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THE CHALLENGES THAT MAINTAINING LEGACY ASSETS POSES TO UNITED STATES COAST GUARD MISSION PERFORMANCE

(112–105)

HEARING

BEFORE THE

SUBCOMMITTEE ON
COAST GUARD AND MARITIME TRANSPORTATION

OF THE

COMMITTEE ON
TRANSPORTATION AND
INFRASTRUCTURE
HOUSE OF REPRESENTATIVES

ONE HUNDRED TWELFTH CONGRESS

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U.S. House of Representatives
Committee on Transportation and Infrastructure

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Washington, DC 20515

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Ranking Member

James H. Zoia, Democrat Chief of Staff

September 14, 2012

MEMORANDUM

TO: Members, Subcommittee on Coast Guard and Maritime Transportation

FROM: Staff, Subcommittee on Coast Guard and Maritime Transportation

RE: Hearing on "The Challenges of Maintaining Legacy Assets Pose to United States Coast Guard Mission Performance".

PURPOSE

On Thursday, September 20, 2012, at 2:00 p.m., in 2167 Rayburn House Office Building, the Subcommittee on Coast Guard and Maritime Transportation will hold a hearing to examine the challenges the Coast Guard faces maintaining its legacy assets and how those challenges impact the Service's mission performance.

BACKGROUND

The Coast Guard began a process of replacing its aging vessels and aircraft in the late 1990's. The program's focus was those assets that carry out missions farther than 50 miles from shore, as well as the modernization of the information technology systems that the Service relies upon to coordinate its operations. The program was known as the Integrated Deepwater System (Deepwater). To manage the acquisition program, the Coast Guard contracted with a Lockheed Martin/Northrop Grumman team, called the Integrated Coast Guard System (ICGS).

Deepwater encountered significant quality and cost issues. It was the subject of several hearings and an investigation by the Committee. It was also the subject of review by the Government Accountability Office (GAO) and the Department of Homeland

Security's Inspector General. Accordingly, the Coast Guard terminated the Deepwater contract with ICGS and is now performing the acquisition functions in-house.

The problems with Deepwater led to considerable delays in the delivery of new and refurbished assets. The Service does not expect to complete its recapitalization of legacy assets until the mid-2030's, approximately ten years behind the 2004 Deepwater baseline schedule. In the meantime, the Service's legacy vessels and aircraft are either approaching, or have exceeded, their intended service lives. The age of the legacy assets, coupled with increased operations tempos, have led to increased rates of failure among the assets' parts and major systems. This, in turn, has increased scheduled and unscheduled maintenance costs and reduced patrol hours which have negatively impacted operational readiness and mission performance.

Legacy Vessels

The Coast Guard currently operates a total of 77 legacy vessels. This includes:

- 9 378' High Endurance Cutters (HEC) with an average age of 42.8 years and an estimated service life of 40 years;
- 13 270' Medium Endurance Cutters (MEC) with an average age of 25 years and an estimated service life of 30 years;
- 14 210' MECs with an average age of 45.3 years and an estimated service life of 47 years;
- 41 110' Patrol Boats (PB) with an average age of 23.1 years and an estimated service life of 20 years.

Condition of Legacy Vessels

The Coast Guard regularly conducts a variety of inspections and assessments of the condition of its legacy vessel fleet. In its report entitled "Legacy Vessels' Declining Conditions Reinforce Need for More Realistic Operational Targets" (GAO 12-741), the GAO reviewed these assessments and found systems critical to the operation of the legacy vessels has been increasingly prone to mission-degrading casualties. The most common mission degrading casualty for the legacy vessel fleet in fiscal years 2010 and 2011 were the main diesel engines.

Legacy Vessel	FY 2010 Top Mission Degrading Casualty	FY 2011 Top Mission Degrading Casualty
378' HEC	Main Diesel Engines	Main Diesel Engines
270' MEC	Diesel Generators	Main Propulsion Control
210' MEC	Main Diesel Engines	Main Propulsion Control
110' PB	Main Diesel Engines	Main Diesel Engines

Coast Guard maintenance managers for the HEC and MEC fleets reported to the GAO that with the vessels nearing the end, or exceeding, their services lives, the

performance of critical systems have been increasingly unpredictable. The GAO also noted that repairs to these systems have a relatively high rate of failure. For instance, in fiscal years 2009 and 2010, the Service spent approximately $200,000 to rebuild several HEC main diesel engines. However, some of the engines broke down within a short period of time because other parts of the engines, not included in the rebuild, failed.

Increasing Maintenance Costs

The Coast Guard uses two metrics to track annual depot level maintenance expenditures: scheduled and unscheduled maintenance. Scheduled maintenance denotes planned activities based on historical maintenance needs of the vessel class. Unscheduled maintenance specifies unplanned, episodic activities conducted in response to part or system failures which adversely affect the asset's ability to conduct missions. The Service also tracks deferred maintenance. Deferred maintenance is the value of any planned depot level maintenance that did not start on schedule and did not commence before the last day of the fiscal year.

The GAO found that scheduled maintenance expenditures generally rose for the legacy vessel fleet from fiscal years 2007 through 2011. From fiscal years 2008 to 2011, scheduled maintenance costs increased from $46.1 million to $61 million, a 32 percent increase. The GAO found that unscheduled maintenance costs varied by legacy vessel class from fiscal years 2007 through 2011. However, with the exception of the PBs, unscheduled maintenance represented at least 20 percent of the total maintenance expenditures for the rest of the legacy fleet in fiscal year 2011. Finally, while the total value of deferred maintenance for the legacy fleet has fallen in recent years, – largely due to Congress appropriating more than was requested by the administration – it continues to grow for the PBs (by 68 percent from fiscal years 2010 to 2011) and for the MECs (by 112 percent from fiscal years 2010 to 2011).

Increases in maintenance expenditures for the legacy fleet are largely the result of the age of the vessels. In addition to the increased frequency of part or system failures which comes with age, many parts are obsolete and need to be reengineered by the Coast Guard or remanufactured by a supplier at considerable cost.

Operating Below Target Levels

The Coast Guard uses several metrics to track and assess whether its assets are operating at planned levels.

Operational Percent of Time Free of Major Casualty:

The Coast Guard primarily uses the operational percent of time free of major casualties (OpPOTF) as a measure of the physical condition of its legacy vessel fleet. After reviewing OpPOTF data for fiscal years 2005 through 2011, the GAO found the legacy fleet as a whole generally remained well below target levels.

The Coast Guard has an annual OpPOTF performance target of 72 percent for HEC and MEC fleets, and a performance target of 86 percent for the PB fleet. From fiscal years 2005 through 2011, the HECs only averaged 44 percent OpPOTF, while the MECs averaged 59 percent OpPOTF. The OpPOTF for the PB fleet from fiscal years 2005 through 2011 never exceeded 63 percent.

Lost Cutter Days:

Each year, the Coast Guard tracks lost cutter days, which are the number of planned operational days that the HEC and MEC fleets are unavailable to conduct operations, typically due to unscheduled maintenance. Lost cutter days are a primary indicator of operational readiness. The GAO found that the HECs and MECs collectively lost 3,710 cutter days from fiscal years 2006 through 2011, an average of approximately 618 lost cutter days per year. Specifically, the HEC fleet lost 2,791 cutter days from fiscal years 2006 to 2011. For fiscal years 2009 through 2011, the HEC fleet lost 1,895 cutter days, the equivalent of three HECs being out of service each of those fiscal years. The MEC fleet lost 919 cutter days from fiscal years 2006 through 2011.

Operational Hours:

The Coast Guard sets targets for the number of hours each asset is expected to be operational on an annual basis. The GAO found the operational hours for the HEC, MEC, and PB fleets have generally declined since fiscal year 2005. For instance, in fiscal year 2011, the legacy fleet's cumulative target for operational hours was 222,740, yet the actual number of operational hours achieved was 180,202, about 23 percent less. Specifically, the HEC fleet did not meet the Coast Guard's operational hour target in any year from fiscal year 2005 through 2011, declining by about 32 percent from fiscal year 2008 to 2011. The MEC fleet also generally did not meet its operational hour targets, with only the 270-foot MECs meeting their targets in fiscal year 2008, and the total operational hours of the 270-foot and 210-foot MEC classes combined declining nearly 21 percent from fiscal year 2007 to fiscal year 2011. The 110-foot PB fleet did not meet operational hour targets in five of the last seven fiscal years, averaging 16 percent below targets.

Impact on Operations

Coast Guard officials reported to the GAO that the declining ability of its legacy fleet to meet operational performance targets has been the prime contributor to the Service's diminishing ability to meet its mission needs, including the interception of threats, such as illegal narcotics before they reach U.S. waters. The Coast Guard has noted that the failure of the HEC fleet to fulfill planned cutter days and meet its OpPOTF targets has reduced the Service's ability to conduct operations in Alaska and has reduced the hours spent conducting drug interdiction activities by 65 percent from fiscal years 2007 through 2010. The Service also noted that the decline in the MEC fleet's operational hours has undermined its alien interdiction mission. From fiscal years 2007 through 2010, the number of operational hours spent conducting alien interdiction activities declined by 40 percent and the number of migrants interdicted dropped by 1,000.

There has also been a growing amount of anecdotal evidence of the extent to which failing legacy assets are impacting operations. For example, in the aftermath of the Haiti earthquake in 2010, the Coast Guard reported that 10 of the 12 legacy vessels deployed to Haiti to assist in humanitarian relief operations suffered severe failures of parts or systems, which diminished their availability to deliver emergency aid and perform medical evacuations.

Coast Guard Actions to Address the Situation

The Coast Guard has implemented several strategies to improve the condition of its legacy fleet, reduce maintenance costs, and mitigate the impact lost operational capacity is having on its missions.

New Maintenance Command Structure:

In 2009, the Coast Guard reorganized its maintenance command structure with a focus on standardization of practices. Under the reorganization, the Service eliminated two commands which managed the maintenance and logistic for its legacy vessels and replaced them with a centralized command structure, the Surface Forces Logistics Center (SFLC). Under the SFLC, a single manager oversees the maintenance of an entire class of vessels. This has improved the oversight of the condition of the vessels, provided unified support to procure parts, and centralized maintenance plans and schedules for the fleets. Having better understanding of the conditions and status of the entire fleet enables the Service to prioritize preventive maintenance and identify maintenance trends.

Mission Effectiveness Projects:

The Coast Guard is nearing completion of Mission Effectiveness Projects (MEP) for the MECs and PBs which began in fiscal year 2005 and cost $450 million. The MEPs are sustainment projects intended to improve the legacy vessels' operating and cost performance by replacing obsolete, unsupportable, or maintenance-intensive equipment that had been key sources of degraded performance.

The Coast Guard completed the MEP on the PBs in September 2010. The scope of the MEP for the PBs was considerable, but not all vessels in the fleet underwent sustainment work. The Coast Guard refurbished only 17 of the 41 PBs in the fleet. The Service replaced significant areas of hull plate and internal structures where corrosion is present, overhauled the engines, upgraded the propulsion control systems, and installed new generators, air conditioners, water makers, and fire suppression systems. The Service planned to conduct a MEP on 21 PBs, but scaled back the program in response to budget concerns and the acceleration of the Fast Response Cutter (FRC) acquisition (see below).

