Order Code RL33753

CRS Report for Congress

Coast Guard Deepwater Program: Background, Oversight Issues, and Options for Congress

Updated May 18, 2007

Ronald O'Rourke
Specialist in National Defense
Foreign Affairs, Defense, and Trade Division

Prepared for Members and
Committees of Congress

Coast Guard Deepwater Program: Background, Oversight Issues, and Options for Congress

Summary

The Integrated Deepwater Systems (IDS) program, or Deepwater program for short, is a $24-billion, 25-year project to replace and modernize the Coast Guard's aging fleet of deepwater-capable ships and aircraft. It is the largest and most complex acquisition effort in Coast Guard history, encompassing 91 new cutters, 124 new small surface craft, and 244 new or converted airplanes, helicopters, and unmanned aerial vehicles (UAVs). The Deepwater program has received a total of about $4.4 billion through FY2007, including about $1.14 billion in FY2007. The Coast Guard's proposed FY2008 budget requests $836.9 million for the program.

The management and execution of the Deepwater program has been strongly criticized in recent months by the Department of Homeland Security Inspector General (DHS IG), the Defense Acquisition University (DAU), the Government Accountability Office (GAO), several Members of Congress from committees and subcommittees that oversee the Coast Guard, and other observers. House and Senate committees and subcommittees have conducted several oversight hearings this year devoted partly or entirely to problems and concerns regarding the management and execution of the program.

On April 17, 2007, the Coast Guard announced a series of actions to reform the management of the Deepwater program. Among other things, the Coast Guard announced it will assume the role of lead system integrator (LSI) for the program. Since 2002, the LSI role had been performed by Integrated Coast Guard Systems (ICGS) — an industry team led by Lockheed Martin and Northrop Grumman Ship Systems (NGSS).

On April 18, 2007, it was reported that the Justice Department is conducting an investigation of the Deepwater program. Justice reportedly notified Lockheed, Northrop, and certain other firms involved in the Deepwater program of the investigation on December 13, 2006, and directed the firms to preserve all documents relating to the program.

Legislation that would significantly restructure Coast Guard contracting and the Deepwater program in various ways, and place various new requirements and conditions on the Deepwater program, includes the following:

- **Sections 4402 and 4405** of the conference report (H.Rept. 110-107 of April 24, 2007) on **H.R. 1591**, the FY2007 emergency supplemental appropriations act;
- **S. 924**, the Integrated Deepwater Program Reform Act; and
- **S. 889**, the Deepwater Accountability Act.

In addition, **Section 4404(b)(1)** of the conference report on **H.R. 1591** appropriates $30 million in additional appropriations to procure four new coastal patrol boats so as to mitigate the Coast Guard's patrol boat operational gap. This report will be updated as events warrant.

Contents

List of Tables

Coast Guard Deepwater Program: Background, Oversight Issues, and Options for Congress

Introduction

The Integrated Deepwater Systems (IDS) program, or Deepwater program for short, is a $24-billion, 25-year project to replace and modernize the Coast Guard's aging fleet of deepwater-capable ships and aircraft. It is the largest and most complex acquisition effort in Coast Guard history, encompassing 91 new cutters, 124 new small surface craft, and 244 new or converted airplanes, helicopters, and unmanned aerial vehicles (UAVs).

The Deepwater program has received a total of about $4.4 billion through FY2007, including about $1.14 billion in FY2007. The Coast Guard's proposed FY2008 budget requests $836.9 million for the program.

The management and execution of the Deepwater program has been strongly criticized in recent months by the Department of Homeland Security Inspector General (DHS IG), the Defense Acquisition University (DAU), the Government Accountability Office (GAO), several Members of Congress from committees and subcommittees that oversee the Coast Guard, and other observers. House and Senate committees and subcommittees have conducted several oversight hearings this year devoted partly or entirely to problems and concerns regarding the management and execution of the program.

On April 17, 2007, the Coast Guard announced a series of actions to reform the management of the Deepwater program. Among other things, the Coast Guard announced it will assume the role of lead system integrator (LSI) for the program. Since 2002, the LSI role had been performed by Integrated Coast Guard Systems (ICGS) — an industry team led by Lockheed Martin and Northrop Grumman Ship Systems (NGSS).

On April 18, 2007, it was reported that the Justice Department is conducting an investigation of the Deepwater program. Justice reportedly notified Lockheed, Northrop, and certain other firms involved in the Deepwater program of the investigation on December 13, 2006, and directed the firms to preserve all documents relating to the program.

Congress has several potential options it may consider for improving management and execution of the Deepwater program. Congress's decisions regarding the Deepwater program could significantly affect Coast Guard capabilities, Coast Guard funding requirements, and federal acquisition practices.

Background[1]

Coast Guard Deepwater Missions

The Coast Guard performs a variety of missions in the deepwater environment, which generally means waters more than 50 miles from shore. These mission include drug interdiction, alien migrant interdiction, fisheries enforcement, search and rescue, the International Ice Patrol in northern waters; overseas maritime intercept (sanctions-enforcement) operations, overseas port security and defense, overseas peacetime military engagement; general defense operations in conjunction with the Navy; marine pollution law enforcement, enforcement of lightering (i.e., at-sea cargo-transfer) zones, and overseas inspection of foreign vessels entering U.S. ports. Deepwater-capable assets are also used closer to shore for various operations.

Legacy Deepwater-Capable Assets

When the Deepwater program began in the late 1990s, the Coast Guard's existing (i.e., "legacy") assets for performing deepwater missions included 93 aging cutters and patrol boats and 207 aging aircraft. Many of these ships and aircraft are expensive to operate (in part because the cutters require large crews), increasingly expensive to maintain, technologically obsolete, and in some cases poorly suited for performing today's deepwater missions.

