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Coast Guard Cutter Procurement: Background and Issues for Congress

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Summary

The Coast Guard's acquisition program of record (POR) calls for procuring 8 National Security Cutters (NSCs), 25 Offshore Patrol Cutters (OPCs), and 58 Fast Response Cutters (FRCs) as replacements for 90 aging Coast Guard high-endurance cutters, medium-endurance cutters, and patrol craft. The Coast Guard's proposed FY2019 budget requests a total of $705 million in acquisition funding for the NSC, OPC, and FRC programs.

NSCs are the Coast Guard's largest and most capable general-purpose cutters; they are intended to replace the Coast Guard's 12 aged Hamilton-class high-endurance cutters. NSCs have an estimated average procurement cost of about $682 million per ship. Although the Coast Guard's POR calls for procuring a total of 8 NSCs to replace the 12 Hamilton-class cutters, Congress through FY2018 has funded 11 NSCs, including two (the 10th and 11th) in FY2018. Six NSCs are now in service. The seventh is scheduled to be commissioned into service in January 2019, and the eighth and ninth are scheduled for delivery in 2019 and 2020, respectively. The Coast Guard's proposed FY2019 budget requests $65 million in acquisition funding for the NSC program; this request does not include additional funding for a 12th NSC.

OPCs are to be smaller, less expensive, and in some respects less capable than NSCs; they are intended to replace the Coast Guard's 29 aged medium-endurance cutters. Coast Guard officials describe the OPC program as the service's top acquisition priority. OPCs have an estimated average procurement cost of about $391 million per ship. On September 15, 2016, the Coast Guard announced that it was awarding a contract with options for building up to nine ships in the class to Eastern Shipbuilding Group of Panama City, FL. The first OPC was funded in FY2018 and is to be delivered in 2021. The Coast Guard's proposed FY2019 budget requests $400 million in acquisition funding for the OPC program for the construction of the second OPC (which is scheduled for delivery in 2022) and procurement of long leadtime materials (LLTM) for the third OPC (which is scheduled for delivery in 2023).

FRCs are considerably smaller and less expensive than OPCs; they are intended to replace the Coast Guard's 49 aging Island-class patrol boats. FRCs have an estimated average procurement cost of about $58 million per boat. A total of 50 have been funded through FY2018. The 29th was commissioned into service on November 8, 2018. The Coast Guard's proposed FY2019 budget requests $240 million in acquisition funding for the procurement of four more FRCs.

The NSC, OPC, and FRC programs pose several issues for Congress, including the following:

- whether to fully or partially fund the acquisition of a 12th NSC in FY2019;
- whether to fund the acquisition of four FRCs in FY2019, as requested, or some other number, such as six, which is the maximum number that has been acquired in some prior fiscal years;
- whether to use annual or multiyear contracting for procuring OPCs;
- the procurement rate for the OPC program;
- the impact of Hurricane Michael on Eastern Shipbuilding of Panama City, FL, the shipyard that is to build the first nine OPCs;
- planned procurement quantities for NSCs, OPCs, and FRCs; and
- initial testing of the NSC.

Congress's decisions on these programs could substantially affect Coast Guard capabilities and funding requirements, and the U.S. shipbuilding industrial base.

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Introduction

This report provides background information and potential oversight issues for Congress on the Coast Guard's programs for procuring 8 National Security Cutters (NSCs), 25 Offshore Patrol Cutters (OPCs), and 58 Fast Response Cutters (FRCs). The Coast Guard's proposed FY2019 budget requests a total of $705 million in acquisition funding for the NSC, OPC, and FRC programs.

The issue for Congress is whether to approve, reject, or modify the Coast Guard's funding requests and acquisition strategies for the NSC, OPC, and FRC programs. Congress's decisions on these three programs could substantially affect Coast Guard capabilities and funding requirements, and the U.S. shipbuilding industrial base.

The NSC, OPC, and FRC programs have been subjects of congressional oversight for several years, and were previously covered in an earlier CRS report that is now archived.[1] CRS testified on the Coast Guard's cutter acquisition programs most recently on July 25, 2017.[2] The Coast Guard's plans for modernizing its fleet of polar icebreakers are covered in a separate CRS report.[3]

Background

Older Ships to Be Replaced by NSCs, OPCs, and FRCs

The 91 planned NSCs, OPCs, and FRCs are intended to replace 90 older Coast Guard ships—12 high-endurance cutters (WHECs), 29 medium-endurance cutters (WMECs), and 49 110-foot patrol craft (WPBs).[4] The Coast Guard's 12 Hamilton (WHEC-715) class high-endurance cutters entered service between 1967 and 1972.[5] The Coast Guard's 29 medium-endurance cutters include 13 Famous (WMEC-901) class ships that entered service between 1983 and 1991,[6] 14 Reliance (WMEC-615) class ships that entered service between 1964 and 1969,[7] and 2 one-of-a-kind cutters that originally entered service with the Navy in 1944 and 1971 and were later

[1] The earlier report was, Coast Guard Deepwater Acquisition Programs: Background, Oversight Issues, and Options for Congress, by Ronald O'Rourke. From the late 1990s until 2007, the Coast Guard's efforts to acquire NSCs, OPCs, and FRCs were parts of a larger, integrated Coast Guard acquisition effort aimed at acquiring several new types of cutters and aircraft that was called the Integrated Deepwater System (IDS) program, or Deepwater for short. In 2007, the Coast Guard broke up the Deepwater effort into a series of individual cutter and aircraft acquisition programs, but continued to use the term Deepwater as a shorthand way of referring collectively to these now-separated programs. In its FY2012 budget submission, the Coast Guard stopped using the term Deepwater entirely as a way of referring to these programs. Congress, in acting on the Coast Guard's proposed FY2012 budget, did not object to ending the use of the term Deepwater. Reflecting this development, CRS Report RL33753, *Coast Guard Deepwater Acquisition Programs: Background, Oversight Issues, and Options for Congress*, by Ronald O'Rourke, was archived in early 2012, following final congressional action on the FY2012 budget, and remains available to congressional readers as a source of historical reference information on Deepwater acquisition efforts.

[2] See CRS Testimony TE10020, *Building a 21st Century Infrastructure for America: Coast Guard Sea, Air, and Land Capabilities: Part II*, by Ronald O'Rourke.

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

[4] In the designations WHEC, WMEC, and WPB, W means Coast Guard ship, HEC stands for high-endurance cutter, MEC stands for medium-endurance cutter, and PB stands for patrol boat.

[5] Hamilton-class cutters are 378 feet long and have a full load displacement of about 3,400 tons.

[6] Famous-class cutters are 270 feet long and have a full load displacement of about 1,800 tons.

[7] Reliance-class cutters are 210 feet long and have a full load displacement of about 1,100 tons.

transferred to the Coast Guard.[8] The Coast Guard's 49 110-foot Island (WPB-1301) class patrol boats entered service between 1986 and 1992.[9]

Many of these 90 ships are manpower-intensive and increasingly expensive to maintain, and have features that in some cases are not optimal for performing their assigned missions. Some of them have already been removed from Coast Guard service: eight of the Island-class patrol boats were removed from service in 2007 following an unsuccessful effort to modernize and lengthen them to 123 feet; the one-of-a-kind cutter that originally entered service with the Navy in 1944 was decommissioned in 2011; and the Hamilton-class cutters are being decommissioned as new NSCs enter service. A July 2012 Government Accountability Office (GAO) report discusses the generally poor physical condition and declining operational capacity of the Coast Guard's older high-endurance cutters, medium-endurance cutters, and 110-foot patrol craft.[10]

Missions of NSCs, OPCs, and FRCs

NSCs, OPCs, and FRCs, like the ships they are intended to replace, are to be multimission ships for routinely performing 7 of the Coast Guard's 11 statutory missions, including

- search and rescue (SAR);
- drug interdiction;
- migrant interdiction;
- ports, waterways, and coastal security (PWCS);
- protection of living marine resources;
- other/general law enforcement; and
- defense readiness operations.[11]

Smaller Coast Guard patrol craft and boats contribute to the performance of some of these seven missions close to shore. NSCs, OPCs, and FRCs perform them both close to shore and in the deepwater environment, which generally refers to waters more than 50 miles from shore.

[8] The two one-of-a-kind cutters are the *Acushnet* (WMEC-167), which originally entered service with the Navy in 1944, and the *Alex Haley* (WMEC-39), which originally entered service with the Navy in 1971. The *Acushnet* served in the Navy from until 1946, when it was transferred to the Coast Guard. The ship was about 214 feet long and had a displacement of about 1,700 tons. The *Alex Haley* served in the Navy until 1996. It was transferred to the Coast Guard in 1997, converted into a cutter, and reentered service with the Coast Guard in 1999. It is 282 feet long and has a full load displacement of about 2,900 tons.

[9] Island-class boats are 110 feet long and have a full load displacement of about 135 to 170 tons.

[10] Government Accountability Office, *Coast Guard[:]Legacy Vessels' Declining Conditions Reinforce Need for More Realistic Operational Targets*, GAO-12-741, July 2012, 71 pp.

[11] The four statutory Coast Guard missions that are not to be routinely performed by NSCs, OPCs, and FRCs are marine safety, aids to navigation, marine environmental protection, and ice operations. These missions are performed primarily by other Coast Guard ships. The Coast Guard states, however, that "while [NSCs, OPCs, and FRCs] will not routinely conduct [the] Aids to Navigation, Marine Safety, or Marine Environmental Protection missions, they may periodically be called upon to support these missions (i.e., validate the position of an Aid to Navigation, transport personnel or serve as a Command and Control platform for a Marine Safety or Marine Environmental Response mission, etc.)." (Source: Coast Guard information paper provided to CRS on June 1, 2012.)

NSC Program

National Security Cutters (**Figure 1**)—also known as Legend (WMSL-750)[12] class cutters because they are being named for legendary Coast Guard personnel[13]—are the Coast Guard's largest and most capable general-purpose cutters.[14] They are larger and technologically more advanced than Hamilton-class cutters, and are built by Huntington Ingalls Industries' Ingalls Shipbuilding of Pascagoula, MS (HII/Ingalls).

Figure 1. National Security Cutter

Source: U.S. Coast Guard photo accessed May 2, 2012, at http://www.flickr.com/photos/coast_guard/5617034780/sizes/l/in/set-72157629650794895/.

[12] In the designation WMSL, W means Coast Guard ship and MSL stands for maritime security cutter, large.

[13] For a Coast Guard news release that mentions the naming rule for the class, see U.S. Coast Guard, "Acquisition Update: Keel Authenticated for the Fifth National Security Cutter," May 17, 2013.

[14] The NSC design is 418 feet long and has a full load displacement of about 4,500 tons. The displacement of the NSC design is about equal to that of Navy's Oliver Hazard Perry (FFG-7) class frigates, which are 453 feet long and have a full load displacement of about 4,200 tons. The Coast Guard's three polar icebreakers are much larger than NSCs, but are designed for a more specialized role of operations in polar waters. The Coast Guard states that

> The largest and most technologically advanced of the Coast Guard's newest classes of cutters, the NSCs replace the aging 378-foot high endurance cutters, which have been in service since the 1960s. Compared to legacy cutters, the NSCs' design provides better sea-keeping and higher sustained transit speeds, greater endurance and range, and the ability to launch and recover small boats from astern, as well as aviation support facilities and a flight deck for helicopters and unmanned aerial vehicles.
>
> ("National Security Cutter," accessed April 19, 2018, at https://www.dcms.uscg.mil/Our-Organization/Assistant-Commandant-for-Acquisitions-CG-9/Programs/Surface-Programs/National-Security-Cutter/.)

The Coast Guard's acquisition program of record (POR)—the service's list, established in 2004, of planned procurement quantities for various new types of ships and aircraft—calls for procuring 8 NSCs as replacements for the service's 12 Hamilton-class high-endurance cutters. The Coast Guard's November 2017 acquisition program baseline (APB) for the NSC program estimated the total acquisition cost of a nine-ship NSC program at $6.135 billion, or an average of about $682 million per ship.[15]

Although the Coast Guard's POR calls for procuring a total of 8 NSCs to replace the 12 Hamilton-class cutters, Congress through FY2018 has funded 11 NSCs, including two (the 10th and 11th) in FY2018. Six NSCs are now in service (the sixth was commissioned into service on April 1, 2017). The seventh is scheduled to be commissioned into service in January 2019, and the eighth and ninth are scheduled for delivery in 2019 and 2020, respectively. The Coast Guard's proposed FY2019 budget requests $65 million in acquisition funding for the NSC program; this request does not include additional funding for a 12th NSC.

For additional information on the status and execution of the NSC program from May 2018 and March 2016 GAO reports, see **Appendix C**.

OPC Program

Offshore Patrol Cutters (**Figure 2**, **Figure 3**, and **Figure 4**)—also known as Heritage (WMSM-915)[16] class cutters because they are being named for past cutters that played a significant role in the history of the Coast Guard and the Coast Guard's predecessor organizations[17]—are to be smaller, less expensive, and in some respects less capable than NSCs.[18] In terms of full load displacement, OPCs are to be about 80% as large as NSCs.[19] Coast Guard officials describe the OPC program as the service's top acquisition priority. OPCs are being built by Eastern Shipbuilding Group of Panama City, FL.

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[15] Government Accountability Office, *Home Security Acquisitions[:] Leveraging Programs' results Could Further DHS's Progress to Improve Portfolio Management*, May 2018, GAO-18-339SP, p. 91.

[16] In the designation WMSM, W means Coast Guard ship and MSM stands for maritime security cutter, medium.

[17] For the naming rule for the class and a list of the names of the first 11 OPCs, see U.S. Coast Guard, "The Offshore Patrol Cutter (OPC) Is The Coast Guard's Highest Investment Priority and Will Play A Critical Role in the Service's Future," undated, accessed August 15, 2017, at http://www.dcms.uscg.mil/Our-Organization/Assistant-Commandant-for-Acquisitions-CG-9/Newsroom/OPC_Day/. See also Sam LaGrone, "Coast Guard Celebrates Birthday by Naming 11 Planned Offshore Patrol Cutters," *USNI News*, August 4, 2017 (updated August 5, 2017).

[18] The service states that OPCs

> The OPCs will provide the majority of offshore presence for the Coast Guard's cutter fleet, bridging the capabilities of the 418-foot national security cutters, which patrol the open ocean, and the 154-foot fast response cutters, which serve closer to shore. The OPCs will conduct missions including law enforcement, drug and migrant interdiction, search and rescue, and other homeland security and defense operations. Each OPC will be capable of deploying independently or as part of task groups and serving as a mobile command and control platform for surge operations such as hurricane response, mass migration incidents and other events. The cutters will also support Arctic objectives by helping regulate and protect emerging commerce and energy exploration in Alaska.
>
> ("Offshore Patrol Cutter," accessed April 20, 2018, https://www.dcms.uscg.mil/Our-Organization/Assistant-Commandant-for-Acquisitions-CG-9/Programs/Surface-Programs/Offshore-Patrol-Cutter/Offshore-Patrol-Cutter-Program-Profile/.)

[19] As of May 26, 2017, the OPC's light ship displacement (i.e., its "empty" displacement, without fuel, water, ballast, stores, and crew) was preliminarily estimated at about 2,640 to 2,800 tons, and its full load displacement was preliminarily estimated at about 3,500 to 3,730 tons. (Source: Figures provided to CRS by Cost Guard liaison office, May 26, 2017.) In terms of full load displacement, this would make OPCs roughly 80% as large as NSCs.

Figure 2. Offshore Patrol Cutter

Artist's rendering

Source: "Offshore Patrol Cutter Notional Design Characteristics and Performance," accessed September 16, 2016, at https://www.dcms.uscg.mil/Portals/10/CG-9/Surface/OPC/OPC%20Placemat%2036x24.pdf?ver=2018-10-02-134225-297.

Figure 3. Offshore Patrol Cutter

Artist's rendering

Source: "Offshore Patrol Cutter Notional Design Characteristics and Performance," accessed September 16, 2016, at https://www.dcms.uscg.mil/Portals/10/CG-9/Surface/OPC/OPC%20Placemat%2036x24.pdf?ver=2018-10-02-134225-297.

The Coast Guard's POR calls for procuring 25 OPCs as replacements for the service's 29 medium-endurance cutters. As of June 2017, the Coast Guard estimated the total acquisition cost of the 25 ships at $10.449 billion, or an average of about $391 million per ship.[20] The first OPC

[20] Government Accountability Office, *Home Security Acquisitions[:] Leveraging Programs' results Could Further DHS's Progress to Improve Portfolio Management*, May 2018, GAO-18-339SP, p. 93.

was funded in FY2018 and is to be delivered in 2021. The Coast Guard's proposed FY2019 budget requests $400 million in acquisition funding for the OPC program for the construction of the second OPC (which is scheduled for delivery in 2022) and for procurement of long leadtime materials (LLTM) for the third OPC (which is scheduled for delivery in 2023).

Figure 4. Offshore Patrol Cutter

Artist's rendering

Source: Image received from Coast Guard liaison office, May 25, 2017.

