



Arctic Icebreaking Capabilities

December 19, 2016
Fiscal Year 2016 Report to Congress



**Homeland
Security**

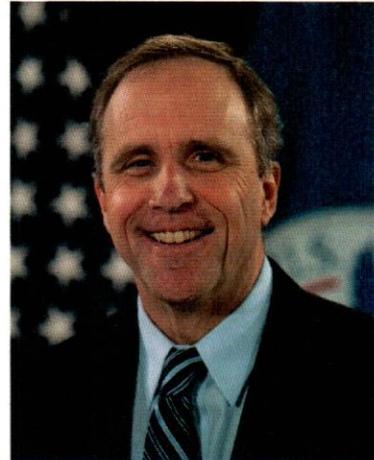
Under Secretary for Management

Message from the Deputy Under Secretary for Management and Chief Financial Officer

December 19, 2016

I am pleased to present the following report, "Arctic Icebreaking Capabilities," which has been prepared by the U.S. Coast Guard in coordination with the U.S. Navy.

This report was compiled pursuant to language set forth in Senate Report 114-68, which accompanies the Fiscal Year 2016 Department of Homeland Security Appropriations Act (P.L. 114-113). The report provides the current ability of the Coast Guard to provide the U.S. Navy with adequate icebreaking capabilities to operate a surface combatant ship in the Arctic year-round.



Pursuant to congressional requirements, this report is being provided to the following Members of Congress:

The Honorable John R. Carter
Chairman, House Appropriations Subcommittee on Homeland Security

The Honorable Lucille Roybal-Allard
Ranking Member, House Appropriations Subcommittee on Homeland Security

The Honorable John Hoeven
Chairman, Senate Appropriations Subcommittee on Homeland Security

The Honorable Jeanne Shaheen
Ranking Member, Senate Appropriations Subcommittee on Homeland Security

Inquiries relating to this report may be directed to me at (202) 447-5751.

Sincerely,

A handwritten signature in black ink that reads "Chip Fulghum". The signature is stylized and includes a long horizontal flourish extending to the right.

Chip Fulghum
Deputy Under Secretary for Management and
Chief Financial Officer



Arctic Icebreaking Capabilities

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I. Legislative Language

This report responds to the language set forth in Senate Report 114-68, which accompanies the Fiscal Year (FY) 2016 Department of Homeland Security (DHS) Appropriations Act (P. L. 114-113).

Senate Report 114-68 states:

POLAR ICEBREAKER

It is obvious that the United States needs another polar icebreaker, yet the administration has offered nothing in the way of a plan to fund and procure this new asset. Furthermore, the administration has not articulated a bridging strategy to demonstrate how legacy assets will be used in the interim to accomplish Coast Guard missions. Even with one operational heavy polar icebreaker, it is unclear how the Coast Guard would perform a rescue operation in the event that the Polar Star were to be in jeopardy.

Not later than 180 days after the date of the enactment of this act, the Secretary, in coordination with the Secretary of the Navy, shall submit to Congress a report on the current ability of the Coast Guard to provide the U.S. Navy with adequate icebreaking capabilities to operate a surface combatant ship in the Arctic year round. This report shall take into account the current requirements on Coast Guard icebreakers to conduct Operation Deep Freeze as well as regularly scheduled maintenance. This report shall also provide what assets are required to ensure that the Coast Guard can provide the Navy year-round icebreaking capabilities in the Arctic while also completing all current missions through 2030.

II. Background

The U.S. Coast Guard Arctic Strategy (published May 2013) aligns with the National Strategy for the Arctic Region and aims to ensure safe, secure, and environmentally responsible maritime activity in the Arctic. Polar icebreakers support evolving strategic goals for the U.S. Arctic, including mapping the extended continental shelf, monitoring our borders, protecting natural resources, and fulfilling international commitments for emergency response in this region. Pursuant to 14 U.S.C. § 2, the Coast Guard shall develop, establish, maintain, and operate icebreaking facilities for (1) the promotion of safety on, under, and over the high seas and waters subject to the jurisdiction of the United States and (2) as specified in international agreements. In the Polar Regions, the Coast Guard's icebreaking operations are currently carried out by one medium polar icebreaker, the Coast Guard Cutter (CGC) HEALY and one heavy polar icebreaker, CGC POLAR STAR.

The Coast Guard is working toward a sustained presence in the Arctic. CGC POLAR STAR is 40 years old and CGC POLAR SEA was put into inactive status since experiencing major propulsion casualties in 2010. Thus, the Coast Guard currently has no redundant heavy icebreaking capability to assist CGC POLAR STAR if the ship becomes stuck in ice or suffers a breakdown. To maintain current capabilities, the Coast Guard is engaged in sustainment and acquisition activities including acceleration of the acquisition of the first new heavy icebreaker. The FY 2017 President's Budget includes \$150 million to accelerate the acquisition of a new heavy Polar Icebreaker. This investment reflects our interests as an Arctic Nation and affirms the Coast Guard's role in assuring access to this region. The fundamental operational requirements for these assets have been approved by the Department of Homeland Security, and industry outreach commenced in March 2016 through formal face-to-face engagements with more than 90 organizations.

