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Coast Guard Cutter Procurement: Background and Issues for Congress

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Summary

The Coast Guard's 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 cutters and patrol craft. The NSC, OPC, and FRC programs have a combined estimated acquisition cost of about $21.1 billion, and the Coast Guard's proposed FY2016 budget requests a total of $449.9 million in acquisition funding for the three programs.

NSCs are the Coast Guard's largest and most capable general-purpose cutters. They have an estimated average procurement cost of about $684 million per ship. The first four are now in service, the fifth was delivered on June 5, 2015, and is scheduled to be commissioned into service in August 2015, the sixth and seventh are under construction, and the eighth was funded in FY2015. The Coast Guard's proposed FY2016 budget requests $638 million for the NSC program, including $91.4 million in acquisition funding for the NSC program.

OPCs are to be smaller, less expensive, and in some respects less capable than NSCs. They have an estimated average procurement cost of about $484 million per ship. The first OPC is to be procured in FY2018. The Coast Guard's proposed FY2016 budget requests $18.5 million in acquisition funding for the OPC program.

FRCs are considerably smaller and less expensive than OPCs. They have an estimated average procurement cost of about $73 million per boat. A total of 32 have been funded through FY2015. The 13th was commissioned into service on June 20, 2015. The Coast Guard's proposed FY2016 budget requests $340 million in acquisition funding for the FRC program.

The NSC, OPC, and FRC programs pose several oversight issues for Congress. 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). These 91 planned cutters are intended as replacements for 90 aging Coast Guard cutters and patrol craft. The Coast Guard began procuring NSCs and FRCs a few years ago, and the first few NSCs and FRCs are now in service. The Coast Guard plans to begin procuring OPCs within the next few years. The NSC, OPC, and FRC programs have a combined estimated acquisition cost of about $21.1 billion, and the Coast Guard's proposed FY2016 budget requests a total of $449.9 million in acquisition funding for the three 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] The Coast Guard's plans for modernizing its fleet of polar icebreakers are covered in a separate CRS report.[2]

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).[3] The Coast Guard's 12 Hamilton (WHEC-715) class high-endurance cutters entered service between 1967 and 1972.[4] The Coast Guard's 29 medium-endurance cutters

[1] The earlier report was CRS Report RL33753, *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* 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] CRS Report RL34391, *Coast Guard Polar Icebreaker Modernization: Background and Issues for Congress*, by Ronald O'Rourke.

[3] 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.

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

include 13 Famous (WMEC-901) class ships that entered service between 1983 and 1991,[5] 14 Reliance (WMEC-615) class ships that entered service between 1964 and 1969,[6] and two one-of-a-kind cutters that originally entered service with the Navy in 1944 and 1971 and were later transferred to the Coast Guard.[7] The Coast Guard's 49 110-foot Island (WPB-1301) class patrol boats entered service between 1986 and 1992.[8]

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 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.[9]

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.[10]

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

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

[7] 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 re-entered service with the Coast Guard in 1999. It is 282 feet long and has a full load displacement of about 2,900 tons.

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

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

[10] 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.)

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.

NSC Program

National Security Cutters (**Figure 1**), also known as Legend (WMSL-750) class cutters,[11] are the Coast Guard's largest and most capable general-purpose cutters.[12] The Coast Guard's 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 FY2016 five-year Capital Investment Plan (CIP) estimates the total acquisition cost of the eight ships at $5.559 billion, or an average of about $695 million per ship.

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/.

[11] In the designation WMSL, W means Coast Guard ship and MSL stands for maritime security cutter, large. NSCs are being named for legendary Coast Guard personnel.

[12] 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.

NSCs are larger and technologically more advanced than Hamilton-class cutters.[13] The Coast Guard states that

> Of the Coast Guard's white-hull patrol cutter fleet, the NSC is the largest and most technologically sophisticated in the Coast Guard. Each NSC is capable of operating in the most demanding open ocean environments, including the hazardous fisheries of the North Pacific and the vast approaches of the Southern Pacific where much of the American narcotics traffic occurs. With robust Command, Control, Communication, Computers, Intelligence, Surveillance and Reconnaissance (C4ISR) equipment, stern boat launch and aviation facilities, as well as long-endurance station keeping, the NSCs are afloat operational-level headquarters for complex law enforcement and national security missions involving multiple Coast Guard and partner agency participation.[14]

NSCs are built by Ingalls Shipbuilding of Pascagoula, MS, a shipyard that forms part of Huntington Ingalls Industries (HII).

The first four are now in service, the fifth was delivered on June 5, 2015, and is scheduled to be commissioned into service in August 2015, the sixth and seventh are under construction, and the eighth was funded in FY2015.[15]

The Coast Guard's proposed FY2016 budget requests $91.4 million in acquisition funding for the NSC program for structural enhancements on the first two NSCs and post-delivery activities on NSCs 5 through 8.

OPC Program

Offshore Patrol Cutters (**Figure 2**) are to be smaller, less expensive, and in some respects less capable than NSCs. The Coast Guard's POR calls for procuring 25 OPCs as replacements for the service's 29 medium-endurance cutters. Under the Coast Guard's FY2015 five-year CIP, it appears (based on programmed annual funding levels) that the first OPC is to be procured in FY2018. The FY2016 CIP estimates the total acquisition cost of the 25 ships at $10.523 billion, or an average of about $421 million per ship.

The Coast Guard's Request for Proposal (RFP) for the program, released on September 25, 2012, establishes 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.[16] 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,[17] or

[13] 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.

[14] U.S. Coast Guard description of the NSC, accessed April 26, 2013, at http://www.uscg.mil/acquisition/nsc/features.asp.

[15] "Acquisition Update: Fifth National Security Cutter Delivered To Coast Guard," June 5, 2015, accessed June 22, 2015, at http://www.uscg.mil/acquisition/newsroom/updates/nsc060515.asp.

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

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

other program costs—such as those for program management, system integration, and logistics—that contribute to the above-cited figure of $421 million per ship.[18]

Figure 2. Offshore Patrol Cutter (Generic Conceptual Rendering)

Source: U.S. Coast Guard generic conceptual rendering accessed May 3, 2012, at http://www.uscg.mil/hq/cg9/opc/default.asp.

The service states that OPCs

> will complement the Coast Guard's current and future fleet to extend the service's operational capabilities. The OPC will replace the service's 210-foot and 270-foot Medium Endurance Cutters. It will feature increased range and endurance, powerful weapons, a larger flight deck, and improved command, control, communications, computers, intelligence, surveillance and reconnaissance (C4ISR) equipment. The OPC will accommodate aircraft and small boat operations in all weather.[19]

The Coast Guard's acquisition strategy for the first 9 to 11 ships in the program is as follows:

> The OPC procurement shall implement a two-phase down select strategy. Phase I entails a full and open competition for Preliminary and Contract Design (P&CD) awarded to a maximum of three offerors. The Coast Guard intends to competitively award the Phase I contract in Fiscal Year (FY) 2013. P&CD will culminate in a Contract Design Review (KDR). After KDR, the three contractors will submit proposals which will result in a down selection to one contractor to continue with Phase II.

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

[19] Coast Guard fact sheet on the OPC accessed April 26, 2013, at http://www.uscg.mil/acquisition/opc/pdf/opc.pdf.

> (h) Phase II award is planned for FY16.... Phase II's down selection will be accomplished by exercising one option with a single contractor for Detail Design (DD) with additional options for Long Lead Time Materials, lead ship and eight to ten follow ships. DD will start after option exercise and be complete upon delivery of the first ship. The contractor will present the OPC design at the Initial Critical Design Reviews (ICDR) and Final Critical Design Review (FCDR) followed by a Production Readiness Review (PRR). During Phase II contract performance, the contractor will be encouraged to submit a fixed price proposal (before construction begins on the Hull #6) for option Hulls #6 through #11 (LRIP 2). If the priced effort is deemed fair and reasonable the contractor shall be eligible for Hulls #10 and #11. If not, the contract will continue with the FPI structure and the contract will end with Hull #9.[20]

At least eight shipyards expressed interest in the program. The firms were:

- 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.[21]

On February 11, 2014, the Coast Guard announced that it had awarded Phase I Preliminary and Contract Design (P&CD) contracts to **Bollinger**, **Eastern**, and **GD/BIW**. A February 11, 2014, Coast Guard news release on the award stated:

> The U.S. Coast Guard today awarded three firm fixed-price contracts for preliminary and contract design (P&CD) for the Offshore Patrol Cutter (OPC) acquisition project. The contracts were awarded to Bollinger Shipyards Lockport LLC (Lockport, La.), Eastern Shipbuilding Group Inc. (Panama City, Fla.), and General Dynamics, Bath Iron Works (Bath, Maine). The total value of the award is approximately $65 million.
>
> Awarding multiple design contracts ensures that competition is continued through to a potential down-select for detailed design and construction, establishes a fixed-price environment for the remainder of the contract, and incorporates a strategy to maximize

[20] Source: Section C.1 of the RFP, accessed March 26, 2013, at http://www.uscg.mil/ACQUISITION/newsroom/updates/opc092512.asp.