The Coast Guard's Request for Proposal (RFP) for the OPC program, released on September 25, 2012, established an affordability requirement for the program of an average unit price of $310 million per ship, or less, in then-year dollars (i.e., dollars that are not adjusted for inflation) for ships 4 through 9 in the program.[21] This figure represents the shipbuilder's portion of the total cost of the ship; it does not include the cost of government-furnished equipment (GFE) on the ship,[22] or other program costs—such as those for program management, system integration, and logistics—that contribute to the above-cited figure of $391 million per ship.[23]

At least eight shipyards expressed interest in the OPC program.[24] On February 11, 2014, the Coast Guard announced that it had awarded Preliminary and Contract Design (P&CD) contracts

[21] Source: Section C.5 of the RFP, accessed October 31, 2012, at http://www.uscg.mil/ACQUISITION/newsroom/updates/opc092512.asp.

[22] GFE is equipment that the government procures and then delivers to the shipyard for installation on the ship.

[23] Source: Coast Guard emails to CRS dated June 25, 2013.

[24] The firms were the following: Bollinger Shipyards of Lockport, LA; Eastern Shipbuilding Group of Panama City, FL; General Dynamics Bath Iron Works (GD/BIW) of Bath, ME; Huntington Ingalls Industries (HII) of Pascagoula, MS; Marinette Marine Corporation of Marinette, WS; General Dynamics National Steel and Shipbuilding Company (GD/NASSCO) of San Diego, CA; Vigor Shipyards of Seattle, WA; and VT Halter Marine of Pascagoula, MS.

to three of those eight firms—Bollinger Shipyards of Lockport, LA; Eastern Shipbuilding Group of Panama City, FL; and General Dynamics' Bath Iron Works (GD/BIW) of Bath, ME.[25] On September 15, 2016, the Coast Guard announced that it had awarded the detail design and construction (DD&C) contract to Eastern Shipbuilding. The contract covers detail design and production of up to 9 OPCs and has a potential value of $2.38 billion if all options are exercised.[26]

Section 223 of the Howard Coble Coast Guard and Maritime Transportation Act of 2014 (S. 2444/P.L. 113-281 of December 18, 2014) states the following:

> SEC. 223. MULTIYEAR PROCUREMENT AUTHORITY FOR OFFSHORE PATROL CUTTERS.
>
> In fiscal year 2015 and each fiscal year thereafter, the Secretary of the department in which the Coast Guard is operating may enter into, in accordance with section 2306b of title 10, United States Code, multiyear contracts for the procurement of Offshore Patrol Cutters and associated equipment.

(Source: U. S. Coast Guard Offshore Patrol Cutter (OPC) List of Interested Contractors Updated July 2012, accessed online October 23, 2012, at http://www.uscg.mil/ACQUISITION/opc/pdf/companiesinterested.pdf; and Kevin Brancato and Anne Laurent, *Coast Guard's $12 Billion Cutter Competition Spurs Eight Shipyards to Dive In*, Bloomberg Government Study, November 8, 2012, 6 pp. The Coast Guard document states that these firms "expressed interest in the Offshore Patrol Cutter acquisition and have agreed to their names provided on the Coast Guard website." See also Stew Magnuson, "New Coast Guard Cutter Sparks Fierce Competition Among Shipbuilders," *National Defense* (*www.nationaldefensemagazine.org*), April 2013, accessed March 26, 2013, at http://www.nationaldefensemagazine.org/articles/2013/4/1/2013april-new-coast-guard-cutter-sparks-fierce-competition-among-shipbuilders.)

[25] "Acquisition Update: U.S. Coast Guard Awards Three Contracts for Offshore Patrol Cutter Preliminary and Contract Design," February 11, 2014, accessed February 14, 2014, at https://www.dcms.uscg.mil/Portals/10/CG-9/Newsroom/In%20The%20News%20Archives/2014/opc021114.pdf?ver=2017-05-23-145011-727. HII and VT Halter Marine reportedly filed protests of the Coast Guard's award decision on February 24 and 25, respectively. The Coast Guard issued stop work orders to Bollinger, Eastern, and GD/BIW pending GAO's rulings on the protests. (Calvin Biesecker, "Coast Guard Issues Stop Work Orders On OPC Following Protests," *Defense Daily*, February 28, 2014: 2-3. See also Christopher P. Cavas, "Ingalls Protesting US Coast Guard Cutter Contract," *DefenseNews.com*, February 26, 2014.) On June 5, 2014, it was reported that GAO had rejected the protests, and that the Coast Guard had directed Bollinger, Eastern, and GD/BIW to resume their work. (Calvin Biesecker, "Coast Guard Directs Design Work Continue On OPC After GAO Denies Protests," *Defense Daily*, June 5, 2014: 1; Christopher P. Cavas, "US Coast Guard Cutter Award Upheld," *Defense News* (http://www.defensenews.com), June 5, 2014. For the text of the decision, see Government Accountability Office, Decision in the Matter of Huntington Ingalls Industries, Inc.; VT Halter Marine, Inc., June 2, 2014.)

[26] "Acquisition Update: Coast Guard Selects Offshore Patrol Cutter Design," September 15, 2016, accessed September 16, 2016, at https://www.dcms.uscg.mil/Portals/10/CG-9/Newsroom/In%20The%20News%20Archives/2016/opc091516.pdf?ver=2017-05-23-124855-680. An October 7, 2016, press report states that "after no protests were filed by the losing bidders to build the Coast Guard's new class of medium-endurance cutters, the service this week directed Eastern Shipbuilding Group to proceed with detail design and construction of the Offshore Patrol Cutter (OPC).... The period for the losing bidders to file a protest ended at close of business on Monday [October 3]." (Calvin Biesecker, "Coast Guard Directs Eastern Shipbuilding To Move Forward With Offshore Patrol Cutter," *Defense Daily*, October 7, 2016, p. 3. See also "Acquisition Update: Coast Guard Moves Forward To Next Phase Of OPC Acquisition," October 5, 2016, accessed march 20, 2016, at https://www.dcms.uscg.mil/Portals/10/CG-9/Newsroom/In%20The%20News%20Archives/2016/opc100516.pdf?ver=2017-05-23-153912-247.)

On September 7, 2017, the Coast Guard exercised a fixed-price option to its contract with Eastern Shipbuilding to procure long lead time materials (LLTM) for the first OPC; the total value of the option is $41.68 million. ("Coast Guard Exercises Long Lead Time Materials Option For First Offshore Patrol Cutter," September 7, 2017, accessed October 25, 2017, at http://www.dcms.uscg.mil/Our-Organization/Assistant-Commandant-for-Acquisitions-CG-9/Newsroom/OPC090717/.)

For additional information on the status and execution of the OPC program from May 2018 and March 2016 GAO reports, see **Appendix C**.

FRC Program

Fast Response Cutters (**Figure 5**)—also called Sentinel (WPC-1101)[27] class patrol boats because they are being named for enlisted leaders, trailblazers, and heroes of the Coast Guard and its predecessor services of the U.S. Revenue Cutter Service, U.S. Lifesaving Service, and U.S. Lighthouse Service[28]—are considerably smaller and less expensive than OPCs, but are larger than the Coast Guard's older patrol boats.[29] FRCs are built by Bollinger Shipyards of Lockport, LA.

Figure 5. Fast Response Cutter

With an older Island-class patrol boat behind

Source: U.S. Coast Guard photo accessed May 4, 2012, at http://www.flickr.com/photos/coast_guard/6871815460/sizes/l/in/set-72157629286167596/.

The Coast Guard's POR calls for procuring 58 FRCs as replacements for the service's 49 Island-class patrol boats.[30] The Coast Guard as of June 2017 estimated the total acquisition cost of the 58

[27] In the designation WPC, W means Coast Guard ship and PC stands for patrol craft.

[28] Source for class naming rule: U.S. Coast Guard bulletin, "ALCOAST 349/17 - Nov 2017 New Fast Response Cutters Named for Coast Guard heroes," November 22, 2017, accessed November 20, 2017, at https://content.govdelivery.com/accounts/USDHSCG/bulletins/1c6c844.

[29] FRCs are 154 feet long and have a full load displacement of 353 tons.

[30] The Coast Guard states that

> The planned fleet of FRCs will conduct primarily the same missions as the 110' patrol boats being replaced. In addition, the FRC will have several increased capabilities enhancing overall mission

cutters at $3.342 billion, or an average of about $58 million per cutter.[31] A total of 50 FRCs have been funded through FY2018. The 29th was commissioned into service on November 8, 2018. The Coast Guard's proposed FY2019 budget requests $240 million in acquisition funding for the procurement of four more FRCs.

For additional information on the status and execution of the FRC program from May 2018 and March 2016 GAO reports, see **Appendix C**.

Funding in FY2013-FY2019 Budget Submissions

Table 1 shows annual requested and programmed acquisition funding for the NSC, OPC, and FRC programs in the Coast Guard's FY2013-FY2019 budget submissions. Actual appropriated figures differ from these requested and projected amounts.

Issues for Congress

Whether to Fund a 12th NSC in FY2019

One issue for Congress is whether to fully or partially fund the acquisition of a 12th NSC in FY2019. Based on funding provided by Congress for the procurement of the 11th NSC in FY2018, fully funding the procurement of a 12th in FY2019 might require about $635 million.

Supporters of procuring a 12th NSC in FY2019 could argue that a total of 12 NSCs would provide one-for-one replacements for the 12 Hamilton-class cutters, that the Coast Guard's POR record includes only about 61% as many new cutters as the Coast Guard has calculated would be required to fully perform the Coast Guard's anticipated missions in coming years (see "Planned NSC, OPC, and FRC Procurement Quantities" below, as well as **Appendix A**); and that funding the 12th NSC in FY2019 would allow the Coast Guard and HII/Ingalls, in identifying an efficient production profile for the ship, to consider options for building the 10th, 11th, and 12th NSCs at intervals of less than 12 months.

Skeptics or opponents of procuring a 12th NSC in FY2019 could argue that the Coast Guard's POR includes only 8 NSCs, that the Coast Guard's fleet mix analyses (see "Planned NSC, OPC, and FRC Procurement Quantities" below, as well as **Appendix A**) have not shown a potential need for more than 9 NSCs, and that in a situation of finite Coast Guard budgets, funding a 12th NSC in FY2018 might require reducing funding for other Coast Guard programs. They might also argue that deferring procurement of a 12th NSC to FY2020 would permit an efficient one-per-year production profile for the 10th, 11th, and 12th NSCs.

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execution. The FRC is designed for rapid response, with approximately a 28 knot speed capability, and will typically operate in the coastal zones. Examples of missions that FRCs will complete include SAR, Migrant Interdiction, Drug Interdiction and Ports Waterways and Coastal Security.

FRCs will provide enhanced capabilities over the 110's including improved C4ISR capability and interoperability; stern launch and recovery (up through sea state 4) of a 40 knot, Over-the-Horizon, 7m cutter boat; a remote operated, gyro stabilized MK38 Mod 2, 25mm main gun; improved sea keeping; and enhanced crew habitability.

(*Department of Homeland Security, United States Coast Guard, Fiscal Year 2013 Congressional Justification*, p. CG-AC&I-28 (pdf page 182 of 400).)

[31] Government Accountability Office, *Home Security Acquisitions[:] Leveraging Programs' results Could Further DHS's Progress to Improve Portfolio Management*, May 2018, GAO-18-339SP, p. 81.

Table 1. NSC, OPC, and FRC Funding in FY2013-FY2019 Budget Submissions

Figures in millions of then-year dollars

Budget	FY13	FY14	FY15	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23
NSC program											
FY13	683	0	0	0	0						
FY14		616	710	38	0	45					
FY15			638	75	130	30	47				
FY16				91.4	132	95	30	15			
FY17					127	95	65	65	21		
FY18						54	65	65	21	6.6	
FY19							65	n/a	n/a	n/a	n/a
OPC program											
FY13	30	50	40	200	530						
FY14		25	65	200	530	430					
FY15			20	90	100	530	430				
FY16				18.5	100	530	430	430			
FY17					100	530	430	530	770		
FY18						500	400	457	716	700	
FY19							400	n/a	n/a	n/a	n/a
FRC program											
FY13	139	360	360	360	360						
FY14		75	110	110	110	110					
FY15			110	340	220	220	315				
FY16				340	325	240	240	325			
FY17					240	240	325	325	18		
FY18						240	335	335	26	18	
FY19							240	n/a	n/a	n/a	n/a
Total											
FY13	852	410	400	560	890						
FY14		716	885	348	640	585					
FY15			768	505	450	780	792				
FY16				449.9	557	865	700	370			
FY17					467	865	820	920	809		
FY18						794	800	857	763	724.6	
FY19							705	n/a	n/a	n/a	n/a

Source: Table prepared by CRS based on FY2013-FY2019 budget submissions.

Note: n/a means not available.

Number of FRCs to Fund in FY2019

Another issue for Congress is whether to fund the acquisition of four FRCs in FY2019, as requested, or some other number, such as six, which is the maximum number that has been acquired in some prior fiscal years. As shown in **Table 1**, the Coast Guard's FY2019 budget requests $240 million for the procurement of four FRCs. Based on prior-year appropriations for FRCs, procuring a total of six FRCs in FY2019 would require $340 million, or $100 million more than the requested amount.

Supporters of funding the acquisition of six FRCs in FY2019 could argue that it would increase production economies of scale and thus reduce the unit acquisition cost of the ships, and help the Coast Guard to close more quickly a gap in patrol boat capacity that is limiting the Coast Guard's ability to interdict illegal drugs and carry out other missions. Supporters of funding the acquisition of four FRCs in FY2019 could argue that in a situation of finite Coast Guard budgets,

funding two additional FRCs at an additional cost of $100 million might require reducing funding for other Coast Guard programs.

Annual or Multiyear Contracting for OPCs

Another issue for Congress is whether to acquire OPCs using annual contracting or multiyear contracting in the form of multiyear procurement (MYP) or block buy contracting. The Coast Guard currently plans to use a contract with options for procuring the first nine OPCs. Although a contract with options may look like a form of multiyear contracting, it operates more like a series of annual contracts. Contracts with options do not achieve the reductions in acquisition costs that are possible with MYP and block buy contracting. Using MYP or block buy contracting involves accepting certain trade-offs.[32]

As mentioned earlier, Section 223 of the Howard Coble Coast Guard and Maritime Transportation Act of 2014 (S. 2444/P.L. 113-281 of December 18, 2014) grants authority to use MYP in the OPC program. MYP typically cannot be used on the first several ships in a shipbuilding program because the law that regulates MYP (10 U.S.C. 2306b) requires a stable design for an acquisition program to qualify for MYP. In a shipbuilding program, a stable design is typically demonstrated by completing the construction of the first ship in the class, by which time the first several ships in the class typically have been funded and put under contract.

Block buy contracting, by comparison, can be used at the start of a shipbuilding program, beginning with the first ship. (Indeed, this was a principal reason why block buy contracting was in effect invented in FY1998, as the contracting method for procuring the Navy's first four Virginia-class attack submarines.) As with MYP, authority for using block buy contracting must be granted by Congress. Since Section 223 of P.L. 113-281 grants authority to use MYP but not block buy contracting, Congress would need to grant authority to the Coast Guard to use block buy contracting in the OPC program.

CRS estimates that if the Coast Guard were to use block buy contracting with economic order quantity (EOQ) purchases (i.e., up-front batch purchases) of components for acquiring the first several OPCs, and either MYP or block buy contracting with EOQ purchases for acquiring the remaining ships in the program, the savings on the total acquisition cost of the 25 OPCs (compared to costs under contracts with options) could amount to roughly $1 billion. CRS also estimates that acquiring the first nine ships in the OPC program under the current contract with options could forego roughly $350 million of the $1 billion in potential savings.

One potential option for the subcommittee would be to look into the possibility of having the Coast Guard either convert the current OPC contract at an early juncture into a block buy contract with EOQ authority, or, if conversion is not possible, replace the current contract at an early

[32] These trade-offs include the following:

- reduced congressional control over year-to-year spending, and tying the hands of future Congresses;
- reduced flexibility for making changes in Coast Guard acquisition programs in response to unforeseen changes in strategic or budgetary circumstances (which can cause any needed funding reductions to fall more heavily on acquisition programs not covered by multiyear contracts);
- a potential need to shift funding from later fiscal years to earlier fiscal years to fund economic order quantity (EOQ) purchases (i.e., up-front batch purchases) of components;
- the risk of having to make penalty payments to shipbuilders if multiyear contracts need to be terminated due to unavailability of funds needed for the continuation of the contracts; and
- the risk that materials and components purchased for ships to be procured in future years might go to waste if those ships are not eventually procured.

juncture with a block buy contract with EOQ authority.[33] Replacing the current contract with a block buy contract might require recompeting the program, which would require effort on the Coast Guard's part and could create business risk for Eastern Shipbuilding Group, the shipbuilder that holds the current contract. On the other hand, the cost to the Coast Guard of recompeting the program would arguably be small relative to a potential additional savings of perhaps $300 million, and Eastern arguably would have a learning curve advantage in any new competition by virtue of its experience in building the first OPC.

OPC Procurement Rate

The current procurement profile for the OPC, which reaches a maximum projected rate of two ships per year, would deliver OPCs many years after the end of the originally planned service lives of the medium-endurance cutters that they are to replace. Coast Guard officials have testified that the service plans to extend the service lives of the medium-endurance cutters until they are replaced by OPCs. There will be maintenance and repair expenses associated with extending the service lives of medium-endurance cutters, and if the Coast Guard does not also make investments to increase the capabilities of these ships, the ships may have less capability in certain regards than OPCs.[34]

One possible option for addressing this situation would be to increase the maximum annual OPC procurement rate from the currently planned two ships per year to three or four ships per year. Doing this could result in the 25th OPC being delivered about four years or six years sooner, respectively, than under the currently planned maximum rate. Increasing the OPC procurement rate to three or four ships per year would require a substantial increase to the Coast Guard's Procurement, Construction, and Improvements (PC&I) account,[35] an issue discussed in **Appendix B**.