The scope of the MEP for the MECs focuses on upgrading selected systems, rather than the almost complete overhaul that the PBs received. MEC work includes replacement of primary sources of degraded equipment, such as the main propulsion control and monitoring system, small boat davits, and air conditioning systems, but does not involve the replacement of main diesel engines. As of July 2012, the Service had

completed work on all 14 210' MECs and six of the 13 270' MECs. The project is scheduled to be complete in fiscal year 2014.

Fast Response Cutter Acceleration:

Under the Deepwater program, ICGS proposed to extend the service life of the PB fleet by conducting an overhaul of the vessels, and improve the PB's capability by lengthening its hull by 13 feet and adding a stern launch system for small boats. The conversion of the PBs was supposed to extend its service life through 2020 when ICGS would begin fielding a replacement vessel made from a composite hull. In May 2007, the Coast Guard was forced to abandon the project and decommission the eight converted PBs after the hulls buckled in operational testing. The U.S. government is still trying to recover from ICGS the $96 million spent on the project.

With the failure of the conversion project and the loss of eight PBs, the operational hours of the PB fleet suffered. In June 2007, the Coast Guard solicited industry for a replacement vessel for the PB. To reduce the time it would take to acquire the new asset, the Service stipulated that the design for the replacement would have to be a "parent-craft", meaning a vessel design already tested and in production somewhere in the world. In September 2008, the Coast Guard awarded a contract to Bollinger Shipyards of Lockport, LA, to build up to 34 FRCs based on a patrol boat design in use by the Netherlands. To date, three FRCs are in service.

The President's fiscal year 2013 budget request proposes to withhold up to $139 million provided by Congress in fiscal year 2012 to construct six new Fast Response Cutters (FRC), opting instead to construct four FRCs in fiscal year 2012. The Service then proposes to combine the withheld $139 million from the fiscal year 2012 appropriations with an additional $139 million requested in fiscal year 2013 to construct four FRCs in fiscal year 2013. H.R. 5855, the Homeland Security Appropriations Act for fiscal year 2013 rejects the Administration's request to delay the acquisition of the FRC by directing the Coast Guard to build six FRCs in fiscal year 2012. The bill also provides funding to acquire an additional four FRCs in fiscal year 2013.

High Tempo High Maintenance Operations:

In response to growing operational hour shortfalls in the PB fleet, the Coast Guard began the High Tempo High Maintenance (HTHM) operations in February 2007. Under HTHM, eight PBs were double crewed and received increased maintenance evolutions to keep the vessels operational for double the programmed operational hours (approximately 14,000 hours). The President's fiscal year 2013 budget request proposes to terminate the HTHM program and return the eight PBs to pre-HTHM operational hours, which will exacerbate the growing gap in operational capacity.

Accelerated Asset Decommissionings:

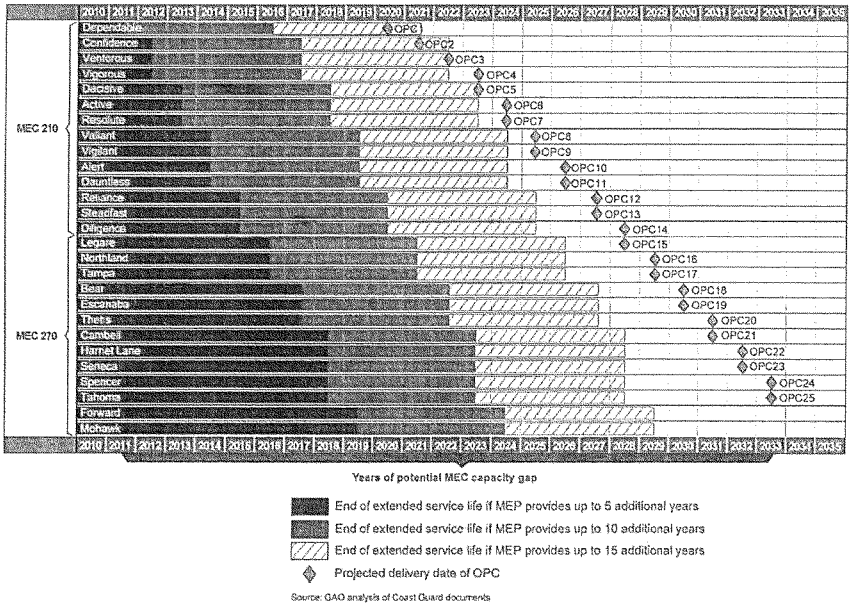
In fiscal year 2011, in an effort to reduce growing maintenance expenditures, the Coast Guard began accelerating the decommissioning of certain legacy vessels before all of their replacements were delivered. To date, the Service has decommissioned 3 HECs,

1 MEC, and 3 Navy-owned 179' patrol boats the Service had operated. The decommissionings saved the Service approximately $13 million in maintenance costs.

The President's fiscal year 2013 budget request proposes to decommission an additional 2 HECs, as well as 3 PBs. These decommissionings would save the Service approximately $5 million in maintenance costs.

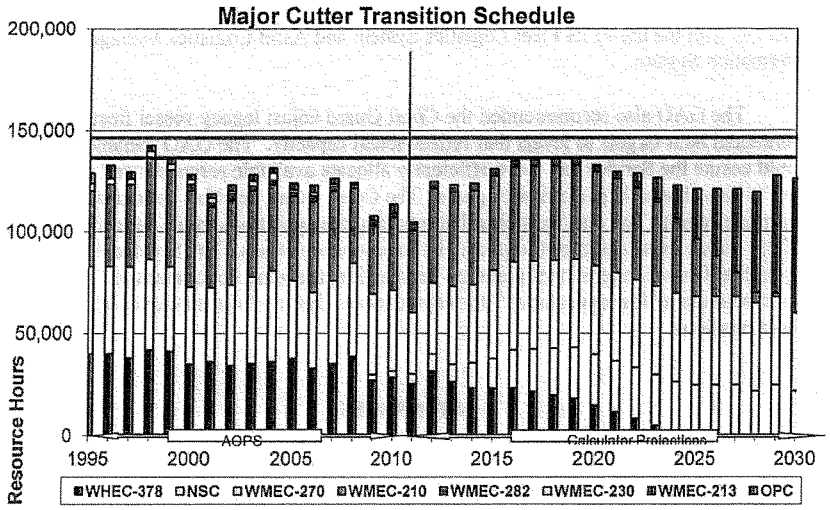
Future Operational Capacity Gaps

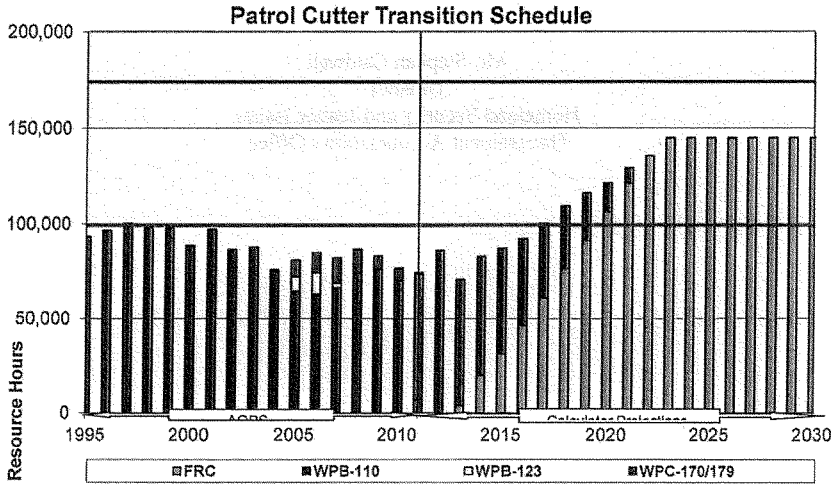
Delays in the delivery of replacement vessels, the accelerated pace of legacy asset decommissionings, and the growing rate of legacy asset failures is exacerbating the operational capacity gap. The problem is especially acute in the MEC fleet. Under the Coast Guard's current recapitalization plans, the MECs will be in service into the mid-2030's before the fleet will be fully replaced by the new Offshore Patrol Cutter (OPC). However, the MEP for the MECs will not extend the service life of the MECs until that time. The Coast Guard has informed staff it is convening a Ship Structure Machinery Engineering Board later this year to begin the process of evaluating the current condition of the MEC fleet and examine ways to extend the fleet's service life. H.R. 5855, the Homeland Security Appropriations Act for fiscal year 2013, includes $5 million to survey the condition of the MEC fleet in anticipation of an additional MEP.



Other factors are affecting the operational capacity gap include: uncertain future funding levels for new and refurbished assets; the final numbers of new and refurbished assets that will be acquired; as well as whether the Coast Guard will proceed with plans to implement a crew rotation system for the HEC's replacement, the National Security Cutters (NSC). The Service's five year Capital Investment Plan (CIP) does not include funding to acquire the planned 7th and 8th NSCs. If these NSCs are not acquired or their deliveries are delayed, it is unclear how that would affect the decommissioning schedule for the HECs, and whether the Service would need to increase the planned buy of OPCs to cover the operational capacity gap. Furthermore, the program of record governing the acquisition of the NSC assumes eight NSCs will achieve more operational capacity than the 12 HECs they are replacing, but this is predicated on the Coast Guard operating the NSCs for 230 days a year. The only way to achieve 230 days away from homeport is to rotate the NSCs' crews on a regular basis. However, the Coast Guard is now reevaluating this concept over concerns about cost and impact on servicemembers' morale.

The Coast Guard tracks the impact on operational capacity of the transition from legacy assets to new and refurbished assets in the Transition Schedule charts below. The chart includes two horizontal lines which represent the operational hour goals for the assets based on a mission needs statement (MNS). The MNS helps the Service determine the amount of capability, including operational hours, it needs to get out of its assets to successfully conduct its 11 statutory missions. The red horizontal line represents the number of hours needed to meet the Service's mission demands in 1998. The blue horizontal line represents the number of hours needed to meet the post-September 11th mission demands. Both charts assume steady maintenance and acquisition funding for new assets, as well as the acquisition of all eight NSCs and the implementation of the NSC crew rotation concept. Even under those scenarios, the Service will fall tens of thousands of hours short of the operational hours needed to meet its post-September 11th mission demands.





GAO Recommendations

The GAO report produced two recommendations for the Coast Guard. The first recommendation was for the Service to adopt the GAO's best practices for cost estimating its annual depot-level maintenance expenditures. The Coast Guard concurred

with this recommendation and states it has already begun implementing these best practices with the use of its Fleet Logistics System and Asset Logistics Management Information System.

The GAO also recommended the Coast Guard adjust legacy vessel fleet operational hour targets to levels that reflect actual capacity. The GAO contends this would ensure the Service can more efficiently allocate available resources and enable them to set achievable performance goals. The Coast Guard does not concur with this recommendation. The Service states that reducing the operational hour targets would fail to fully utilize those assets not impacted by maintenance issues. The Service further argues that from an operational planning perspective, reducing the operational target would result in a "lost opportunity" for capital assets that are fully able to conduct Coast Guard missions.