System-Of-Systems (SOS) Acquisition

Rather than replacing its various deepwater-capable cutters, patrol boats, and aircraft through a series of individual procurement programs, the Coast Guard decided to pursue the Deepwater program as a system-of-systems (SOS) acquisition, under which a combination of new and modernized cutters, patrol boats, aircraft, along with associated C4ISR systems[2] and logistics support, would be procured as a single, integrated package. The Coast Guard believes that a system-of-systems approach permits the Deepwater project to be optimized (i.e., made cost effective) at the overall, system-of-systems level, rather than suboptimized at the level of individual platforms and systems.

Lead Systems Integrator (LSI)

To execute this system-of-systems acquisition approach, the Coast Guard initially decided to use a private-sector lead system integrator (LSI) — an industry entity responsible for designing, building, and integrating the various elements of the package so that it meets the Coast Guard's projected deepwater operational requirements at the lowest possible cost. The Coast Guard initially decided to use a private-sector LSI to execute the Deepwater program in part because the size and

---

[1] For additional background information on the Deepwater program on the internet, log onto [http://www.uscg.mil/deepwater/] and [http://www.teamdeepwater.com].

[2] C4I stands for command, control, communications, computers, intelligence, surveillance, and reconnaissance.

complexity of the project was thought to be beyond the system-integration capabilities of the Coast Guard's relatively small in-house acquisition work force. Another major acquisition effort being pursued as a system-of-systems acquisition with an LSI is the Army's Future Combat System (FCS).[3]

Performance-Based Acquisition

The Coast Guard decided to pursue the Deepwater program as a performance-based acquisition, meaning that it would set performance requirements for the program and permit the Deepwater LSI some latitude in determining how the Deepwater system would meet those requirements.

ICGS Contract Award And Extension

The Coast Guard ran a competition for the Deepwater LSI role. Three industry teams competed, and on June 25, 2002, the Coast Guard awarded the role to Integrated Coast Guard Systems (ICGS) — an industry team led by Lockheed Martin and Northrop Grumman Ship Systems (NGSS). ICGS was awarded an indefinite delivery, indefinite quantity (ID/IQ) contract for the Deepwater program that includes a five-year baseline term ending in June 2007, and five potential additional award terms of up to five years (60 months) each. On May 19, 2006, the Coast Guard announced that it was awarding ICGS a 43-month first additional award term, reflecting good but not excellent performance by ICGS. With this additional award term, the contract would extend to January 2011.

Revised Implementation Plan

The original (1998) Deepwater implementation plan reflected a pre-9/11 analysis of Coast Guard mission demands. On March 25, 2005, the Coast Guard submitted to Congress a revised Deepwater implementation plan reflecting an analysis of the Coast Guard's expanded post-9/11 missions. The revised implementation plan increased the capabilities to be acquired under the Deepwater program. Primarily because of the increase in capabilities to be acquired, the Deepwater program's estimated acquisition cost increased from $17 billion to $24 billion, and the program's acquisition period increased from about 20 years to 25 years.

Some observers have expressed concern that the Deepwater program's estimated total acquisition cost has increased from $17 billion to $24 billion. An April 2006 Government Accountability Office (GAO) report stated the following:

> The revised Deepwater implementation plans change the balance between new and legacy assets, alter the delivery schedule for some assets, lengthen the

---

[3] For more on the FCS program, see CRS Report RL32888, *The Army's Future Combat System (FCS): Background and Issues for Congress*, by Andrew Feickert. For more on LSIs in general, see CRS Report RS22631, *Defense Acquisition: Use of Lead System Integrators (LSIs) — Background, Oversight Issues, and Options for Congress*, by Valerie Bailey Grasso.

> overall acquisition schedule by 5 years, and increase the projected program cost from $17 billion to $24 billion. The higher cost generally relates to upgrading assets to reflect added homeland security mission requirements. Upgrades to vessels account for the single largest area of increase; with upgrades to the command, control, communications and other capabilities being second highest. In contrast, because the revised plans upgrade rather than replace most legacy aircraft and reduce the number of unmanned aircraft, the cost for Deepwater aircraft drops. The revised plans, like the original plan, are heavily dependent on receiving full funding each year. Coast Guard officials state that a shortfall in funding in any year could substantially increase total costs.[4]

Some observers expected the revised Deepwater implementation plan to include more ships and aircraft than the original (1998) Deepwater plan. A 2004 RAND Corporation report recommended substantially increasing the numbers of cutters and aircraft to be acquired under the original plan.[5] The revised implementation plan, however, did not substantially increase ship and aircraft numbers. The Coast Guard says the revised force would have considerably more capability than the 1998-planned force because the ships and aircraft would be individually more capable than under the 1998 plan. Coast Guard officials have also acknowledged, however, that the revised force would not have enough capacity to meet long-term (FY2005-FY2009) Government Performance and Review Act (GPRA) goals. An April 2006 GAO report concluded that

> The Coast Guard's analytical methods were appropriate for determining if the revised asset mix would provide greater mission performance and whether the mix is appropriate for meeting Deepwater missions. GAO and other independent experts found the Coast Guard's methods were reliable for assessing the effects of changing the asset mix and a Department of Defense review board facilitated accreditation of the Coast Guard's approach."[6]

Systems To Be Procured Or Converted

The revised Deepwater implementation plan includes the acquisition of the following:

---

[4] Government Accountability Office: *Coast Guard[:] Changes to Deepwater Plan Appear Sound, and Program Management Has Improved, but Continued Monitoring Is Warranted,* GAO-06-546, June 2006.

[5] John Birkler, et al., *The U.S. Coast Guard's Deepwater Force Modernization Plan: Can It Be Accelerated? Will It Meet Changing Security Needs?* RAND, National Security Research Division, MG-114, 2004.

[6] Government Accountability Office: *Coast Guard[:] Changes to Deepwater Plan Appear Sound, and Program Management Has Improved, but Continued Monitoring Is Warranted,* GAO-06-546, June 2006.

For further discussion regarding the adequacy of proposed Deepwater assets, see Statement of Ronald O'Rourke, Specialist in National Defense, Congressional Research Service, Before the Senate Commerce, Science, and Transportation Committee Subcommittee on Fisheries and the Coast Guard Hearing on the Coast Guard's Revised Deepwater Implementation Plan, June 21, 2005, pp. 1-5.