Increasing the maximum procurement rate for the OPC program could, depending on the exact approach taken, reduce OPC unit acquisition costs due to improved production economies of scale. Doubling the rate to four ships per year, for example, could reduce unit procurement costs by as much as 10%, which could result in hundreds of millions of dollars in additional savings in acquisition costs for the program. Increasing the maximum procurement rate could also create new opportunities for using competition in the OPC program. Notional alternative approaches for increasing the OPC procurement rate to three or four ships per year include but are not necessarily limited to the following:

- increasing the production rate to three or four ships per year at Eastern Shipbuilding—an option that would depend on Eastern Shipbuilding's production capacity;
- introducing a second shipyard to build Eastern's design for the OPC;
- introducing a second shipyard (such as one of the other two OPC program finalists) to build its own design for the OPC—an option that would result in two OPC classes; or

[33] As part of the replacement scenario, the Coast Guard could end the implementation of the current contract with options by not exercising an option.

[34] For further discussion, see Government Accountability Office, *Coast Guard Acquisitions[:] Actions Needed to Address Longstanding Portfolio Management Challenges*, GAO 18-454, July 2018, pp. 32-36.

[35] Prior to FY2019, the PC&I account was called the Acquisition, Construction, and Improvements (AC&I) account.

- building additional NSCs in the place of some of the OPCs—an option that might include descoping equipment on those NSCs where possible to reduce their acquisition cost and make their capabilities more like that of the OPC. Such an approach would be broadly similar to how the Navy is planning to use a descoped version of the San Antonio (LPD-17) class amphibious ship as the basis for its LPD-17 Flight II (LPD-30) class amphibious ships.[36]

Impact of Hurricane Michael on Eastern Shipbuilding

Another potential issue for Congress concerns the impact of Hurricane Michael on Eastern Shipbuilding of Panama City, FL, the shipyard that is to build the first nine OPCs. An October 22, 2018, press report states the following:

> U.S. Coast Guard officials and Eastern Shipbuilding Group are still assessing the damage caused by deadly category 4 Hurricane Michael to the Panama City, Fla.-based yard contracted to build the new class of Offshore Patrol Cutters.
>
> On September 28, the Coast Guard awarded Eastern Shipbuilding a contract to build the future USCGC *Argus* (WMSM-915), the first offshore patrol cutter (OPC). The yard was also set to build a second OPC, the future USCGC *Chase* (WMSM-916). Eastern Shipbuilding's contract is for nine OPCs, with options for two additional cutters. Ultimately, the Coast Guard plans to buy 25 OPCs.
>
> However, just as the yard was preparing to build *Argus*, Hurricane Michael struck the Florida Panhandle near Panama City on October 10. Workers from the shipyard and Coast Guard project managers evacuated and are just now returning to assess damage to the yard facilities, Brian Olexy, communications manager for the Coast Guard's Acquisitions Directorate, told USNI News.
>
> "Right now we haven't made any decisions yet on shifts in schedule," Olexy said….
>
> Since the yard was just the beginning stages of building *Argus*, Olexy said the hull wasn't damaged. "No steel had been cut," he said.
>
> Eastern Shipbuilding is still in the process of assessing damage to the yard and trying to reach its workforce. Many employees evacuated the area and have not returned, or are in the area but lost their homes, Eastern Shipbuilding spokesman Justin Smith told USNI News.
>
> At first, about 200 workers returned to work, but by week's end about 500 were at the yard, Smith said. The company is providing meals, water, and ice for its workforce.
>
> "Although we were significantly impacted by this catastrophic weather event, we are making great strides each day thanks to the strength and resiliency of our employees," Joey D'Isernia, president of Eastern Shipbuilding, said in a statement.[37]

A November 1, 2018, statement from Eastern Shipbuilding states that the firm

> resumed operations at both of its two main shipbuilding facilities just two weeks after Hurricane Michael devastated Panama City Florida and the surrounding communities….

[36] For additional discussion, see CRS Report R43543, *Navy LPD-17 Flight II (LX[R]) Amphibious Ship Program: Background and Issues for Congress*, by Ronald O'Rourke.

[37] Ben Werner, "Coast Guard, Shipbuilder Assessing Hurricane Damage to Yard Building Offshore Patrol Cutter," *USNI News*, October 22, 2018. See also Paul McLeary, "Hurricane Michael Hits Coast Guard's Largest Program, Leaving Devastation," *Breaking Defense*, October 18, 2018; Marex, "Despite Hurricane Michael, Eastern Shipbuilding Keeps Working," *Maritime Executive*, October 16, 2018; Samuel Hill, "Eastern Shipbuilding Hit Hard by Hurricane Michael," *Workboat*, October 16, 2018.

> … the majority of ESG's [Eastern Shipbuilding Group's] workforce has returned to work very quickly despite the damage caused by the storm. "Our employees are a resourceful and resilient group of individuals with the drive to succeed in the face of adversity. This has certainly been proven by their ability to bounce back over the two weeks following the storm. Our employees have returned to work much faster than anticipated and brought with them an unbreakable spirit, that I believe sets this shipyard and our community apart" said [Eastern Shipbuilding] President Joey D'Isernia. "Today, our staffing levels exceed 80% of our pre-Hurricane Michael levels and is rising daily."
>
> Immediately following the storm, ESG set out on an aggressive initiative to locate all of its employees and help get them back on the job as soon as practical after they took necessary time to secure the safety and security of their family and home. Together with its network of friends, partners, and customers in the maritime community, ESG organized daily distribution of meals and goods to employees in need. Additionally, ESG created an interest free deferred payback loan program for those employees in need and has organized Go Fund Me account to help those employees hardest hit by the storm. ESG also knew temporary housing was going to be a necessity in the short term and immediately built a small community located on greenfield space near its facilities for those employees with temporary housing needs.
>
> ESG has worked closely with its federal, state and commercial partners over the past two weeks to provide updates on the shipyard as well as on projects currently under construction. Power was restored to ESG's Nelson Facility on 10-21-18 and at ESG's Allanton Facility on 10-24-18 and production of vessels under contract is ramping back up. Additionally, all of the ESG personnel currently working on the US Coast Guard's Offshore Patrol Cutter contract have returned to work….
>
> "We are grateful to our partners and the maritime business community as a whole for their support and confidence during the aftermath of this historic storm. Seeing our incredible employees get back to building ships last week was an inspiration," said D'Isernia. "While there is no doubt that the effects of Hurricane Michael will linger with our community for years to come, I can say without reservation that we are open for business and excited about delivering quality vessels to our loyal customers."[38]

Planned NSC, OPC, and FRC Procurement Quantities

Another issue for Congress concerns the Coast Guard's planned NSC, OPC, and FRC procurement quantities. The POR's planned force of 91 NSCs, OPCs, and FRCs is about equal in number to the Coast Guard's legacy force of 90 high-endurance cutters, medium-endurance cutters, and 110-foot patrol craft. NSCs, OPCs, and FRCs, moreover, are to be individually more capable than the older ships they are to replace. Even so, Coast Guard studies have concluded that the planned total of 91 NSCs, OPCs, and FRCs would provide 61% of the cutters that would be needed to fully perform the service's statutory missions in coming years, in part because Coast Guard mission demands are expected to be greater in coming years than they were in the past. For further discussion of this issue, about which CRS has testified and reported on since 2005,[39] see **Appendix A**.

[38] Eastern Shipbuilding news release, November 1, 2018, entitled "Eastern Shipbuilding Group, Inc. Resumes Operations."

[39] See Statement of Ronald O'Rourke, Specialist in National Defense, Congressional Research Service, Before the Senate Commerce, Science, and Transportation Committee, Subcommittee on Fisheries and the Coast Guard, Hearing on The Coast Guard's Revised Deepwater Implementation Plan, June 21, 2005, pp. 1-5.

NSC Program: Initial Testing

Another potential oversight issue for Congress concerns the results of initial testing of the NSC. A January 2016 GAO report stated the following:

> The U.S. Navy, the Coast Guard's independent test agent, completed initial testing for the National Security Cutter (NSC) in April 2014 and rated the NSC as operationally effective and suitable. Still, testing revealed 10 major deficiencies.... Initial testing is an event designed to verify performance of critical systems to ensure assets are capable of meeting mission requirements. The event tests critical operational issues and key performance parameters. The NSC fully met 12 of 19 key performance parameters. Tests of one key performance parameter, as well as other critical systems, were deferred to follow-on testing. The Coast Guard and the U.S. Navy disagree on the NSC's requirements for cutter boat operations. Without clear requirements the Navy and Coast Guard will not have a basis for determining actions to resolve any performance issues. Coast Guard officials acknowledged that clarifying these requirements would be beneficial.
>
> The Coast Guard plans to begin follow-on testing in fall 2016. It must submit corrective action plans to the U.S. Navy to close any deficiencies. According to Coast Guard documentation, it may choose not to correct all deficiencies due to the cost of changes. Department of Homeland Security (DHS) acquisition guidance does not specify the timing of follow-on testing or the actions to be taken in response to the findings. Without a definite time frame DHS risks encountering the same problems as the NSC program experienced with future acquisitions and fielding assets without knowing the full capabilities.
>
> During operations, the NSC has experienced performance issues that were not identified during initial testing, and the Coast Guard has planned design changes to some of the cutters' equipment.... However, the Coast Guard has not yet found the causes for problems affecting the NSC's propulsion systems. As a result of these and other equipment failures, the NSC has been operating in a degraded condition in some mission areas. DHS has no plans for additional acquisition review boards for the NSC, which would provide oversight going forward. Continued management-level oversight by DHS would help ensure that problems identified during testing and operations are addressed.[40]

Legislative Activity in 2018

Summary of Appropriations Action on FY2019 Acquisition Funding Request

Table 2 summarizes appropriations action on the Coast Guard's request for FY2019 acquisition funding for the NSC, OPC, and FRC programs.

Table 2. Summary of Appropriations Action on FY2019 Acquisition Funding Request

Figures in millions of dollars, rounded to nearest tenth

Request	Request	HAC	SAC	Final
NSC program	65	140	72.6	
OPC program	400	400	400	
FRC program	240	340	240	
TOTAL	**705**	**880**	**712.6**	

[40] Government Accountability Office, *National Security Cutter[:]Enhanced Oversight Needed to Ensure Problems Discovered during Testing and Operations Are Addressed*, GAO-16-148, January 2016, summary page.

Source: Table prepared by CRS based on Coast Guard's FY2019 budget submission, HAC committee report, and SAC chairman's mark and explanatory statement on FY2019 DHS Appropriations Act. **HAC** is House Appropriations Committee; **SAC** is Senate Appropriations Committee.

FY2019 DHS Appropriations Act (H.R. XXXX/S. 3109)

House

The House Appropriations Committee marked up the FY2019 DHS Appropriations Act (referred to here as H.R. XXXX) on July 25, 2018. The text of the bill as marked up, and the committee's report reflecting the markup, were not available as of August 3, 2018. The figures shown in the HAC column of **Table 2** and the discussion below are based on the bill text and draft committee report (referred to here as H.Rept. 115-XXX) going into the July 25, 2018, markup meeting, combined with a summary of the amendments adopted at the markup meeting, which were posted on the committee's website in conjunction with the pre-markup bill text and draft committee report.[41]

H.Rept. 115-XXX recommends the funding levels shown in the HAC column of **Table 2**. In addition, the committee states that at the July 25, 2018, markup, the committee adopted by voice vote an amendment that "allows certain existing, unobligated funds to be used to purchase long-lead time materials for the 12th National Security Cutter."

H.Rept. 115-XXX states the following:

> *National Security Cutter (NSC).* The Consolidated Appropriations Act, 2018 (Public Law 115–141) provided $1,241,000,000 for the NSC program, which included funds for construction of the tenth and eleventh NSC, a contrast from the historic approach of funding construction for one NSC per fiscal year. The Committee's fiscal year 2019 recommendation includes $140,000,000 for the NSC program, $75,000,000 more than requested. Included in this amount is an additional $75,000,000 above the request to continue support of Post Delivery Activities (PDA) for the seventh through ninth hulls and other program-wide activities.
>
> *Offshore Patrol Cutter (OPC).* The recommendation includes $400,000,000 for the OPC program, as requested, to fund construction of the second OPC, long lead time materials for the third, and program management costs.
>
> *Fast Response Cutter (FRC).* The recommendation provides $340,000,000 for six FRCs, four for the current program of record, as requested, and two to continue replacement of the 110-foot Island Class Cutters supporting U.S. Central Command in Southwest Asia. The Committee strongly encourages the Coast Guard to transition the 110-foot patrol boats supporting U.S. Central Command in Southwest Asia to FRCs in the most expedient manner possible, and to update the Committee of any changes to its FRC deployment strategy. The Committee understands the current patrol boats are well past their service life and wants to ensure the Coast Guard men and women serving in this challenging area of operations have the right equipment necessary to meet these evolving threats. (Page 39)

H.Rept. 115-XXX also states the following:

> Similar to the other Armed Services, the Coast Guard must maintain military readiness in order to meet its mission requirements. Within 180 days of enactment of this Act, the Coast Guard is directed to report to the Committee on any lost operational time due to unplanned

[41] Houser Appropriations Committee, "Appropriations Committee Approves Fiscal Year 2019 Homeland Security Funding Bill," July 25, 2019, accessed August 3, 2018, at https://appropriations.house.gov/news/documentsingle.aspx?DocumentID=395388.

> maintenance or supply shortfalls for cutters, aircraft, and boats, as well as the current operations and support (O&S) maintenance backlog for cutters, aircraft, shore facilities, and information technology systems, including the operational impact of this backlog.
>
> he Committee recommends $7,620,209,000 for [the Coast Guard] O&S [operation and support account], $27,071,000 above the request to fund additional full-time equivalents, increase child care subsidy benefits, fund an independent analysis of the current and projected air and sea fleet requirements, and address rising costs for fuel and rent. Also included in this amount is $1,000,000 to equip the Fast Response Cutter fleet with hailing and acoustic laser light tactical systems. (Page 36)

H.Rept. 115-XXX also states the following:

> The Commandant of the Coast Guard is directed to provide to the Committee not later than one year after the date of enactment of this Act, a report that examines the number and type of Coast Guard assets required to meet the Service's current and foreseeable needs in accordance with the Service's statutory missions. The report shall include, but not be limited to, an assessment of the required number and types of cutters and aircraft for current and planned asset acquisitions. The report shall specifically address regional mission requirements in the Western Hemisphere, including the Polar regions, support provided to Combatant Commanders, and trends in illicit activity and illegal migration. In order to provide an impartial assessment, the recommendation includes an increase of $3,300,000 for the report to be prepared by a Federally Funded Research and Development Center experienced in similar examinations. (Page 37)

Senate

The Senate Appropriations Committee, in its report (S.Rept. 115-283 of June 21, 2018) on S. 3109, recommends the funding levels shown in the SAC column of **Table 2**. S.Rept. 115-283 states the following:

> *National Security Cutter*.—Legend Class National Security Cutters [NSCs] are replacing the legacy High Endurance Cutters, built between 1967 and 1972. In fiscal year 2017, the Coast Guard interdicted 2,512 illegal migrants and removed 224 metric tons of cocaine with an estimated street value of over $6,600,000,000, which surpassed the previous record amount of cocaine removal set the previous fiscal year. Of the 224 metric tons of cocaine removed, four NSCs interdicted 72.6 metric tons of cocaine with an estimated street value of $2,144,000,000. In a single deployment, the USCGC JAMES (WMSL–754) removed 16.8 metric tons of uncut cocaine with a street value in excess of $496,000,000. The Committee recommends $72,600,000 for the NSC program including $7,600,000 for advance purchase of several systems for the tenth and eleventh NSCs, including wind indicating and measurement systems, homing beacons for aircraft, and navigation and sensor data distribution systems. The Committee worked diligently to ensure resources were provided by the Consolidated Appropriations Act, 2018 to construct a tenth and eleventh NSC. The Committee is pleased that the Coast Guard has indicated that contracts for these NSCs are on track to be awarded on time. The Committee continues to believe that the Coast Guard's fleet of twelve High Endurance Cutters should be replaced with twelve NSCs. The Committee intends to continue to work with the Coast Guard to understand the costs, operational benefits of, and recommended schedule for acquisition of a twelfth NSC.
>
> *Offshore Patrol Cutter*.—The OPC will replace the fleet of Medium Endurance Cutters and further enhance the Coast Guard's layered security strategy. The recommendation includes $400,000,000 for the OPC program. This funding will provide for production of a second OPC, LLTM for a third OPC, program activities, test and evaluation, government furnished equipment, and training aids. The Committee encourages the Coast Guard to evaluate the requirements for a sensitive compartmented information facility and a

> multimodal radar system onboard the OPC and determine whether and when these requirements should be incorporated into revised design and construction.
>
> *Fast Response Cutter*.—The Committee recommends $240,000,000 to acquire four FRCs, as requested. (Page 68)

S.Rept. 115-283 also states the following:

> Due in large part to the Committee's efforts, the Coast Guard's surface and air fleets are in the midst of unprecedented modernization. With the expansion of the National Security Cutter fleet, continuation of Fast Response Cutter production, beginning of the Offshore Patrol Cutter acquisition, and initiation of the first Heavy Polar Icebreaker acquisition in more than four decades, the Coast Guard's cutter fleet is growing into a state-of-the-art force adaptable to any mission. (Page 6)

S.Rept. 115-283 also states the following:

> *Coast Guard Yard*.—The Committee has urged the Coast Guard to expedite planning for facility and equipment upgrades necessary for service life extensions of the Fast Response Cutter [FRC] and other vessels at the Coast Guard Yard at Curtis Bay in Baltimore, Maryland. The nearest travel lift of sufficient size and capacity to service the FRC is in Hampton Roads, Virginia. Transporting the travel lift between Hampton Roads and Baltimore is a costly and time consuming procedure that removes the lift from service during transport. The recommendation includes funding within the PC&I appropriation to acquire necessary equipment and make physical modifications to wharves or other parts of the Coast Guard Yard facility to accommodate FRCs and other vessels. (Page 63)

S.Rept. 115-283 also states the following:

> *Full-Funding Policy*.—The Committee again directs an exception to the administration's current acquisition policy that requires the Coast Guard to attain the total acquisition cost for a vessel, including long lead time materials [LLTM], production costs, and postproduction costs, before a production contract can be awarded. This policy has the potential to make shipbuilding less efficient, to force delayed obligation of production funds, and to require post-production funds far in advance of when they will be used. The Department should position itself to acquire vessels in the most efficient manner within the guidelines of strict governance measures. The Committee expects the administration to adopt a similar policy for the acquisition of the Offshore Patrol Cutter [OPC] and heavy polar icebreaker. (Page 67)

S.Rept. 115-283 also states the following:

> *Homeport of New Vessels*.—The Committee supports the current and planned homeport locations for National Security Cutters. However, the Committee recognizes the challenges that replacing the 378-foot Hamilton-class cutter with 418-foot NSCs has imposed on Coast Guard facilities where waterfront space is limited and reiterates the importance of pier availability for Coast Guard cutters and other surface vessels to minimize operational delays or other unnecessary costs that would undermine the Coast Guard's ability to conduct its missions. Therefore, not later than 180 days after enactment of this act, the Coast Guard shall report to the Committee on infrastructure requirements associated with the homeporting of new vessels. At a minimum, the Coast Guard shall assess if major acquisition system infrastructure is required, identify associated funding needs, and provide a plan to address these requirements to the Committee. (Pages 70-71)

Frank LoBiondo Coast Guard Authorization Act of 2018 (S. 140/P.L. 115-282)

S. 140 was introduced in the Senate on January 12, 2017, as a bill to amend the White Mountain Apache Tribe [WMAT] Water Rights Quantification Act of 2010 to clarify the use of amounts in the WMAT Settlement Fund. The bill retained that purpose and was acted on by Congress into 2018. Later in 2018, S. 140 became a bill to authorize appropriations for the Coast Guard, and for other purposes. On November 14, 2018, the Senate concurred, 94-6, in the House amendment to S. 140 with an amendment (S.Amdt. 4054 as modified). On November 27, 2018, the House agreed to by voice vote a motion that the House suspend the rules and agree to the Senate amendment to the House amendment. S. 140 was signed into law as P.L. 115-282 on December 4, 2018.

Section 204 of S. 140/P.L. 115-282 states the following:

> SEC. 204. Authorization of amounts for Fast Response Cutters.
>
> (a) In general.—Of the amounts authorized under section 4902 of title 14, United States Code, as amended by this Act, for each of fiscal years 2018 and 2019 up to $167,500,000 is authorized for the acquisition of 3 Fast Response Cutters.
>
> (b) Treatment of acquired cutters.—Any cutters acquired pursuant to subsection (a) shall be in addition to the 58 cutters approved under the existing acquisition baseline.

Section 304 of S. 140/P.L. 115-282 states the following:

> SEC. 304. Unmanned aircraft.
>
> (a) Land-based unmanned aircraft system program.—Chapter 3 of title 14, United States Code, is amended by adding at the end the following:
>
> "§ 319. Land-based unmanned aircraft system program
>
> "(a) In general.—Subject to the availability of appropriations, the Secretary shall establish a land-based unmanned aircraft system program under the control of the Commandant.
>
> "(b) Unmanned aircraft system defined.—In this section, the term 'unmanned aircraft system' has the meaning given that term in section 331 of the FAA Modernization and Reform Act of 2012 (49 U.S.C. 40101 note).".
>
> (b) Limitation on unmanned aircraft systems.—Chapter 11 of title 14, United States Code, is amended by inserting after section 1155 the following:
>
> "§ 1156. Limitation on unmanned aircraft systems
>
> "(a) In general.—During any fiscal year for which funds are appropriated for the design or construction of an Offshore Patrol Cutter, the Commandant—
>
> "(1) may not award a contract for design of an unmanned aircraft system for use by the Coast Guard; and
>
> "(2) may lease, acquire, or acquire the services of an unmanned aircraft system only if such system—
>
> "(A) has been part of a program of record of, procured by, or used by a Federal entity (or funds for research, development, test, and evaluation have been received from a Federal entity with regard to such system) before the date on which the Commandant leases, acquires, or acquires the services of the system; and

"(B) is leased, acquired, or utilized by the Commandant through an agreement with a Federal entity, unless such an agreement is not practicable or would be less cost-effective than an independent contract action by the Coast Guard.

"(b) Small unmanned aircraft exemption.—Subsection (a)(2) does not apply to small unmanned aircraft.

"(c) Definitions.—In this section, the terms 'small unmanned aircraft' and 'unmanned aircraft system' have the meanings given those terms in section 331 of the FAA Modernization and Reform Act of 2012 (49 U.S.C. 40101 note).".

(c) Clerical amendments.—

(1) CHAPTER 3.—The analysis for chapter 3 of title 14, United States Code, is amended by adding at the end the following:

"319. Land-based unmanned aircraft system program.".

(2) CHAPTER 11.—The analysis for chapter 11 of title 14, United States Code, is amended by inserting after the item relating to section 1155 the following:

"1156. Limitation on unmanned aircraft systems.".

(d) Conforming amendment.—Subsection (c) of section 1105 of title 14, United States Code, is repealed.

Section 311 of S. 140/P.L. 115-282 states the following:

SEC. 311. Contracting for major acquisitions programs.

(a) General acquisition authority.—Section 501(d) of title 14, United States Code, is amended by inserting "aircraft, and systems," after "vessels,".

(b) Contracting authority.—Chapter 11 of title 14, United States Code, as amended by this Act, is further amended by inserting after section 1136 the following:

"§ 1137. Contracting for major acquisitions programs

"(a) In general.—In carrying out authorities provided to the Secretary to design, construct, accept, or otherwise acquire assets and systems under section 501(d), the Secretary, acting through the Commandant or the head of an integrated program office established for a major acquisition program, may enter into contracts for a major acquisition program.

"(b) Authorized methods.—Contracts entered into under subsection (a)—

"(1) may be block buy contracts;

"(2) may be incrementally funded;

"(3) may include combined purchases, also known as economic order quantity purchases, of—

"(A) materials and components; and

"(B) long lead time materials; and

"(4) as provided in section 2306b of title 10, may be multiyear contracts.

"(c) Subject to appropriations.—Any contract entered into under subsection (a) shall provide that any obligation of the United States to make a payment under the contract is subject to the availability of amounts specifically provided in advance for that purpose in subsequent appropriations Acts.".

(c) Clerical amendment.—The analysis for chapter 11 of title 14, United States Code, as amended by this Act, is further amended by inserting after the item relating to section 1136 the following:

"1137. Contracting for major acquisitions programs.".

(d) Conforming amendments.—The following provisions are repealed:

(1) Section 223 of the Howard Coble Coast Guard and Maritime Transportation Act of 2014 (14 U.S.C. 1152 note), and the item relating to that section in the table of contents in section 2 of such Act.

(2) Section 221(a) of the Coast Guard and Maritime Transportation Act of 2012 (14 U.S.C. 1133 note).

(3) Section 207(a) of the Coast Guard Authorization Act of 2016 (14 U.S.C. 561 note).

(e) Internal regulations and policy.—Not later than 180 days after the date of enactment of this Act, the Secretary of the department in which the Coast Guard is operating shall establish the internal regulations and policies necessary to exercise the authorities provided under this section, including the amendments made in this section.

(f) Multiyear contracts.—The Secretary of the department in which the Coast Guard is operating is authorized to enter into a multiyear contract for the procurement of a tenth, eleventh, and twelfth National Security Cutter and associated government-furnished equipment.

Section 817 of S. 140/P.L. 115-282 states the following:

SEC. 817. Fleet requirements assessment and strategy.

(a) Report.—Not later than 1 year after the date of enactment of this Act, the Secretary of the department in which the Coast Guard is operating, in consultation with interested Federal and non-Federal stakeholders, shall submit to the Committee on Commerce, Science, and Transportation of the Senate and the Committee on Transportation and Infrastructure of the House of Representatives a report including—

(1) an assessment of Coast Guard at-sea operational fleet requirements to support its statutory missions established in the Homeland Security Act of 2002 (6 U.S.C. 101 et seq.); and

(2) a strategic plan for meeting the requirements identified under paragraph (1).

(b) Contents.—The report under subsection (a) shall include—

(1) an assessment of—

(A) the extent to which the Coast Guard at-sea operational fleet requirements referred to in subsection (a)(1) are currently being met;

(B) the Coast Guard's current fleet, its operational lifespan, and how the anticipated changes in the age and distribution of vessels in the fleet will impact the ability to meet at-sea operational requirements;

(C) fleet operations and recommended improvements to minimize costs and extend operational vessel life spans; and

(D) the number of Fast Response Cutters, Offshore Patrol Cutters, and National Security Cutters needed to meet at-sea operational requirements as compared to planned acquisitions under the current programs of record;

(2) an analysis of—

(A) how the Coast Guard at-sea operational fleet requirements are currently met, including the use of the Coast Guard's current cutter fleet, agreements with partners, chartered vessels, and unmanned vehicle technology; and

(B) whether existing and planned cutter programs of record (including the Fast Response Cutter, Offshore Patrol Cutter, and National Security Cutter) will enable the Coast Guard to meet at-sea operational requirements; and

(3) a description of—

(A) planned manned and unmanned vessel acquisition; and

(B) how such acquisitions will change the extent to which the Coast Guard at-sea operational requirements are met.

(c) Consultation and transparency.—

(1) CONSULTATION.—In consulting with the Federal and non-Federal stakeholders under subsection (a), the Secretary of the department in which the Coast Guard is operating shall—

(A) provide the stakeholders with opportunities for input—

(i) prior to initially drafting the report, including the assessment and strategic plan; and

(ii) not later than 3 months prior to finalizing the report, including the assessment and strategic plan, for submission; and

(B) document the input and its disposition in the report.

(2) TRANSPARENCY.—All input provided under paragraph (1) shall be made available to the public.

(d) Ensuring maritime coverage.—In order to meet Coast Guard mission requirements for search and rescue, ports, waterways, and coastal security, and maritime environmental response during recapitalization of Coast Guard vessels, the Coast Guard shall ensure continuity of the coverage, to the maximum extent practicable, in the locations that may lose assets.

Section 818 of S. 140/P.L. 115-282 states the following:

SEC. 818. National Security Cutter.

(a) Standard method for tracking.—The Commandant of the Coast Guard may not certify an eighth National Security Cutter as Ready for Operations before the date on which the Commandant provides to the Committee on Transportation and Infrastructure of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate—

(1) a notification of a new standard method for tracking operational employment of Coast Guard major cutters that does not include time during which such a cutter is away from its homeport for maintenance or repair; and

(2) a report analyzing cost and performance for different approaches to achieving varied levels of operational employment using the standard method required by paragraph (1) that, at a minimum—

(A) compares over a 30-year period the average annualized baseline cost and performances for a certified National Security Cutter that operated for 185 days away from homeport or an equivalent alternative measure of operational tempo—

(i) against the cost of a 15 percent increase in days away from homeport or an equivalent alternative measure of operational tempo for a National Security Cutter; and

(ii) against the cost of the acquisition and operation of an additional National Security Cutter; and

(B) examines the optimal level of operational employment of National Security Cutters to balance National Security Cutter cost and mission performance.

(b) Conforming amendments.—

(1) Section 221(b) of the Coast Guard and Maritime Transportation Act of 2012 (126 Stat. 1560) is repealed.

(2) Section 204(c)(1) of the Coast Guard Authorization Act of 2016 (130 Stat. 35) is repealed.

Section 822 of S. 140/P.L. 115-282 states the following:

SEC. 822. Strategic assets in the Arctic.

(a) Definition of arctic.—In this section, the term "Arctic" has the meaning given the term in section 112 of the Arctic Research and Policy Act of 1984 (15 U.S.C. 4111).

(b) Sense of congress.—It is the sense of Congress that—

(1) the Arctic continues to grow in significance to both the national security interests and the economic prosperity of the United States; and

(2) the Coast Guard must ensure it is positioned to respond to any accident, incident, or threat with appropriate assets.

(c) Report.—Not later than 1 year after the date of enactment of this Act, the Commandant of the Coast Guard, in consultation with the Secretary of Defense and taking into consideration the Department of Defense 2016 Arctic Strategy, shall submit to the Committee on Commerce, Science, and Transportation of the Senate and the Committee on Transportation and Infrastructure of the House of Representatives a report on the progress toward implementing the strategic objectives described in the United States Coast Guard Arctic Strategy dated May 2013.

(d) Contents.—The report under subsection (c) shall include—

(1) a description of the Coast Guard's progress toward each strategic objective identified in the United States Coast Guard Arctic Strategy dated May 2013;

(2) an assessment of the assets and infrastructure necessary to meet the strategic objectives identified in the United States Coast Guard Arctic Strategy dated May 2013 based on factors such as—

(A) response time;

(B) coverage area;

(C) endurance on scene;

(D) presence; and

(E) deterrence;

(3) an analysis of the sufficiency of the distribution of National Security Cutters, Offshore Patrol Cutters, and Fast Response Cutters both stationed in various Alaskan ports and in other locations to meet the strategic objectives identified in the United States Coast Guard Arctic Strategy, dated May 2013;

(4) plans to provide communications throughout the entire Coastal Western Alaska Captain of the Port zone to improve waterway safety and mitigate close calls, collisions, and other dangerous interactions between the shipping industry and subsistence hunters;

(5) plans to prevent marine casualties, when possible, by ensuring vessels avoid environmentally sensitive areas and permanent security zones;

(6) an explanation of—

(A) whether it is feasible to establish a vessel traffic service, using existing resources or otherwise; and

(B) whether an Arctic Response Center of Expertise is necessary to address the gaps in experience, skills, equipment, resources, training, and doctrine to prepare, respond to, and recover spilled oil in the Arctic; and

(7) an assessment of whether sufficient agreements are in place to ensure the Coast Guard is receiving the information it needs to carry out its responsibilities.

Coast Guard Authorization Act of 2017 (Division D of National Defense Authorization Act for Fiscal Year 2019 [H.R. 5515/P.L. 115-232])

House Floor Action

On May 22, 2018, as part of its consideration of the National Defense Authorization Act for Fiscal Year 2019 (H.R. 5515), the House agreed to by voice vote H.Amdt. 641, an *en bloc* amendment that included, *inter alia*, amendment number 52 as printed in H.Rept. 115-702 of May 22, 2018, on H.Res. 908, providing for the further consideration of H.R. 5515. Amendment number 52 added to H.R. 5515, as a new Division D, the **Coast Guard Authorization Act of 2017**.

Section 4204 within Division D states the following:

SEC. 4204. Authorization of amounts for Fast Response Cutters.

(a) In general.—Of the amounts authorized under section 4902 of title 14, United States Code, as amended by this division, for each of fiscal years 2018 and 2019 up to $167,500,000 is authorized for the acquisition of 3 Fast Response Cutters.

(b) Treatment of acquired cutters.—Any cutters acquired pursuant to subsection (a) shall be in addition to the 58 cutters approved under the existing acquisition baseline.

Section 4304 within Division D states the following (emphasis added):

SEC. 4304. Unmanned aircraft.

(a) Land-based unmanned aircraft system program.—Chapter 3 of title 14, United States Code, is amended by adding at the end the following:

"§ 319. Land-based unmanned aircraft system program

"(a) In general.—Subject to the availability of appropriations, the Secretary shall establish a land-based unmanned aircraft system program under the control of the Commandant.

"(b) Unmanned aircraft system defined.—In this section, the term 'unmanned aircraft system' has the meaning given that term in section 331 of the FAA Modernization and Reform Act of 2012 (49 U.S.C. 40101 note).".

(b) Limitation on unmanned aircraft systems.—Chapter 11 of title 14, United States Code, is amended by inserting after section 1154 the following:

"§ 1155. Limitation on unmanned aircraft systems

"(a) In general.—**During any fiscal year for which funds are appropriated for the design or construction of an Offshore Patrol Cutter**, the Commandant—

"(1) may not award a contract for design of an unmanned aircraft system for use by the Coast Guard; and

"(2) may lease, acquire, or acquire the services of an unmanned aircraft system only if such system—

"(A) has been part of a program of record of, procured by, or used by a Federal entity (or funds for research, development, test, and evaluation have been received from a Federal entity with regard to such system) before the date on which the Commandant leases, acquires, or acquires the services of the system; and

"(B) is leased, acquired, or utilized by the Commandant through an agreement with a Federal entity, unless such an agreement is not practicable or would be less cost-effective than an independent contract action by the Coast Guard.