WITNESSES

Rear Admiral Ronald J. Rabago,
Assistant Commandant for Engineering and Logistics
United States Coast Guard

Mr. Stephen Caldwell
Director
Homeland Security and Justice Issues
Government Accountability Office

THE CHALLENGES THAT MAINTAINING LEGACY ASSETS POSES TO UNITED STATES COAST GUARD MISSION PERFORMANCE

THURSDAY, SEPTEMBER 20, 2012

HOUSE OF REPRESENTATIVES,
SUBCOMMITTEE ON COAST GUARD AND
MARITIME TRANSPORTATION,
COMMITTEE ON TRANSPORTATION AND INFRASTRUCTURE,
Washington, DC.

The subcommittee met, pursuant to notice, at 2:21 p.m. in Room 2167, Rayburn House Office Building, Hon. Frank LoBiondo (Chairman of the subcommittee) presiding.

Mr. LOBIONDO. The subcommittee will come to order. Mr. Larsen is on his way, and he gave us, in light of the delay because of the votes, the green light to get started with the committee. So I will start with my statement.

The subcommittee is meeting this afternoon to review the challenges the Coast Guard faces maintaining its legacy assets and examine how those challenges impact the Service's mission and performance.

Findings by GAO and others over the years have accurately shown the rapid decline of legacy assets that is causing the Coast Guard to fall short of its operational targets, forcing the Service to spend too much of its tight budget on maintenance and undermining the success of its critical safety and security missions. This is a very serious problem that has me and, I believe, many others very deeply concerned.

Rather than alleviate my concerns, the President-proposed fiscal year 2013 budget for the Coast Guard only makes the situation that much worse. The budget request would exacerbate the growing patrol boat mission hour gap by ending High-Tempo-High-Maintenance operations, and retiring vessels before their replacements arrive. The budget request would also slash funding for the critically needed replacement assets by $272 million, or 19 percent below the current level. Clearly unacceptable.

This would significantly delay the acquisition of the critically needed replacement assets, including Fast Response Cutters, National Security Cutters, Maritime Patrol Aircraft, and Long Range Surveillance Aircraft. It also proposes to put off important upgrades to the Jayhawk helicopter fleet, and delay sustainment projects on Buoy Tenders. Fortunately, our colleagues on the Appropriation Committee have found the dollars to reverse these very draconian cuts.

However, the problem remains that as we are forced to pour more money into maintaining rapidly failing legacy assets, there is less available for replacement assets. And as we put off acquisition of new assets, we only increase the strain of legacy assets. Admiral Allen used to call this the death spiral.

While the Coast Guard has taken steps to improve the conditions of its legacy fleet and the efficiency of its maintenance command, more needs to be done. There are many questions that need to be answered as a result of GAO's latest study. The ballooning costs of scheduled and unscheduled maintenance are a major problem that needs to be addressed. So we are growing operational gaps in the legacy fleet.

The Coast Guard continues to operate tens—and in some cases hundreds of thousands—of hours short of its operational targets. This means assets are not there for the Service to conduct drug and migrant interdiction, protect our environment, secure our ports, and ensure the safety of our waterways. I hope that Admiral Rábago can tell us what the plan is to get out of this death spiral and ensure mission performance.

I also look forward to hearing Mr. Caldwell's insight into some of the key findings from the GAO report.

I thank both of you for coming this afternoon. And with that I would like to yield to Mr. Larsen.

Mr. LARSEN. Thank you, Mr. Chairman. And I appreciate that you found time before the House adjourns to reschedule this afternoon's hearing regarding the status of the Coast Guard legacy assets.

Throughout the course of this Congress I have stressed that we cannot expect the Coast Guard to do more with less at this time. The GAO's new report of the crumbling condition of the Coast Guard's legacy fleet provides perhaps the most conclusive evidence we have yet received that, in fact, the Coast Guard is being forced to do less with less.

The GAO's analysis highlights the dilemma that the Coast Guard now finds itself in as it struggles with insufficient budgets. On the one hand, the Coast Guard is struggling to overcome billions of dollars in cost overruns and years of scheduled delays in its effort to recapitalize its entire fleet of offshore cutters and patrol boats. Yet the very steep cost of recapitalization, along with the time table that has been pushed out far to the right by more than a decade, forces the Coast Guard to rely on its legacy assets which grow less reliable and more costly to maintain and operate yearly.

Under the present circumstances, much of which the Coast Guard brought upon itself due to its failed deepwater program, the Coast Guard is caught between the proverbial rock and a hard place. For example, the GAO reports that the condition of each class of legacy assets is poor and generally declining, and that each class failed to meet key physical condition targets for the period between fiscal years 2005 and 2011.

Additionally, depot-level maintenance expenditures for the legacy fleet have increased, and the prospect is that these costs will continue to increase as these vessels are pushed further and further past their life expectancies.

Worst of all, due to the declining condition of its legacy assets, the GAO concludes that the Coast Guard's present operational capacity targets are unrealistic. In effect, the GAO is simply paraphrasing what I have been saying all along: the Coast Guard will be doing less with less.

The Coast Guard is now forced to choose between two vital needs, either funding the construction of a new modern fleet of offshore vessels, or maintaining its aged and unreliable legacy assets. The end result will be diminished maritime security presence.

Considering the gravity of the situation, I do want to commend the Coast Guard for the steps it has taken already to partially address these circumstances, especially its reorganization of its command structure and its timely implementation of a mission effectiveness project, or MEP, for the Medium Endurance Cutters and 110-foot patrol boats.

Yet knowing what we know now, I find it troubling the Coast Guard has still failed to develop new budget proposals for additional MEPs or for the service life extension projects to bolster the operational capacity of its legacy assets for the next 10 to 15 years. I hope Admiral Rábago will address exactly where the Coast Guard is in this process to develop a budget proposal.

The unfortunate truth is that we can no longer ignore the reality that the GAO has laid before us in the report. We can choose to devote additional resources to ensure the Coast Guard maintains its operational readiness throughout its lengthy transition to a new fleet, or we can continue the current path of budget cuts, which we know will risk the operational readiness of a Coast Guard—of the Coast Guard now, and well into the future.

Present constraints leave us little choice but to examine carefully the assets and resources we devote to the Coast Guard. And certainly I am no advocate of blindly throwing money to solve the problem. We clearly are confronting a budget situation that means the Coast Guard might be less effective in drug interdiction at sea or might not respond as quickly to mariners in distress, or to communities devastated by natural disaster. I am suggesting that we can no longer continue to cut the Coast Guard's budget as if it had no effect. We need to set aside differences to find a way to provide the Coast Guard with the resources it needs. And without that effort, we cannot expect the Coast Guard to maintain the same excellent services they now give our Nation.

With that, I yield back.

Mr. LOBIONDO. Thank you, Mr. Larsen. Our witnesses today are Coast Guard Rear Admiral Ronald Rábago, assistant commandant for engineering and logistics, and Mr. Stephen Caldwell, director of GAO's homeland security and justice issues team.

Admiral, you are recognized.

TESTIMONY OF REAR ADMIRAL RONALD J. RÁBAGO, ASSISTANT COMMANDANT FOR ENGINEERING AND LOGISTICS, UNITED STATES COAST GUARD; AND STEPHEN L. CALDWELL, DIRECTOR, HOMELAND SECURITY AND JUSTICE ISSUES, GOVERNMENT ACCOUNTABILITY OFFICE

Admiral RÁBAGO. Good afternoon, Chairman LoBiondo, Ranking Member Larsen, and other distinguished members of the sub-

committee. I am privileged to appear before you today in my capacity as the Coast Guard's chief engineer to address the many challenges of maintaining our aging assets—in particular, our service fleet. I also thank you for your continued strong advocacy for the men and women of the Coast Guard, and for your oversight.

I would like to acknowledge the work of Mr. Stephen Caldwell and his team at GAO, who recently completed this comprehensive study highlighting the difficulties associated with sustaining operational availability of the Coast Guard's cutter fleet. The external perspective provided by the GAO report not only underscores the challenges that our cutter crews and shoreside maintenance personnel face on a daily basis, but it also provides actionable recommendations to improve our cost estimating processes.

The Coast Guard has taken these recommendations, and has begun a review of our vessel repair estimating procedures. Along other management improvements, which I will discuss in a moment, standardization of cost estimating will further strengthen our ability to deal with the highly unpredictable nature of maintaining an aging fleet.

The Coast Guard is operating a fleet of cutters that are approaching or are beyond their designed service life. Periodic and substantial investments like our mission effectiveness project are critical to sustaining an aging fleet. The in-service vessel sustainment project and our capital investment plan will also enable us to institutionalize this strategic approach across multiple cutter classes in the coming years.

However, despite periodic investments and the dedicated cutter crews, there is a point when it becomes too costly to repair aging cutters and/or to retrofit their particular systems. A good example of this is our 378-foot High Endurance Cutters, which were constructed in the 1960s. These cutters frequently deploy in a degraded state of mission readiness. Their obsolescences also contributes to increased repair times, while critical parts are repaired or even remanufactured because they are no longer available from suppliers. Obsolescence is also prevalent on our 140-foot ice breaking types, navigation fleets, and other cutter classes, which are fast approaching or well beyond their design service lives.

Despite the declining condition of several classes of our fleet, our cutter crews somehow continue to overcome these significant challenges and remarkably respond when our Nation calls. In the recent weeks, inland navigation cutters the *Saginaw* and the *Hatchet*, average age 40-plus years, responded in the wake of Hurricane Isaac and helped restore vital commercial traffic on impacted waterways within days of the storm's passage.

As I noted earlier, over the last 3 years we have fundamentally reorganized the way we manage our surface fleet maintenance programs. We have centralized resources and governance to streamline and standardize support. We have established the surface logistics center to consolidate functions that were previously executed among three separate commands.

Our regional industrial capabilities, including the Coast Guard yard in Baltimore, were brought under centralized programmatic oversight. We continue to make substantial progress working with the Department of Homeland Security to improve our financial

audit position. All of this has significantly enhanced our ability to manage costs and respond to operational priorities across the entire enterprise, including efficient management of our newest ships, the National Security Cutters and the Fast Response Cutters.

In our new maintenance organization led by product line managers, we have emphasized first and foremost the completion of critical plan maintenance, and are appreciative of Congress' support of our efforts to reduce deferred maintenance. This will improve the resiliency of our fleet and has enabled us to better support the operational commander's requirements and ensure good stewardship of the resources that are entrusted to us.

Maturation of our support network extends beyond the lifelines of the Coast Guard. We have expanded partnerships with the Navy's Naval Sea Systems Command and the American Bureau of Shipping. Agreements with the Navy have enabled us to tap into their expertise for technical analysis, design, and peer review. We also regularly consult with ABS on a variety of technical areas that enable us to take advantage of their expertise and experience.

Under our commandant's leadership, we are carefully balancing resources to both sustain our aging fleet and to acquire much-needed new assets, thereby ensuring the Coast Guard can effectively execute its missions today and long into the future.

Finally, there are no routine in-port periods for our aging fleet. The moment a cutter returns to home port from an operational mission, the crew begins extensive maintenance and repair efforts to ensure they are ready to sail for the next mission. Without the many dedicated and talented men and women working very long hours, our fleet would not sail. I could not be more proud of our cutter crews and shoreside maintenance professionals who work through these significant challenges to ensure your Coast Guard is always ready to perform its many missions.

Thank you for the opportunity to testify before you today. I look forward to answering your questions.