[21] 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/archive/2013/April/Pages/NewCoastGuardCutterSparksFierceCompetitionAmongShipbuilders.aspx.

> affordability. This strategy was developed by analyzing lessons learned from other major government shipbuilding programs and through collaboration with industry on how to best design and produce the most affordable OPC....
>
> The Coast Guard issued the P&CD Request for Proposal (RFP) Sept. 25, 2012. Responses were received in January 2013, and the Coast Guard conducted a thorough evaluation of proposals based on technical, management, past performance and price factors. To support the effort to acquire an affordable OPC, the Coast Guard engaged industry prior to RFP release through industry day events, one-on-one meetings and providing opportunities for potential offerors to review and comment on OPC draft technical packages, specifications and solicitation language.[22]

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.[23] 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.[24]

The Coast Guard's proposed FY2016 budget requests $18.5 million in acquisition funding for the OPC program for technical and project management ($4.7 million) and design and development work ($13.8 million). The Coast Guard states, "The Administration's [FY2016 budget] request includes a [proposed legislative] General Provision permitting a transfer [of additional funding] to the OPC project if the program is ready to award the next phase of vessel acquisition in FY 2016."[25]

GAO testified on May 14, 2015, that

> The Coast Guard currently plans to begin construction on the lead ship in fiscal year 2018—one year later than planned in its most recent program baseline—and deliver this ship in 2022. The Coast Guard attributes the schedule delay to procurement delays, including a bid protest. The fiscal year 2016 Capital Investment Plan has $1.5 billion in funding for the OPC, which funds the design work and construction of the first three vessels. After the first 3 of the planned fleet of 25 OPCs are built, the Coast Guard plans to increase its purchase to 2 OPCs per year until the final asset is delivered, currently scheduled for fiscal year 2035.[26]

[22] "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 http://www.uscg.mil/hq/cg9/newsroom/updates/opc021114.asp.

[23] 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.

[24] 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* (*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.

[25] *Department of Homeland Security, United States Coast Guard, Fiscal Year 2016 Congressional Justification*, p. CG-AC&I-30.

[26] Government Accountability Office, *Coast Guard Acquisitions[:] As Major Assets Are Fielded, Overall Portfolio Remains Unaffordable*, GAO-15-620T, May 14, 2015, p. 9.

FRC Program

Fast Response Cutters (**Figure 3**), also called Sentinel (WPC-1101) class patrol boats, are considerably smaller and less expensive than OPCs, but are larger than the Coast Guard's older patrol boats.[27] The Coast Guard's POR calls for procuring 58 FRCs as replacements for the service's 49 Island-class patrol boats. The FY2016 CIP estimates the total acquisition cost of the 58 cutters at $3.764 billion, or an average of about $65 million per cutter.

Figure 3. 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 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 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

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

> 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.[28]

The FRC program received approval from DHS to enter full-rate production on September 18, 2013.[29] A total of 32 FRCs have been funded through FY2015. The 13th was commissioned into service on June 20, 2015.[30]

FRCs are currently built by Bollinger Shipyards of Lockport, LA. Bollinger's contract with the Coast Guard originally included annual options for building a total of up to 34 FRCs through FY2014, but some of the annual options were not exercised by the Coast Guard to their maximum possible quantities, and Bollinger's contract wound up covering the 32 FRCs. (The Coast Guard on February 27, 2015, exercised a final option under the contract with Bollinger for ships 31 and 32.)[31] Ship awards under that contract are now completed.

The Coast Guard holds the data rights for the Sentinel-class design and on February 27, 2015, issued a Request for Proposals (RFP) for a contract that will include options for the acquisition of up to 26 FRCs (i.e., the remaining 26 ships in the program). Proposals from bidders are due by June 5, 2015.[32]

The Coast Guard's proposed FY2016 budget requests $340 million in acquisition funding for the FRC program.

NSC, OPC, and FRC Funding in FY2013-FY2016 Budget Submissions

Table 1 shows annual acquisition funding for the NSC, OPC, and FRC programs in the Coast Guard's FY2013-FY2016 budget submissions.

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

[29] "Acquisition Update: Sentinel-class Fast Response Cutter Project Achieves Acquisition Milestone," September 18, 2013, accessed November 18, 2013, at http://www.uscg.mil/acquisition/newsroom/updates/frc092413.asp.

[30] "Acquisition Update: Coast Guard Commissions 13th Fast Response Cutter," June 22, 2015, accessed June 22, 2015, at http://www.uscg.mil/acquisition/newsroom/updates/frc062215.asp.

[31] "Acquisition Update: Coast Guard Exercises Contract Option for Fast Response Cutters 31 And 32," February 27, 2015, accessed March 6, 2015, at http://www.uscg.mil/acquisition/newsroom/updates/frc022815.asp.

[32] "Acquisition Update: Coast Guard Issues Request for Proposal for Fast Response Cutters 33-58," February 27, 2015, accessed March 6, 2015, http://www.uscg.mil/acquisition/newsroom/updates/frc022915.asp.

Table 1. NSC, OPC, and FRC Funding in FY2013-FY2016 Budget Submissions

(millions of then-year dollars)

	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019	FY2020
NSC program								
FY13 budget	683	0	0	0	0			
FY14 budget		616	710	38	0	45		
FY15 budget			638	75	130	30	47	
FY16 budget				91.4	132	95	30	15
OPC program								
FY13 budget	30	50	40	200	530			
FY14 budget		25	65	200	530	430		
FY15 budget			20	90	100	530	430	
FY16 budget				18.5	100	530	430	430
FRC program								
FY13 budget	139	360	360	360	360			
FY14 budget		75	110	110	110	110		
FY15 budget			110	340	220	220	315	
FY16 budget				340	325	240	240	325
Total								
FY13 budget	852	410	400	560	890			
FY14 budget		716	885	348	640	585		
FY15 budget			768	505	450	780	792	
FY16 budget				449.9	557	865	700	370

Source: FY2013-FY2016 budget submissions.

Issues for Congress

Planned NSC, OPC, and FRC Procurement Quantities

One potential oversight 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 be considerably fewer ships than the number 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. CRS first testified about this issue in 2005.[33]

The Coast Guard estimates that with the POR's planned force of 91 NSCs, OPCs, and FRCs, the service would have capability or capacity gaps[34] in 6 of its 11 statutory missions—search and

[33] 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.

[34] 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.

rescue (SAR); defense readiness; counter-drug 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 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 2** compares planned numbers of NSCs, OPCs, and FRCs in the POR to those in the objective fleet mix.

Table 2. 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 2**, 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 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 3** compares the POR to FMAs 1 through 4.

Table 3. 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 4** shows the POR and FMAs 1 through 4 in terms of their mission performance gaps.

Table 4. 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).

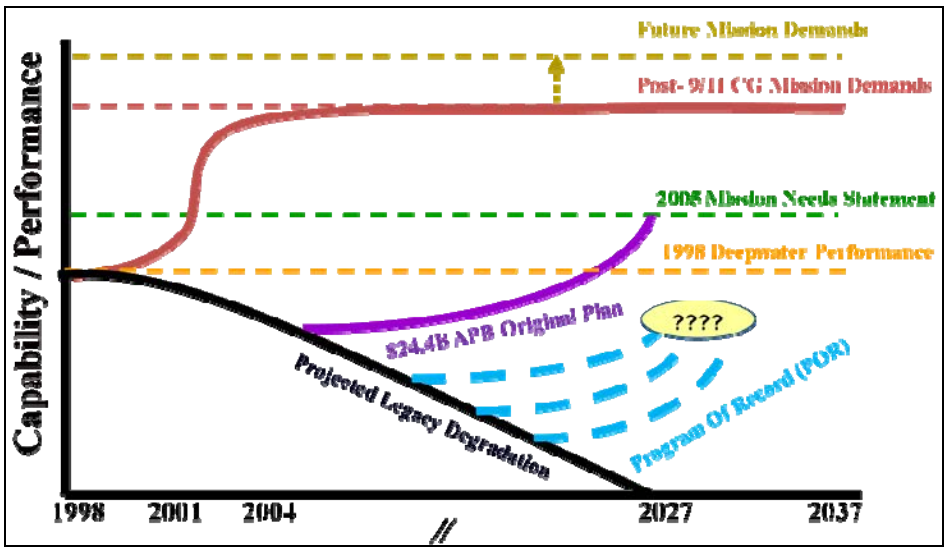
d. This gap occurs in the Southeast and Western operating areas.

e. This gap occurs in the Northeast operating area.

Figure 4, 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 4. 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 3** 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 3** 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.[35] GAO again presented them in a July 2011 report.[36]

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 5** compares the POR to the objective fleet mix from FMA Phase 1 and the refined objective mix from FMA Phase 2.

