program, it could raise a question regarding whether to grant some form of contract relief to the PSC shipbuilder, as occurred in the OPC program.[25]

One option for Congress would be to ask the Congressional Budget Office (CBO) to conduct a more-refined analysis of the potential for cost growth in the PSC program. Something similar occurred with the

---

[20] Cal Biesecker, "Fagan Suggests Further Delay In Polar Security Cutter," *Defense Daily*, July 13, 2023.

[21] The estimated unit procurement cost of Virginia-class attack submarines to be procured in FY2025-FY2027 is about 10% higher in the Navy's FY2024 budget submission than in the Navy's FY2023 budget submission. For more on the Virginia-class program, see CRS Report RL32418, *Navy Virginia (SSN-774) Class Attack Submarine Procurement: Background and Issues for Congress*, by Ronald O'Rourke.

[22] A June 2023 GAO report on the OPC program states: "The OPC's total acquisition cost estimate increased from $12.5 billion to $17.6 billion between 2012 and 2022. The program attributes the 40 percent increase to many factors, including restructuring the stage 1 contract [for OPCs 1 through 4] and recompeting the stage 2 requirement [for OPCs 5 through 15] in response to a disruption caused by Hurricane Michael, and increased infrastructure costs for homeports and facilities, among other things." (Government Accountability Office, *Coast Guard Acquisitions[:] Offshore Patrol Cutter Program Needs to Mature Technology and Design*, GAO 23-105805, June 2023, highlights page.) For more on the OPC program, see CRS Report R42567, *Coast Guard Cutter Procurement: Background and Issues for Congress*, by Ronald O'Rourke.

[23] In the Navy's FY2021 budget submission, the four TAO-205s programmed for procurement during the five-year period FY2021-FY2025 had an average estimated procurement cost of $556.9 million per ship, while in the Navy's FY2024 budget submission, the six TAO-205s programmed for procurement during the five-year period FY2024-FY2028 have an average estimated procurement cost of $843.4 million, a figure that is 51% greater. For more on the TAO-205 program, see CRS Report R43546, *Navy John Lewis (TAO-205) Class Oiler Shipbuilding Program: Background and Issues for Congress*, by Ronald O'Rourke.

[24] The Navy in FY2022 procured the first of a planned class of seven new TAGOS-25 class ocean surveillance ships at a cost of $434.4 million. The Navy's FY2024 budget submission shows that the ship's estimated procurement cost has since grown to $789.6 million—an increase of $355.2 million, or 81.8%. For more on the TAGOS-25 program, see CRS In Focus IF11838, *Navy TAGOS-25 (Previously TAGOS[X]) Ocean Surveillance Shipbuilding Program: Background and Issues for Congress*, by Ronald O'Rourke.

[25] For more on the contract relief granted in the OPC program, which was done under the authority provided by P.L. 85-804 (50 U.S.C. 1431-1435), see CRS Report R42567, *Coast Guard Cutter Procurement: Background and Issues for Congress*, by Ronald O'Rourke.

Navy's Constellation (FFG-62) class frigate program: A preliminary CRS analysis suggested that if FFG-62s were to cost about the same to construct per thousand tons of displacement as other recent U.S. military surface combatants, then the third and subsequent FFG-62s could cost 17% to 56% more than the budgeted estimates for those ships in the Navy's FY2021 budget submission. Following that preliminary CRS analysis, CBO was asked to conduct a more-refined analysis, which estimated that the first 10 FFG-62s will cost 40% more to build than the Navy estimates.[26]

The April 2023 GAO report mentioned earlier provides additional information regarding cost, technical, and schedule risk in the PSC program.[27]

Existing Commercially Available Polar Icebreaker (CAPI)

The Coast Guard's proposed FY2024 budget, in addition to requesting continued procurement funding for the PSC program, also requests $125.0 million in procurement funding for the purchase of an existing commercially available polar icebreaker (CAPI) that would be modified to become a Coast Guard polar icebreaker, so as to help augment the Coast Guard's current polar icebreaking capacity until the new PSCs enter service, and to continue augmenting the Coast Guard's polar icebreaking capacity after the PSCs enter service. Under the Coast Guard's proposal, the Coast Guard would conduct a full and open competition for the purchase, the commercially available icebreaker that the Coast Guard selects for acquisition would be modified for Coast Guard operations following its acquisition, and the ship would enter service 18 to 24 months after being acquired. The total cost to purchase the ship and then modify it to meet Coast Guard mission needs is uncertain.