Ships, boats, and surface craft:

- *8 new National Security Cutters, or NSCs,* displacing about 4,000 tons each (i.e., ships analogous to today's high-endurance cutters);
- *25 new Offshore Patrol Cutters, or OPCs,* displacing about 3,200 tons each (i.e., ships analogous to today's medium-endurance cutters);
- *58 new Fast Response Cutters (FRCs)* displacing 200 tons each;
- *33 new Long Range Interceptor (LRI) craft* displacing 15 tons each; and
- *91 new Short Range Prosecutor (SRP) craft* displacing 9 tons each.

Aircraft:

- *6 missionized HC-130J and 16 converted HC-130H Long Range Search (LRS) aircraft;*
- *36 new HC-144A Medium Range Maritime Patrol Aircraft (MPA)* based on the European Aeronautic Defence and Space Company (EADS) CASA HC-235 Persuader MPA aircraft design;
- *42 converted HH-60J Medium Range Recovery (MRR) helicopters*;
- *95 converted HH-65C Multi-Mission Cutter Helicopters (MCHs)*;
- *45 new HV-911 Eagle Eye VTOL (vertical take-off or landing) Unmanned Aerial Vehicles (VUAVs)*; and
- *4 leased RQ-4A Global Hawk High Altitude Endurance UAVs (HAEUAVs).*

In addition to the above items, the Deepwater program included the conversion of the Coast Guard's existing 49 Island-class 110-foot patrol boats into modernized, 123-foot patrol boats, so that these boats could remain in service until the delivery of replacement FRCs.

Program Funding

Table 1 below shows funding for the Deepwater program. As can be seen in the table, the program has received a total of about $4.4 billion through FY2007, including $1,144.6 million in FY2007. The Coast Guard's proposed FY2008 budget requests $836.9 million for the program.

Table 1. Deepwater Program Funding
(in millions of dollars, rounded to nearest tenth)

	Prior[a]	FY02	FY03	FY04	FY05	FY06	FY07	FY08
Request	n/a	320.2	500.0	500.0	678	966.0	934.4	836.9
Appropriation	n/a	320.2	478.0	668.2	724.0	933.1	1,065.9	
Rescissions	n/a		3.1	57.6	38.9	98.7		
Transfers	n/a				49.7	77.8	78.7	
Supplemental approps	n/a					124.2		
Total[b]	**117.0**	**320.2**	**474.9**	**610.6**	**734.8**	**1,036.4**	**1,144.6**	
Cumulative total[b]	**117.0**	**437.2**	**912.1**	**1,522.7**	**2,257.5**	**3,293.9**	**4,438.5**	

Source: Prepared by CRS using Coast Guard data provided on January 29, 2007, and proposed Coast Guard FY2008 budget.

n/a = not available
a. Pre-award funding prior to 2002.
b. Excludes HC-130J funding prior and airborne use-of-force funding prior to FY2007.

Earlier Interest In Potential For Program Acceleration

Prior to recent strong criticisms regarding management and execution of the Deepwater program, some Members of Congress expressed interest in accelerating procurement of Deepwater assets and thereby compressing the Deepwater acquisition period from 25 years to 15 or 10 years, so as to reduce total Deepwater acquisition costs and more quickly replace legacy assets. Some of these Members expressed disappointment that the Coast Guard's revised implementation plan lengthened the program's acquisition period from about 20 years to 25 years. Compressing the Deepwater program's acquisition period to 15 or 10 years could reduce total Deepwater acquisition costs but would require substantially increasing annual Deepwater acquisition funding levels.[7]

A 2004 RAND Corporation report, using the original (pre-2005) Deepwater implementation plan, concluded that "the shipbuilding and air vehicle industrial bases could produce the USCG's Deepwater assets on either the 15-year or the 10-year schedule. Manufacturers would require no major facility upgrades to accommodate acceleration."[8] GAO has cautioned that accelerating the Deepwater

---

[7] Section 888(I) of H.R. 5005/P.L. 107-296 directed DHS to report to Congress on the idea of compressing the Deepwater program from 20 years to 10 years. On March 12, 2003, the Coast Guard submitted the report, which concluded that compressing the Deepwater acquisition period to 10 years was feasible, that it would increase Deepwater acquisition costs over the period FY2005-FY2011 by about $7.4 billion in then-year dollars, but reduce total Deepwater acquisition costs over the long run from $16.022 billion in then-year dollars to $11.473 billion in then-year dollars. (U.S. Coast Guard, *Report to Congress on the Feasibility of Accelerating the Integrated Deepwater System*, 2003.)

[8] John Birkler, et al., *The U.S. Coast Guard's Deepwater Force Modernization Plan: Can It Be Accelerated? Will It Meet Changing Security Needs?* RAND, National Security (continued...)

program could increase program-management risks, but has also acknowledged that accelerating selected parts of the program might be more feasible.

Congressional Oversight Hearings In 2007

House and Senate committees and subcommittees have conducted several oversight hearings in 2007 devoted partly or entirely to problems and concerns regarding the management and execution of the program. Examples of such hearings include:

- a January 30, 2007, hearing before the Coast Guard and Maritime Transportation subcommittee of the House Transportation and Infrastructure Committee;
- February 6 and 15, 2007, hearings before the Homeland Security subcommittee of the House Appropriations Committee
- a February 8, 2007, hearing before the House Committee on Oversight and Government Affairs;
- a February 14, 2007, hearing before the Oceans, Atmosphere, Fisheries, and Coast Guard subcommittee of the Senate Commerce, Science and Transportation Committee;
- a March 8, 2007, hearing before the Coast Guard and Maritime transportation subcommittee of the House Transportation and Infrastructure Committee.
- an April 18, 2007, hearing before the full House Transportation and Infrastructure Committee;
- an April 18, 2007, hearing before the Oceans, Atmosphere, Fisheries, and Coast Guard subcommittee of the Senate Commerce, Science, and Transportation Committee; and
- a May 17, 2007, joint hearing before the Border, Maritime, and Global Counterterrorism subcommittee and the Management, Investigations, and Oversight subcommittee of the House Homeland Security Committee.