Table 5. 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.

As can be seen in **Table 5**, 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.

Compared to the POR, the larger force mixes shown in **Table 3** and **Table 5** 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.[37]

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

[35] 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.

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

[37] 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.

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 3** and **Table 5** 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.[38]

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 4**? 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 4**, 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 4** 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 4**?

Funding Level of Coast Guard's Acquisition Account

Another potential oversight issue for Congress concerns the funding level in the Coast Guard's acquisition account, known formally as the Acquisition, Construction, and Improvements (AC&I) account. The Coast Guard has testified that acquiring the ships and aircraft in its POR on a timely basis while also adequately funding other Coast Guard acquisition programs would require a funding level for the AC&I account of roughly $1.5 billion to $2.5 billion per year.

As shown in **Table 6** below, the Administration's FY2013 budget submission programmed an average of about $1.5 billion per year in the AC&I account. As also shown in the table,

[38] 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.

subsequent budget submissions have reduced that figure to between $1 billion and $1.2 billion per year.

Table 6. Funding in AC&I Account in FY2013-FY2016 Budgets

Millions of dollars, rounded to nearest tenth

	FY13	FY14	FY15	FY16	FY17	FY18	FY19	FY20	Avg.
FY13 budget	1,217.3	1,429.5	1,619.9	1,643.8	1,722.0				1,526.5
FY14 budget		951.1	1,195.7	901.0	1,024.8	1,030.3			1,020.6
FY15 budget			1,084.2	1,103.0	1,128.9	1,180.4	1,228.7		1,145.0
FY16 budget				1,017.3	1,125.3	1,255.7	1,201.0	1,294.6	1,178.8

Source: Coast Guard FY2013-FY2016 budget submissions.

At a June 26, 2013, hearing on Coast Guard acquisition before the Coast Guard and Maritime Transportation subcommittee of the House Transportation and Infrastructure Committee, CRS testified that

> The Coast Guard's FY2014 Five Year (FY2014-FY2018) CIP includes a total of about $5.1 billion in acquisition funding, which is about $2.5 billion, or about 33%, less than the total of about $7.6 billion that was included in the Coast Guard's FY2013 Five Year (FY2013-FY2017) CIP. (In the four common years of the two plans—FY2014-FY2017—the reduction in funding from the FY2013 CIP to the FY2014 CIP is about $2.3 billion, or about 37%.) This is one of the largest percentage reductions in funding that I have seen a five-year acquisition account experience from one year to the next in many years.
>
> About twenty years ago, in the early 1990s, Department of Defense (DOD) five-year procurement plans were reduced sharply in response to the end of the Cold War—a large-scale change in the strategic environment that led to a significant reduction in estimated future missions for U.S. military forces. In contrast to that situation, there has been no change in the Coast Guard's strategic environment since last year that would suggest a significant reduction in estimated future missions for the Coast Guard.[39]

The Coast Guard has testified that funding the AC&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 AC&I account of about $1 billion to $1.2 billion per year would leave about $200 million to $400 million per year for all other AC&I-funded programs.

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:

[39] Statement of Ronald O'Rourke, Specialist in Naval Affairs, Congressional Research Service, before the House Transportation and Infrastructure Committee, Subcommittee on Coast Guard and Maritime Transportation, Hearing on Coast Guard Readiness: Examining Cutter, Aircraft, and Communications Needs, June 26, 2013, p. 1.

> 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.[40]

An April 18, 2012, blog entry stated:

> 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.[41]

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 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."[42]

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[40] Source: Transcript of hearing.

[41] 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.

[42] 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/news/x1138492141/Coast-Guard-cutbacks-will-cost-1-000-jobs#axzz1wSDAFCzX. 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.

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 AC&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.[43]

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:

> 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 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.[44]

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:

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

[44] Transcript of hearing.

> 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.[45]

Although the annual amounts of acquisition funding that the Coast Guard has received in recent years are one potential guide to what Coast Guard acquisition funding levels might or should be in coming years, there may be other potential guides. For example, one could envision potential guides that focus on whether Coast Guard funding for ship acquisition and sustainment is commensurate with Coast Guard funding for the personnel that in many cases will operate the ships. Observations that might be made in connection with this example based on the Coast Guard and Navy budget submissions include the following:

- Using figures from the FY2014 budget submission, the Coast Guard has about 12.9% as many active-duty personnel as the Navy.[46] If the amount of funding for the surface ship acquisition and sustainment part of the AC&I account were equivalent to 12.9% of the amount of funding in the Navy's shipbuilding account, the surface ship acquisition and sustainment part of the AC&I account would be about $1.8 billion per year.[47] Navy surface ship acquisition, unlike Coast Guard surface ship acquisition, includes substantial numbers of large and complex ships, including nuclear-powered aircraft carriers, highly capable surface combatants, and large amphibious and auxiliary ships. Accounting for this difference in Navy and Coast Guard surface ship acquisition by reducing the $1.8 billion figure by, say, one-half or one-third would produce an adjusted figure of about $900 million to about $1.2 billion per year for surface ship acquisition and sustainment.
- Again using figures from the FY2014 budget submission, funding in the Navy's shipbuilding account is equivalent to about 51% of the Navy's funding for active-duty personnel.[48] If Coast Guard funding for surface ship acquisition and sustainment were equivalent to 51% of Coast Guard funding for military pay and allowances, the surface ship acquisition and sustainment part of the AC&I account would be about $1.7 billion per year.[49] Reducing the $1.8 billion figure by, say, one-half or one-third to account for differences in the types of surface ships acquired by the Navy and Coast Guard (see previous bullet point) would

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

[46] The Coast Guard for FY2014 appears to be requesting an active-duty end strength—the number of active-duty military personnel—of 41,594 (measured by the Coast Guard in full-time equivalent [FTE] positions); the Navy for FY2014 is requesting an active-duty end strength of 323,600.

[47] The Navy's proposed FY2014 budget requests $14,078 million for the Shipbuilding and Conversion, Navy (SCN) appropriation account.

[48] The Navy's proposed FY2014 budget requests $27,824 million for the Military Personnel, Navy (MPN) appropriation account.

[49] The Coast Guard's proposed FY2014 budget requests $3,425.3 million for military pay and allowances.

produce an adjusted figure of about $850 million to about $1.1 billion per year for surface ship acquisition and sustainment.

Multiyear Procurement (MYP) and Block Buy Contracting

Another potential oversight issue for Congress concerns the potential for using multiyear contracting (i.e., multiyear procurement (MYP) or block buy contracting) in acquiring new cutters. With congressional approval, certain Department of Defense (DOD) programs for procuring ships, aircraft, and other items employ MYP or block buy contracting to reduce procurement costs. Compared to the standard or default approach of annual contracting, MYP and block buy contracting have the potential for reducing procurement costs by several percent.[50]

The statute that governs the use of MYP—10 U.S.C. 2306b—makes MYP available with congressional approval not only to DOD, but to other government departments, including DHS, the parent department of the Coast Guard.[51] Congress also has the option of providing the Coast Guard with authority to use block buy contracting, as it has done for the Navy. All three of the Navy's year-to-year shipbuilding programs—the Virginia-class attack submarine program, the DDG-51 destroyer program, and the Littoral Combat Ship (LCS) program—currently use MYP or block buy contracting. In contrast, the Coast Guard has not used MYP or block buy contracting for any of its cutter procurement programs.

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:

> 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.

Potential oversight questions for Congress include the following:

- Has the Coast Guard considered using MYP or block buy contracting for procuring NSCs, OPCs, or FRCs? If not, why not?
- What would be the potential savings of using MYP or block buy contracting for procuring the final two or three NSCs, for procuring OPCs, or for procuring FRCs?
- What are the potential risks or downsides of using MYP or block buy contracting for procuring NSCs, OPCs, or FRCs?

[50] For more on MYP and block buy contracting, see CRS Report R41909, *Multiyear Procurement (MYP) and Block Buy Contracting in Defense Acquisition: Background and Issues for Congress*, by Ronald O'Rourke and Moshe Schwartz.

[51] 10 U.S.C. 2306b(b)(2)(B).

OPC Program: FY2016 Funding Request

Another potential oversight issue for Congress concerns the FY2016 funding request for the OPC program. As shown in **Table 1**, the amount requested—$18.5 million—is $71.5 million less than the $90 million that was projected for the OPC program for FY2016 under the FY2015 budget submission. As also noted earlier, the Coast Guard states, "The Administration's [FY2016 budget] request includes a [proposed legislative] General Provision permitting a transfer [of additional funding] to the OPC project if the program is ready to award the next phase of vessel acquisition in FY 2016." Potential oversight questions for Congress include the following:

- Why was the program's FY2016 funding request reduced from the $90 million projected under the FY2015 budget submission to $18.5 million?
- Who will determine whether "the OPC project if the program is ready to award the next phase of vessel acquisition in FY 2016"? What criteria will be used to make this determination?
- If additional funding is not transferred to the OPC program, what effect will this have on the program's schedule?