Mr. LOBIONDO. Thank you, Admiral.

Mr. Caldwell?

Mr. CALDWELL. Chairman LoBiondo and Ranking Member Larsen, thank you for asking GAO to be here to talk about the legacy fleet. My written statement summarizes our July report, and it focused on the condition, cost, and performance of these legacy vessels.

As noted, the key issue here is that the recapitalization program, formally known as Deepwater, experienced schedule delays that have required the Coast Guard to depend longer on the legacy fleet. And the recapitalization program has also experienced major cost escalation from the original estimates of $17 billion to current estimates of roughly $29 billion, which puts pressure on the Coast Guard's overall budget and its ability to maintain and potentially upgrade the increasingly unreliable legacy fleet.

The overall result of this situation factor is that the performance is dropping from the legacy fleet, which is degrading the Coast Guard's ability to do its overall mission. Further, continued instability in the plans for the recapitalization fleet create additional uncertainties regarding mission performance.

For example, more than 10 years into the Deepwater recapitalization, there is still some uncertainty over the size of the new fleet, in terms of both the NSCs and the OPCs, and there is uncertainty over the Coast Guard's commitment to use multiple crews to achieve 230 days away from home port for the new vessels.

In preparing for this testimony, I looked through GAO's many reports over the years on the Coast Guard's fleet, both old and new, and I would like to share an overall observation. In general, the Coast Guard has been overly optimistic in its assumptions about its bridging strategies, and how well they will work to bridge the gap between the old and the new fleet. These assumptions have not proven valid in the face of time and budget realities. I would like to cite a few examples.

In 2008 we reported on lost operational hours caused by the failed attempt to upgrade existing patrol boats to 123 feet. As part of its bridging strategy, the Coast Guard planned to use multiple crews in a High-Tempo-High-Maintenance, or HTHM, program, to increase operational hours from 1,800 to 4,000 hours per year for each of eight patrol boats. In doing our work in 2012 we learned the Coast Guard operational hours were as low as 1,200 hours for some vessels in some years, and only one boat had achieved or exceeded the 4,000 hours in 1 year during the several years of the HTHM program.

As another example, in 2009 we reported delays in fielding the NSCs, and that the new vessels were being fielded without several of the originally planned capabilities. When asked how they planned to maintain performance in this situation, the Coast Guard at that time told us that they planned a major sustainment program for the legacy High Endurance Cutters, and that they would carefully manage the mix of these cutters and the NSCs to maintain a total of 12 major cutters until all the NSCs were fielded. During our 2012 report, and getting the update from the Coast Guard, we learned that the High Endurance Cutter sustainment program was never funded, nor are there plans at this time to do so. And now the Coast Guard has accelerated the decommissioning of the High Endurance Cutters.

In 2012, the most recent report, we noted that the Coast Guard has expended considerable time and money to carefully pick which cutters of the Medium Endurance fleet it wants to upgrade through the MEP program and what order it wants to do so. Coast Guard was optimistic in that these medium cutters could provide several more years of service. Yet some of these vessels, such as the *Northland*, experienced multiple major system failures soon after they went through the MEP program.

Because of delays in the acquisition of the OPCs, the operational gap that is of most concern is that of these Medium Endurance Cutters. And as shown on our July report on page 38, the gap is exacerbated by uncertainty as to whether the MEP will provide an additional 5, 10, or 15 years of service.

My final example of Coast Guard optimistic assumptions relate to the current capital investment plan. As you know, this plan is subject to change every year, but the most recent plan in the President's budget shows the NSC class acquisition stopping at six vessels. The Coast Guard continues to support the program of record

of eight NSCs. But, as we know, there is a shortage of at least $1 billion in the capital investment program needed for those two additional vessels.

In closing, I would like to say that lower expectations are probably in order here. As the Coast Guard continues its transition from the old to the new fleet, it is not likely to achieve the same performance that Congress may be expecting. I think that is already clear, based on your comments so far.

And as Congress continues to deal with budget deficits through appropriations, Coast Guard is not likely to receive all the vessels with all the capabilities that it may be expecting.

With that, I am happy to respond to any questions.

Mr. LOBIONDO. All right. Thank you, Mr. Caldwell. Admiral, I got to say before I actually get into the questions, I find it stunning and very disappointing that you chose not to address the GAO report in your remarks. I don't know how we don't get into this at some point.

The GAO recommends that the Coast Guard set an annual operational performance target based on actual capacity, actual capacity, of legacy vessels available to carry out their missions. The Coast Guard sets those targets based on the assumption that available assets operate 100 percent of the planned operating time, which, obviously, they don't.

It is clear that the aging High Endurance Cutters and the Medium Endurance Cutters and patrol boats will never meet that target. The Service adjusts its mission-performance targets annually, but does not adjust legacy vessel operational hour targets annually. Setting such targets annually would allow the Coast Guard to conduct more realistic planning, and allow Congress to more fully understand the impact of delaying both the maintenance and replacement of those assets. And that is key so that we, Mr. Larsen and I, can convince our colleagues that this is a very real problem. I am not sure the Coast Guard is presenting this the way they should.

And, of course, we know it is a high priority of the Coast Guard to provide Congress with the most accurate, easily understood, transparent information regarding how it meets mission-performance targets. So can you shed some light on why does the Coast Guard oppose providing realistic mission target objectives by setting legacy operational hour targets annually?

Admiral RÁBAGO. Yes, sir. The Coast Guard sets those operational targets based on the resources that are provided for the vessels. It is true that, in the aggregate, our fleet is not achieving those objectives, those targets. However, individual vessels, and in particular geographic areas, we are able to achieve that. We are able to achieve those targets. And we use those targets as a goal to decide where we want to put the resources.

The operational commanders can express their prerogative to emphasize and apply resources or direct the maintenance manager to keep certain vessels in particular areas up to a higher level. In fact, they do that, and we have allocated resources, and some of our vessels do in fact achieve those targets in particular areas. However, as an aggregate, it is a true statement, sir, that we are not meeting the current targets.

In our MEP program, mission effectiveness program, which has been effective in terms of improving the reliability—and we get a third-party analysis of the results, and we have shown that the operational availability of that fleet has in some cases doubled, especially for the 110-foot. But also it showed up in the 210- and 270-foot vessels. So that project has, in fact, increased the operational—and now we are working to our targets.

Where we achieve that, sir, we are battling the aging fleet. These vessels, as you know, sir, are 40 and some approaching 50 years old, and that is a continuing challenge. But the targets themselves represent something we are striving towards, and something that we follow the operational commander's direction. And we can prioritize and achieve those targets, at least geographically, or within particular missions, if so directed by the operational commander. But not for the whole fleet. We are not doing that, as you mentioned, sir.

Mr. LOBIONDO. Admiral, in 2010 Congress changed the law to require the Coast Guard's newly acquired vessels to be classed by the American Bureau of Shipping, a standard all commercial vessels must meet. Classification ensures that vessel designs are safe, that vessels are built to the latest marine engineering standards, and reduces the likelihood of structural problems when the vessels are ultimately delivered.

Once the Coast Guard takes delivery of the Fast Response Cutter and the Offshore Patrol Cutter, does the Service intend to maintain these vessels in class? And, if not, why not?

Admiral RÁBAGO. We see great value in the classification at delivery. The standards that ABS has set for commercial vessels, some of which are directly transferable to Coast Guard cutters, have been very valuable in setting standards that we have designed our ships to. Certainly we have seen that with the FRC, which was delivered in class, as one of its contract requirements. And we are proceeding with that with the Offshore Patrol Cutter with the naval vessel rules classification standard. And, in fact, that vessel will be classed at delivery.

The Coast Guard is—has a number of initiatives with ABS, where we use their expertise and experience after the vessels have been delivered. We have done this for many years, and we continue to value that. Whether we will keep the vessel in class or not is—we have tried that in the past. We have tried it with our 175 and our 225 vessels for a period of time, and at least for those vessels at that time it was not a—we didn't get the reliability or additional value out of it for the expenditure of funds, and also for the hours and the people that were involved in the process of keeping it within class.

So right now we do not anticipate keeping them in class. However, we continue to work with ABS to get a lot of value out of the things that they do provide us, which are areas of structure and other things which ABS sets the standards for, which we do conform to, because they are good maritime standards.

Mr. LOBIONDO. Admiral, many vessels in the Medium Endurance Cutter fleet have exceeded their service lives, while others are fast approaching the end of their service life. The MEC replacement, the Offshore Patrol Cutter, has yet to be designed, and will not be

fully fielded until the mid-2030s, at the earlier. The Coast Guard is expected to complete its mission effectiveness project on the Medium Security Cutter fleet in fiscal year 2014. In previous testimony before the subcommittee, the Service indicated this would be the last overhaul needed by the MECs before the OPCs come in online.

Is it still the belief of the Coast Guard that these Medium Endurance Cutters will last another 10, 15, maybe even 20 years past their life expectancy without another overhaul?

Admiral RÁBAGO. Sir, as we complete the mission effectiveness project, we are going to be taking those vessels through a process called the Ship Structure and Machinery Evaluation Board. This is an evaluation process that we have used for many years. It puts out very, very good information. And it will tell us what the expected life of the particular systems and also the structure of the ship.

When we complete that, we will be able to project whether or not we need to have another mid-life or some sort of a life extension, or another mission effectiveness project for particular systems for those vessels. And once we learn that information, I will be able to answer that question more fully. It is a number of years until the OPCs will replace the current MEC fleet. But we will evaluate. We conduct these SSMEBs periodically to assess the fleet, because we realize that things change, especially on older vessels. So we do this to gain a good baseline, and then project whether we need to make other investments, including follow-ons to the mission effectiveness project.

Mr. LOBIONDO. Mr. Caldwell, I have a couple questions for you, but I would like now to turn to Mr. Larsen, and then I will come back to you.

Rick?

Mr. LARSEN. Mr. Chairman. And actually, I will start with Mr. Caldwell.

You assert in your written statement the operational percentage time free of major casualties for the Coast Guard legacy assets are well below target levels, and that looming in the immediate future is a growing gap in the Coast Guard's operational capacity. Concerning that finding, and the increasing trend in the difference between target levels and actual performance as expressed in figure 10 of your report, is it reasonable to assume that gap will continue to increase in the absence of any acceleration in the delivery of new assets or substantial new increase in the Coast Guard's maintenance budget for its legacy assets?

Mr. CALDWELL. The biggest gap that we see right now is maybe 10 or 12 years out. That is when the medium-endurance fleet—which is the furthest out in terms of replacement—will have the biggest problems. That is when those ships are going to be the oldest, and the OPCs will be coming in at a rate of maybe two a year, but potentially far behind the rate that MECs may have to be decommissioned. And those still in service are certainly going to be operating at lower than optimum rates.

We have a chart in our report that shows this period of 2024 to 2033 may be the peak of that gap. So we are not there yet, but it is going to get worse.

Mr. LARSEN. Well, and that gets to the point. Do you assume a certain—a constant rate of—I won't say "failure," that is a strong word, but a constant rate of maintenance, as opposed to an acceleration rate, acceleration rate of maintenance necessary for the MEC?

Mr. CALDWELL. The assumption that we made in our report is that the current MEP will provide either 5, 10, or 15 years of additional life to those vessels. In some cases, you know, you may get lucky, and a ship has good systems and will work, and in some cases a ship won't. And those ships won't perform well and will have to be decommissioned earlier.