Problems In Program Management And Execution

The management and execution of the Deepwater program has been strongly criticized in recent months by the Department of Homeland Security Inspector General (DHS IG), the Defense Acquisition University (DAU), the Government

---

[8] (...continued)
Research Division, MG-114, 2004.

Accountability Office (GAO), several Members of Congress from committees and subcommittees that oversee the Coast Guard, and other observers.

Criticism of the management and execution of the program has focused on problems in three cutter acquisition efforts, and on overall management of the program. Each of these is discussed below.

Problems In Cutter Acquisition Efforts. The Deepwater cutter acquisition efforts that have experienced problems are the new National Security Cutter (NSC), the 110-foot patrol boat modernization effort, and the new Fast Response Cutter (FRC).

National Security Cutter (NSC). A DHS IG report released in January 2007 strongly criticized the NSC program, citing design flaws in the ship and the Coast Guard's decision to start construction of NSCs in spite of early internal notifications about these flaws. The DHS IG report also noted considerable growth in the cost to build the first two NSCs, and other issues.[9]

110-Foot Patrol Boat Modernization. As mentioned earlier, as part of the Deepwater program, the Coast Guard originally planned to modernize its 49 existing Island-class 110-foot patrol boats so as to improve their capabilities and extend their lives until their planned eventual replacement with new Deepwater Fast Response Cutters (FRCs) starting in 2018. Among other things, the modernization lengthened the boats to 123 feet. The program consequently is referred to as the 110-foot or 123-foot modernization program.

Eight of the boats were modernized at a total cost of $87 million to $100 million (sources quote different figures). The first was delivered in March 2004. Structural problems were soon discovered in them. In June 2005, the Coast Guard stopped the modernization effort at eight boats after determining that they lacked capabilities needed for meeting post-9/11 Coast Guard operational requirements.

In August 2006, a former Lockheed engineer posted on the Internet a video alleging four other problems with the 110-foot patrol boat modernization effort.[10] The engineer had previously presented these problems to the DHS IG, and a February 2007 report from the DHS IG confirmed two of the four problems.[11]

---

[9] Department of Homeland Security, Office of Inspector General, *Acquisition of the National Security Cutter*, OIG -07-23, January 2007. The report is available online at [http://www.dhs.gov/xoig/assets/mgmtrpts/OIG_07-23_Jan07.pdf].

[10] Patricia Kime, "Video Alleges Security Problems With Converted U.S. Coast Guard Cutters," *DefenseNews.com*, August 7, 2006. See also Griff Witte, "On YouTube, Charges Of Security Flaws," *Washington Post*, August 29, 2006. The video is posted on the Internet at [http://www.youtube.com/watch?v=qd3VV8Za04g].

[11] Department of Homeland Security, Office of Inspector General, *110'/123' Maritime Patrol Boat Modernization Project*, OIG -07-27, January 2007. The report is available online at [http://www.dhs.gov/xoig/assets/mgmtrpts/OIG_07-27_Feb07.pdf].

On November 30, 2006, the Coast Guard announced that it was suspending operations of the eight modernized 123-foot patrol boats (which were assigned to Coast Guard Sector Key West, FL) due to the discovery of additional structural damage to their hulls. The suspension prompted expressions of concern that the action could reduce the Coast Guard's border-enforcement capabilities in the Caribbean. The Coast Guard said it was exploring options for addressing operational gaps resulting from the decision.[12]

On April 17, 2007, the Coast Guard announced that it would permanently decommission the eight converted boats and strip them of equipment and components that might be reused on other Coast Guard platforms. The Coast Guard estimates the total value of the recovered equipment at $30 million to $60 million, depending on how much can be reused.[13] In announcing the decision, the Admiral Thad Allen, the Commandant of the Coast Guard, stated:

> A significant step in changing the course of Deepwater is resolving outstanding issues within the program, so let me begin this morning by announcing my decision to permanently decommission the eight 123' patrol boats converted under the Deepwater program.
>
> Multiple extensive studies and analyses by both Coast Guard engineers and third-party naval architects and marine engineers over many months have described the failures in these vessels. They have been unable to determine a single definitive root cause for the 123-foot patrol boat structural problems.
>
> We believe the design of the 123-foot patrol boat reduced the structural cross section necessary to support the added weight distribution following the conversion. Our analysis has been complicated, however, by the fact that we've observed permanent deformations of each hull in slightly different ways.
>
> Based on this analysis, any strategy to permanently repair these cutters and return them to service would require an iterative, phased approach over a long period of time with uncertain costs and outcome. Initial estimates indicate it could cost well over $50 million.
>
> The excessive cost and time associated with continuing to pursue an uncertain resolution to these structural problems has convinced me, with the recommendation of my chief engineer, that permanently removing these cutters

---

[12] "Coast Guard Statement on Suspension of Converted Patrol Boat Operations," *InsideDefense.com*, November 30, 2006; Patricia Kime, "U.S. Coast Guard Pulls 123s Out of Service," *DefenseNews.com*, November 30, 2006; Calvin Biesecker, "Coast Guard Suspends 123-Foot Patrol Boat Operations," *DefenseDaily*, December 1, 2006; Robert Block, "Coast Guard Fleet Cuts Could Hurt Border Patrols," *Wall Street Journal*, December 1, 2006; Renae Merle, "Coast Guard Finds Flaws In Converted Patrol Boats," *Washington Post*, December 2, 2006; Renae Merle and Spencer S. Hsu, "Costly Fleet Update Falters," *Washington Post*, December 8, 2006.