Prior to 2021, Coast Guard plans did not include the acquisition of such a ship. The Coast Guard's FY2022 unfunded priorities list (UPL), dated June 29, 2021, however, included a $150.0 million item for the lease or purchase of a commercially available vessel to provide polar icebreaking capability until the future delivery of PSCs.[28] The following year, the Coast Guard as part of its proposed FY2023 budget requested $125.0 million in procurement funding for the purchase of an existing commercially available polar icebreaker. Congress, in acting on the Coast Guard's proposed FY2023 budget, denied the request. The Coast Guard is once again requesting the $125.0 million as part of its proposed FY2024 budget.

Service Life Extension for *Polar Star*

The Coast Guard plans to extend the service life of *Polar Star* until the delivery of at least the second PSC.[29] The Coast Guard estimated the cost of *Polar Star's* service life extension work at $75 million, a sum that was funded at a rate of $15 million per year for five years, with the final $15-million increment being provided in FY2023.

---

[26] For additional discussion, see CRS Report R44972, *Navy Constellation (FFG-62) Class Frigate Program: Background and Issues for Congress*, by Ronald O'Rourke.

[27] Government Accountability Office, *DHS Annual Assessment[:] Major Acquisition Programs Are Generally Meeting Goals, but Cybersecurity Policy Needs Clarification*, GAO-23-106701, April 2023, pp. 50-51.

[28] U.S. Coast Guard, *FY 2022 Unfunded Priorities List, Report to Congress*, June 29, 2021, p. 3.

[29] In February 2020, for example, the Coast Guard testified that

> The Coast Guard also understands that we must maintain our existing heavy and medium icebreaking capability while proceeding with recapitalization.... Maintenance of POLAR STAR will be critical to sustaining this capability until the new PSCs are delivered. Robust planning efforts for a service life extension project on POLAR STAR are already underway and initial work for this project will begin in 2020, with phased industrial work occurring annually from 2021 through 2023. The end goal of this process will be to extend the vessel's service life until delivery of at least the second new PSC.
>
> (Testimony of Admiral Charles W. Ray, Coast Guard Vice Commandant, on "Arctic Security Issues," before the House Homeland Security Subcommittee on Transportation & Maritime Security, February 5, 2020, p. 9.)

Search and Rescue (SAR)

Increasing sea and air traffic through Arctic waters has increased concerns regarding Arctic-area search and rescue (SAR) capabilities. Given the location of current U.S. Coast Guard operating bases, it could take Coast Guard aircraft several hours, and Coast Guard cutters days or even weeks, to reach a ship in distress or a downed aircraft in Arctic waters. The Coast Guard states that "the closest Coast Guard Air Station to the Arctic is located in Kodiak, AK, approximately 820 nautical miles south of Utqiagvik, AK, which is nearly the same distance as from Boston, MA, to Miami, FL."[30] In addition to such long distances, the harsh climate complicates SAR operations in the region.

Particular concern has been expressed about cruise ships carrying large numbers of civilian passengers that may experience problems and need assistance. There have been incidents of this kind with cruise ships in waters off Antarctica, and a Russian-flagged passenger ship with 162 people on board ran aground on Canada's Northwest Passage on August 24, 2018.[31]

The Coast Guard is participating in exercises focused on improving Arctic SAR capabilities. Further increasing U.S. Coast Guard SAR capabilities for the Arctic could require one or more of the following: enhancing or creating new Coast Guard operating bases in the region; procuring additional Arctic-capable aircraft, cutters, and rescue boats for the Coast Guard; and adding systems to improve Arctic maritime communications, navigation, and domain awareness. It may also entail enhanced forms of cooperation with navies and coast guards of other Arctic countries.