I am not an engineer, I don't quite understand this, but the surprising thing for me in doing this review is that once you get to an older ship, there is a great deal of imprecision in determining how long a major repair will last. So we went to the Coast Guard with various estimates and settled on using those three assumptions, 5, 10, and 15 years. But it would be based on the current MEP. We have no assumption of a new MEP, because there is not a new MEP in the budget.

Mr. LARSEN. Sure. So I was a little surprised to read in your statement that the Department of Homeland Security objected to your recommendation that the Coast Guard adjust legacy vessel fleet operational hour targets to reflect actual capacity, as appropriate by class. Can you explain the DHS's concern with your recommendation to address operational hour targets?

Mr. CALDWELL. It is somewhat convoluted. What we and the Coast Guard agree upon is that the Coast Guard has been unable to meet these operational targets, and we also agree that while collectively not meeting these targets, some of the individual vessels do meet those targets.

In our discussions with Coast Guard and DHS, there was a concern that by lowering those targets, the Coast Guard was lowering the expectations of what are statutory required missions. We would not object to them having an "objective" target of what levels they would want those operational hours to be. And if they do adjust those operational hours to show the reality of recent years and recent history, they could certainly ramp those back up to that desired level as appropriate.

When facing the losses that frequently number in the tens of thousands of hours on an annual basis, the exceptional output of some individual vessels is not a good reason for holding to what are unrealistic and unachievable targets. By adjusting those hours annually to reflect the capacity as evidenced by the historic and actual performance, as opposed to the desired capacity of the ships, the Coast Guard would more realistically be setting its annual targets, and even those for individual vessels and commands that are in charge of those vessels.

Mr. LARSEN. Admiral, a little change of subject. And it has to do with sequestration. Based on my review of the OMB report that was released last week, the Coast Guard is facing about a $430 million cut to line items. I won't go into the details, but it is about that amount. A lot of focus around here has been on the Defense Department, but obviously there is a lot going on on the domestic side, which you all fall into, in some respects.

So, can you talk about the impact of sequestration on the Coast Guard's ability, then, to maintain its legacy assets? And how—is there discussion about how the Coast Guard would distribute cuts that would come from sequestration?

Admiral RÁBAGO. Sir, I am not prepared to talk about how we would distribute across our entire Coast Guard budget. We can certainly provide that information for the record, sir.

Mr. LARSEN. Please do so.

Admiral RÁBAGO. I will let our budget folks provide that.

Mr. LARSEN. I am sure they will enjoy providing that information.

[United States Coast Guard insert for the record follows:]

> The Coast Guard does not have a specific plan on how reductions would be distributed under the potential sequestration, or identify which programs, projects or activities would be impacted, and to what degree. Overall, the strategy would be to allocate available resources in a manner that prevents disruptions to our workforce; preserves the most essential operations, activities, and services; and prevents long-term detrimental impacts to the Service, including the ability to maintain our legacy assets.

Admiral RÁBAGO. The—with regards to the budget that I have today to take care of the fleet of today, as well as the new ships that are coming on, I am not yet satisfied that I am able—I am obviously not reaching the targets that we would like to reach for all of the vessels. Our newer ships are, and we use those targets for our newer ships. And after—certainly we have seen the results of what MEP is providing, in terms of increased reliability of the systems, which is what the essence of MEP was.

But for us, we—the money that we have today, it is my charge to make sure that I spend it very wisely with the existing assets that we have. The changes that we made to our maintenance organization, which I did talk about in my opening statement, or my written statement, is ways to make sure that—number one is that we know exactly what—where every dollar is going, in terms of how it applies to maintenance, and how that maintenance translates into operations.

We have recently strengthened a new metric in the last two or so years, which is our cost to operate, where I can provide information to the operational commander. And again, this becomes a decision process and the prerogative of the operational commander, where I can say what things actually cost, what is the cost of operating that 210, that 270, that 110, and provide that operational commander information to make good decisions about how to allocate the operational resources based on cost. And we are continuing to improve that. It was mentioned in the GAO report. It is one of our key metrics. And it allows, I think, operational commanders to make good decisions.

So, regardless of where our budget ends up in the future years, or with some form of sequestration or whatever may come, we are best positioned to give the operational commanders the choices they need to choose what assets that they want to run, what the

costs are going to be, in order to achieve the operational effect that is required to execute our missions.

Mr. LARSEN. Well, just one more question. The chairman was trying to touch on this—why haven't you revised mission performance targets to account for the current legacy fleet? Because, you know, from where we sit, it looks like you are trying to paper over a problem when it is pretty clear you've got plenty of paper that tells us there is a problem.

Admiral RÁBAGO. Sir, right now we are keeping operational targets where they are. We certainly read the information in the report and recognizing that we are not achieving those targets. Those targets, over time, and the changes to what the Nation may require of us still are valid targets and what the Nation should expect out of those ships, in terms of—as capital assets that we make investments in.

Challenging us, of course, is the age of those ships and their capabilities that they have, that if we don't recapitalize them they get more and more expensive. And therefore, we are allocating money to maintenance activities that we would just as soon spend to do other things that produce more operational capabilities. But that is a consequence of an aging fleet.

In the end, the best choice is to recapitalize particular assets when they reach a certain age.

Mr. LARSEN. Thank you.

Mr. LOBIONDO. Just before I got to Mr. Coble, with all due respect, Admiral, if it is what the Nation expects, but it is not what is happening, and the cost—we know we need to recapitalize, but we are not matching up our needs versus our cost and what, realistically, we are doing and how we are doing it.

So I mean I have got to agree with Mr. Larsen that I think that the Coast Guard has got to be more realistic about this, and we are going to have to get our heads together, since obviously high brass at the Coast Guard doesn't think so.

Master Chief Coble?

Mr. COBLE. Thank you, Mr. Chairman, appreciate it. Admiral, good to have you all with us today. Admiral, I am told that 4 years ago the Coast Guard assured the subcommittee it was conducting a condition survey of the HEC fleet. Was such a survey ever, in fact, conducted?

Admiral RÁBAGO. Yes, we have conducted the SSMEB, which is a Ship Structure and Machinery Evaluation Board, on that fleet. We determined the exact condition of it. We have actually made some modest amount of work to keep those ships operating. But we have not made a large investment, nor do we intend to.

Mr. COBLE. Well, has the subcommittee received the copy of the report, of the survey?

Admiral RÁBAGO. I don't know, sir. I will find out and make sure that you have it.

[United States Coast Guard insert for the record follows:]

> The Coast Guard completed a Ship Structure and Machinery Evaluation Board (SSMEB) review of the 378-foot Medium Endurance Cutter (WHEC) fleet and held a WHEC

> Sustainment Conference in 2008 resulting in findings of the SSMEB in 2009.
>
> During the sustainment conference, it was determined that the Coast Guard needed to conduct a comprehensive hull assessment and structural survey to better assess the true condition of the fleet. The Naval Surface Warfare Center performed hull corrosion and piping system surveys from 2009 through 2010 report. This effort indentified numerous structural and engineering system deficiencies that require extensive repairs and further validated the Coast Guard's on-going strategy to replace these aging assets with National Security Cutters.

Mr. COBLE. I thank you for that.

Admiral RÁBAGO. Yes, sir.

Mr. COBLE. Admiral, let me ask you this. How many days away from port are NSC 1, 2, and 3 currently achieving?

Admiral RÁBAGO. NSCs 1 and 2 have exceeded 200 days away from home port, and our goal is to continue to increase that number until we reach the 230, which is the designed days away from home port for that class of ships.

Mr. COBLE. Thank you. Thank you both for being with us. I yield back, Mr. Chairman.

Mr. LOBIONDO. OK. Thank you there, Master Chief.

Mr. COBLE. Yes, sir.

Mr. LOBIONDO. Mr. Caldwell, the Coast Guard is nearing completion of the mission effectiveness project for the MECs and the patrol boats which began in fiscal year 2005 and cost $450 million. Was the mission effectiveness project a wise investment, given that we will not fully bridge the MEC and OPC delivery, and there is no guarantee regarding how long the mission effectiveness project will extend these vessels' service lives?

Mr. CALDWELL. Whether it could have been cheaper another way or whether that money maybe should have gone into moving the newer assets up sooner, I can't answer that question. But I think the situation probably would have been worse if we didn't have that MEP. In terms of the patrol boats, those boats are going through a much larger overhaul, so the reliability you would get out of them may be better spent.

With the MECs, it is more difficult, because they are just replacing the most distressed elements or systems within those vessels. So it is much less predictable, as to what we are getting out of those particular vessels in the medium to long term.

But as I said, the Medium Endurance Cutter gap is the worst one we are facing right now. So we are between a rock and a hard place, sir.

Mr. LOBIONDO. For future mission performance, the GAO report notes that the problems with maintaining the legacy vessel fleet is only expected to worsen in the future, and will have consequences on mission performance. Could you identify for us the Coast Guard's greatest challenge regarding sustaining the legacy fleet and meeting mission requirements?

Mr. CALDWELL. They are having to rob Peter to pay Paul with the resources they have. The challenges are, making those deci-

sions in terms of which missions they are going to pursue, and at what locations. For example, you have got very rough seas off Alaska, the Bering Sea, only certain vessels are actually capable of doing missions there. They would be pulling vessels from, say, the Caribbean and drug missions and other missions there, which is reducing the effectiveness and performance in the Caribbean.

And then other missions are falling by the wayside, or being ignored, at least in the short term, because of those other priorities. These missions might include the fisheries enforcements and the other missions where life and limb are not at risk.

Mr. LOBIONDO. Thank you. Mr. Larsen?

Mr. LARSEN. Admiral, can you cover for us a little bit more about how you see the positives of the command maintenance structure, since it has been in place now for a couple of years and you have some experience? Give us some feedback on that.

Admiral RÁBAGO. Yes, sir. Thank you for the question. Our maintenance organization previously was an east-west maintenance organization. So decisions were sometimes different between the two coasts, and even in the same fleet of vessels. By consolidating in 2009 and setting up our surface forces logistics center, we were able to be able to approach the fleet as a single enterprise. It allowed us to make tradeoffs, in terms of where the priorities are. It allowed us to create a concept called the product line manager, which is a single point of accountability for a particular asset class, and have a conversation with the operational commander about priorities.

Additionally, what it did is we had those three commands I mentioned in my opening statement. We separated supply away from maintenance. In the new organization, a single point of accountability, the product line manager oversees all maintenance and supplies. So decisions that are made with maintenance that do have an impact on what spare parts you have and the system that you want to support and how you want to support it can all be made holistically.

And again, we no longer have an east-west, we have a one Coast Guard approach to taking care of our fleet. That has allowed us to do a couple of things. One is it is the most effective and efficient way to use the dollars we are given, in the sense that we can make sure that they are applied with the priorities we get from the operational commander.

Secondly, it allows us to gather data that is—we can use to make good decisions about the priorities. And those are some of the new metrics, the cost-to-operate metric, which we could not have gotten before, now allows us to decide and provide options to Coast Guard leadership, and particularly the operational commander, as to exactly where they want us to put our resources when it comes to maintenance. And again, that can vary based on geography, or it can be based on mission. Whatever the operational commander decides is the highest priority, we are able to leverage those resources into those assets to answer that and that particular requirement.