"(b) Small unmanned aircraft exemption.—Subsection (a)(2) does not apply to small unmanned aircraft.

"(c) Definitions.—In this section, the terms 'small unmanned aircraft' and 'unmanned aircraft system' have the meanings given those terms in section 331 of the FAA Modernization and Reform Act of 2012 (49 U.S.C. 40101 note).".

(c) Clerical amendments.—

(1) CHAPTER 3.—The analysis for chapter 3 of title 14, United States Code, is amended by adding at the end the following:

"319. Land-based unmanned aircraft system program.".

(2) CHAPTER 11.—The analysis for chapter 11 of title 14, United States Code, is amended by inserting after the item relating to section 1154 the following:

"1155. Limitation on unmanned aircraft systems.".

(d) Conforming amendment.—Subsection (c) of section 1105 of title 14, United States Code, is repealed.

Section 4311 within Division D states the following:

SEC. 4311. Contracting for major acquisitions programs.

(a) General acquisition authority.—Section 501(d) of title 14, United States Code, is amended by inserting "aircraft, and systems," after "vessels,".

(b) Contracting authority.—Chapter 11 of title 14, United States Code, as amended by this division, is further amended by inserting after section 1136 the following:

"§ 1137. Contracting for major acquisitions programs

"(a) In general.—In carrying out authorities provided to the Secretary to design, construct, accept, or otherwise acquire assets and systems under section 501(d), the Secretary, acting through the Commandant or the head of an integrated program office established for a major acquisition program, may enter into contracts for a major acquisition program.

"(b) Authorized methods.—Contracts entered into under subsection (a)—

"(1) may be block buy contracts;

"(2) may be incrementally funded;

"(3) may include combined purchases, also known as economic order quantity purchases, of—

"(A) materials and components; and

"(B) long lead time materials; and

"(4) as provided in section 2306b of title 10, may be multiyear contracts.

"(c) Subject to appropriations.—Any contract entered into under subsection (a) shall provide that any obligation of the United States to make a payment under the contract is subject to the availability of amounts specifically provided in advance for that purpose in subsequent appropriations Acts.".

(c) Clerical amendment.—The analysis for chapter 11 of title 14, United States Code, as amended by this division, is further amended by inserting after the item relating to section 1136 the following:

"1137. Contracting for major acquisitions programs.".

(d) Conforming amendments.—The following provisions are repealed:

(1) Section 223 of the Howard Coble Coast Guard and Maritime Transportation Act of 2014 (14 U.S.C. 1152 note), and the item relating to that section in the table of contents in section 2 of such Act.

(2) Section 221(a) of the Coast Guard and Maritime Transportation Act of 2012 (14 U.S.C. 1133 note).

(3) Section 207(a) of the Coast Guard Authorization Act of 2016 (14 U.S.C. 561 note).

(e) Internal regulations and policy.—Not later than 180 days after the date of enactment of this Act, the Secretary of the department in which the Coast Guard is operating shall establish the internal regulations and policies necessary to exercise the authorities provided under this section, including the amendments made in this section.

(f) Multiyear contracts.—The Secretary of the department in which the Coast Guard is operating is authorized to enter into a multiyear contract for the procurement of a tenth, eleventh, and twelfth National Security Cutter and associated government-furnished equipment.

Section 4817 within Division D states the following:

SEC. 4817. Fleet requirements assessment and strategy.

(a) Report.—Not later than 1 year after the date of enactment of this Act, the Secretary of the department in which the Coast Guard is operating, in consultation with interested Federal and non-Federal stakeholders, shall submit to the Committee on Commerce, Science, and Transportation of the Senate and the Committee on Transportation and Infrastructure of the House of Representatives a report including—

(1) an assessment of Coast Guard at-sea operational fleet requirements to support its statutory missions established in the Homeland Security Act of 2002 (6 U.S.C. 101 et seq.); and

(2) a strategic plan for meeting the requirements identified under paragraph (1).

(b) Contents.—The report under subsection (a) shall include—

(1) an assessment of—

(A) the extent to which the Coast Guard at-sea operational fleet requirements referred to in subsection (a)(1) are currently being met;

(B) the Coast Guard's current fleet, its operational lifespan, and how the anticipated changes in the age and distribution of vessels in the fleet will impact the ability to meet at-sea operational requirements;

(C) fleet operations and recommended improvements to minimize costs and extend operational vessel life spans; and

(D) the number of Fast Response Cutters, Offshore Patrol Cutters, and National Security Cutters needed to meet at-sea operational requirements as compared to planned acquisitions under the current programs of record;

(2) an analysis of—

(A) how the Coast Guard at-sea operational fleet requirements are currently met, including the use of the Coast Guard's current cutter fleet, agreements with partners, chartered vessels, and unmanned vehicle technology; and

(B) whether existing and planned cutter programs of record (including the Fast Response Cutter, Offshore Patrol Cutter, and National Security Cutter) will enable the Coast Guard to meet at-sea operational requirements; and

(3) a description of—

(A) planned manned and unmanned vessel acquisition; and

(B) how such acquisitions will change the extent to which the Coast Guard at-sea operational requirements are met.

(c) Consultation and transparency.—

(1) CONSULTATION.—In consulting with the Federal and non-Federal stakeholders under subsection (a), the Secretary of the department in which the Coast Guard is operating shall—

(A) provide the stakeholders with opportunities for input—

(i) prior to initially drafting the report, including the assessment and strategic plan; and

(ii) not later than 3 months prior to finalizing the report, including the assessment and strategic plan, for submission; and

(B) document the input and its disposition in the report.

(2) TRANSPARENCY.—All input provided under paragraph (1) shall be made available to the public.

(d) Ensuring maritime coverage.—In order to meet Coast Guard mission requirements for search and rescue, ports, waterways, and coastal security, and maritime environmental response during recapitalization of Coast Guard vessels, the Coast Guard shall ensure continuity of the coverage, to the maximum extent practicable, in the locations that may lose assets.

Section 4818 within Division D states the following:

SEC. 4818. National Security Cutter.

(a) Standard method for tracking.—The Commandant of the Coast Guard may not certify an eighth National Security Cutter as Ready for Operations before the date on which the Commandant provides to the Committee on Transportation and Infrastructure of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate—

(1) a notification of a new standard method for tracking operational employment of Coast Guard major cutters that does not include time during which such a cutter is away from its homeport for maintenance or repair; and

(2) a report analyzing cost and performance for different approaches to achieving varied levels of operational employment using the standard method required by paragraph (1) that, at a minimum—

(A) compares over a 30-year period the average annualized baseline cost and performances for a certified National Security Cutter that operated for 185 days away from homeport or an equivalent alternative measure of operational tempo—

(i) against the cost of a 15 percent increase in days away from homeport or an equivalent alternative measure of operational tempo for a National Security Cutter; and

(ii) against the cost of the acquisition and operation of an additional National Security Cutter; and

(B) examines the optimal level of operational employment of National Security Cutters to balance National Security Cutter cost and mission performance.

(b) Conforming amendments.—

(1) Section 221(b) of the Coast Guard and Maritime Transportation Act of 2012 (126 Stat. 1560) is repealed.

(2) Section 204(c)(1) of the Coast Guard Authorization Act of 2016 (130 Stat. 35) is repealed.

Section 4822 within Division D states (emphasis added):

SEC. 4822. Strategic assets in the Arctic.

(a) Definition of arctic.—In this section, the term "Arctic" has the meaning given the term in section 112 of the Arctic Research and Policy Act of 1984 (15 U.S.C. 4111).

(b) Sense of congress.—It is the sense of Congress that—

(1) the Arctic continues to grow in significance to both the national security interests and the economic prosperity of the United States; and

(2) the Coast Guard must ensure it is positioned to respond to any accident, incident, or threat with appropriate assets.

(c) Report.—Not later than 1 year after the date of enactment of this Act, the Commandant of the Coast Guard, in consultation with the Secretary of Defense and taking into consideration the Department of Defense 2016 Arctic Strategy, shall submit to the Committee on Commerce, Science, and Transportation of the Senate and the Committee on Transportation and Infrastructure of the House of Representatives a report on the progress toward implementing the strategic objectives described in the United States Coast Guard Arctic Strategy dated May 2013.

(d) Contents.—The report under subsection (c) shall include—

(1) a description of the Coast Guard's progress toward each strategic objective identified in the United States Coast Guard Arctic Strategy dated May 2013;

(2) an assessment of the assets and infrastructure necessary to meet the strategic objectives identified in the United States Coast Guard Arctic Strategy dated May 2013 based on factors such as—

(A) response time;

(B) coverage area;

(C) endurance on scene;

(D) presence; and

(E) deterrence;

(3) an analysis of the sufficiency of the distribution of **National Security Cutters, Offshore Patrol Cutters, and Fast Response Cutters** both stationed in various Alaskan

ports and in other locations to meet the strategic objectives identified in the United States Coast Guard Arctic Strategy, dated May 2013;

(4) plans to provide communications throughout the entire Coastal Western Alaska Captain of the Port zone to improve waterway safety and mitigate close calls, collisions, and other dangerous interactions between the shipping industry and subsistence hunters;

(5) plans to prevent marine casualties, when possible, by ensuring vessels avoid environmentally sensitive areas and permanent security zones;

(6) an explanation of—

(A) whether it is feasible to establish a vessel traffic service, using existing resources or otherwise; and

(B) whether an Arctic Response Center of Expertise is necessary to address the gaps in experience, skills, equipment, resources, training, and doctrine to prepare, respond to, and recover spilled oil in the Arctic; and

(7) an assessment of whether sufficient agreements are in place to ensure the Coast Guard is receiving the information it needs to carry out its responsibilities.

Conference

The conference report (H.Rept. 115-874 of July 25, 2018) on H.R. 5515/P.L. 115-232 of August 13, 2018, states the following:

Coast Guard Authorization Act of 2018

The House bill contained a division (Division D) that would authorize certain aspects of the Coast Guard.

The Senate amendment contained no similar provisions.

The House recedes. (Page 1137)

Appendix A. Planned NSC, OPC, and FRC Procurement Quantities

This appendix provides further discussion on the issue of the Coast Guard's planned NSC, OPC, and FRC procurement quantities.

Overview

The Coast Guard's program of record for NSCs, OPCs, and FRCs includes only about 61% as many cutters as the Coast Guard calculated in 2011 would be needed to fully perform its projected future missions. The Coast Guard's planned force levels for NSCs, OPCs, and FRCs have remained unchanged since 2004. In contrast, the Navy since 2004 has adjusted its ship force-level goals eight times in response to changing strategic and budgetary circumstances.[42]

Although the Coast Guard's strategic situation and resulting mission demands may not have changed as much as the Navy's have since 2004, the Coast Guard's budgetary circumstances may have changed since 2004. The 2004 program of record was heavily conditioned by Coast Guard expectations in 2004 about future funding levels in the PC&I account. Those expectations may now be different, as suggested by the willingness of Coast Guard officials in 2017 to begin regularly mentioning the need for an PC&I funding level of $2 billion per year (see **Appendix B**).

It can also be noted that continuing to, in effect, use the Coast Guard's 2004 expectations of future funding levels for the PC&I account as an implicit constraint on planned force levels for NSCs, OPCs, and FRCs can encourage an artificially narrow view of Congress's options regarding future Coast Guard force levels and associated funding levels, depriving Congress of agency in the exercise of its constitutional power to provide for the common defense and general welfare of the United States, and to set funding levels and determine the composition of federal spending.

2009 Coast Guard Fleet Mix Analysis

The Coast Guard estimated in 2009 that with the POR's planned force of 91 NSCs, OPCs, and FRCs, the service would have capability or capacity gaps[43] in 6 of its 11 statutory missions—search and rescue (SAR); defense readiness; counterdrug operations; ports, waterways, and coastal security (PWCS); protection of living marine resources (LMR); and alien migrant interdiction operations (AMIO). The Coast Guard judges that some of these gaps would be "high risk" or "very high risk."

Public discussions of the POR frequently mention the substantial improvement that the POR force would represent over the legacy force. Only rarely, however, have these discussions explicitly acknowledged the extent to which the POR force would nevertheless be smaller in number than the force that would be required, by Coast Guard estimate, to fully perform the Coast Guard's statutory missions in coming years. Discussions that focus on the POR's improvement over the legacy force while omitting mention of the considerably larger number of

[42] See Table 1 and Table B-1 of CRS Report RL32665, *Navy Force Structure and Shipbuilding Plans: Background and Issues for Congress*, by Ronald O'Rourke. As shown in those tables, the Navy's force-level goal of 2002-2004 was followed by new force- level goals in early 2005, February 2006, mid-2011, September 2011, March 2012, January 2013, March 2015, and December 2016.

[43] The Coast Guard uses *capability* as a qualitative term, to refer to the kinds of missions that can be performed, and *capacity* as a quantitative term, to refer to how much (i.e., to what scale or volume) a mission can be performed.

cutters that would be required, by Coast Guard estimate, to fully perform the Coast Guard's statutory missions in coming years could encourage audiences to conclude, contrary to Coast Guard estimates, that the POR's planned force of 91 cutters would be capable of fully performing the Coast Guard's statutory missions in coming years.

In a study completed in December 2009 called the Fleet Mix Analysis (FMA) Phase 1, the Coast Guard calculated the size of the force that in its view would be needed to fully perform the service's statutory missions in coming years. The study refers to this larger force as the objective fleet mix. **Table A-1** compares planned numbers of NSCs, OPCs, and FRCs in the POR to those in the objective fleet mix.

Table A-1. Program of Record Compared to Objective Fleet Mix

From Fleet Mix Analysis Phase 1 (2009)

Ship type	Program of Record (POR)	Objective Fleet Mix From FMA Phase 1	Objective Fleet Mix compared to POR	
			Number	%
NSC	8	9	+1	+13%
OPC	25	57	+32	+128%
FRC	58	91	+33	+57%
Total	**91**	**157**	**+66**	**+73%**

Source: Fleet Mix Analysis Phase 1, Executive Summary, Table ES-8 on page ES-13.

As can be seen in **Table A-1**, the objective fleet mix includes 66 additional cutters, or about 73% more cutters than in the POR. Stated the other way around, the POR includes about 58% as many cutters as the 2009 FMA Phase I objective fleet mix.

As intermediate steps between the POR force and the objective fleet mix, FMA Phase 1 calculated three additional forces, called FMA-1, FMA-2, and FMA-3. (The objective fleet mix was then relabeled FMA-4.) **Table A-2** compares the POR to FMAs 1 through 4.

Table A-2. POR Compared to FMAs 1 Through 4

From Fleet Mix Analysis Phase 1 (2009)

Ship type	Program of Record (POR)	FMA-1	FMA-2	FMA-3	FMA-4 (Objective Fleet Mix)
NSC	8	9	9	9	9
OPC	25	32	43	50	57
FRC	58	63	75	80	91
Total	**91**	**104**	**127**	**139**	**157**

Source: Fleet Mix Analysis Phase 1, Executive Summary, Table ES-8 on page ES-13.

FMA-1 was calculated to address the mission gaps that the Coast Guard judged to be "very high risk." FMA-2 was calculated to address both those gaps and additional gaps that the Coast Guard judged to be "high risk." FMA-3 was calculated to address all those gaps, plus gaps that the Coast Guard judged to be "medium risk." FMA-4—the objective fleet mix—was calculated to address all the foregoing gaps, plus the remaining gaps, which the Coast Guard judge to be "low risk" or

"very low risk." **Table A-3** shows the POR and FMAs 1 through 4 in terms of their mission performance gaps.

Table A-3. Force Mixes and Mission Performance Gaps

From Fleet Mix Analysis Phase 1 (2009)—an X mark indicates a mission performance gap

Missions with performance gaps	Risk levels of these performance gaps	Program of Record (POR)	FMA-1	FMA-2	FMA-3	FMA-4 (Objective Fleet Mix)
Search and Rescue (SAR) capability	Very high	X				
Defense Readiness capacity	Very high	X				
Counter Drug capacity	Very high	X				
Ports, Waterways, and Coastal Security (PWCS) capacity[a]	High	X	X			
Living Marine Resources (LMR) capability and capacity[a]	High	X	X			[all gaps addressed]
PWCS capacity[b]	Medium	X	X	X		
LMR capacity[c]	Medium	X	X	X		
Alien Migrant Interdiction Operations (AMIO) capacity[d]	Low/very low	X	X	X	X	
PWCS capacity[e]	Low/very low	X	X	X	X	

Source: Fleet Mix Analysis Phase 1, Executive Summary, page ES-11 through ES-13.

Notes: In the first column, The Coast Guard uses *capability* as a qualitative term, to refer to the kinds of missions that can be performed, and *capacity* as a quantitative term, to refer to how much (i.e., to what scale or volume) a mission can be performed.

a. This gap occurs in the Southeast operating area (Coast Guard Districts 7 and 8) and the Western operating area (Districts 11, 13, and 14).

b. This gap occurs in Alaska.

c. This gap occurs in Alaska and in the Northeast operating area (Districts 1 and 5).