[13] Geoff Fein, "Coast Guard Nixes 123-Foot Patrol Boat, Assumes Lead of Deepwater Effort," *Defense Daily*, April 18, 2007;Patricia Kime, "Coast Guard To Decommission Troubled 123s," *NavyTimes.com*, April 18, 2007.

> from service while recouping any residual value and redirecting funds to other programs is in the best interest of the government.
>
> We will continue to mitigate the loss of these patrol boat hours through our ongoing efforts and strategies (such as multi-crewing 110-foot patrol boats and an extension of the memorandum of understanding for three Navy 179-foot patrol craft) while we work toward acquiring a new platform as soon as we can to replace our entire fleet of 110-foot patrol boats.
>
> We will pursue all viably available contractual, legal or other options for recouping any funds that might be owed the government as a result of the loss of these hulls.[14]

On May 17, 2007, the Coast Guard testified that, earlier that same day, it had issued a letter to ICGS revoking its previous acceptance of the eight converted boats — an action intended to facilitate Coast Guard attempts to recover from ICGS funds that were spent on the eight converted boats.[15]

Fast Response Cutter (FRC). As a result of the problems in the 110-foot patrol boat modernization project, the Coast Guard accelerated the FRC design and construction effort by 10 years. Problems, however, were discovered in the FRC design, and the Coast Guard in February 2006 suspended work on the design.

The Coast Guard has now divided the 58-ship FRC effort into two classes — 12 FRC-Bs, which are to be procured as a near-term stop-gap measure and which are to be based on an existing patrol boat design (which the Coast Guard calls a "parent craft" design), and 46 subsequent FRC-As, which are to be based on a fixed version of the new FRC design. The Coast Guard by mid-November 2006 reportedly had looked at 27 candidate designs submitted by 19 manufacturers for the FRC-B effort. In December 2006, the Coast Guard issued a Request for Proposals (RFP) to ICGS for the FRC-B.

On March 14, 2007, the Coast Guard announced that it intends to procure the 12 FRC-B cutters directly from the manufacturer, rather than through ICGS.[16]

Overall Management Of The Program. Some observers believe the problems experienced in the three cutter acquisition efforts are the product of broader problems in the Coast Guard's overall management of the Deepwater program. A

---

[14] Coast Guard Press Release dated April 17, 2007, entitled "Statement by Adm. Thad Allen on the Converted 123-Foot Patrol Boats and Changes to the Deepwater Acquisition Program."

[15] Dan Caterinicchia, "Coast Guard Wants Refund For Ships," *Associated Press*, May 17, 2007; Renae Merle, "Coast Guard Seeks Deepwater Refund," *Washington Post*, May 18, 2007: D3.

[16] Coast Guard press release, "Coast Guard Reassigns Deepwater Replacement Patrol Boast Acquisition Project," March 14, 2007; Calvin Biesecker, "Coast Guard Strips FRC-B Patrol Boat Acquisition From ICGS," *Defense Daily*, March 15, 2007; Renae Merle, "Coast Guard Cancels Contract," *Washington Post*, March 15, 2007; and David Stout, "Coast Guard Cancels Contract For Vessel," *New York Times*, March 15, 2007.

February 2007 DAU "quick look study,"[17] as well as reports from the DHS IG and GAO, have expressed serious concerns about the Coast Guard's overall management of the Deepwater program. These reports, as well as Members of Congress and other observers, have raised concerns about a number of actual or alleged problems.

Some observers have expressed the view that using an LSI to implement the Deepwater program made a complex program more complex, and set the stage for waste, fraud, and abuse by effectively outsourcing oversight of the program to the private sector and by creating a conflict of interest for the private sector in executing the program.

Other observers, including the DAU and GAO, have expressed the view that the LSI approach is basically valid, but that the contract used to implement the approach for the Deepwater program was flawed in various ways, undermining the Coast Guard's ability to assess contractor performance, control costs, ensure accountability, and conduct general oversight of the program.[18]

Observers have raised various issues about the Deepwater contract. Among other things, they have expressed concern that the contract is an indefinite delivery, indefinite quantity (ID/IQ) contract, which, they say, can be an inappropriate kind of contract for a program like the Deepwater program. Observers have also expressed concern that the contract:

- transferred too much authority to the LSI for defining performance specifications, for subsequently modifying them, and for making technical judgements;
- permitted the LSI to certify that certain performance goals had been met — so-called self-certification, which, critics argue, can equate to no meaningful certification;
- provided the Coast Guard with insufficient authority over the LSI for resolving technical disputes between the Coast Guard and the LSI;
- was vaguely worded with regard to certain operational requirements and technical specifications, reducing the Coast Guard's ability to assess performance and ensure that the program would achieve Coast Guard goals;
- permitted the firms making up the LSI to make little use of competition between suppliers in selecting products to be used in the Deepwater program, to tailor requirements to fit their own products,

---

[17] Defense Acquisition University, *Quick Look Study, United States Coast Guard Deepwater Program*, February 2007.

[18] For additional discussion about LSIs in general, see CRS Report RS22631, *Defense Acquisition: Use of Lead System Integrators (LSIs) — Background, Oversight Issues, and Options for Congress*, by Valerie Bailey Grasso.

and consequently to rely too much on their own products, as opposed to products available from other manufacturers;

- permitted the LSI's performance during the first five-year period to be scored in a way that did not sufficiently take into account recent problems in the cutter acquisition efforts;

- permitted award fees and incentive fees (i.e., bonuses) to be paid to the LSI on the basis of "attitude and effort" rather than successful outcomes; and

- lacked sufficient penalties and exit clauses.

Observers have also expressed concern that the Coast Guard does not have enough in-house staff and in-house expertise in areas such as program management, financial management, and system integration, to properly oversee and manage an acquisition effort as large and complex as the Deepwater program, and that the Coast Guard did not make sufficient use of the Navy or other third-party, independent sources of technical expertise, advice, and assessments. They also have expressed concern that the Coast Guard, in implementing the Deepwater program, has placed a higher priority on meeting a schedule as opposed to ensuring performance.