At a March 24, 2015, hearing on the Coast Guard's proposed FY2016 budget before the Homeland Security subcommittee of the House Appropriations Committee, the following exchange occurred:

> REPRESENTATIVE JOHN CARTER, CHAIRMAN (continuing):
>
> Now, I've got a question about this offshore patrol cutter situation. I told you in my opening remarks that it's going to be one of the largest, if not the largest, acquisition ever completed by DHS. Over $130 million has been appropriated to the program since 2004, yet we will not see an operational [O]PC until 2021. I am confused by your (inaudible) support of the (inaudible) acquisition but there are no funding requests in the [FY]'16 budget. Why are there no funds requested for a PC [sic: OPC] in [FY]'16? Your acquisition plans indicates a contract award by late '16—FY '16. What would it impact if the contract award needed to be shifted to FY '17?
>
> ADMIRAL PAUL ZUKUNFT, COMMANDANT, U.S. COAST GUARD:
>
> So we have partial funding to do—do final construction and design work for the OPC. The work would actually begin following that. We're working very closely with the Department of Homeland Security to provide the offset that will be needed to do full design work for the offshore patrol cutter in [FY]2016. The underlying criteria is affordability. We have adhered to very stable requirements. I revisited those and—and I am convinced that—that we will be able to produce an affordable offshore patrol cutter using fixed priced contracting and we have three very highly incentivized contractors competing to get this largest contract in Coast Guard history.
>
> CARTER:
>
> So that's the reason there's no fund[ing] request in the [FY]'16 (inaudible).
>
> ZUKUNFT:
>
> No, sir. I requested full funding [for the OPC program]. I'm short about $69 million to proceed forward with the final design of this. But, again, working very closely and with the

> great support of our secretary of Homeland Security to move this forward in [FY]2016. As you mentioned, I cannot afford to let this date lapse. I need relief ships for our 50-year-old ships today that will be 55-years-old by the time their relief arrives.[52]

A bit later in the hearing, the following exchange occurred:

> REPRESENTATIVE LUCILLE ROYBAL-ALLARD, RANKING MEMBER:
>
> The FY 2016 request for continued development of the offshore patrol cutter is $18.5 million which is substantially below the planned spending level in the FY 2015 CIP [i.e., five-year Capital Investment Plan] which is the most recently CIP that we have. The budget request proposes new bill language that would provide unlimited authority to transfer funding to the Coast Guard for the OPC project. What can you tell us about the need for this new transfer authority and the likelihood that the department would actually use it? And if there is a reasonable expectation that more funding for the OPC will be needed, why not just include the funding in the request?
>
> ZUKUNFT:
>
> Yes, first and foremost, we have great support from the department and so that transfer authority would be imperative for us to be able to have full funding in [FY]2016 to be able to move this project forward. You will hear from our secretary two days from now, I believe, he is testifying as well and—and, clearly, counterterrorism in the homeland is always a highest priority for our Department of Homeland Security. But at the same time so is recapitalizing in the Coast Guard, in the offshore patrol cutter. I have a very open and frank dialogue with our secretary and I need to demonstrate to him that—that we can produce an affordable offshore patrol cutter and I remain confident that I will be able to do that. And, with that, the transfer authority would be very critical for us to meet this very important timeline short of an additional appropriation for full funding to move this project forward.[53]

OPC Program: Cost, Design, and Acquisition Strategy

Another potential oversight issue for Congress concerns the Coast Guard's acquisition strategy for the Offshore Patrol Cutter. Potential oversight questions for Congress include the following:

- Has the Coast Guard fully incorporated into the OPC acquisition strategy lessons learned from the NSC and FRC programs? What, in the Coast Guard's view, are those lessons?
- As mentioned earlier, the Coast Guard's RFP for the OPC program establishes an affordability requirement of an average unit price of $310 million per ship, or less, in then-year dollars for ships 4 through 9 in the program (for the shipbuilder's portion of the total cost of the ship). How was the $310 million figure determined?
- What process is the Coast Guard using to evaluate tradeoffs in OPC performance features against this target construction price? What performance features have been reduced or eliminated to meet the target construction price?

[52] Transcript of hearing.

[53] Transcript of hearing.

- How much confidence does the Coast Guard have that the OPC that emerges from the tradeoff process could be built within the Coast Guard's target construction price?
- As mentioned earlier, the Coast Guard plans to evaluate the preliminary and contract design (P&CD) proposals and then award one of the competitors a contract for detailed design development and ship construction. What process does the Coast Guard plan to use in evaluating the P&CD efforts? What evaluation factors does the Coast Guard plan to use, and how much weight will be assigned to each?

A January 16, 2015, press report states:

> Coast Guard Commandant Adm. Paul Zukunft on Thursday [January 15] said that his staff is currently reviewing the requirements for its Offshore Patrol Cutter (OPC) with affordability in mind.
>
> The "biggest challenge that we're facing right now is that this will not be affordable," Zukunft said at the annual Surface Navy Association conference in Arlington, Va. "I've turned it back to industry…bring me a capable platform that is also affordable."
>
> Zukunft, who became commandant last May, is doing more than leave it to industry to design and produce a new and affordable medium endurance cutter for the Coast Guard. He told Defense Daily after his speech that he directed his "staff do a deep scrub on every one of the line items and so there are some line items in there that struck me."
>
> For example, he said, what is the required water pressure for firefighting? If the requirement is set too high, that affects "piping, it affects weight, [and] how big of a pump do you need." Zukunft said it's this level of detail that is being scrubbed to figure out what is needed.
>
> Zukunft describe[d] the requirements review as an "open dialogue" that is "fully transparent" with the shipbuilders competing for the 25-ship OPC buy free to weigh in.
>
> The "competitors are very incentivized to come up with an affordable product for us as well," Zukunft said.[54]

NSC Program: Preliminary and Operational Testing

Another potential oversight issue for Congress concerns the results of preliminary and operational testing of the NSC. A June 2014 GAO report stated:

> The Coast Guard has some knowledge about the performance of the National Security Cutter, gained through operational deployments and preliminary test events, and the field portion of operational testing was recently conducted. The Coast Guard has been operating the vessel since 2008, conducted a preliminary operational test in 2011, and has received certifications to fully operate and maintain helicopters as well as, according to officials, to use the cutter's information technology systems on protected networks. In addition, Coast Guard program officials stated that the National Security Cutter has demonstrated most of its key performance parameters through a myriad of non-operational tests and assessments, but

[54] Calvin Biesecker, "With Affordability In Mind, Zukunft Reviewing OPC Requirements," *Defense Daily*, January 16, 2015: 4.

a few key performance parameters, such as those relating to the endurance of the vessel and its self-defense systems have yet to be assessed. Verification of an asset's ability prior to operational testing may be beneficial, but, as we have previously found, only operational testing can ensure that an asset is ready to meet its missions.

Prior to testing, the Coast Guard encountered several issues that require retrofits or design changes to meet mission needs based upon operations, certifications, and non-operational testing. The total cost of these changes is not yet known, but changes identified to date have totaled approximately $140 million, about one-third of the production cost of a single National Security Cutter. The Coast Guard must pay for all of these and future changes due to the contract terms under which the first three ships were constructed and because the warranty on the remaining ships does not protect the Coast Guard against defects costing more than $1 million. Table 4 lists the retrofits and design changes costing more than $1 million. The table does not include all changes because the Coast Guard did not have data for some of the modifications. In addition to the $140 million in identified changes, the Coast Guard has established a program to supply the National Security Cutter with cutter small boats for an additional $52.1 million because the small boats originally planned to be delivered with the vessel did not meet requirements.

Table 4: Retrofits and Design Changes on the National Security Cutter Class Costing over $1 Million as of December 2013

Retrofits and design changes	Cost (in millions)
Primary information system replacement	$88.5
Structural enhancements	to be determined[a]
Remove Aircraft Ship Integrated Secure and Traverse tracks in flight deck[b]	to be determined
Gantry crane that aids in launching small boats from stern ramp	$31
Side davit crane for small boat operations	$12.5
Two ammunition hoists	$6.3
Breathing apparatus replacement	$1.6
Total cost	**$140**[c]

Source: GAO presentation of Coast Guard data.

Notes: The Coast Guard reported these numbers for all eight hulls. However, for some items, such as the information system replacement, the costs primarily cover retrofitting some or all of the first four hulls.

[a]The work package is being developed and, according to program officials, initial estimates are about $19 million per vessel.

[b]In January 2011, Coast Guard officials canceled the Aircraft Ship Integrated Secure and Traverse—a system intended to automate the procedure to land, lock down, and move the HH-65 helicopter from the deck to the hangar on the National Security Cutter—after significant deficiencies were identified during testing conducted by the U.S. Naval Air Warfare Center. The Coast Guard invested approximately $27 million to install the system on three National Security Cutters, including putting tracks in the flight deck that must now be removed.