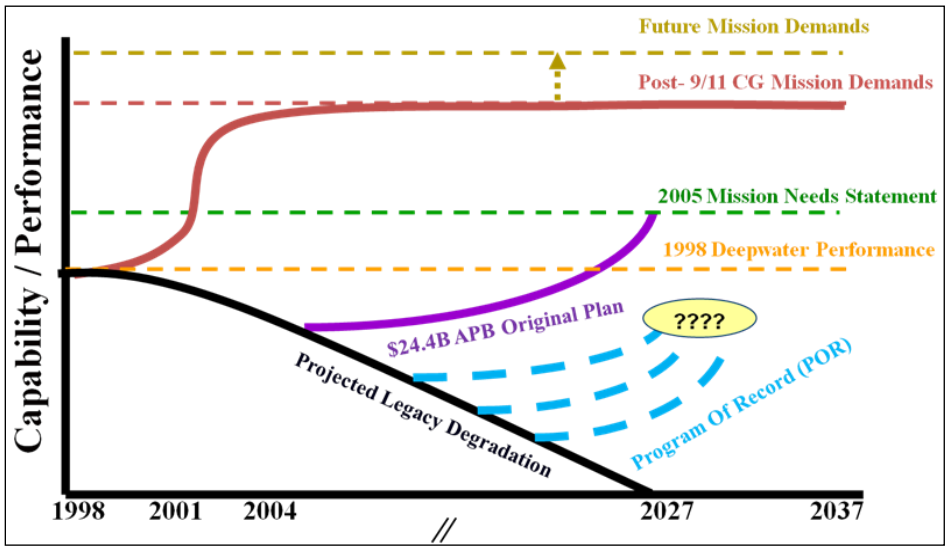
d. This gap occurs in the Southeast and Western operating areas.

e. This gap occurs in the Northeast operating area.

Figure A-1, taken from FMA Phase 1, depicts the overall mission capability/performance gap situation in graphic form. It appears to be conceptual rather than drawn to precise scale. The black line descending toward 0 by the year 2027 shows the declining capability and performance of the Coast Guard's legacy assets as they gradually age out of the force. The purple line branching up from the black line shows the added capability from ships and aircraft to be procured under the POR, including the 91 planned NSCs, OPCs, and FRCs. The level of capability to be provided when the POR force is fully in place is the green line, labeled "2005 Mission Needs Statement." As can be seen in the graph, this level of capability is substantially below a projection of Coast Guard mission demands made after the terrorist attacks of September 11, 2001 (the red line, labeled "Post-9/11 CG Mission Demands"), and even further below a Coast Guard projection of future mission demands (the top dashed line, labeled "Future Mission Demands"). The dashed blue lines show future capability levels that would result from reducing planned procurement quantities in the POR or executing the POR over a longer time period than originally planned.

Figure A-1. Projected Mission Demands vs. Projected Capability/Performance

From Fleet Mix Analysis Phase 1, Executive Summary



Source: Fleet Mix Analysis Phase 1, Executive Summary, Figure ES-1 on p. ES-2.

FMA Phase 1 was a fiscally unconstrained study, meaning that the larger force mixes shown in **Table A-2** were calculated primarily on the basis of their capability for performing missions, rather than their potential acquisition or life-cycle operation and support (O&S) costs.

Although the FMA Phase 1 was completed in December 2009, the figures shown in **Table A-2** were generally not included in public discussions of the Coast Guard's future force structure needs until April 2011, when GAO presented them in testimony.[44] GAO again presented them in a July 2011 report.[45]

The Coast Guard completed a follow-on study, called Fleet Mix Analysis (FMA) Phase 2, in May 2011. Among other things, FMA Phase 2 includes a revised and updated objective fleet mix called the refined objective mix. **Table A-4** compares the POR to the objective fleet mix from FMA Phase 1 and the refined objective mix from FMA Phase 2.

As can be seen in **Table A-4**, compared to the objective fleet mix from FMA Phase 1, the refined objective mix from FMA Phase 2 includes 49 OPCs rather than 57. The refined objective mix includes 58 additional cutters, or about 64% more cutters than in the POR. Stated the other way around, the POR includes about 61% as many cutters as the refined objective mix.

[44] Government Accountability Office, *Coast Guard[:]Observations on Acquisition Management and Efforts to Reassess the Deepwater Program, Testimony Before the Subcommittee on Coast Guard and Maritime Transportation, Committee on Transportation and Infrastructure, House of Representatives, Statement of John P. Hutton, Director Acquisition and Sourcing Management*, GAO-11-535T, April 13, 2011, p. 10.

[45] Government Accountability Office, *Coast Guard[:]Action Needed As Approved Deepwater Program Remains Unachievable*, GAO-11-743, July 2011, p. 46.

Table A-4. POR Compared to Objective Mixes in FMA Phases 1 and 2

From Fleet Mix Analysis Phase 1 (2009) and Phase 2 (2011)

Ship type	Program of Record (POR)	Objective Fleet Mix from FMA Phase 1	Refined Objective Mix from FMA Phase 2
NSC	8	9	9
OPC	25	57	49
FRC	58	91	91
Total	**91**	**157**	**149**

Source: Fleet Mix Analysis Phase 1, Executive Summary, Table ES-8 on page ES-13, and Fleet Mix Analysis Phase 2, Table ES-2 on p. iv.

Compared to the POR, the larger force mixes shown in **Table A-2** and **Table A-4** would be more expensive to procure, operate, and support than the POR force. Using the average NSC, OPC, and FRC procurement cost figures presented earlier (see "Background"), procuring the 58 additional cutters in the Refined Objective Mix from FMA Phase 2 might cost an additional $10.7 billion, of which most (about $7.8 billion) would be for the 24 additional FRCs. (The actual cost would depend on numerous factors, such as annual procurement rates.) O&S costs for these 58 additional cutters over their life cycles (including crew costs and periodic ship maintenance costs) would require billions of additional dollars.[46]

The larger force mixes in the FMA Phase 1 and 2 studies, moreover, include not only increased numbers of cutters, but also increased numbers of Coast Guard aircraft. In the FMA Phase 1 study, for example, the objective fleet mix included 479 aircraft—93% more than the 248 aircraft in the POR mix. Stated the other way around, the POR includes about 52% as many aircraft as the objective fleet mix. A decision to procure larger numbers of cutters like those shown in **Table A-2** and **Table A-4** might thus also imply a decision to procure, operate, and support larger numbers of Coast Guard aircraft, which would require billions of additional dollars. The FMA Phase 1 study estimated the procurement cost of the objective fleet mix of 157 cutters and 479 aircraft at $61 billion to $67 billion in constant FY2009 dollars, or about 66% more than the procurement cost of $37 billion to $40 billion in constant FY2009 dollars estimated for the POR mix of 91 cutters and 248 aircraft. The study estimated the total ownership cost (i.e., procurement plus life-cycle O&S cost) of the objective fleet mix of cutters and aircraft at $201 billion to $208 billion in constant FY2009 dollars, or about 53% more than the total ownership cost of $132 billion to $136 billion in constant FY2009 dollars estimated for POR mix of cutters and aircraft.[47]

A December 7, 2015, press report states the following:

> The Coast Guard's No. 2 officer said the small size and advanced age of its fleet is limiting the service's ability to carry out crucial missions in the Arctic and drug transit zones or to meet rising calls for presence in the volatile South China Sea.

[46] The FMA Phase 1 and Phase 2 studies present acquisition and life-cycle ownership cost calculations for force mixes that include not only larger numbers of NSC, OPCs, and FRCs, but corresponding larger numbers of Coast Guard aircraft.

[47] Fleet Mix Analysis Phase 1, Executive Summary, Table ES-11 on page ES-19, and Table ES-10 on page ES-18. The life-cycle O&S cost was calculated through 2050.

> "The lack of surface vessels every day just breaks my heart," VADM Charles Michel, the Coast Guard's vice commandant, said Dec. 7.
>
> Addressing a forum on American Sea Power sponsored by the U.S. Naval Institute at the Newseum, Michel detailed the problems the Coast Guard faces in trying to carry out its missions of national security, law enforcement and maritime safety because of a lack of resources.
>
> "That's why you hear me clamoring for recapitalization," he said.
>
> Michel noted that China's coast guard has a lot more ships than the U.S. Coast Guard has, including many that are larger than the biggest U.S. cutter, the 1,800-ton [sic:4,800-ton] National Security Cutter. China is using those white-painted vessels rather than "gray-hull navy" ships to enforce its claims to vast areas of the South China Sea, including reefs and shoals claimed by other nations, he said.
>
> That is a statement that the disputed areas are "so much our territory, we don't need the navy. That's an absolutely masterful use of the coast guard," he said.
>
> The superior numbers of Chinese coast guard vessels and its plans to build more is something, "we have to consider when looking at what we can do in the South China Sea," Michel said.
>
> Although they have received requests from the U.S. commanders in the region for U.S. Coast Guard cutters in the South China Sea, "the commandant had to say 'no'. There's not enough to go around," he said.[48]

Potential oversight questions for Congress include the following:

- Under the POR force mix, how large a performance gap, precisely, would there be in each of the missions shown in **Table A-3**? What impact would these performance gaps have on public safety, national security, and protection of living marine resources?
- How sensitive are these performance gaps to the way in which the Coast Guard translates its statutory missions into more precise statements of required mission performance?
- Given the performance gaps shown in **Table A-3**, should planned numbers of Coast Guard cutters and aircraft be increased, or should the Coast Guard's statutory missions be reduced, or both?
- How much larger would the performance gaps in **Table A-3** be if planned numbers of Coast Guard cutters and aircraft are reduced below the POR figures?
- Has the executive branch made sufficiently clear to Congress the difference between the number of ships and aircraft in the POR force and the number that would be needed to fully perform the Coast Guard's statutory missions in coming years? Why has public discussion of the POR focused mostly on the capability improvement it would produce over the legacy force and rarely on the performance gaps it would have in the missions shown in **Table A-3**?

[48] Otto Kreisher, "'Not Enough' USCG Vessels to Meet Demand for Presence in South China Sea, Arctic," *Seapower*, December 7, 2015.

Appendix B. Funding Levels in PC&I Account

This appendix provides background information on funding levels in the Coast Guard's Procurement, Construction, and Improvements (PC&I) account.[49]

Overview

As shown in **Table B-1**, the FY2013 budget submission programmed an average of about $1.5 billion per year in the PC&I account. As also shown in the table, the FY2014-FY2016 budget submissions reduced that figure to between $1 billion and $1.2 billion per year.

Table B-1. Funding in PC&I Account in FY2013-FY2019 Budgets

Figures in millions of dollars, rounded to nearest tenth

Budget	FY13	FY14	FY15	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	Avg.	% change compared to avg. for FY13 budget
FY13	1,217.3	1,429.5	1,619.9	1,643.8	1,722.0							1,526.5	—
FY14		951.1	1,195.7	901.0	1,024.8	1,030.3						1,020.6	-33.1%
FY15			1,084.2	1,103.0	1,128.9	1,180.4	1,228.7					1,145.0	-25.0%
FY16				1,017.3	1,125.3	1,255.7	1,201.0	1,294.6				1,178.8	-22.8%
FY17					1,136.8	1,259.6	1,339.9	1,560.5	1,840.8			1,427.5	-6.5%
FY18						1,203.7	1,360.9	1,602.7	1,810.6	1,687.5		1,533.1	+0.4%
FY19							1,886.8	n/a	n/a	n/a	n/a	n/a	n/a

Source: Table prepared by CRS based on Coast Guard FY2013-FY2019 budget submissions.

The Coast Guard has testified that funding the PC&I account at a level of about $1 billion to $1.2 billion per year would make it difficult to fund various Coast Guard acquisition projects, including a new polar icebreaker and improvements to Coast Guard shore installations. Coast Guard plans call for procuring OPCs at an eventual rate of two per year. If each OPC costs roughly $400 million, procuring two OPCs per year in an PC&I account of about $1 billion to $1.2 billion per year, as programmed under the FY2014-FY2016 budget submissions, would leave about $200 million to $400 million per year for all other PC&I-funded programs.

Since 2017, Coast Guard officials have been stating more regularly what they stated only infrequently in earlier years: that executing the Coast Guard's various acquisition programs fully and on a timely basis would require the PC&I account to be funded in coming years at a level of about $2 billion per year. Statements from Coast Guard officials on this issue in past years have sometimes put this figure as high as about $2.5 billion per year.

Using Past PC&I Funding Levels as a Guide for Future PC&I Funding Levels

In assessing future funding levels for executive branch agencies, a common practice is to assume or predict that the figure in coming years will likely be close to where it has been in previous

[49] Prior to FY2019, the PC&I account was called the Acquisition, Construction, and Improvements (AC&I) account.

years. While this method can be of analytical and planning value, for an agency like the Coast Guard, which goes through periods with less acquisition of major platforms and periods with more acquisition of major platforms, this approach might not always be the best approach, at least for the PC&I account.

More important, in relation to maintaining Congress's status as a co-equal branch of government, including the preservation and use of congressional powers and prerogatives, an analysis that assumes or predicts that future funding levels will resemble past funding levels can encourage an artificially narrow view of congressional options regarding future funding levels, depriving Congress of agency in the exercise of its constitutional power to set funding levels and determine the composition of federal spending.

Past Coast Guard Statements About Required PC&I Funding Level

At an October 4, 2011, hearing on the Coast Guard's major acquisition programs before the Coast Guard and Maritime Transportation subcommittee of the House Transportation and Infrastructure Committee, the following exchange occurred:

> REPRESENATIVE FRANK LOBIONDO:
>
> Can you give us your take on what percentage of value must be invested each year to maintain current levels of effort and to allow the Coast Guard to fully carry out its missions?
>
> ADMIRAL ROBERT J. PAPP, COMMANDANT OF THE COAST GUARD:
>
> I think I can, Mr. Chairman. Actually, in discussions and looking at our budget—and I'll give you rough numbers here, what we do now is we have to live within the constraints that we've been averaging about $1.4 billion in acquisition money each year.
>
> If you look at our complete portfolio, the things that we'd like to do, when you look at the shore infrastructure that needs to be taken care of, when you look at renovating our smaller icebreakers and other ships and aircraft that we have, we've done some rough estimates that it would really take close to about $2.5 billion a year, if we were to do all the things that we would like to do to sustain our capital plant.
>
> So I'm just like any other head of any other agency here, as that the end of the day, we're given a top line and we have to make choices and tradeoffs and basically, my tradeoffs boil down to sustaining frontline operations balancing that, we're trying to recapitalize the Coast Guard and there's where the break is and where we have to define our spending.[50]

An April 18, 2012, blog entry stated the following:

> If the Coast Guard capital expenditure budget remains unchanged at less than $1.5 billion annually in the coming years, it will result in a service in possession of only 70 percent of the assets it possesses today, said Coast Guard Rear Adm. Mark Butt.
>
> Butt, who spoke April 17 [2012] at [a] panel [discussion] during the Navy League Sea Air Space conference in National Harbor, Md., echoed Coast Guard Commandant Robert Papp in stating that the service really needs around $2.5 billion annually for procurement.[51]

At a May 9, 2012, hearing on the Coast Guard's proposed FY2013 budget before the Homeland Security subcommittee of the Senate Appropriations Committee, Admiral Papp testified, "I've

[50] Source: Transcript of hearing.

[51] David Perera, "The Coast Guard Is Shrinking," *FierceHomelandSecurity.com*, April 18, 2012, accessed July 20, 2012, at http://www.fiercehomelandsecurity.com/story/coast-guard-shrinking/2012-04-18.

gone on record saying that I think the Coast Guard needs closer to $2 billion dollars a year [in acquisition funding] to recapitalize—[to] do proper recapitalization."[52]

At a May 14, 2013, hearing on the Coast Guard's proposed FY2014 budget before the Homeland Security Subcommittee of the Senate Appropriations Committee, Admiral Papp stated the following regarding the difference between having about $1.0 billion per year rather than about $1.5 billion per year in the PC&I account:

> Well, Madam Chairman, $500 million—a half a billion dollars—is real money for the Coast Guard. So, clearly, we had $1.5 billion in the [FY]13 budget. It doesn't get everything I would like, but it—it gave us a good start, and it sustained a number of projects that are very important to us.
>
> When we go down to the $1 billion level this year, it gets my highest priorities in there, but we have to either terminate or reduce to minimum order quantities for all the other projects that we have going.
>
> If we're going to stay with our program of record, things that have been documented that we need for our service, we're going to have to just stretch everything out to the right. And when we do that, you cannot order in economic order quantities. It defers the purchase. Ship builders, aircraft companies—they have to figure in their costs, and it inevitably raises the cost when you're ordering them in smaller quantities and pushing it off to the right.
>
> Plus, it almost creates a death spiral for the Coast Guard because we are forced to sustain older assets—older ships and older aircraft—which ultimately cost us more money, so it eats into our operating funds, as well, as we try to sustain these older things.
>
> So, we'll do the best we can within the budget. And the president and the secretary have addressed my highest priorities, and we'll just continue to go on the—on an annual basis seeing what we can wedge into the budget to keep the other projects going.[53]

At a March 12, 2014, hearing on the Coast Guard's proposed FY2015 budget before the Homeland Security subcommittee of the House Appropriations Committee, Admiral Papp stated the following:

> Well, that's what we've been struggling with, as we deal with the five-year plan, the capital investment plan, is showing how we are able to do that. And it will be a challenge, particularly if it sticks at around $1 billion [per year]. As I've said publicly, and actually, I said we could probably—I've stated publicly before that we could probably construct comfortably at about 1.5 billion [dollars] a year. But if we were to take care of all the Coast Guard's projects that are out there, including shore infrastructure that that fleet that takes care of the Yemen [sic: inland] waters is approaching 50 years of age, as well, but I have

[52] Source: transcript of hearing. Papp may have been referring to remarks he made to the press before giving his annual state of the Coast Guard speech on February 23, 2012, in which reportedly stated that the Coast Guard would require about $2 billion per year in acquisition funding to fully replace its current assets. (See Adam Benson, "Coast Guard Cutbacks Will Cost 1,000 Jobs," *Norwich Bulletin*, February 23, 2012, accessed May 31, 2012, at http://www.norwichbulletin.com/x1138492141/Coast-Guard-cutbacks-will-cost-1-000-jobs. See also "Coast Guard Leader Calls For More Ships," *MilitaryFeed.com*, February 24, 2012, accessed May 31, 2012, at http://militaryfeed.com/coast-guard-leader-calls-for-more-ships-5/; Associated Press, "Coast Guard Commandant Calls for New Ships," *TheLog.com*, March 10, 2012, accessed May 31, 2012, at http://www.thelog.com/SNW/Article/Coast-Guard-Commandant-Calls-for-New-Ships-to-Replace-Aging-Fleet; Mickey McCarter, "Congress Poised to Give Coast Guard More Money Than Requested for FY 2013," *HSToday.us*, May 10, 2012, accessed May 31, 2012, at http://www.hstoday.us/focused-topics/customs-immigration/single-article-page/congress-poised-to-give-coast-guard-more-money-than-requested-for-fy-2013.html.) See also "Interview, Adm. Robert Papp, US Coast Guard Commandant," *Defense News*, November 11, 2013: 30.