In addition, observers have stated that the Coast Guard proceeded with construction of the first NSCs in spite of early internal warnings about flaws in the NSC design, failed to report problems about the NSC effort to Congress on a timely basis, resisted efforts by the DHS IG to investigate the NSC effort, and appears to have altered briefing slides on the NSC effort so as to downplay the design flaws to certain audiences. On May 17, 2007, the DHS IG testified that the Coast Guard's cooperation with the DHS IG had substantially improved (though some issues remained), but that Deepwater contractors had establishing unacceptable conditions for DHS IG to interview contractor personnel about the program.

For additional information on the issues discussed above, see the reprinted portions of reports and testimony in the **appendices** to this report.

Coast Guard Management Reforms Announced April 17, 2007

On April 17, 2007, the Coast Guard announced a series of actions to reform the management of the Deepwater program. Among other things, the Coast Guard announced it will assume the role of lead system integrator (LSI) for the program. Since 2002, the LSI role had been performed by Integrated Coast Guard Systems (ICGS) — an industry team led by Lockheed Martin and Northrop Grumman Ship Systems (NGSS). In announcing the actions, Admiral Thad Allen, the Commandant of the Coast Guard, stated in part:

> As many of you know, I met with the Lockheed Martin CEO Robert Stevens and Northrop Grumman CEO Ronald Sugar in January to determine near and long-term objectives and goals for the Deepwater program. Since then we've spoken frequently, as both the Coast Guard and our industry partners have taken a number of steps to improve the management, oversight and performance of the

Deepwater program. More recently, we reached agreement on six fundamental principles that we have begun implementing to ensure that the government's interests are fully and fairly achieved in acquiring and fielding assets and capabilities being developed and produced under the Integrated Deepwater System.

These principles will guide us as we seek to obtain the best value for the government through robust competition and vigilant contract oversight and management.

Working together with industry, the Coast Guard will make the following six fundamental changes in the management of our Deepwater program:

The Coast Guard will assume the lead role as systems integrator for all Coast Guard Deepwater assets, as well as other major acquisitions as appropriate. I have already begun building my organic staff in the fiscal year 2008 budget request, and will combine that with other government assets as we transition to this new role.

The Coast Guard will take full responsibility for leading the management of all life cycle logistics functions within the Deepwater program under a an improved logistics architecture established with the new mission support organization.

The Coast Guard will expand the role of the American Bureau of Shipping, or other third-parties as appropriate, for Deepwater vessels to increase assurances that Deepwater assets are properly designed and constructed in accordance with established standards.

The Coast Guard will work collaboratively with Integrated Coast Guard Systems to identify and implement an expeditious resolution to all outstanding issues regarding the national security cutters.

The Coast Guard will consider placing contract responsibilities for continued production of an asset class on a case-by-case basis directly with the prime vendor consistent with competition requirements if: (1) deemed to be in the best interest of the government and (2) only after we verify lead asset performance with established mission requirements.

Finally, I will meet no less than quarterly with my counterparts from industry until any and all Deepwater program issues are fully adjudicated and resolved. Our next meeting is to be scheduled within a month.

These improvements in program management and oversight going forward will change the course of Deepwater.

By redefining our roles and responsibilities, redefining our relationships with our industry partners, and redefining how we assess the success of government and industry management and performance, the Deepwater program of tomorrow will be fundamentally better than the Deepwater program of today....

As many of you know, I have directed a number of significant organizational changes [to the Coast Guard], embedded within direction and orders, to better prepare the Coast Guard to meet and sustain mission performance long into the future as we confront a broad range of converging threats and challenges to the safety, security and stewardship of America's vital maritime interests.

What's important to understand here is that these proposed changes in organizational structure, alignment and business processes, intended to make the Coast Guard more adaptive, responsive and accountable, are not separate and distinct from what we have been doing over the past year to improve Deepwater.

In fact, many of these initiatives can be traced directly to challenges we've faced, in part, in our Deepwater program. Consequently, we will be better organized, better trained, and better equipped to manage large, complex acquisitions like Deepwater in the coming days, weeks, months and years as we complete these service-wide enhancements to our mission support systems, specifically our acquisition, financial and logistics functions. That is the future of the Coast Guard, and that is the future of Deepwater.

To be frank, I am tired of looking in the rearview mirror - conducting what has been the equivalent of an archaeological dig into Deepwater. We already understand all too well what has been ailing us within Deepwater in the past five years:

We've relied too much on contractors to do the work of government as a result of tightening AC&I budgets, a dearth of contracting personnel in the federal government, and a loss of focus on critical governmental roles and responsibilities in the management and oversight of the program.

We struggle with balancing the benefits of innovation and technology offered through the private sector against the government's fundamental reliance on robust competition.

Both industry and government have failed to fully understand each other's needs and requirements, all too often resulting in both organizations operating at counter-odds to one another that have benefited neither industry nor government.

And both industry and government have failed to accurately predict and control costs.

While we can — and are — certainly learning from the past, we ought to be about the business of looking forward — with binoculars even — as we seek to see what is out over the horizon so we can better prepare to anticipate challenges and develop solutions with full transparency and accountability. That is the business of government. And it's the same principle that needs to govern business as well.

And it's precisely what I intend to do: with the changes in management and oversight I outlined for you here today, with the changes we are making in the terms and conditions of the Deepwater contract, and with the changes we will make in our acquisition and logistics support systems throughout the Coast Guard. If we do, I have no doubt in my mind that we will exceed all expectations for Deepwater....