[c]Several funding accounts, including acquisition funding and operations and maintenance funding, are being used for these corrections.

Additional changes may be needed because the Coast Guard has not fully validated the capabilities of the National Security Cutter, though seven vessels have been delivered or are in production. This situation could result in the Coast Guard having to spend even more money in the future, beyond the current changes, to ensure the National Security Cutter fleet meets requirements and is logistically supportable. For example, the cutter is experiencing problems operating in all intended environments. The National Security Cutter requirements document states that the cutter will conduct assigned missions in a full spectrum of climate and maritime weather conditions, to include tropical, dry, temperate, and arctic climates. This document adds that although the National Security Cutter will operate in regions in which ice is frequently encountered, it will not have an ice-breaking mission. However, Coast Guard engineering reports from December 2012 discuss problems operating in both warm and cold climates. These reports discuss several warm weather problems, including

> cooling system failures, excessive condensation forming "considerable" puddles on the deck of the ship, and limited redundancy in its air conditioning system—which, among other things, prevents the use of information technology systems when the air conditioning system needs to be serviced or repaired. In addition, according to operational reports, during a recent deployment, the Commanding Officer of a National Security Cutter had to impose speed restrictions on the vessel because of engine overheating when the seawater temperature was greater than 77 degrees. Cold climate issues include the National Security Cutter not having heaters to keep oil and other fluids warm during operations in cold climates, such as the arctic. Further, Coast Guard operators state that operating near ice must be done with extreme caution since the ice can move quickly and can "spell disaster" if the National Security Cutter comes in contact with it. Senior Coast Guard officials acknowledged that there are issues to address and stated that the Coast Guard has not yet determined what, if any, fixes are necessary and that it depends on where the cutter ultimately operates....
>
> The Coast Guard has also encountered several issues with the C4ISR [command and control, communications, computers, intelligence, surveillance, and reconnaissance] system that have required significant and costly changes, including replacing the original system. The original C4ISR system, which cost $413 million to develop and field, was designed and built as a tightly integrated system bundling large commercial and government software programs with contractor-proprietary software, which made it difficult and costly to maintain—primarily due to its unique characteristics and large size. For example, according to program officials, the Coast Guard relied on the contractor to conduct even basic system updates, which required new software code because of how the system was integrated.
>
> As a result, in 2010, the Coast Guard began replacing the C4ISR software in two steps. First, to address immediate issues, the Coast Guard separated the weapons and command and control/navigation portions of the software but maintained the ability to share data between these portions of the system. Second, the Coast Guard has developed and is now installing a new software package that shares data between proven systems, which makes the system easier to maintain. For example, the communication/navigation system is largely based upon the Navy's Global Command and Control System, a long-standing system maintained by DOD. In addition, the combat system is adapted from the Navy's Aegis system. While the previous version of the C4ISR system also contained this software, the Coast Guard's new configuration keeps these systems independent to improve performance and maintenance, while still allowing data to be passed back and forth between the software packages within the system.
>
> The Coast Guard has spent nearly $2 million to develop this new system, called Seawatch, which will have to be further developed for each asset on which it is fielded. For example, it will cost an additional $88.5 million in acquisition funds to purchase the software and hardware needed to field the system on the National Security Cutters.[55]

GAO testified on May 14, 2015, that

> The Coast Guard has all 8 NSCs on contract or delivered as of May 2015, and, as we reported in April 2015, completed operational test and evaluation in April 2014. All 8 NSCs are planned to be fully operational by 2020 and the Coast Guard is phasing out the legacy 378'-foot high endurance cutters as the NSCs become operational. We are currently conducting a detailed review of the NSC's recent test event at the request of this subcommittee. We reported in April 2015, however, that during this initial operational

[55] Government Accountability Office, *Coast Guard Acquisitions[:] Better Information on Performance and Funding Needed to Address Shortfalls*, GAO-14-450, June 2014, pp. 17-21.

testing, the NSC was found to be operationally effective and suitable, but with several major deficiencies. For example, the NSC's small boat—which is launched from the back of the cutter—is not suited to operate in rough waters (sea state 5) as intended. Coast Guard officials told us they planned to test a new small boat by March 2015. In addition, the Coast Guard deferred testing for several key capabilities on the cutter, such as cybersecurity, the use of unmanned aerial systems, or its ability to handle certain classified information. Coast Guard officials said follow-on operational tests will be conducted between fiscal years 2015 and 2017. While future tests will be key to understanding the NSC's capabilities, any necessary changes resulting from these tests will have to be retrofit onto all 8 NSCs since they are all either built or under contract. In June 2014, we found that the NSC program had at least $140 million in retrofits and design changes to fund and implement on the NSC fleet.

As we also reported in June 2014, further changes may be needed due to issues discovered through operating the NSC, which could result in the Coast Guard having to spend even more money in the future to ensure the NSC fleet meets requirements and is logistically supportable. For example, the cutter is experiencing problems operating in warm climates, including cooling system failures, excessive condensation forming puddles on the deck of the ship, and limited redundancy in its air conditioning system affecting use of information technology systems. According to operational reports from a 2013 deployment, the Commanding Officer of an NSC had to impose speed restrictions on the vessel because of engine overheating when the seawater temperature was greater than 68 degrees. In addition, cold climate issues on the cutter include a lack of heaters to keep oil and other fluids warm during operations in cold climates, such as the arctic. Further, Coast Guard operators state that operating near ice must be done with extreme caution since the ice can move quickly and the NSC could sustain significant damage if it comes in contact with the ice. In June 2014 we reported that while senior Coast Guard officials acknowledged that there were issues to address, they stated that the Coast Guard has not yet determined what, if any, fixes are necessary and that it depends on where the cutter ultimately operates.[56]

NSC Program: Rotational Crewing

A March 2015 GAO report stated that

> The Coast Guard has delayed the feasibility test for using the crew rotation concept (CRC) to achieve increased operational days at sea with its National Security Cutters (NSC) until 2019. In 2006, the Coast Guard decided to use the CRC for its NSCs and that implementation would begin in 2011. However, the Coast Guard has postponed CRC testing because of delays in NSC deliveries and needed structural enhancements. In fiscal year 2013, the Coast Guard began implementing an interim plan to increase the NSCs' operational performance, not by rotating crews, but by adding crew members to help bear the increased workload. However, the added crew members do not have the skill mix recommended by a 2011 manpower requirements analysis. Without the appropriate crew members with the right skill mix, the NSCs may not be able to complete all mission requirements or required maintenance.
>
> The Coast Guard has not fully addressed a variety of risks that could affect the success of its planned CRC feasibility test and goal to increase NSC operational days away from home port (DAFHP) from 185 to 230 days per year using the CRC. Further, the Coast Guard could

[56] Government Accountability Office, *Coast Guard Acquisitions[:] As Major Assets Are Fielded, Overall Portfolio Remains Unaffordable*, GAO-15-620T, May 14, 2015, pp. 7-8.

not provide us with complete details about whether the CRC plan, to be completed by the end of 2017, will include actions to address and effectively mitigate various risks, to include

• determining the appropriate number and skill mix of NSC crew members and support personnel and whether they will be in place in time for the CRC test;

• incorporating actual NSC maintenance needs when developing NSC maintenance schedules and goals;

• testing the CRC under realistic circumstances, such as addressing the misalignment of the crewing concept to be tested as compared to the NSC homeporting plan;

• addressing the potential impacts of wide variations between alternative deployment schedules using the CRC; and

• implementing a training infrastructure and providing training support for off-cycle rotating crews.

As the Coast Guard continues to develop its CRC plan, establishing interim milestones for carrying out the actions needed to address and effectively mitigate these risks would help ensure that it addresses the risks in a timely manner.