[53] Transcript of hearing. The remarks were made in response to a question from Sen. Mary Landrieu.

> no replacement plan in sight for them because we simply can't afford it. Plus, we need at some point to build a polar icebreaker. Darn tough to do all that stuff when you're pushing down closer to 1 billion [dollars per year], instead of 2 billion [dollars per year].
>
> As I said, we could fit most of that in at about the 1.5 billion [dollars per year] level, but the projections don't call for that. So we are scrubbing the numbers as best we can.[54]

At a March 24, 2015, hearing on the Coast Guard's proposed FY2016 budget before the Homeland Security subcommittee of the House Appropriations Committee, Admiral Paul Zukunft, Admiral Papp's successor as Commandant of the Coast Guard, stated the following:

> I look back to better years in our acquisition budget when we had a—an acquisition budget of—of $1.5 billion. That allows me to move these programs along at a much more rapid pace and, the quicker I can build these at full-rate production, the less cost it is in the long run as well. But there's an urgent need for me to be able to deliver these platforms in a timely and also in an affordable manner. But to at least have a reliable and a predictable acquisition budget would make our work in the Coast Guard much easier. But when we see variances of—of 30, 40% over a period of three or four years, and not knowing what the Budget Control Act may have in store for us going on, yes, we are treading water now but any further reductions, and now I am—I am beyond asking for help. We are taking on water.[55]

An April 13, 2017, press report states the following (emphasis added):

> Coast Guard Commandant Adm. Paul Zukunft on Wednesday [April 12] said that for the Coast Guard to sustain its recapitalization plans and operations the service needs a $2 billion annual acquisition budget that grows modestly overtime to keep pace with inflation.
>
> The Coast Guard needs a "predictable, reliable" acquisition budget "and within that we need 5 percent annual growth to our operations and maintenance (O&M) accounts," Zukunft told reporters at a Defense Writers Group breakfast. Inflation will clip 2 to 3 percent from that, but "at 5 percent or so it puts you on a moderate but positive glide slope so you can execute, so you can build the force," he said.[56]

In an interview published on June 1, 2017, Zukunft said the following (emphasis added):

> We cannot be more relevant than we are now. But what we need is predictable funding. We have been in over 16 continuing resolutions since 2010. I need stable and repeatable funding. **An acquisition budget with a floor of $2 billion.** Our operating expenses as I said, they've been funded below the Budget Control Act floor for the past five years. I need 5 percent annualized growth over the next five years and beyond to start growing some of this capability back.
>
> But more importantly, we [need] more predictable, more reliable funding so we can execute what we need to do to carry out the business of the world's best Coast Guard.[57]

[54] Transcript of hearing.

[55] Transcript of hearing. The remarks were made in response to a question from Rep. John Culberson.

[56] Calvin Biesecker, "Zukunft Wants $2 Billion Baseline Acquisition Budget; Sustained Growth In O&M Funding," *Defense Daily*, April 13, 2017: 1.

[57] Jill Aitoro, "Interview: Adm. Paul Zukunft Demands Coast Guard Respect," *Defense News*, June 1, 2017.

Appendix C. Additional Information on Status and Execution of NSC, OPC, and FRC Programs from May 2018 and March 2016 GAO Reports

This appendix presents additional information on the status and execution of the NSC, OPC, and FRC programs from May 2018 and March 2016 GAO reports reviewing DHS acquisition programs.[58]

NSC Program

May 2018 GAO Report

Regarding the NSC program, the May 2018 GAO report states the following:

> DHS's Under Secretary for Management (USM) directed the USCG to complete follow-on operational test and evaluation (OT&E) by March 2019. According to USCG officials, the program's OTA began follow-on OT&E in October 2017, which will test unmet key performance parameters (KPP) and address deficiencies found during prior testing. The NSC completed initial operational testing in 2014, but did not fully demonstrate 7 of its 19 KPPs, including those related to unmanned aircraft and cutter-boat deployment in rough seas. According to USCG officials, operators have since demonstrated these KPPs during USCG operations. For example, USCG officials stated that they successfully demonstrated operations of a prototype unmanned aircraft on an NSC. However, the USCG will not evaluate the NSC's unmanned aircraft KPP until the unmanned aircraft undergoes initial OT&E, currently planned for June 2019. In addition, the NSC will be the first USCG asset to undergo cybersecurity testing. However, this test has been delayed over a year with the final cyber test event scheduled for August 2018 because of a change in NSC operational schedules, among other things.
>
> The DHS USM also directed the USCG to complete a study to determine the root cause of the NSC's propulsion system issues by December 2017; however, as of January 2018, the study was not yet complete. GAO previously reported on these issues—including high engine temperatures, cracked cylinder heads, and overheating generator bearings that were impacting missions—in January 2016....
>
> The USCG initially planned to implement a crew rotational concept in which crews would rotate while NSCs were underway to achieve a goal of 230 days away from the cutter's homeport. In February 2018, USCG officials told GAO they abandoned the crew rotational concept because the concept did not provide the USCG with the expected return on investment. Instead, USCG officials said a new plan has been implemented that does not rotate crew and is anticipated to increase the days away from home port from the current capability of 185 days to 200 days.[59]

[58] Government Accountability Office, *Home Security Acquisitions[:] Leveraging Programs' results Could Further DHS's Progress to Improve Portfolio Management*, May 2018, GAO-18-339SP, 109 pp., and Government Accountability Office, *Homeland Security Acquisitions[:]DHS Has Strengthened Management, but Execution and Affordability Concerns Endure*, GAO-16-338SP, March 2016, 110 pp. Hereinafter *GAO-18-339SP* and *GAO-16-338SP*, respectively.

[59] *GAO-18-339SP*, p. 92.

March 2016 GAO Report

The March 2016 GAO report states the following:

> Notably, officials from six [DHS acquisition] programs explained that their current KPPs [key performance parameters] are still poorly defined and may require revisions going forward. For example, USCG officials identified that the NSC's cutter boat requirements should have been written more clearly, and, in January 2016, we recommended the NSC program office clarify them.... [60]
>
> ... DHS has not identified specific actions to improve the affordability of one of the programs that department leadership reviewed—USCG NSC—and this program continues to face a funding gap exceeding 10 percent. In this case, the USCG did not provide DHS leadership critical information necessary for addressing affordability issues.....[61]
>
> ... the USCG NSC program—one of the department's largest investments—continues to face a funding gap exceeding 10 percent even though it was reviewed in September 2014. We found that the funding certification memo that the USCG provided to the DHS ARB [Acquisition Review Board] did not include as much detail as the others we reviewed across DHS components. Specifically, the NSC funding certification, signed by the USCG CFO [Chief Financial Officer], consisted of only a high-level narrative discussion, stating that adjustments would be made, as necessary, to sustain and operate the NSC. Unlike the other funding certifications we reviewed, it did not include detailed tables that quantified cost estimates, funding streams, and the monetary value of proposed tradeoffs. We also found that DHS leadership did not document any tradeoffs to improve the program's affordability after the September 2014 ARB. While the DHS CFO's June 2014 memorandum identifies that the success of the ARB reviews is dependent on the quality of the information presented to the ARB, it does not specify what information the components should include in the memos. It does not specifically require detailed information, such as quantifying cost estimates, funding streams, and the monetary value of proposed tradeoffs. We have previously established that information should be communicated to management in a form that enables them to carry out their responsibilities. Without detailed information, the ARB will be unable to hold fully informed discussions about tradeoffs needed to improve program affordability.... [62]
>
> The [Coast Guard's C4ISR acquisition] program is continuing to work to replace the C4ISR [command and control, communications, computers, intelligence, surveillance, and reconnaissance] system on the NSC because it relies on contractor-proprietary software that is becoming obsolete and is costly to maintain. This transition has been delayed by more than 7 years largely due to funding shortfalls and, according to program officials, difficulties scheduling system installations when the NSCs are in port. Future funding shortfalls would likely delay the transition further, and it appears that the program's cost estimate exceeds its funding plan significantly from fiscal year 2016 to 2020. However, the gap may not be as great as it appears. The C4ISR funding plans DHS has presented to Congress do not identify all of the funding the USCG plans to allocate to C4ISR operations. GAO has reported on USCG affordability issues since 2011 (GAO-11-743). In April 2015, GAO recommended DHS account for all of the operations and maintenance funding the USCG is allocating to its major acquisition programs in an annual report to Congress. DHS concurred with this recommendation, but USCG officials told GAO they have made no progress in accounting for these funding allocations. This issue obscures the size of future funding gaps, and the actual amount allocated through fiscal year 2015 may be greater than $797 million.

[60] *GAO-16-338SP*, p. 31.

[61] *GAO-16-338SP*, p. 32.

[62] *GAO-16-338SP*, p. 40.

Test Activities [for the C4ISR program]

The USCG initially planned to test the C4ISR system separately from its planes and vessels, including the NSC, but officials subsequently decided to test the C4ISR system in conjunction with the planes and vessels to save money and avoid duplication. However, the C4ISR system's KPPs were not specifically evaluated during the NSC's operational test because the necessary testing activities were not fully integrated into the NSC test plan. The USCG deferred a significant portion of the C4ISR testing on the NSC to later dates including the testing of cybersecurity capabilities and real-time tactical communications with the Navy. In June 2014, GAO recommended the USCG fully integrate C4ISR assessments into other assets' operational test plans or test the C4ISR program independently in order to assess the operational effectiveness and suitability of the C4ISR system. The USCG concurred with GAO's recommendation and stated that it planned to test the C4ISR system's KPPs during follow-on testing for the NSC. The NSC's follow-on operational test and evaluation was scheduled for fiscal year 2015, but slipped to the end of fiscal year 2016 when the USCG refined the NSC's testing schedule. In the meantime, the USCG is using the C4ISR system on deployed NSCs.... [63]

Performance

The USCG has been operating the NSC since 2010, and it initiated production of the eighth NSC in 2015, but it has not yet demonstrated the NSC can fully meet 7 of its 19 key performance parameters (KPP). In September 2015, USCG officials indicated they were in the process of validating data that would demonstrate the NSC could meet the KPP that establishes the NSC's transit range requirement. The NSC's other unmet KPPs include those related to unmanned aircraft, cutter-boat deployment, and interoperability requirements.

Acquisition Strategy

The USCG awarded delivery and task orders to produce the first three NSCs to Integrated Coast Guard Systems—a joint venture between Northrop Grumman and Lockheed Martin—as part of the now-defunct acquisition effort designated Deepwater. In 2006, the USCG revised its Deepwater acquisition strategy, citing cost increases, and took over the role of lead systems integrator, acknowledging that it had relied too heavily on contractors. In 2010, the USCG awarded the production contract for the fourth NSC to Northrop Grumman. In 2011, Northrop Grumman spun off its shipbuilding sector as an independent company named Huntington Ingalls Industries (HII). HII is producing the sixth, seventh, and eighth NSCs for the USCG, and plans to deliver the eighth NSC in 2019.

Program Execution

From 2008 to 2014, the program's schedule for completing developmental testing slipped nearly 5 years, and its schedule for completing initial operational testing slipped nearly 3 years. In July 2011, GAO reported on a number of issues the USCG identified during developmental testing that the USCG needed to address before initiating operational testing, including performance and safety issues (GAO-11-743). The program's full operational capability date also slipped, from fiscal year 2016 to fiscal year 2020, although program officials anticipate it will occur sooner. USCG officials attributed the schedule slips to, among other things, funding shortfalls. The NSC has adhered to the revised schedule since January 2014, but going forward, the NSC is projected to face additional funding shortfalls. From fiscal year 2016 to fiscal year 2020, the NSC's costs are projected to exceed its funding by $401 million. However, the funding gap may not be as large as it appears. The NSC funding plan DHS has presented to Congress does not identify all of the funding the USCG plans to allocate to the NSC's operations. GAO has reported on USCG affordability issues since 2011. In April 2015, GAO recommended DHS account for all of

[63] *GAO-16-338SP*, p. 86.

the operations and maintenance funding the USCG is allocating to its major acquisition programs in an annual report to Congress. DHS concurred with this recommendation, but USCG officials told GAO they have made no progress in accounting for these funding allocations. This issue obscures the size of the future funding gaps, and the amount allocated through fiscal year 2015 may be greater than $5.7 billion.

From 2008 to 2014, the program's acquisition cost estimate increased from $4.7 billion to $5.7 billion. The USCG primarily attributed this increase to the lingering impacts of Hurricane Katrina, which struck the region where the NSCs are being built in 2005. USCG officials explained that the hurricane created labor shortages, which increased rates and decreased productivity. Alternatively, from 2008 to 2014, the program's life-cycle cost estimate decreased from $24.3 billion to $21.9 billion. USCG officials attributed this decrease to increasingly accurate cost estimates for personnel, materials, and maintenance. The program's approved cost thresholds remained stable from January 2014 to January 2016.

Test Activities

The NSC completed its initial operational testing in 2014, and the Department of Homeland Security's (DHS) Director of Operational Test and Evaluation (DOT&E) subsequently found the NSC operationally effective and suitable. However, testing identified several major deficiencies, and the USCG did not demonstrate the NSC could fully meet 7 of its 19 KPPs. For example, the USCG has not yet procured an unmanned aircraft system for the NSC, and has not yet demonstrated the NSC can meet the related KPP. Three of the NSC's unmet KPPs are related to cutter-boat deployment in rough seas. USCG officials indicated that challenges remain in determining a path forward to resolve these KPPs because the USCG and its operational test agent have different interpretations of the cutter boat requirements. In January 2016, GAO recommended the NSC program office clarify the KPPs for the cutter boats.

USCG officials have indicated that all deficiencies and unmet KPPs will be tested as part of follow-on operational test and evaluation (FOT&E), but it is unclear when the USCG will complete the NSC's FOT&E. The USCG has planned test activities through the end of fiscal year 2017 and USCG officials indicated that DOT&E will independently assess the FOT&E results. However, it is unclear when the USCG will actually demonstrate the NSC can meet its unmanned aircraft and intelligence requirements. In January 2016, GAO recommended DHS specify when the USCG must complete the NSC's FOT&E and any further actions the NSC program should take following FOT&E.

Other Issues

In May 2015, DHS reported the program office had 55 full time equivalents (FTE) but needed 62 FTEs. USCG officials have told GAO this has made it difficult to obligate funds in a timely manner. However, according to USCG officials, as of September 2015 the program office was in the process of hiring staff to fill several vacancies.