On May 12, 2011, representatives from the member states of the Arctic Council, meeting in Nuuk, Greenland, signed an agreement on cooperation on aeronautical and maritime SAR in the Arctic.[32] The agreement divides the Arctic into SAR areas within which each party has primary responsibility for conducting SAR operations. **Figure 2** shows a map of the national areas of SAR responsibility based on the geographic coordinates listed in the Annex to the agreement.

U.S. Arctic Strategic Seaport

Some observers have expressed concern about whether the United States is doing enough militarily to defend its interests in the Arctic, and in some cases have offered recommendations for doing more, such as building ice-hardened Navy or Coast Guard surface ships other than icebreakers, or establishing a strategic seaport in Alaska's north to better support DOD and Coast Guard operations in the Arctic. (Anchorage, in the southern part of Alaska's mainland, was designated a U.S. strategic seaport for supporting DOD operations in 2004.) A June 2023 press report stated that a $600 million project to expand port facilities at Nome, Alaska, will make Nome "the nation's first deep-water Arctic port. The expansion, expected to be operational by the end of the decade, will accommodate not just larger cruise ships of up to 4,000 passengers, but cargo ships to deliver additional goods for the 60 Alaska Native villages in the region, and military vessels to counter the presence of Russian and Chinese ships in the Arctic."[33]

[30] Coast Guard, *Arctic Strategic Outlook*, April 2019, p. 11.

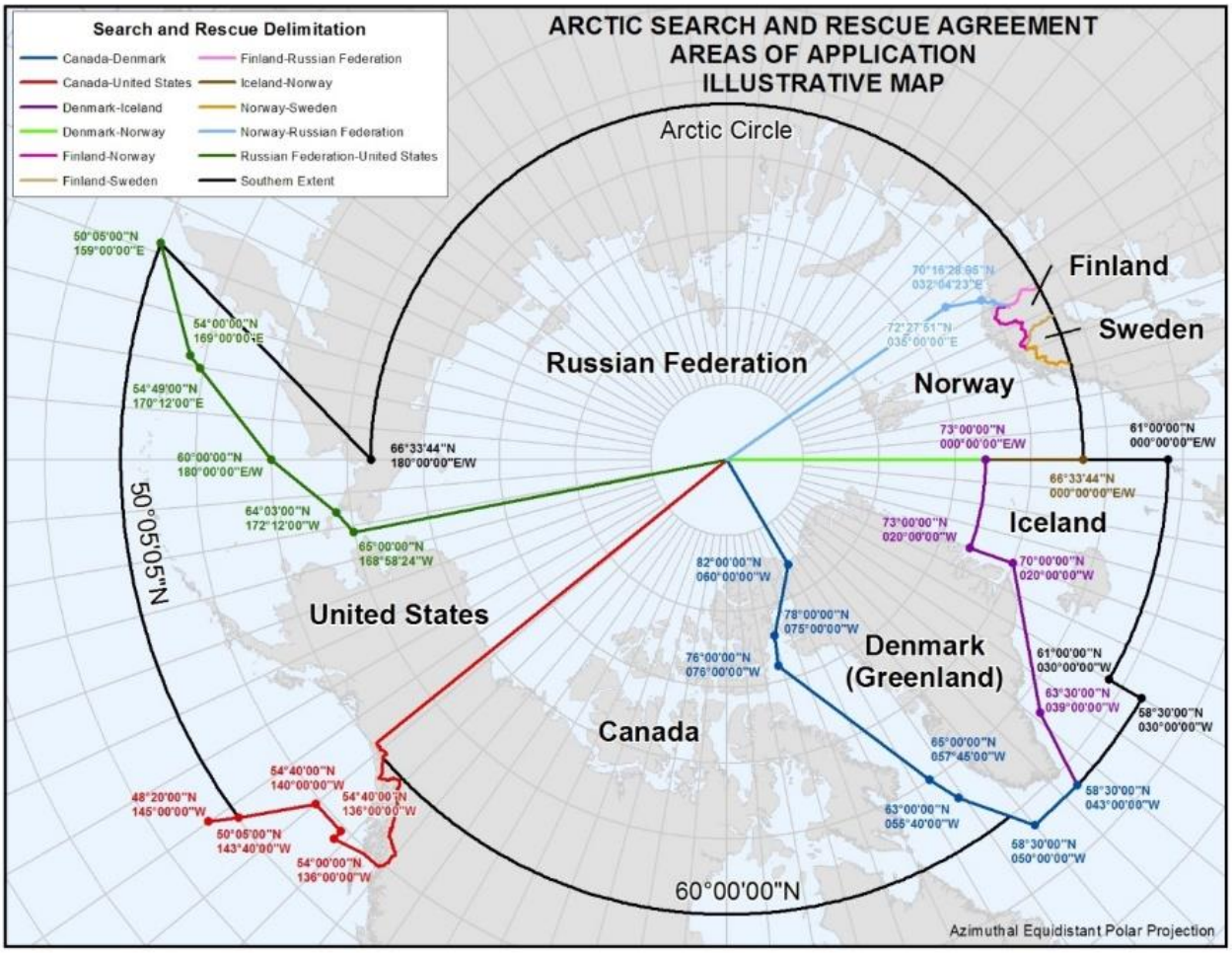
[31] Malte Humpert, "A Cruise Ship Runs Aground in Canada's Arctic Waters; The Akademik Ioffe's Sister Ship Was Nearby, and Together with Canadian Coast guard Ships, Was Able to Rescue All Passengers," *ArcticToday*, August 28, 2018.