The Coast Guard's current measure does not accurately quantify the operational performance of the NSC fleet. The Coast Guard primarily uses the DAFHP measure across its major cutter fleet; however, this measure includes days when a cutter is undergoing maintenance away from its home port and, as a result, will likely overstate the number of operational days. The Coast Guard has known of the measure's limitation for years and is exploring alternatives. However, since the CRC plan is premised on achieving 230 DAFHP per year—and that other Coast Guard vessels, such as the Offshore Patrol Cutter, also plan to use the DAFHP metric—implementing alternative measures prior to CRC testing will better ensure the test results are benchmarked against a more appropriate goal to quantify the operational performance of its fleet of NSCs and its planned fleet of Offshore Patrol Cutters.[57]

FRC Program: Operational Testing

Another potential oversight issue for Congress concerns the results of operational testing of the FRC. A June 2014 report on Coast Guard acquisition programs states that

> DHS approved the Fast Response Cutter and [the] HC-144 [maritime patrol aircraft] for full-rate production in September 2013 and October 2012, respectively. However, neither asset met all key requirements during initial operational testing. The Fast Response Cutter partially met one of six key requirements while the HC-144 met or partially met four of seven. The Fast Response Cutter was found to be operationally effective (with the exception of its cutter boat) though not operationally suitable, and the HC-144 was found to be operationally effective and suitable. As we have previously found for Department of Defense (DOD) programs, continuing with full-rate production before ensuring that assets meet key requirements risks replicating problems in each new asset until such problems are corrected. DHS officials stated that they approved both assets for full-rate production because the programs had plans in place to address most major issues identified during testing, such as

[57] Government Accountability Office, Coast Guard[:] Timely Actions Needed to Address Risks in Using Rotational Crews, GAO-15-195, summary page.

supplying the Fast Response Cutter with a small boat developed for the National Security Cutter. However, DHS and Coast Guard acquisition guidance are not clear regarding when the minimum performance standards should be met, such as prior to entering full-rate production. For example, DHS and Coast Guard guidance provide that the Coast Guard should determine if the capability meets the established minimum performance standards, but do not specify when this determination should be made. By comparison, DOD acquisition guidance requires that specific minimum performance standards, which are defined at the time assets are approved for system development, be met prior to entering full-rate production.

In addition, DHS and Coast Guard acquisition guidance do not clearly specify how agency officials determine when a breach occurs and what triggers the need for a program manager to submit a performance breach memo. According to DHS and Coast Guard acquisition guidance, when programs fail to meet key performance parameters, program managers are required to file breach memorandums stating that the program did not demonstrate the required capability. Even though threshold key performance parameters on the HC-144 and Fast Response Cutter were not met during operational testing, the Coast Guard did not report that a breach had occurred. Acquisition guidance is unclear as to whether or not failing to meet key requirements during operational testing constitutes a breach. According to Coast Guard officials, if the Coast Guard plans to re-test or re-design a deficiency in order to meet the threshold value, then a breach has not yet occurred. For example, the Fast Response Cutter small boat did not meet the threshold seakeeping requirement, but a new cutter small boat has since been tested on its own and fielded to all Fast Response Cutters. The Coast Guard plans to test this new cutter small boat with the Fast Response Cutter during follow on testing. Program officials are confident that the cutter's new small boat meets this requirement and that—therefore—a breach has not occurred. DHS acquisition guidance specifies the performance criteria used to determine whether or not a breach has occurred, but does not identify a triggering event for determining when a breach occurs. DHS's Program Accountability and Risk Management officials stated that a program breach is not necessarily related to its performance during initial operational testing, which they state is a snapshot of a single asset's performance during a defined test period. Without clear acquisition guidance, it is difficult to determine when or by what measure an asset has breached the threshold values of its key performance parameters and—therefore—when to notify DHS and certain congressional committees....

COTF [Commander, Operational Test and Evaluation Force] determined in July 2013 that the Fast Response Cutter, without the cutter's small boat, is operationally effective—meaning that testers determined that the asset enables mission success. The cutter's small boat was determined to not be seaworthy in minimally acceptable sea conditions and—therefore—could not support the cutter's mission set. Further, COTF determined that the Fast Response Cutter is not operationally suitable because a key engine part failed, which lowered the amount of time the ship was available for missions to an unacceptable level. Despite the mixed test results, COTF and DHS testers as well as Coast Guard program officials all agree that the Fast Response Cutter is a capable vessel. Ultimately, COTF recommended that the Coast Guard proceed to field the vessel, but also recommended that the issues with the cutter's small boat be remedied expeditiously and that follow-on operational testing be conducted once corrective actions have been implemented. Since the test, the Coast Guard has delivered a new small boat that meets the Fast Response Cutter's needs and determined that the engine part failure was an isolated event.

The Navy also examined the extent to which the Fast Response Cutter meets key requirements. The test demonstrated that it partially met only one out of its six key requirements; the other five requirements did not meet minimum performance levels or were not tested. Table 2 displays each key performance parameter for the Fast Response Cutter, the test results, and a discussion of these results.

Table 2: Key Performance Parameter Test Results for the Fast Response Cutter

Key performance parameter (threshold requirement)	Was KPP tested?	KPP met?	Test result	Discussion
Top speed (28 knots)	No	N/A	N/A	Speed was not tested during initial operational testing due to a fuel oil leak. Speed has been assessed during preliminary acceptance trials and the vessel has reached top speed following the replacement of the original propeller. Since this change, all 9 FRCs have demonstrated at least 28 knots during other test events.
Fuel endurance (5 Days)	No	N/A	N/A	Not assessed due to inaccurate fuel level indicators.
Independent operations duration (5 days)	No	N/A	N/A	The Coast Guard's ability to independently operate the vessel was not tested. The cutter was still under warranty; thus, all maintenance was the responsibility of the shipbuilder at the time of the test.
Sea-keeping (conduct all operations in sea state 4)	Yes	No	The cutter small boat could not conduct operations in sea state 4.	Since the test, the Coast Guard has purchased new cutter small boats that are performing well according to crews. These boats have gone through their own testing and will be tested with the Fast Response Cutter during follow-on operational testing, which is scheduled to commence by the end of fiscal year 2015.
Interoperability (share information with internal and external partners)	Partial	Partial	Radios and some data transfers were successfully tested.	Communication with operational headquarters, intelligence units, external DHS, DOD and local assets, as well as other shore installations, were not tested.
Operational availability (85 percent)	Yes	No	47 percent	A key engine part failed during testing and it took 11 days to receive the part and conduct repairs, resulting in significant downtime during testing. Thus, the ship's availability to conduct missions during the test period was limited. Since testing was completed the FRC has experienced additional engine issues, including at least two generations of faulty cylinder head gaskets.

Source: GAO analysis of Navy and Coast Guard data.

> The Coast Guard proactively sought to test the Fast Response Cutter early in the acquisition process, but early testing limited the ability to fully examine the vessel. For example, the Coast Guard did not test the top speed of the vessel due to a fuel oil leak. As noted above, DHS approved the Fast Response Cutter for full-rate production, but directed the program to develop corrections for the issues identified during operational testing and to verify those corrections through follow-on operational testing by the end of fiscal year 2015.[58]

GAO testified on May 14, 2015, that

> As we reported in June 2014, operational testers within the Department of the Navy determined in July 2013 that the FRC, without the cutter's small boat, is operationally effective—meaning that testers determined that the asset enables mission success. However, these operational testers also determined that the FRC is not operationally suitable because a key engine part failed, which lowered the amount of time the ship was available for missions to an unacceptable level. Despite the mixed test results, Navy and DHS testers as well as Coast Guard program officials all agreed that the FRC is a capable vessel, and the Coast Guard plans to confirm that it has resolved these issues during follow-on testing planned to be completed by the end of fiscal year 2015.[59]

[58] Government Accountability Office, *Coast Guard Acquisitions[:] Better Information on Performance and Funding Needed to Address Shortfalls*, GAO-14-450, June 2014, pp. 13-16.

[59] Government Accountability Office, *Coast Guard Acquisitions[:] As Major Assets Are Fielded, Overall Portfolio Remains Unaffordable*, GAO-15-620T, May 14, 2015, pp. 8-9.

Legislative Activity for FY2016

Summary of Appropriations Action on FY2016 Acquisition Funding Request

Table 7 summarizes appropriations action on the Coast Guard's request for FY2016 acquisition funding for the NSC, OPC, and FRC programs.

Table 7. Summary of Appropriations Action on FY2016 Acquisition Funding Request

Figures in millions of dollars, rounded to nearest tenth

Request	Request	House Appropriations Committee	Senate Appropriations Committee	Final
NSC program	91.4	103.4	731.4	
OPC program	18.5	89	18.5	
FRC program	340	340	230.0	
TOTAL	449.9	532.4	979.9	

Source: For request: Coast Guard FY2016 budget submission. For House Appropriations Committee: H.Rept. 114-215, p. 61. For Senate Appropriations Committee: S.Rept. 114-68, p. 80.

FY2016 Department of Homeland Security (DHS) Appropriations Act (H.R. 3128/S. 1619)

House

Section 516 of H.R. 3128 as reported by the House Appropriations Committee (H.Rept. 114-215 of July 21, 2015) states:

> Sec. 516. Any funds appropriated to "Coast Guard, Acquisition, Construction, and Improvements" for fiscal years 2002, 2003, 2004, 2005, and 2006 for the 110–123 foot patrol boat conversion that are recovered, collected, or otherwise received as the result of negotiation, mediation, or litigation, shall be available until expended for the Fast Response Cutter program.