Program Office Comments [from the Coast Guard]

Cost estimates cited herein are threshold values taken from the approved NSC baseline. They do not reflect current estimates to complete based on updated data, which includes actual production contract award amounts for NSCs 7 and 8. The NSC program completed IOT&E [initial operational test and evaluation] in 2014 and continues to work with DHS to complete remaining testing and resolve pending discrepancies. Delaying IOT&E was a deliberate decision to ensure maximum benefits from the testing and resulted in the Navy evaluator's assessment that the NSC is "Operationally Effective and Suitable." Despite not fully completing all aspects of IOT&E, recent NSC operations have resulted in rarely seen magnitudes of law enforcement success. USCGC BERTHOLF recently seized nearly 29,000 pounds of cocaine, part of a remarkable 2015 interagency/partner nation effort

> which included more than 110 interdictions, the arrest of 700 suspected smugglers, and the seizure of 709,888 pounds of cocaine worth roughly $9.4 billion.
>
> GAO Response
>
> Across all 25 program assessments [in this GAO report], GAO has reported threshold cost estimates because they are the maximum costs authorized by DHS leadership. DHS leadership approved an updated NSC cost estimate in September 2014, but it has not changed the program's maximum authorized cost.[64]

OPC Program

May 2018 GAO Report

Regarding the OPC program, the May 2018 GAO report states the following:

> DHS approved six key performance parameters (KPP) for the OPC related to the ship's operating range and duration, crew size, interoperability and maneuverability, and ability to support operations in moderate to rough seas. The first OPC has not yet been constructed, so the USCG has not yet demonstrated whether it can meet these KPPs. The USCG plans to use engineering reviews, and developmental and operational tests throughout the acquisition to measure the OPC's performance.
>
> USCG officials told GAO that the program completed an early operational assessment on the basic ship design in August 2017, which entailed a review of the current design plans. The program plans to refine the ship's design as needed based on preliminary test results. However, as of December 2017, USCG officials had not received the results of this assessment.
>
> The USCG plans to conduct initial operational test and evaluation (OT&E) on the first OPC in fiscal year 2023. However, the test results from initial OT&E will not be available to inform key decisions. For example, the results will not be available to inform the decision to build 2 OPCs per year—which USCG officials said is scheduled to begin in fiscal year 2021. Without test results to inform these key decisions, the USCG must make substantial commitments prior to knowing how well the ship will meet its requirements....
>
> The USCG is in the process of completing the design of the OPC before starting construction, which is in-line with GAO shipbuilding best practices. In addition, USCG officials stated that the program is using state-of-the-market technology that has been proven on other ships as opposed to state-of-the-art technology, which lowers the risk of the program.[65]

March 2016 GAO Report

The March 2016 GAO report states the following:

> Performance
>
> Department of Homeland Security (DHS) leadership has approved six key performance parameters (KPP) for the OPC, establishing goals for the ship's operating range and duration, crew size, interoperability and maneuverability, and ability to conduct operations in moderate to rough seas. The first OPC has not yet been constructed, so the USCG has not yet demonstrated whether it can meet these KPPs. The USCG plans to use engineering

[64] *GAO-16-338SP*, pp. 95-96.

[65] *GAO-18-339SP*, p. 94.

reviews, and developmental and operational tests throughout the acquisition to measure the OPC's performance.

Acquisition Strategy

The USCG is using a two-phased down-select strategy to select a contractor to deliver the OPC. First, the USCG conducted a full and open competition to select three contractors to perform preliminary and contract design work, and in February 2014, the USCG awarded fixed-price contracts to Eastern Shipbuilding Group, Bollinger Shipyards, and Bath Iron Works for phase 1. Second, in late fiscal year 2016, for phase 2, the USCG plans to select one of these three contractors to develop a detailed design of the OPC, and construct the first 9 to 11 ships.

Program Execution

From 2012 to 2016, the program's initial operational test and evaluation (IOT&E) date slipped 12 months, and its initial and full operational capability dates both slipped 15 months. Additionally, the program's preliminary design review date slipped 13 months, including 4 months during 2015. USCG officials said they completed the contract design review in March 2015, but they did not expect to complete the preliminary design review until January 2016. USCG officials attributed these schedule slips to delays in awarding the three preliminary and contract design contracts, and a subsequent bid protest that was filed with GAO. GAO denied the protest in June 2014.

In June 2014, GAO identified that the OPC's schedule had slipped 14 years between 2007 and 2014. Going forward, USCG officials have stated that additional OPC delays will decrease the USCG's operational capacity because the aging Medium Endurance Cutters will require increased downtime for maintenance and other issues, reducing their availability.

The OPC's acquisition and life-cycle cost estimates did not change from 2012 to 2015. However, in June 2014, GAO reported that the OPC program's acquisition cost estimate had increased by $4 billion from 2007 to 2012. USCG officials said this increase was largely due to invalid assumptions in the earlier cost estimate, along with schedule delays and inflation.

Test Activities

DHS's Director of Operational Test and Evaluation approved the OPC Test and Evaluation Master Plan (TEMP) in October 2011, but the USCG has issued an interim TEMP to reflect schedule changes resulting from the bid protest. The USCG now plans to conduct IOT&E on the first OPC in fiscal year 2023. USCG officials told GAO that they have been working closely with DHS's Office of Test and Evaluation and U.S. Navy test officials since 2010 to incorporate testing into the program.

Other Issues

The program is currently projected to have a $1.2 billion funding shortfall from fiscal years 2016 to 2020. Program officials said this is because the OPC's current cost estimate does not reflect its schedule delays, and that they are working to update the cost estimate. Nonetheless, in 2012, DHS's Chief Financial Officer raised concerns that the OPC's costs could grow as other shipbuilding programs' costs have grown in the past, and could ultimately affect the affordability of other USCG acquisition programs. In June 2014, GAO reported that the OPC will absorb about two-thirds of the USCG's acquisition funding from 2018 to 2032, and recommended that the USCG develop a 20-year fleet modernization plan that identifies all acquisitions needed to maintain the current level of service, along with tradeoffs if the funding needed to execute the plan is not consistent with annual budgets. The USCG concurred with this recommendation but did not identify an estimated date for completing the plan, and USCG officials told GAO they had not identified what tradeoffs they would make to address affordability issues.

> In May 2015, DHS headquarters identified that the program office needed 26 full time equivalents (FTE) and actually had 20 FTEs. However, in December 2015, program officials told GAO the program now only needs 20 FTEs, but is still 3 short. Program officials also said that these shortfalls did not significantly affect the program.
>
> Program Office Comments [from the Coast Guard]
>
> The USCG provided technical comments that GAO addressed as appropriate.[66]

FRC Program

May 2018 GAO Report

Regarding the FRC program, the May 2018 GAO report states the following:

> In February 2017, DHS's Director, Office of Test and Evaluation (DOT&E) assessed the results from the program's July 2016 follow-on operational test and evaluation (OT&E) and determined that
>
> • the program met its six key performance parameters, and
>
> • the FRC was operationally effective and suitable.
>
> During follow-on OT&E, the OTA found that several deficiencies from the program's initial OT&E had been corrected. For example, the OTA closed a severe deficiency related to the engines based on modifications to the FRC's main diesel engines. However, five major deficiencies remain. According to USCG officials, the remaining deficiencies are related to ergonomics (e.g., improving the working environment for operators) and issues with stowage space. USCG officials stated that they plan to resolve the remaining deficiencies by fiscal year 2020.
>
> DOT&E noted that these deficiencies do not prevent mission completion or present a danger to personnel, but recommended that they be resolved as soon as possible. USCG officials indicated that they plan to resolve the remaining deficiencies through engineering or other changes....
>
> The USCG continues to work with the contractor—Bollinger Shipyards, LLC—to address issues covered by the warranty and acceptance clauses for each ship. For example, 18 engines—9 operational engines and 9 spare engines—have been replaced under the program's warranty. According to USCG documentation, 65 percent of the current issues with the engines have been resolved through retrofits; however, additional problems with the engines have been identified since our April 2017 review. For example, issues with water pump shafts are currently being examined through a root cause analysis and will be redesigned and are scheduled to undergo retrofits starting in December 2018. We previously found that the FRC's warranty resulted in improved cost and quality by requiring the shipbuilder to pay for the repair of defects. As of September 2017, USCG officials said the replacements and retrofits completed under the program's warranty allowed the USCG to avoid an estimated $104 million in potential unplanned costs—of which $63 million is related to the engines.[67]

For a discussion of some considerations relating to warranties in shipbuilding and other acquisition programs, see **Appendix D**.

[66] *GAO-16-338SP*, pp. 97-98.

[67] *GAO-18-339SP*, p. 82. For additional discussions of warranties in acquisition programs, see XXX.

March 2016 GAO Report

The March 2016 GAO report states the following:

> Officials from 8 of the 11 programs that remained on track during 2015 said their programs were at risk of future schedule slips, cost growth, or both due to anticipated funding constraints, workforce challenges, expanded development efforts, and other reasons. These 8 programs include 7 that previously experienced schedule slips, cost growth, or both. For example, officials from the USCG Fast Response Cutter (FRC) program said that funding shortfalls could affect the number of cutters they are able to procure each year, which could increase costs. Currently, the USCG plans to award a contract by the end of June 2016 that will allow the USCG to purchase 4 to 6 cutters per year, depending on available funding levels. In June 2014, we reported that the USCG estimated a decision to order fewer ships per year would likely increase the program's costs by $600 million to $800 million beyond its current estimates.... [68]
>
> Performance
>
> The FRC partially met one of its six key performance parameters (KPP) during initial operational test and evaluation (IOT&E) in fiscal year 2013. The other five KPPs were not met or not tested. In September 2015, USCG officials told GAO the FRC had since demonstrated it could meet all six of its KPPs, but the Department of Homeland Security's (DHS) Director of Operational Test and Evaluation (DOT&E) has not validated the FRC's performance since IOT&E. The FRC's follow-on operational test and evaluation (FOT&E) is scheduled for June 2016.
>
> Acquisition Strategy
>
> In September 2008, USCG officials awarded Bollinger Shipyards Lockport a contract for 1 FRC with options to build up to 33 more. GAO subsequently received a bid protest, which was denied, and upheld the USCG's contract award in January 2009. In May 2014, the USCG established that it would only procure 32 FRCs through this contract. In June 2014, GAO reported that the USCG purchased the technical specifications and licenses from Bollinger that are necessary to build the FRC, and planned to use this information to conduct a full and open competition for the remaining 26 vessels. The USCG has designated this effort Phase 2 of the program.
>
> The USCG began Phase 2 with a request for proposals (RFP), all of which were to be received by July 2015. According to program officials, they plan to award the Phase 2 contract by the end of June 2016. According to USCG officials, the Phase 2 RFP allowed the bidders to make certain changes to the design of the ship, though the key performance parameters remain the same as for Phase 1. In addition, the design for several critical systems—such as the propulsion system, generators, hull structure, and bridge layout—remained consistent with the Phase 1 design.
>
> Program Execution
>
> Previously, the program's initial operational capability date slipped from December 2012 to August 2013 because of the bid protest and the need for structural modifications. Additionally, the program's full operational capability date slipped from September 2022 to March 2027 because, according to USCG officials, the procurement quantities for the FRC changed under the Phase 1 contract. In fiscal years 2010 and 2011, the quantities decreased from six FRCs per year to four. Under the Phase 2 contract, program officials said the USCG will be able to purchase four to six FRCs per year. The USCG has established that the annual procurement quantity will be dictated by funding levels, and a $143 million gap appears to remain between the program's projected funding levels and

[68] *GAO-16-338SP*, p. 17.

estimated costs through fiscal year 2020. Program officials told GAO that funding shortfalls could cause further delays going forward, but maintained that the program is still on track to meet its cost goals. Nonetheless, in June 2014, GAO reported that the USCG estimated the decision to order fewer ships per year will likely increase the program's costs by $600 million to $800 million beyond its current estimates.

The FRC's projected funding gap may not actually be $143 million from fiscal year 2016 to fiscal year 2020. The FRC funding plan DHS has presented to Congress does not identify all of the funding the USCG plans to allocate to FRC operations. GAO has reported on USCG affordability issues since 2011 (GAO-11-743). In April 2015, GAO recommended DHS account for all of the operations and maintenance funding the USCG is allocating to its major acquisition programs in an annual report to Congress. DHS concurred with the recommendation, but USCG officials told GAO they have made no progress in accounting for these funding allocations. This issue obscures the size of future funding gaps, and the actual amount allocated through fiscal year 2015 may be greater than $2.1 billion.

Test Activities

In 2009, DOT&E approved the FRC program's Test and Evaluation Master Plan (TEMP). In 2012, USCG officials updated the TEMP in preparation for IOT&E, which was conducted in fiscal year 2013 and assessed three of the program's six KPPs. At that time, the FRC did not fully meet any of them. IOT&E also revealed several major deficiencies, the most significant of which involved the FRC's cutter boat, which exhibited problems operating in moderate sea conditions, and the FRC's main diesel engines, which had multiple equipment failures during testing. Subsequently, independent testers from the U.S. Navy concluded the FRC was operationally effective, but not operationally suitable.

USCG officials told GAO they have improved the FRC's performance since the 2013 IOT&E. For example, they replaced and successfully tested the FRC's cutter boat, worked with the engine manufacturer to determine the root cause of equipment failures, and have begun retrofitting the engines. USCG officials stated the FRC has demonstrated it can meet all six of its KPPs, but DOT&E will not validate the FRC's performance until the USCG completes its FOT&E, which is scheduled for June 2016.

In January 2015, USCG officials told GAO that they were updating the TEMP again in preparation for FOT&E, and that they expected DOT&E would approve the updated TEMP by June 2015. However, it has taken the USCG longer than anticipated to update the TEMP, and in September 2015, USCG officials stated that they were still working on the updates.

Other Issues

In May 2015, DHS headquarters reported that the program required five additional staff, but in September 2015, program officials told GAO that number was down to one. The open staff position was for a naval architect, and the officials said that they were in the process of filling the position.

Program Office Comments [from the Coast Guard]

The FRC program has delivered 15 FRCs and 14 of those have been commissioned. In the past year, FRCs have rescued 117 undocumented migrants. In a Joint Operation, an FRC intercepted a smuggling vessel carrying 212 kg of cocaine, worth an estimated value of over $7 million. The FRC program looks forward to demonstrating the capabilities of the FRC during FOT&E.[69]

[69] *GAO-16-338SP*, pp. 87-88.

Appendix D. Some Considerations Relating to Warranties in Shipbuilding and Other Acquisition Programs

This appendix presents some considerations relating to warranties in shipbuilding and other defense acquisition.[70]

In discussions of Navy and Coast Guard shipbuilding, one question that sometimes arises is whether including a warranty in a shipbuilding contract is preferable to not including one.

Including a warranty in a shipbuilding contract (or a contract for building some other kind of military end item), while potentially valuable, might not always be preferable to not including one—it depends on the circumstances of the acquisition, and it is not necessarily a valid criticism of an acquisition program to state that it is using a contract that does not include a warranty (or a weaker form of a warranty rather than a stronger one).

Including a warranty generally shifts to the contractor the risk of having to pay for fixing problems with earlier work. Although that in itself could be deemed desirable from the government's standpoint, a contractor negotiating a contract that will have a warranty will incorporate that risk into its price, and depending on how much the contractor might charge for doing that, it is possible that the government could wind up paying more in total for acquiring the item (including fixing problems with earlier work on that item) than it would have under a contract without a warranty.

When a warranty is not included in the contract and the government pays later on to fix problems with earlier work, those payments can be very visible, which can invite critical comments from observers. But that does not mean that including a warranty in the contract somehow frees the government from paying to fix problems with earlier work. In a contract that includes a warranty, the government will indeed pay something to fix problems with earlier work—but it will make the payment in the less-visible (but still very real) form of the up-front charge for including the warranty, and that charge might be more than what it would have cost the government, under a contract without a warranty, to pay later on for fixing those problems.

From a cost standpoint, including a warranty in the contract might or might not be preferable, depending on the risk that there will be problems with earlier work that need fixing, the potential cost of fixing such problems, and the cost of including the warranty in the contract. The point is that the goal of avoiding highly visible payments for fixing problems with earlier work and the goal of minimizing the cost to the government of fixing problems with earlier work are separate and different goals, and that pursuing the first goal can sometimes work against achieving the second goal.[71]

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[70] This appendix is adapted from Appendix C of CRS Testimony TE10019, *Options and Considerations for Achieving a 355-Ship Navy*, by Ronald O'Rourke.

[71] It can also be noted that the country's two largest builders of Navy ships—General Dynamics (GD) and Huntington Ingalls Industries (HII)—derive about 60% and 96%, respectively, of their revenues from U.S. government work. (See General Dynamics, *2016 Annual Report*, page 9 of Form 10-K [PDF page 15 of 88]) and Huntington Ingalls Industries, *2016 Annual Report*, page 5 of Form 10-K [PDF page 19 of 134]). These two shipbuilders operate the only U.S. shipyards currently capable of building several major types of Navy ships, including submarines, aircraft carriers, large surface combatants, and amphibious ships. Thus, even if a warranty in a shipbuilding contract with one of these firms were to somehow mean that the government did not have pay under the terms of that contract—either up front or later

The Department of Defense's guide on the use of warranties states the following:

> Federal Acquisition Regulation (FAR) 46.7 states that "the use of warranties is not mandatory." However, if the benefits to be derived from the warranty are commensurate with the cost of the warranty, the CO [contracting officer] should consider placing it in the contract. In determining whether a warranty is appropriate for a specific acquisition, FAR Subpart 46.703 requires the CO to consider the nature and use of the supplies and services, the cost, the administration and enforcement, trade practices, and reduced requirements. The rationale for using a warranty should be documented in the contract file....
>
> In determining the value of a warranty, a CBA [cost-benefit analysis] is used to measure the life cycle costs of the system with and without the warranty. A CBA is required to determine if the warranty will be cost beneficial. CBA is an economic analysis, which basically compares the Life Cycle Costs (LCC) of the system with and without the warranty to determine if warranty coverage will improve the LCCs. In general, five key factors will drive the results of the CBA: cost of the warranty + cost of warranty administration + compatibility with total program efforts + cost of overlap with Contractor support + intangible savings. Effective warranties integrate reliability, maintainability, supportability, availability, and life-cycle costs. Decision factors that must be evaluated include the state of the weapon system technology, the size of the warranted population, the likelihood that field performance requirements can be achieved, and the warranty period of performance.[72]

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on—for fixing problems with earlier work done under that contract, there would still be a question as to whether the government would nevertheless wind up eventually paying much of that cost as part of the price of one or more future contracts the government may have that firm.

[72] Department of Defense, *Department of Defense Warranty Guide*, Version 1.0, September 2009, accessed July 13, 2017, at https://www.acq.osd.mil/dpap/pdi/uid/docs/departmentofdefensewarrantyguide[1].doc.