Additionally, the other efficiencies in the sense of overseeing our entire industrial enterprise previously, that was done very geographic, very local. By standardizing our business process across the way, we were able to actually redistribute resources across the

enterprise to provide a much more even support so that we have—we don't have haves and have-nots when it comes to taking care of our fleet. We want to take care of all of our ships with intent and purpose, and we want to do it with a data-driven methodology.

Mr. LARSEN. That is fine. Thank you.

Mr. LOBIONDO. Admiral, thank you very much. Mr. Caldwell, thank you very much. The subcommittee stands adjourned.

[Whereupon, at 3:05 p.m., the subcommittee was adjourned.]

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TESTIMONY OF REAR ADMIRAL RONALD J. RÁBAGO
ASSISTANT COMMANDANT FOR ENGINEERING AND LOGISTICS

ON
"A REVIEW OF THE CHALLENGES MAINTAINING LEGACY ASSETS POSE TO UNITED STATES COAST GUARD MISSION PERFORMANCE"

BEFORE THE
HOUSE TRANSPORTATION AND INFRASTRUCTURE SUBCOMMITTEE
ON COAST GUARD AND MARITIME TRANSPORTATION

SEPTEMBER 14, 2012

INTRODUCTION

Good morning Mr. Chairman, Ranking Member Larsen, and distinguished members of the Subcommittee. It is an honor to appear before you today to provide an update on the U.S. Coast Guard's efforts to address the challenges of maintaining our aging fleet of cutters and aircraft. The Coast Guard's ability to save lives, enforce laws on the high seas, facilitate maritime commerce, and protect our ports, waterways, and natural resources is highly dependent on maintaining a reliable and capable fleet of vessels and aircraft.

On behalf of the men and women of the Coast Guard who pursue mission excellence each day onboard our fleet of cutters, boats, and aircraft, I thank you for your continued advocacy and oversight of our Service. Balancing the acquisition of new assets with the maintenance demands of the existing fleet is a pivotal factor in continued mission success and the Coast Guard's ability to continue to provide truly outstanding value to the American taxpayer. The FY 2013 President's budget strikes the optimal balance between sustaining current operations and investment in future capability. It supports the Coast Guard's FY 2013 priorities to *Responsibly Rebuild the Coast Guard, Preserve Front-line Operations, Strengthen Resource and Operational Stewardship and Prepare for the Future*.

CHALLENGES OF MAINTAINING AN AGING FLEET

The recently completed Government Accountability Office (GAO) audit regarding the status of the Coast Guard's vessel fleet provides valuable insight into the many challenges faced by the Service due to our reliance on aging surface assets to execute our missions. The challenges of maintaining such a fleet include technical obsolescence of systems and components, increased incidents of unscheduled maintenance, and increased maintenance demands on cutter crews and support personnel. Additionally, growth in unplanned maintenance due to casualties potentially increases the number of lost scheduled cutter operational days for an asset as it ages and becomes more difficult to support due to relative unavailability of repair parts. I greatly appreciate the Subcommittee's interest in the Coast Guard's continued efforts to address the challenges in maintaining our legacy assets in the current fiscal environment.

NEW ACQUISITION ESSENTIAL TO CONTINUED SERVICE READINESS

As outlined in the Fiscal Year (FY) 2013 President's Budget, the Coast Guard is committed to responsibly rebuilding the Coast Guard and efficiently preserving front-line operations. This strategy is essential to address the condition of our fleet in order to continue to provide exceptional service to our Nation.

Through the support of Congress, the Coast Guard recently made great strides in both surface and air asset recapitalization. Later this month, we will take delivery of the cutter WILLIAM FLORES, the third Fast Response Cutter (FRC) of a planned fleet of 58. This cutter, along with its recently delivered predecessors BERNARD WEBBER and RICHARD ETHERIDGE, are the lead hulls of the new Sentinel class of cutters that will replace the 110' Island Class Patrol Boats, which are reaching the end of their designed service lives. These cutters provide larger and more stable platforms from which to conduct operations, safer small boat launch and recovery in heavy seas, the ability to detect threats at longer range, remotely operated weapons to protect the crew, and the capacity to remain on station at sea for longer periods of time.

The Legend-class National Security Cutter (NSC) replaces and improves upon the capabilities of our 378-foot High Endurance Cutter fleet, which are more than forty years old. The NSC provides the Coast Guard with the necessary capabilities to maintain an extended presence to execute Coast Guard missions in critical offshore environments, including the North and East Pacific Oceans, drug transit zones, and the expanding ice-free zones of the Arctic. The Coast Guard recently commissioned the third NSC, STRATTON, to join the BERTHOLF (NSC # 1) and WAESCHE (NSC # 2) which have already attained "Ready for Operations" status and demonstrated enhanced capabilities during recent patrols in the Eastern Pacific and the Bering Sea. Fabrication of HAMILTON (NSC # 4) began last summer with the keel-laying scheduled this August. Fabrication for the JAMES (NSC # 5) is also underway. The FY 2013 President's Budget Request includes full funding for NSC # 6.

A Request for Proposal is planned to be issued prior to the end of FY 2012 that will lead to an award of three Preliminary and Contract Design contracts for the Offshore Patrol Cutter (OPC). This cutter class is intended to replace the Coast Guard's aging fleet of medium endurance cutters, most of which are between 25 and 40 years old.

We have just accepted our 14th HC-144 Ocean Sentry, Maritime Patrol Aircraft (MPA), out of a planned fleet of 36. This turboprop aircraft provides increased medium range surveillance and rescue response in the maritime domain and replaces the HU-25 Falcon jet aircraft, which is at the end of its service life. The HC-144 offers a number of advantages over its predecessor that improve mission performance. These include vastly improved endurance, improved fuel economy, superior cargo capacity via a stern ramp, better low altitude and low speed search capability, and a state-of-the-art mission system pallet which integrates an upgraded radar system, secure communications and an electro optical infrared camera.

BALANCING NEW ACQUISITION WITH SUSTAINMENT PRIORITIES

While acquisition of new assets is an essential part of ensuring the Service's ability to operate in current and future environments, effectively maintaining our existing assets cannot be understated. It is our challenge and duty as careful stewards of taxpayer dollars to effectively balance the needs of today with the needs of tomorrow in order to provide safe and reliable assets to our front line forces.

To maintain operational capacity until delivery of FRCs and OPCs, the Coast Guard embarked on a Mission Effectiveness Project (MEP) for its 110' patrol boats and 270' and 210' medium endurance cutters. This Acquisition, Construction, and Improvements funded program was designed to cost effectively provide selected equipment upgrades and enhancements to increase cutter reliability, address technical obsolescence, improve mission effectiveness, and reduce future maintenance costs. The last 210' cutter completed MEP in FY 2010 and the final 110' patrol boat completed its MEP in July 2012. MEP on the 270' cutters is scheduled to be complete in FY 2014. MEP has resulted in significantly improved reliability of several systems installed onboard the medium endurance cutter and patrol boat fleet.

Numerous cutter classes are at or beyond their designed service lives. Others are reaching their mid-life period and require major system recapitalization to mitigate technical obsolescence issues that can drive maintenance costs up and operational availability down. For those surface assets at or beyond service life and with no replacement programs on the immediate horizon, Service Life Extension Projects (SLEPs) are considered to mitigate operational gaps, such as the 140' Icebreaking Tugs funded in the FY 2012 enacted budget. For others, major mid-life availabilities are intended to optimize mission readiness and stewardship of funds over the remaining lifecycle of the assets.

The In Service Vessel Sustainment (ISVS) program in the Coast Guard's Capital Investment Plan, started in FY 2012, is the mechanism to address these needs within the surface fleet. The Coast Guard's Naval Engineering program administers a rigorous process of periodically evaluating the materiel condition of service assets. This process, known as a Ship Structure and Machinery Evaluation Board (SSMEB), provides a detailed evaluation of a cutter or boat class and its estimated remaining service life.

Output from SSMEBs and lessons learned during MEP in recent years informed the first major project to be managed under the ISVS umbrella, the 140' Icebreaking Tug SLEP. Funding for preliminary engineering work was made available in FY 2011 and design for this project is well underway. The project funding appropriated in FY 2012 specifically funds completion of detailed design work, materials purchasing and initial production for the first 140' Ice Breaking Tug (WTGB) Service Life Extension Project (SLEP). The entire fleet of nine 140' WTGBs are planned to undergo SLEPs with the first vessel scheduled to start in late FY14. . A major mid-life availability project is also planned for the 225' sea-going buoy tenders, with funding appropriated for engineering design work beginning in FY 2012. A 270' medium endurance cutter SSMEB is ongoing with a follow-on Sustainment Conference scheduled for September 2012 and will be a basis for determining future sustainment projects. Likewise an SSMEB for the 210' cutters will be completed in FY 2013. Using the information obtained from these post-MEP SSMEBs, the Coast Guard will formulate a plan to maximize the operational lives and mission effectiveness of these cutters until the OPCs are delivered.

POSITIVE EFFECTS OF MODERNIZED STRUCTURE AND PROCESSES

As part of a service-wide modernization and restructuring effort, the Coast Guard created the Surface Forces Logistics Center (SFLC) in 2009. This new command consolidated functions that were previously executed among three commands: Maintenance and Logistics Command (MLC) Atlantic, MLC Pacific, and the Engineering Logistics Center. Additionally, the Coast Guard Yard in Baltimore was aligned under the SFLC's command structure. This reorganization has allowed the Coast Guard maintenance community to manage all surface assets under a single enterprise and make several positive changes in surface fleet maintenance planning and execution.

Elimination of the two MLCs enabled the creation of a single point of accountability for the management of maintenance pertaining to any asset class. This organizational structure uses Product Line Management and derives its benefit from the standard processes and procedures associated with a single set of management priorities across multiple classes of cutters and boats. Additionally, each Product Line Manager now has responsibility for funding all routine maintenance, unplanned maintenance, system upgrades, and spare parts. Convergence of maintenance and supply funding, coupled with fleet-wide metrics, enables each Product Line Manager and the SFLC Commander to best address the maintenance priorities of operational commanders within his/her base of resources.

Product Lines and the Coast Guard Yard are both under the SFLC command umbrella to streamline decisions regarding the use of organic labor and facilities versus commercial services, thus achieving best value for the Service in the execution of both planned and unplanned depot level maintenance. Additionally, the Coast Guard recently unified 21 different industrial sites into a National Industrial Enterprise organization. This effort will improve the planning of industrial projects and management of industrial resources enabling efficiency through standard practices, processes, and management plans and will aid in the efficient mobilization of capabilities to deliver mission support services during contingency operations or major targeted maintenance activities.

CONCLUSION

The Coast Guard works to execute its missions with distinction. It is critical that we provide our service members with the safest, most reliable assets to carry out those functions.

Recent years have provided a challenging operational environment as a result of both planned and contingency operations. The structure of the Coast Guard engineering and logistics community continuously evolves to meet the maintenance needs of an aging fleet. Through a vigilantly administered acquisition plan, a carefully prioritized maintenance strategy, the dedicated work of Coast Guard service members and civilian employees, and the continued support of Congress, the Coast Guard is positioned to meet the significant challenges of maintaining its fleet into the next decade.