H.Rept. 114-215 states:

> Recommendation
>
> The Committee recommends $1,301,289,000 for Acquisition, Construction, and Improvements (AC&I), $284,020,000 above the amount requested and $76,066,000 above the amount provided in fiscal year 2015.
>
> The Committee is alarmed by the significant decrease in the President's budget request for AC&I. The Coast Guard continues to communicate publicly that its fleets of aircraft and vessels are in desperate need of recapitalization. Many vessels are decades beyond their useful life. Though the need for recapitalization programs is apparent, the budget request fails to meet the requirement. The Committee recommends a significant increase to the

> AC&I request and expects the Department and the Administration to provide a more realistic AC&I budget request in the future. (Page 60)

H.Rept. 114-215 also states:

> National Security Cutter
>
> The Committee recommends $103,400,000 for the National Security Cutter (NSC) program, $12,000,000 above the amount requested and $529,447,000 below the amount provided in fiscal year 2015. The increase above the request will support the top-side engineering design work required for the permanent installation of small UAS, along with associated testing activities and critical spares. The fiscal year 2015 appropriation provided sufficient funding to acquire the eighth NSC, which is the final NSC of record. The Committee notes that funding for additional NSCs beyond the program of record would be neither operationally necessary nor warranted, would create potentially unsustainable operational funding requirements in the future, and could potentially threaten funding for other Coast Guard acquisition priorities.
>
> Fast Response Cutter
>
> The Committee recommends $340,000,000 to acquire six additional Fast Response Cutters (FRCs), as requested, and $230,000,000 above the amount provided in fiscal year 2015.
>
> Offshore Patrol Cutter
>
> The Committee recommends $89,000,000 for the Offshore Patrol Cutter (OPC) program, $70,500,000 above the request and $69,000,000 above the amount provided in fiscal year 2015.
>
> The fiscal year 2016 budget request did not include funding for the detailed design and construction of the high priority OPC, even though the Coast Guard's acquisition schedule includes a projected contract award date during fiscal year 2016. Instead, the budget proposed open-ended transfer authority without clear direction as to the source of funding when the award is made in fiscal year 2016. The Coast Guard has repeatedly communicated that the OPC is its highest acquisition priority, yet this is not reflected in the budget request. The Committee recommends the appropriate level of funding to ensure the OPC contract can be awarded, and the Coast Guard can begin the process of recapitalizing its aging fleet of medium endurance vessels. The planned OPC program will be the Department's largest acquisition program ever, and the Administration should make this a top priority by requesting the appropriate level of future funding to ensure success. (Page 62)

Senate

In S. 1619 as reported by the Senate Appropriations Committee (S.Rept. 114-68 of June 18, 2015), the paragraph that appropriates funds for the Coast Guard's Acquisition, Construction, and Improvements (AC&I) account includes a provision that states:

> *Provided*, That, of the funds provided by this Act, not less than $640,000,000 shall be immediately available and allotted to contract for the production of the ninth National Security Cutter notwithstanding the availability of funds for postproduction costs....

Section 516 of the bill as reported states:

> Sec. 516. Any funds appropriated to "Coast Guard, Acquisition, Construction, and Improvements" for fiscal years 2002, 2003, 2004, 2005, and 2006 for the 110–123 foot patrol boat conversion that are recovered, collected, or otherwise received as the result of negotiation, mediation, or litigation, shall be available until expended for the Fast Response Cutter program.

Section 559 of the bill as reported states:

> Sec. 559. Notwithstanding the limitations as to threshold, time, and condition of section 503 of this Act, the Secretary may propose to reprogram or transfer to the Coast Guard for the Offshore Patrol Cutter Project: (1) discretionary appropriations made available by this Act, to remain available until September 30, 2017, and (2) the unobligated balances of discretionary appropriations made available by prior Department of Homeland Security Appropriations Acts: Provided, That any amounts proposed for reprogramming or transfer under this section shall not be available for obligation until the Committees on Appropriations of the Senate and the House of Representatives approve of such reprogramming or transfer: Provided further, That this section shall not apply to amounts that were (1) classified as being in the revised security category, as defined under section 250(c)(4)(D) of the Balanced Budget and Emergency Deficit Control Act of 1985, as amended (BBEDCA); (2) designated by the Congress for Overseas Contingency Operations/Global War on Terrorism or as an emergency requirement pursuant to the Concurrent Resolution on the Budget or BBEDCA; or (3) designated as being for disaster relief pursuant to section 251(b)(2)(D) of BBEDCA.

S.Rept. 114-68 states:

> As an extension of our border security needs, the Coast Guard's vessel and air fleets are vital. Yet, the age of those fleets and their antiquated capabilities beg recapitalization and modernization. Year after year, the President's budget requests short-change Coast Guard's acquisition needs and year after year, the Coast Guard's Commandants indicate before Congress that their annual acquisition budget is insufficient. As the Coast Guard proceeds towards selecting a final design for the Offshore Patrol Cutter [OPC], the Committee sees an opportunity for a ninth National Security Cutter [NSC] in the interim. The most capable vessel ever commissioned by the Coast Guard, the NSC will replace aging high endurance cutters which were state-of-the-art nearly a half-century ago. In addition to cutter needs, the Committee continues its acquisition and sustainment investments in the Coast Guard's icebreaking fleet, directs further guidance from the Coast Guard on their air fleet mix, and increases investments in critical shore facilities. (Page 6)

S.Rept. 114-68 also states:

> BERING SEA COVERAGE
>
> The Committee is concerned that adequate cutter coverage in the Bering Sea and Arctic Region will become increasingly difficult to achieve as the medium endurance cutter Alex Haley and high endurance cutter Munro have both exceeded 40 years of service life under extremely demanding conditions.
>
> Not later than 60 days after the date on enactment of this act, the Secretary shall submit to Congress a report on the plans of the Coast Guard to ensure that at least one cutter capable of operating in and patrolling the Bering Sea and Arctic Region maintains a presence in the Bering Sea and Arctic Region at all times during the 10-year period beginning on the date of such submittal. This report shall include the following:

(1) For each cutter of the Coast Guard involved in patrolling the Bering Sea and Arctic Region on the day before the date of enactment of this act that the Secretary considers a legacy cutter, the date on which the Secretary expects to decommission the cutter;

(2) For each cutter described in (1), the date on which the Secretary expects to replace the cutter;

(3) The Committee expects the replacement cutters to meet or exceed the current capabilities of the legacy assets, keeping in mind the growing presence of China and Russia; and

(4) The Coast Guard's plan to ensure there are no gaps in coverage during this 10-year period. (Pages 75-76)

S.Rept. 114-68 also states:

COMMITTEE RECOMMENDATIONS

The Committee recommends $1,573,269,000 for Acquisition, Construction, and Improvements, including $24,500,000 from the Oil Spill Liability Trust Fund. This is $556,000,000 above the amount requested and $348,046,000 above the amount provided in fiscal year 2015.

The increase above the President's request is a reflection of what the Committee views as an underfunded recapitalization effort which simply cannot provide new assets at the pace required. The sheer age of the Coast Guard's assets is staggering, including high endurance cutters from the 1960s, a dry dock at the Coast Guard Yard which had its heyday during World War II, and C–130H aircraft which will continue to age without necessary upgrades as they await transfer or replacement. The Coast Guard cutter Reliance celebrated its 50th anniversary in 2014 and in 2015 was at the Coast Guard Yard in the dry dock Oakridge for repairs. The combined age of these two assets was over 120 years. This poses questions about not only mission efficacy but also of crew safety.

In addition to recapitalizing aging infrastructure and vessels, the Committee is concerned about the Coast Guard's air fleet mix. While the Coast Guard inducts the C–27J it has prudently paused the C–144A but has not indicated to Congress whether it still requires additional C–130Js. How the Coast Guard expects to transition to an all ''J'' fleet by the mid-2020s is unclear, and the Coast Guard's Capital Investment Plan [CIP] for 2016–2020 is silent. Similarly troubling is the neglect of the unmanned aircraft systems [UAS] procurement. The Coast Guard will procure its first operational UAS in 2015 at the direction of Congress despite having already commissioned four National Security Cutters with which they should be paired. (Pages 79-80)

S.Rept. 114-68 also states:

NATIONAL SECURITY CUTTER

The National Security Cutter [NSC] is the largest and most technologically advanced cutter the Coast Guard has ever placed into service. Built to replace the aging 378-foot high endurance cutters commissioned in the late 1960s and early 1970s, the NSC has no peer within the Coast Guard and is effectively a floating sector, equally capable of search and rescue in the Bering Sea or counternarcotics enforcement in the South Pacific. It is also currently the only vessel within the Coast Guard capable of detecting and defending its crew against chemical, biological and radiological attacks and its suite of sensors and secure communications capabilities make its domain awareness unmatched in the fleet.

Since commissioning of the first NSC in 2008 the Legend-class cutters have demonstrated their efficacy continuously. In 2012, a newly commissioned NSC was dispatched to the Arctic tasked with monitoring exploratory drilling and performing domain awareness, operational response, and command and control functions. In subsequent years, the NSC had led multinational coalitions in the biannual Rim of the Pacific Exercise and continues to seize thousands of pounds of illicit drugs bound for the United States.