> The Deepwater program of tomorrow will be fundamentally better than the Deepwater program of today.
>
> The Coast Guard has a long history of demonstrating exceptional stewardship and care of the ships, aircraft and resources provided it by the public, routinely extending the life of our assets far beyond original design specifications to meet the vital maritime safety, security and stewardship needs of the nation....
>
> Knowing that to be the case, I am personally committed to ensuring that our newest ships, aircraft and systems acquired through the Coast Guard's Integrated Deepwater System are capable of meeting our mission requirements from the moment they enter service until they are taken out of service many, many years into the future....
>
> As I've said many times in the past, the safety and security of all Americans depends on a ready and capable Coast Guard, and the Coast Guard depends on our Deepwater program to keep us ready long into the future.
>
> The changes to Deepwater management and oversight I outlined here for you today reflect a significant change in the course of Deepwater. I will vigorously implement these and other changes that may be necessary to ensure that our Coast Guard men and women have the most capable fleet of ships, aircraft and systems they need to do the job I ask them to do each and every day on behalf of the American people.[19]

Coast Guard officials state that the Coast Guard intends to proceed with the 43-month award term with ICGS and use the contract to complete Deepwater acquisition efforts that are already underway. Coast Guard official state that task orders that the Coast Guard issues under the 43-month award term will be for performance periods of 18 to 24 months, with the aim of closing out efforts already underway.[20]

Other Announced Coast Guard Actions

In addition to the April 17 Coast Guard announcement about Deepwater management reforms and the March 14 Coast Guard announcement concerning the FRC-Bs, the Coast Guard in recent weeks has done the following:

- announced a reorganization of certain Coast Guard commands that is intended in part to strengthen the Coast Guard's ability to manage acquisition projects, including the Deepwater program;
- stated that it is making additional internal changes specifically targeted at improving its ability to manage the Deepwater program;

---

[19] Coast Guard Press Release dated April 17, 2007, entitled "Statement by Adm. Thad Allen on the Converted 123-Foot Patrol Boats and Changes to the Deepwater Acquisition Program."

[20] See, for example, the spoken testimony of Admiral Thad Allen, Commandant of the Coast Guard, before the Oceans, Atmosphere, Fisheries, and Coast Guard subcommittee of the Senate Commerce, Science, and Transportation Committee on April 18, 2007.

- stated that it plans to alter the terms of the Deepwater contract for the 43-month award term that commences in mid-2007 so as to address concerns raised about the current Deepwater contract;

- stated that it is hiring additional people with acquisition experience, so as to strengthen its in-house capability for managing the Deepwater program and other Coast Guard acquisition efforts;

- acted to resolve differences between the Coast Guard and ICGS regarding the fatigue life of the NSC;

- stated that it concurs with many of the recommendations made in the DHS IG reports, and is moving to implement them;

- stated that it is weighing the recommendations of the DAU quick look study; and

- stated that it has also implemented many recommendations regarding Deepwater program management that have been made by GAO.

On May 17, 2007, the Coast Guard testified that its Deepwater acquisition staff had increased from about 250 to about 450, and that it would continue to grow about 10% per year. The Coast Guard testified that it would be generally capable of acting as the LSI for the Deepwater program within about 12 to 18 months, that the area of in-house acquisition expertise that is most in need of improvement during this period is C4ISR, and that the increase in acquisition-related staffing would not impact other Coast Guard activities because of the service's increasing end strength. The Coast Guard testified that it will continue to use the services of independent, third-party sources of support, such as the Carderock division of the Naval Surface Warfare Center (NSWC), the Navy's center of excellence for ships and ship systems.[21]

Justice Department Investigation Of Program

On April 18, 2007, it was reported that the Justice Department is conducting an investigation of the Deepwater program. The investigation reportedly centers on communications systems, the conversion of the Coast Guard's 110-foot patrol boats, and the National Security Cutter (NSC). Justice reportedly notified Lockheed, Northrop, and certain other firms involved in the Deepwater program of the investigation on December 13, 2006, and directed the firms to preserve all documents relating to the program.[22]

---

[21] Spoken testimony of Rear Admiral Gary Blore at May 17, 2007, joint hearing before the Border, Maritime, and Global Counterterrorism subcommittee and the Management, Investigations, and Oversight subcommittee of the House Homeland Security Committee.

[22] Ana Radelat, "Justice Investigating Deepwater Contractors," *NavyTimes.com*, April 18, 2007; Chris Strohm, "Deepwater Contractors Face Justice Probe" *GovExec.com*, April 19, (continued...)

Oversight Issues for Congress

Coast Guard's Announced Management Reforms

In light of the Deepwater management reforms announced by the Coast Guard on April 17, 2007, potential oversight questions for Congress regarding management and execution of the Deepwater program include the following:

- Are the Coast Guard's announced reforms appropriate? Are they insufficient, excessive, or about right? Do they properly address all concerns regarding the management and execution of the Deepwater program?

- Has the Coast Guard developed a detailed plan for transferring the Deepwater LSI role from ICGS to the Coast Guard? Which specific system-integration responsibilities, if any, will continue to be performed by ICGS?

- Does the Coast Guard have enough in-house technical and program-management expertise to take on the role of Deepwater LSI? Will the Coast Guard be able to expand its in-house expertise quickly enough to meet the added demand for such expertise that will result from taking on the LSI role? Does the Coast Guard have a career path for acquisition personnel similar to that in Departmentof Defense agencies? To what degree will the Coast Guard need to obtain technical and program-management support from the Navy or other third parties? Does the Coast Guard have a detailed plan for expanding its in-house technical and program-management staff and for obtaining assistance from third parties?

- Has the Coast Guard established milestones that Congress can use to assess the success of the Coast Guard's announced management reforms? If so, what are the milestones, and how were they determined? If not, does the Coast Guard plan to develop such milestones?

- What implications, if any, does the Coast Guard's decision to perform the Deepwater LSI role have for the concept of using private-sector LSIs on other federal acquisition programs?[23]

---

[22] (...continued)
2007; Patricia Kime, "Justice Investigating Deepwater Contract," *NavyTimes.com*, April 20, 2007.

[23] For more on LSIs in general, see CRS Report RS22631, *Defense Acquisition: Use of Lead System Integrators (LSIs) — Background, Oversight Issues, and Options for Congress*, by Valerie Bailey Grasso.