The CGC HEALY, a medium icebreaker, will continue to provide Arctic icebreaking services during the summer months and, as demand dictates, during shoulder seasons. Federal partners could rely on foreign or leased icebreakers if USCG icebreakers are unavailable.

III. Report

Navy Icebreaking Requirements

The Navy fully supports the national need to develop and maintain icebreaking capability and capacity to meet national interests and to enhance safety and security in the changing Arctic. The Navy values the sustained presence of icebreakers that enable it to continue missions of scientific research. Coast Guard icebreakers provide critical national support, including to the National Science Foundation (NSF), for scientific research and resupply. For naval operations specifically, icebreakers provide minimal support because the Navy has no defense requirement for year-round icebreaking capabilities. Navy defense requirements for operational forces in the Arctic currently are met by its undersea and air assets, which can provide year-round naval presence. The Navy's existing posture addresses near-term defense requirements in the Arctic and no Combatant Commanders have identified a defense requirement for year-round icebreaking capabilities.

Because the Navy's undersea and air assets fulfill current operational requirements in the Arctic, there is no defense requirement for Navy surface combatant ships to operate in the Arctic year-round. The Navy's surface combatants are not designed to operate in the extreme harsh environment of sea-ice conditions, even with the support of a Coast Guard icebreaker. Surface combatants participate in Arctic and sub-Arctic exercises, but they are not ice-hardened and operate only in open water conditions found in limited areas during the summer melt season. The Navy has two classes of ice-strengthened Military Sealift Command Combat Logistics Force ships, but they are not combat-capable and can conduct Navy missions only during the times of year when the sea ice recedes.

The Navy is studying options and costs involved with ice-hardening some surface ships. However, preliminary examinations of ice-hardening combatants reveal significant costs associated with ship re-design. Specifically, surface ship ice-hardening would need to factor in the many environmental risk factors, including sea-ice, wind, ice accumulation on equipment, and impacts to communications and satellite coverage. In addition, surface operations in the Arctic would require significant new infrastructure in the Arctic region, including deep water ports, roads, and logistics infrastructure. This would require regional authorization and immense investment of defense funding, and likely would have cultural and social impacts on the local population. The *U.S. Navy Arctic Roadmap 2014-2030* lays out a phased approach to meeting national security needs in the Arctic, balancing the demands of current requirements with investments in the development of future capabilities, and keeping pace with the changing environment.

Coast Guard Icebreaking Capability

CGC HEALY deploys annually to the Arctic during the summer and fall months to conduct multi-mission operations, including scientific research, hydrographic surveys, search and rescue, and marine environmental response. HEALY also participates in *Operation Arctic Shield*, for which the Coast Guard deploys cutters, aircraft, and personnel to engage in operations encompassing a variety of Coast Guard missions including support of homeland defense activities. While the Coast Guard and Navy are developing long-range exercise and training plans, as part of the *U.S. Navy Arctic Roadmap 2014-2030*, the Navy currently does not have missions under *Operation Arctic Shield*.

The current and recurring demand for a heavy icebreaker is to support the NSF-led U.S. Antarctic Program through *Operation Deep Freeze*. The mission of *Operation Deep Freeze* is to resupply U.S. facilities on the Antarctic continent. In support of the U.S. Antarctic Program and NSF for national science missions, the Coast Guard provides reimbursable icebreaking services for the annual resupply of McMurdo Station. This is the sole mission that CGC POLAR STAR is able to complete annually, due to extensive annual post-operation maintenance requirements.

Given the state of the current icebreaker fleet, it will take time to develop capacity for year-round access to the Polar Regions. The Coast Guard is planning to acquire at least two new heavy icebreakers to recapitalize the existing fleet.

Currently, the Coast Guard prioritizes *Operation Deep Freeze* when planning annual heavy icebreaker operations. In the event of an emergent national security situation that requires surface access to ice-covered Arctic waters, the Coast Guard would deploy one of the two icebreakers available (one heavy or one medium). When POLAR SEA and POLAR STAR were unavailable in the past, NSF mitigated any adverse effect on *Operation Deep Freeze* through leasing of foreign icebreakers.

Simultaneously, the Coast Guard is settling its bridging strategy to mitigate any potential gap in icebreaking capability until new assets can be delivered. The Coast Guard is currently evaluating options to extend the service life of CGC POLAR STAR, or to reactivate CGC POLAR SEA.