Thank you for the opportunity to testify before you today. I look forward to answering your questions.

United States Government Accountability Office

GAO

Testimony

Before the Subcommittee on Coast Guard and Maritime Transportation, Committee on Transportation and Infrastructure, House of Representatives

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COAST GUARD

Mission Performance Challenged by the Declining Condition and Rising Costs of its Legacy Vessel Fleet

Statement of Stephen L. Caldwell, Director
Homeland Security and Justice Issues

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GAO-12-934T

Chairman LoBiondo, Ranking Member Larsen, and Members of the Subcommittee:

Thank you for the opportunity to discuss the condition of the Coast Guard's legacy vessel fleet, and challenges the Coast Guard faces in sustaining these vessels and meeting mission requirements. The Coast Guard, within the Department of Homeland Security, is the principal federal agency responsible for maritime safety, security, and environmental stewardship. The legacy vessel fleet is critical for executing Coast Guard missions, which include defense operations; search and rescue; and securing ports, waterways, and coastal areas. My comments will focus on the legacy 378-foot high endurance cutters, 270-foot and 210-foot medium endurance cutters, and 110-foot patrol boats, and are based on findings from the report we released in July 2012.[1]

The legacy high endurance cutters, medium endurance cutters, and patrol boats are either approaching the end of or are past their originally-expected service lives, with a number of these vessels having entered into service in the 1960s and 1970s. Coast Guard officials report that these legacy vessels have become increasingly costly to maintain and their degraded condition has negatively affected the Coast Guard's operational capacity to meet mission requirements. The Coast Guard is in the midst of a long-term recapitalization plan that could cost as much as $29 billion to replace legacy vessels, aircraft, and other related systems.[2] However, since beginning the acquisition program in 1996, the Coast Guard has experienced cost, management, and oversight problems that have led to considerable delays in the delivery of new vessels—by as much as 13 years. In turn, delays in delivery of the replacement vessels have created uncertainties regarding how the Coast Guard will sustain its legacy vessels and meet mission requirements.

[1] Our published report provides additional details on the sizes and capabilities of each of these vessels. See GAO, *Coast Guard: Legacy Vessels' Declining Conditions Reinforce Need for More Realistic Performance Targets,* GAO-12-741 (Washington, D.C.: July 31, 2012).

[2] The Coast Guard's asset recapitalization plan includes projects to build or modernize five classes each of vessels and aircraft and undertake procurement of other capabilities, such as improved command, control, communications, computers, intelligence, surveillance, and reconnaissance. This report focuses only on the legacy vessel fleet. For more information on the recapitalization effort as a whole, see GAO, *Coast Guard: Action Needed As Approved Deepwater Program Remains Unachievable.* GAO-11-743 (Washington, D.C.: July 28, 2011).

My testimony today summarizes the findings of our July 2012 report and addresses (1) how the physical condition of the Coast Guard's legacy vessel fleet changed from fiscal years 2005 through 2011, and key actions the Coast Guard has taken related to the physical condition of its legacy fleet; (2) key annual maintenance expenditure trends for the legacy vessel fleet, and the extent to which the Coast Guard's cost estimating process has followed established best practices; and (3) the operational capacity of the legacy vessel fleet and the extent to which the Coast Guard faces challenges in sustaining the legacy vessel fleet and meeting mission requirements.

For our report, we analyzed Coast Guard data from fiscal years 2005 through 2011 on the legacy vessels' condition, cost, and operational performance. We interviewed relevant Coast Guard headquarters officials and conducted site visits to five Coast Guard field locations where legacy vessels were based or undergoing maintenance. We also compared the documentation that the Coast Guard uses to compute its annual legacy vessel maintenance cost estimates against established best practices.[3] We reviewed Coast Guard documents and other evidence that outlined challenges the Coast Guard faces in sustaining its legacy vessels and meeting mission requirements given delays in deploying replacement vessels. Further, we evaluated the Coast Guard's actions against Office of Management and Budget guidance.[4] We conducted this work in accordance with generally accepted government auditing standards. Our July 2012 report provides further details on our scope and methodology.[5]

[3] GAO, *GAO Cost Estimating and Assessment Guide: Best Practices for Developing and Managing Capital Program Costs*, GAO-09-3SP (Washington, D.C.: Mar. 2, 2009).

[4] Office of Management and Budget, *Program Assessment Rating Tool Guidance Number 2007-2*, (Washington, D.C.: Jan. 29, 2007).

[5] GAO-12-741.

Legacy Vessel Fleet's Condition Is Poor and Generally Declining Despite Coast Guard Maintenance Efforts

From fiscal years 2005 through 2011, the physical condition of the Coast Guard's legacy vessels was generally poor. A primary Coast Guard measure of a vessel's condition—the operational percent of time free of major casualties—shows that the high endurance cutters, medium endurance cutters, and patrol boats generally remained well below target levels from fiscal years 2005 through 2011.[6] For example, over this 7-year period, the operational percent of time free of major casualties averaged about 44 percent for the high endurance cutters and about 65 percent for the medium endurance cutters versus a target of 72 percent; and the patrol boats averaged approximately 74 percent versus a target of 86 percent. Other evidence, such as our review of vessel condition assessments and inspections the Coast Guard conducts of the legacy vessels, also shows that the condition of the legacy vessel fleet is generally declining. For example, a variety of Coast Guard assessments show that legacy vessels' critical operating systems—such as main diesel engines—have been increasingly prone to mission-degrading casualties. In addition, Coast Guard senior maintenance officials and vessel crew members we interviewed noted increased maintenance challenges because of the advanced age of the legacy vessels. In particular, the maintenance managers for both the high endurance and medium endurance cutters reported that the performance of critical systems on these legacy vessel classes has become increasingly unpredictable and refurbishments of these vessel classes' least reliable systems have brought limited returns on the investments. Maintenance officials and vessel crew members also reported devoting increasing amounts of time and resources to troubleshoot and resolve maintenance issues because some systems and parts on these legacy vessel classes are obsolete.

The Coast Guard has taken two key actions to improve the condition of its legacy vessels. First, in 2009, the Coast Guard reorganized its maintenance command structure to focus on standardization of practices. Under this reorganization, the Coast Guard eliminated its two Maintenance and Logistics Commands and replaced them with a centralized command structure—the Surface Forces Logistics Center—whereby a single product line manager oversees the maintenance of

[6] A major casualty is a deficiency in mission essential equipment that causes the major degradation or loss of a primary mission.

similar classes of vessels.[7] Coast Guard officials reported that this change was made to enable better oversight of the condition of entire classes of the vessel fleet, reduce the workload on vessel crews by providing centralized support for procurement of replacement parts, and implement centralized maintenance plans to address commonly occurring casualties.[8] Second, Coast Guard officials also reported that the Coast Guard was on schedule to complete a 10-year, almost half-billion dollar set of sustainment projects to refurbish selected patrol boats and upgrade medium endurance cutters, known as Mission Effectiveness Projects, which are intended to improve legacy vessel operating and cost performance. Our July 2012 report provides additional information regarding these actions but, as noted in the report, the condition of these legacy vessels continues to decline despite these efforts.

[7] The Coast Guard established the Surface Forces Logistics Center under which Coast Guard vessels are grouped into five product lines whose mission support, maintenance procedures, priorities, and funds are overseen by a single product line manager. The product lines are the (1) Long Range Enforcer (which includes the high endurance cutter and the national security cutter); (2) Medium Endurance Cutter; (3) Ice Breaker, Buoy Tender and Construction Tender; (4) Patrol Boat (which includes the 110-foot patrol boat and fast response cutter); and (5) Small Boat.

[8] According to Coast Guard officials, vessel crews had previously been responsible for managing procurement of replacements for minor casualties. According to these officials, doing so could be time consuming for crews. Under the reorganization, the Surface Forces Logistics Center manages a greater share of the procurement of replacement parts and systems to both reduce the workload of crews and provide better oversight across the vessel fleet. Additionally, the new organization is structured to provide a single point of accountability (the product line manager) for all maintenance, system upgrades, and supply functions for a vessel class.

Maintenance Expenditures Have Recently Increased, and the Process for Estimating Costs Does Not Fully Meet Best Practices

Expenditures for the two key types of legacy vessel annual depot-level maintenance—scheduled and unscheduled maintenance—declined from fiscal year 2005 to fiscal year 2007, and then rose from fiscal year 2007 to fiscal year 2011.[9] For example, scheduled maintenance expenditures rose from about $43 million in fiscal year 2007 to about $70 million in fiscal year 2011. Coast Guard officials attributed the increase in scheduled maintenance expenditures to better identifying maintenance needs, increasing the prioritization of completing all scheduled maintenance, and the receipt of supplemental funding. In contrast, unscheduled maintenance expenditures varied by vessel class from fiscal years 2005 through 2011, but the high endurance cutter fleet consistently incurred the greatest share of unscheduled maintenance expenditures. For example, high endurance cutters accounted for 86 percent of all unscheduled maintenance expenditures in fiscal year 2011. Coast Guard officials attributed the comparatively high unscheduled maintenance expenditures to the high endurance cutters' advanced age and size.[10]

Further, annual depot-level maintenance expenditures often exceeded the Coast Guard's budgeted funds for depot-level maintenance for the legacy vessels—known as Standard Support Levels—from fiscal years 2005 through 2011. For example, actual depot-level maintenance expenditures for the high endurance cutters were about 3.6 times higher than Standard Support Levels in fiscal year 2009—$55.5 million compared with $15.5 million. The Standard Support Levels have generally remained unchanged over decades and do not reflect the rising costs to maintain the legacy vessels as they have aged.[11] Senior Coast Guard vessel maintenance officials cited this funding gap as a challenge,

[9] Depot-level maintenance is vessel maintenance that is beyond the capability of the operating units.

[10] Coast Guard officials told us that major casualties on three high endurance cutters—the *CHASE*, *DALLAS* and *GALLATIN*—contributed disproportionately to these expenditures in fiscal years 2010 and 2011. The Coast Guard has since decommissioned the *CHASE* and *DALLAS* on May 13, 2011 and March 30, 2012, respectively.

[11] According to Coast Guard officials, Standard Support Levels are established when a vessel class enters service or undergoes a service life extension program. For example, the Coast Guard reset the Standard Support Level for the high endurance cutters after conducting a service life extension program between 1987 and 1992—the Fleet Renovation and Modernization Program—but has not reset the Standard Support Levels for the medium endurance cutters or patrol boats. Coast Guard officials indicated that the Coast Guard increases Standard Support Levels using non-pay inflation, but it has not done so every year.

noting that supplemental funding had been critical to enable the Coast Guard to fund necessary maintenance for the legacy vessel fleet. Our July 2012 report provides further information regarding the Coast Guard's annual depot-level maintenance expenditures.