[32] For a State Department fact sheet on the agreement, see "Secretary Clinton Signs the Arctic Search and Rescue Agreement with Other Arctic Nations," May 12, 2011, accessed July 11, 2023, at https://2009-2017.state.gov/r/pa/prs/ps/2011/05/163285.htm.

[33] Mark Thiessen, "Cruising to Nome: The First U.S. Deep Water Port for the Arctic to Host Cruise Ships, Military," *Associated Press*, June 18, 2023.

Figure 2. Arctic SAR Areas in Arctic SAR Agreement

(Based on geographic coordinates listed in the agreement)



Source: Map posted at "Arctic Region," U.S. Department of State**,** accessed July 11, 2023, at https://www.state.gov/key-topics-office-of-ocean-and-polar-affairs/arctic/.

Conclusion

Chairman Giménez, Ranking Member Thanedar, thank you again for the opportunity to appear before you today, and I will be pleased to respond to any questions the subcommittee may have.

Appendix. Biography

Mr. O'Rourke is a Phi Beta Kappa graduate of the Johns Hopkins University, from which he received his B.A. in international studies, and a valedictorian graduate of the University's Paul Nitze School of Advanced International Studies, where he received his M.A. in the same field.

Since 1984, Mr. O'Rourke has worked as a naval analyst for the Congressional Research Service of the Library of Congress. He has written many reports for Congress on various issues relating to the Navy, Coast Guard shipbuilding, China's naval forces, U.S.-China strategic competition in the South and East China seas, U.S. defense strategy, defense acquisition policy, the international security environment, and the Arctic. He regularly briefs Members of Congress and Congressional staffers, and has testified before Congressional committees on many occasions.

In 1996, he received a Distinguished Service Award from the Library of Congress for his service to Congress on naval issues.

In 2010, he was honored under the Great Federal Employees Initiative for his work on naval, strategic, and budgetary issues.

In 2012, he received the CRS Director's Award for his outstanding contributions in support of the Congress and the mission of CRS.

In 2017, he received the Superior Public Service Award from the Navy for service in a variety of roles at CRS while providing invaluable analysis of tremendous benefit to the Navy for a period spanning decades.

Mr. O'Rourke is the author of several journal articles on naval issues, and is a past winner of the U.S. Naval Institute's Arleigh Burke essay contest. He has given presentations on naval, Coast Guard, and strategy issues to a variety of U.S. and international audiences in government, industry, and academia.

Disclaimer