In 2011, a cutter study commissioned by the Coast Guard indicated that ''the NSC has a mature design, stable requirements, demonstrated operational performance and predictable costs''. And given the Coast Guard's experience with its current fleet of high endurance cutters with an average age of 46 years old, it's likely that the Coast Guard will have the NSCs it procures now for decades to come. The Coast Guard has also stated that central to its plan to replace its legacy high endurance cutters is a new crew rotation concept [CRC] which would ultimately increase days away from home port for the new NSCs. Unfortunately, the Coast Guard has yet to fully test the CRC and will not understand its feasibility until 2019 meaning that the Coast Guard's goal of meeting or exceeding operational performance of the legacy high endurance cutters within the NSCs Program of Record may fall well short of mission needs.

For these reasons, the Committee recommends $640,000,000 for award and production costs associated with a ninth National Security Cutter, notwithstanding future costs for post-delivery activities.

FULL FUNDING POLICY

The Committee again directs an exception to the administration's current acquisition policy that requires the Coast Guard to attain total acquisition cost for a vessel, including long lead time materials [LLTM], production costs, and post-production costs, before a production contract can be awarded. This has the potential to create shipbuilding inefficiencies, force delayed obligation of production funds, and require post-production funds far in advance of when they will be used. The Department should be in a position 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].

FAST RESPONSE CUTTER

The Committee recommends $230,000,000 for the Coast Guard's Fast Response Cutter [FRC]. This funding will allow the Coast Guard to acquire four FRC hulls (33–36) and supports base award of the phase II re-compete FRC production contract. This contract will allow options for four, five, or six cutters.

OFFSHORE PATROL CUTTER

The recommendation includes $18,500,000 for the OPC, as requested. Funding is provided to support Preliminary and Contract Design [P&CD] deliverables to complete the P&CD phase and related support for the acquisition. The Committee also includes language whereby the Department may propose a reprogramming or transfer of $70,500,000 to award Detailed Design, should the Coast Guard be prepared to award in fiscal year 2016....

UNMANNED AIRCRAFT SYSTEMS

The Committee is concerned that the Coast Guard will commission its fifth NSC in the summer of 2015, but have only one UAS pair to support deployments. Since the early days of Coast Guard recapitalization under the Deepwater Program, UAS were integral to the

overall ‘‘system of systems.’’ Over a decade later, the Coast Guard still appears unsure of how to incorporate UAS technology despite examples of such integration within DHS and across the Federal Government.

The Committee expects the Coast Guard to continue its longstanding plan to conduct vertical take-off and landing UAS flight demonstrations. The Coast Guard has reported to the Committee that this system would enhance the surveillance capabilities of the NSC and estimates a significant increase in the number of prosecutions achieved by the cutter. The Committee continues to be very supportive of the use of vertical take-off UAS aboard Coast Guard cutters and strongly encourages the Coast Guard to ensure that the acquisition schedule is not delayed for this enhanced surveillance capability. The Committee is encouraged by the successful results of the Coast Guard’s cutter-based testing and evaluation completed in December, 2014. The Coast Guard is directed to provide a report outlining its plans to acquire and utilize this capability with the fiscal year 2017 budget request. (Pages 82-83)

Coast Guard Authorization Act of 2015 (H.R. 1987)

House

Section 206 of H.R. 1987 as reported by House Transportation and Infrastructure Committee (H.Rept. 114-115 of May 15, 2015) states:

SEC. 206. Long-term major acquisitions plan.

Section 2903 of title 14, United States Code, as redesignated and otherwise amended by this Act, is further amended—

(1) by redesignating subsection (e) as subsection (f); and

(2) by inserting after subsection (d) the following:

“(e) Long-Term major acquisitions plan.—Each report under subsection (a) shall include a plan that describes for the upcoming fiscal year, and for each of the 20 fiscal years thereafter—

“(1) the numbers and types of cutters and aircraft to be decommissioned;

“(2) the numbers and types of cutters and aircraft to be acquired to—

“(A) replace the cutters and aircraft identified under paragraph (1); or

“(B) address an identified capability gap; and

“(3) the estimated level of funding in each fiscal year required to—

“(A) acquire the cutters and aircraft identified under paragraph (2);

“(B) acquire related command, control, communications, computer, intelligence, surveillance, and reconnaissance systems; and

“(C) acquire, construct, or renovate shoreside infrastructure.”.

Regarding Section 206, H.Rept. 114-115 states:

> *Sec. 206. Long term major acquisitions plan.*
>
> Under current law, the Navy provides Congress with a long-term plan for its shipbuilding requirements. The Coast Guard does not conduct a similar long-term planning effort for its major assets. This section would improve oversight of the Coast Guard's effort to recapitalize its major assets by requiring the Service to develop a long-term plan for its acquisition needs and the funding levels to support them. (Page 30)

H.Rept. 114-115 also states:

> *Investment in Coast Guard capabilities*
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> The Committee has long had concerns about the adequacy of capital investment in Coast Guard assets and infrastructure. Enforcing federal laws in, under, over the high seas and waters subject to the jurisdiction of the United States is a complicated task requiring a workforce that is highly trained in many areas from marine and aviation operations to marine safety. It also requires a substantial number of physical assets from cutters and aircraft, to buoys and shoreside facilities. The Coast Guard and GAO have both done estimates of what is required in annual Coast Guard capital investment. These estimates range from $1.5 to more than $2.0 billion depending on whether the goal is to maintain existing capability or to achieve capabilities closer to those imagined in the 2005 Mission Need Statement (MNS), or in the approved acquisition program of record. In recent years, administration budget requests have fallen woefully short of even meeting minimum needs and appropriations have only been able to make up a fraction of the shortfall. In fiscal year 2016, the President is requesting $1 billion for the Coast Guard's Acquisition, Construction, and Improvement (AC&I) account. This represents a cut of over $200 million or 17 percent from the FY 2015 enacted level.
>
> Section 215 of P.L. 113–281[60] requires the submission of a revised MNS which explains how each major acquisition program addresses identified mission hour gaps, and describes the missions the Coast Guard will be unable to fully achieve for each gap identified. The Committee will do oversight based on this MNS when it is submitted in July 2015. Pending that updated information, H.R. 1987 authorizes the Coast Guard's AC&I account at $1.5 billion for each of the fiscal years 2016 and 2017, approximately $500 million more than the President's FY 2016 request. The Committee believes long-term funding at this level will allow the Coast Guard to maintain current mission capability. However, the Committee acknowledges that even at the level of capital funding proposed in this authorization, certain Coast Guard missions simply will not be done or will be done at an operations tempo far short of what is needed to adequately carry them out. The Committee looks forward to continuing to work with the Coast Guard for the remainder for the 114th Congress to determine how to better align missions and assets under current budget constraints and to identify those missions which may be best handled by other entities.
>
> As mentioned, section 215 of P.L. 113–281 requires the Coast Guard to update its 2005 MNS which provides the underlying justification for its asset recapitalization program. H.R. 1987, as amended, builds on that requirement by adding a review of Coast Guard manpower needs. Without a sufficient number of trained servicemembers operating assets, readiness and mission performance suffers. Without trained Coast Guard inspectors and environmental

[60] S. 2444/P.L. 113-281, the Howard Coble Coast Guard and Maritime Transportation Act of 2014 of December 18, 2014.

responders, maritime safety and environmental response regulations have no real world effect. The Committee believes these documents will assist in our oversight and our efforts to improve Coast Guard mission performance. (Pages 21-22)

H.Rept. 114-115 also states:

> *Section 101. Authorizations*
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> This section authorizes $8.7 billion in discretionary funds for the Coast Guard for each of the fiscal years 2016 and 2017. This is the same level of funding that was authorized for the Coast Guard in section 101 of P.L. 113–281. It also authorizes an end-of-year strength for active duty Coast Guard personnel of 43,000 and sets military training student loads for each of the fiscal years 2016 and 2017.
>
> The President's budget for FY 2016 includes a request to transfer an undefined amount of money from an undefined source within the Department of Homeland Security to the Coast Guard to complete detailed design of the Offshore Patrol Cutter (OPC). The Committee is very concerned with this erratic approach to budgeting. This approach is especially troubling for the OPC as the need for the cutter has been well and thoroughly documented and the requirements for which have been widely and extensively vetted. Failure to enter into a contract for detailed design of the OPC before the end of FY 2016 will significantly increase the cost and substantially delay this vital acquisition. The Committee is very concerned that further delays in the initiation of the procurement will only exacerbate existing gaps in Coast Guard mission capabilities. This section authorizes sufficient funds within the Coast Guard's AC&I account to enter into a contract for detailed design of the OPC in FY 2016. The Committee expects the Coast Guard to ensure, to the maximum extent practicable, that it awards a contract for detailed design of the OPC at the earliest possible date. (Pages 28-29)

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