Our review found that the Coast Guard's process for estimating legacy vessel annual depot-level maintenance costs does not fully reflect relevant best practices. GAO's Cost Estimating and Assessment Guide states that a high-quality and reliable cost estimate includes certain best practice characteristics. We determined that the three characteristics relevant to the Coast Guard's cost estimation process are that the process should be (1) well-documented, (2) comprehensive, and (3) accurate. Our assessment showed that the Coast Guard's legacy vessel maintenance cost-estimating process partially met the three characteristics, as follows:

- **Partially comprehensive:** The Coast Guard's process for estimating annual legacy vessel depot-level maintenance costs defines the program, among other things, but does not document all cost-influencing ground rules and assumptions (e.g., inflation rate).
- **Partially well-documented:** The Coast Guard's process for estimating annual legacy vessel depot-level maintenance costs discusses the technical baseline description, and the data in the baseline are consistent with the estimate; however, the Coast Guard did not provide documentation that discusses key cost estimating factors, such as how the data were normalized or the reliability of the data.
- **Partially accurate:** The Coast Guard's process for estimating annual legacy vessel depot-level maintenance costs contains few, if any, minor mathematical mistakes and is regularly updated to reflect significant program changes and current status. However, we assessed the cost estimate as being not fully accurate because Coast Guard officials could not provide us with documentation that would allow us to assess the reliability of the historical data used, the accuracy of the calculations, the relationship of the data to the historical contractor bids, or the final estimates for all maintenance costs.

To address these issues, in our July 2012 report, we recommended that the Secretary of Homeland Security direct the Commandant of the Coast Guard to ensure that the Coast Guard's annual depot-level maintenance

cost estimates conform to cost estimating best practices. DHS concurred with this recommendation and described actions the Coast Guard has taken or plans to take, but these actions may not fully address the intent of this recommendation. For example, DHS noted that given current fiscal constraints, the Coast Guard will focus on improvements that do not require additional resources. While we agree that federal resources are limited, aligning the cost estimating process for legacy vessel maintenance with best practices would not necessarily require an increased investment of resources. Rather, having a well documented cost estimating process and using accurate historical data should enable the Coast Guard to operate more efficiently.[12]

Declining Condition of the Legacy Vessel Fleet Makes Operational Capacity Targets Increasingly Unachievable

The operational capacity of the Coast Guard's legacy vessel fleet declined from fiscal years 2006 through 2011. In particular, while performance varied across the legacy vessel classes, two key Coast Guard metrics—operational hours and lost cutter days—show that the legacy vessels did not meet their operational capacity targets and lost considerable planned operational time. For example, the high endurance cutters and 210-foot medium endurance cutters did not meet any of their operational hour targets from fiscal years 2006 through 2011, and the 270-foot medium endurance cutters met their targets only in fiscal year 2008. Specifically, operational hours for the high endurance cutters declined by about 32 percent from fiscal year 2008 to 2011,[13] and the combined operational hours of the 210-foot and 270-foot medium endurance cutters declined nearly 21 percent from fiscal year 2007 to fiscal year 2011.[14] In addition, Coast Guard data show the high and medium endurance cutters, collectively, averaged about 618 lost cutter days per year from fiscal years 2006 through 2011. Further, the number of lost cutter days for the high endurance cutters has been nearly

[12] See the July 2012 report for more information on DHS's comments and our evaluation of them.

[13] Coast Guard headquarters officials reported that two high endurance cutters were decommissioned in fiscal year 2011 for a total reduction of 3,330 operational hours from that achieved in fiscal year 2010.

[14] Coast Guard officials attributed declines in the medium endurance cutters' capacity primarily to increased unscheduled maintenance. However, the officials also reported that because medium endurance cutters were taken out of service on a rotating basis to undergo the Mission Effectiveness Project, doing so may have also decreased the medium endurance cutters' operational hours by as much as 9,900 hours annually.

equivalent to three high endurance cutters being out of service for an entire year in each of the last 3 fiscal years. Moreover, lost cutter days for both the 210-foot and 270-foot medium endurance cutters combined more than doubled, from 122 lost cutter days in fiscal year 2006 to 276 lost cutter days in fiscal year 2010.[15] Coast Guard headquarters officials reported that the declining operational capacity of its legacy vessel fleet—particularly the high and medium endurance cutters—has been a prime contributor to the Coast Guard's declining ability to meet mission requirements and intercept threats beyond U.S. territorial waters.

Coast Guard officials also reported that delays in the delivery of replacement vessels will require the Coast Guard to continue to operate its legacy vessels beyond their originally-expected service lives and result in a widening operational capacity gap.[16] As a result, these officials expect the Coast Guard's legacy vessels to become increasingly unreliable, have increasingly diminished operational capacity, and be increasingly costly and challenging to maintain. In the next few years, the operational capacity gap that exists for the high endurance cutter and patrol boat fleets is expected to increase because of actions the Coast Guard plans to take to better balance the needs of the legacy fleet with the acquisition of replacement vessels. For example, by the end of fiscal year 2012, the Coast Guard plans to end the "High Tempo/High Maintenance" program for eight of its patrol boats.[17] Then, in fiscal year 2013, the Coast Guard plans to decommission the next two most degraded and costly high endurance cutters, as well as three patrol boats. While these actions will reduce legacy fleet expenditures, they will

[15] Coast Guard officials attributed the majority of the high endurance cutter lost cutter days to propulsion system casualties. For example, the Coast Guard reported that catastrophic engine failure rendered the high endurance cutters *DALLAS*, *CHASE*, and *GALLATIN* inoperative for 1 year, 1 year and 5 months, and 2 years, respectively, during this time period. As stated previously, the Coast Guard has since decommissioned the *CHASE* and *DALLAS*.

[16] The *Naval Engineering Manual* defines remaining service life as the time period during which no major expenditures will be required for hull and structural repairs or modernizations, or for machinery or system modernizations based solely on the vessel's capability to meet existing mission requirements.

[17] The "High Tempo/High Maintenance" program was designed to mitigate the loss of eight patrol boats to hull failure and six to deployment to Bahrain by doubling the operational hour output of eight patrol boats through the use of double crews and increased maintenance. Coast Guard officials reported that these eight patrol boats will return to normal operations at the end of fiscal year 2012.

also increase the vessel fleet's operational capacity gap because the Coast Guard will not receive sufficient numbers of replacement vessels during this time period to make up for the lost capacity.

The ongoing delivery of replacement vessels is expected to help mitigate the existing operational capacity gap for the legacy high endurance cutter and patrol boat fleets. However, Coast Guard officials reported, and our analysis of Coast Guard documents confirms, that the medium endurance cutter fleet will be most affected by delays in delivery of replacement vessels. The Coast Guard is refurbishing its medium endurance cutters through the Mission Effectiveness Project to increase these cutters' reliability and reduce longer-term maintenance costs, and third-party assessments show that the performance of those medium endurance cutters that have completed the project has improved.[18] Even if the most optimistic projections were realized, though, and the Mission Effectiveness Project was to extend the medium endurance cutters' service lives by 15 years, the medium endurance cutters would remain in service increasingly beyond the end of their originally-expected service lives before full deployment of their replacement vessels—the offshore patrol cutters. In particular, according to current plans, some of the 270-foot medium endurance cutters are to remain in service as late as 2033—up to 21 years beyond the end of their originally-expected service lives—before they are replaced. Coast Guard officials reported that a further refurbishment of the medium endurance cutters will be necessary to meet operational requirements and that the Coast Guard is in the early stages of developing plans for addressing the expected gap between remaining medium endurance cutter fleet service lives and the delivery of the replacement offshore patrol cutters.

Coast Guard efforts to sustain its legacy vessel fleet and meet mission requirements until the replacement vessels are delivered are also challenged by uncertainties regarding the future mix of vessels, as well as the implementation of a rotational crew concept for the replacement vessel for the high endurance cutters, known as the national security

[18] The Coast Guard has contracted with the Department of Transportation, Research and Innovative Technology Administration's Volpe National Transportation Systems Center to conduct annual assessments of the effectiveness of the Mission Effectiveness Project.

cutter.[19] The Coast Guard's fiscal year 2013 to 2017 5-year Capital Investment Plan does not allocate funds for the acquisition of the last two replacement national security cutters, as called for by the program of record, and it is unclear how this could affect the decommissioning schedule of the high endurance cutters, the last of which the Coast Guard currently plans to decommission in fiscal year 2023.[20]

The Coast Guard has established operational hour targets for the number of hours its vessels are expected to conduct operations or missions each fiscal year and uses these targets to inform planning decisions, such as setting performance targets and corresponding resource allocations. Although senior Coast Guard headquarters officials reported considering various factors when setting overall mission performance targets annually, these officials reported doing so based on the assumption that vessel class assets will achieve 100 percent of their operational hour targets. Our analysis of Coast Guard data, though, makes it clear that the Coast Guard's legacy vessel fleet has increasingly fallen below operational hour targets in recent years, and this trend is expected to continue. In addition, Coast Guard officials reported that the decline in legacy vessel operational capacity has challenged the Coast Guard's ability to meet its mission performance targets. Further, Coast Guard operational commanders reported taking actions to mitigate the effect of declining legacy vessel capacity, such as diverting vessels tasked to other missions to help complete operations. Nevertheless, the Coast Guard has not revised legacy vessel operational hour targets because, according to Coast Guard officials, doing so would lower its mission performance targets. However, these targets have gone unmet because of the declining operational capacity of the legacy vessel fleet. Because it sets mission performance targets and allocates resources on the assumption that legacy vessels will achieve 100 percent of operational hour targets, the Coast Guard's allocation of resources is not realistic. Further, because the Coast Guard uses vessels' operational hour targets

[19] The Coast Guard's program of record assumes that the new national security cutter fleet will achieve more operational capacity than the legacy high endurance cutter fleet by implementing a rotational crew concept in which the Coast Guard would have four sets of crew staff and operate three national security cutters on a rotating basis to increase the vessels' operational time.

[20] The Coast Guard recently revised the high endurance cutter decommissioning schedule to delay the decommissioning of the last high endurance cutter from 2020 to 2023 in its fiscal years 2013-2017 *Capital Investment Plan*.

to set agency-wide performance targets and to allocate resources, consistent achievement of its performance targets is at increased risk.

In our July 2012 report, we recommended that the Secretary of Homeland Security direct the Commandant of the Coast Guard to adjust legacy vessel fleet operational hour targets to reflect actual capacity, as appropriate by class. DHS did not concur with this recommendation and noted, among other things, that reducing the operational hour targets would fail to fully utilize those assets not impacted by maintenance issues. We disagree with DHS's position because, as noted in the July 2012 report, while senior Coast Guard officials reported that the Coast Guard adjusts its mission performance targets annually, it does not also adjust legacy vessel operational hour targets annually. These officials also stated that the Coast Guard's mission performance targets are based on each vessel class's capacity, with the assumption that each vessel will operate at 100 percent of its planned operating time. Thus, we do not believe that reducing the operational hour targets would result in a failure by the Coast Guard to fully utilize assets not impacted by maintenance challenges and continue to believe that this recommendation has merit.[21]

Chairman LoBiondo, Ranking Member Larsen, and members of the subcommittee, this completes my prepared statement. I would be happy to respond to any questions you may have at this time.

GAO Contact and Staff Acknowledgements

For questions about this statement, please contact Stephen L. Caldwell at (202) 512-9610 or caldwells@gao.gov. Contact points for our Offices of Congressional Relations and Public Affairs may be found on the last page of this statement. Individuals making key contributions to this statement include Christopher Conrad (Assistant Director) and Michael C. Lenington. Additional contributors include Jason Berman, Chloe Brown, and Lara Miklozek.

[21] See the July 2012 report for more information on DHS's comments and our evaluation of them.

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