Execution Of FY2007 Funds

The pace at which prior-year funding for a program is obligated and expended is one measure by which Congress assesses the readiness of the program to receive additional funding in future fiscal years. On March 12, 2007, it was reported that a large percentage of FY2007 funding for the Deepwater program had not yet been obligated.[24]

Revolving Door And Potential For Conflicts Of Interest

The so-called revolving door, which refers to the movement of officials between positions in government and industry, can create benefits for government and industry in terms of allowing each side to understand the other's needs and concerns, and in terms of spreading best practices from one sector to the other. At the same time, some observers have long been concerned that the revolving door might create conflicts of interest for officials carrying out their duties while in government positions. A March 25, 2007, news article stated in part:

> Four of the seven top U.S. Coast Guard officers who retired since 1998 took positions with private firms involved in the Coast Guard's troubled $24 billion fleet replacement program, an effort that government investigators have criticized for putting contractors' interests ahead of taxpayers'.
>
> They weren't the only officials to oversee one of the federal government's most complex experiments at privatization, known as Deepwater, who had past or subsequent business ties to the contract consortium led by industry giants Northrop Grumman and Lockheed Martin.
>
> The secretary of transportation, Norman Y. Mineta, whose department included the Coast Guard when the contract was awarded in 2002, was a former Lockheed executive. Two deputy secretaries of the Department of Homeland Security, which the Coast Guard became part of in 2003, were former Lockheed executives, and a third later served on its board.
>
> Washington's revolving-door laws have long allowed officials from industry giants such as Lockheed, the nation's largest defense contractor, to spend parts of their careers working for U.S. security agencies that make huge purchases from those companies, though there are limits.
>
> But Deepwater dramatizes a new concern, current and former U.S. officials said: how dwindling competition in the private sector, mushrooming federal defense spending and the government's diminished contract management skills raise the stakes for potential conflicts of interest.[25]

---

[24] Patricia Kime, "Unspent Funds Are Bulk of Deepwater Budget," *DefenseNews.com*, March 12, 2007.

[25] A 2002 CRS report on shipyard mergers stated in part:

> Movement of senior-level employees between DoD and the defense industry is common and can be beneficial in terms of improving DoD

(continued...)

Deepwater also illustrates how federal ethics rules carve out loopholes for senior policymakers to oversee decisions that may benefit former or prospective employers. These include outsourcing strategies under which taxpayers bear most of the risks for failure, analysts said.

There is no sign that any of the retired admirals or former Lockheed officials did anything illegal.

But the connections between the agencies and the contractors have drawn the attention of the DHS inspector general, Richard L. Skinner. "That is on our radar screen," he said. "It's something we are very sensitive to."[26]

---

[25] (...continued)

understanding of industry concerns, importing efficient industry business practices into DoD, and improving industry understanding of DoD goals, procedures, and concerns. It also, however, has the potential to create questions regarding potential conflicts of interest for senior DoD officials involved in making decisions about major weapon acquisition programs or regulatory issues that affect the defense industry, particularly if those officials are potential candidates for post-DoD employment with a defense firm.

Shipyard mergers since 1995 have contributed to the general consolidation of defense firms and have reduced in particular the number of major defense firms that might hire a former DoD or Navy official specifically on account of that person's background in Navy shipbuilding programs. Until 1995, for example, a DoD or Navy official with such a background who was anticipating or hoping for a post-DoD/Navy career in the private sector knew there were 6 major naval shipbuilding firms (plus several other major contractors involved in shipbuilding programs) available as potential employers. Now, in contrast, there are only two firms that own shipyards that build major ships for the Navy (GD and NOC) and a smaller number of other major defense contractors involved in shipbuilding programs (e.g., Lockheed Martin and Raytheon).

A potential issue for Congress is whether and how shipyard mergers since 1995, by reducing the number of potential post-DoD/Navy employers for persons with shipbuilding backgrounds, might affect decisions made by current senior DoD and Navy officials with responsibility for Navy shipbuilding programs or regulatory issues affecting the shipyards. With fewer firms available as potential post-DoD/Navy employers, will DoD/Navy officials involved in shipbuilding programs be willing to make decisions that might strongly disappoint one or more of those firms?

(CRS Report RL31400, Navy Shipbuilding: Recent Shipyard Mergers — Background and Issues for Congress, by Ronald O'Rourke.)

[26] Spencer S. Hsu and Renae Merle, "Coast Guard's Purchasing Raises Conflict-Of-Interest Flags," *Washington Post*, March 25, 2007.

Potential Options for Congress

Potential options for Congress regarding the Deepwater program — some of which might have the effect of legislatively mandating reforms that the Coast Guard announced on April 17, 2007 — include but are not limited to the following:

- track and assess the changes that the Coast Guard has stated it will implement regarding management and execution of the Deepwater program;
- institute additional or stricter reporting requirements for the Deepwater program;
- encourage or require the Coast Guard to implement recommendations for the Deepwater program made by the DAU, the DHS IG, and GAO that the Coast Guard has not already agreed to implement;
- encourage or require the Coast Guard to make greater use of the Navy or other third-party, independent sources of expertise to help the Coast Guard manage the program;
- encourage or require the Coast Guard to cancel its 43-month award period to the current LSI and to hold a new competition, open to all bidders, for the LSI role;
- encourage or require the Coast Guard to reduce the role of the LSI to that of a coordinator of Deepwater program efforts managed and executed by various firms acting as prime contractors for their various efforts;
- encourage or require the Coast Guard to end the use of a private-sector LSI in favor of direct Coast Guard management and integration of the program;
- encourage or require the Coast Guard to replace the Deepwater program with a series of separate procurement programs for replacing individual classes of cutters, boats, and aircraft; and
- prohibit the obligation or expenditure of some or all FY2008 funding for the Deepwater program until the Coast Guard or DHS takes certain actions or makes certain certifications regarding the Deepwater program.

Legislative Activity in 2007

FY2007 Emergency Supplemental Appropriations Act (H.R. 1591)

House. Sections 4403 and 4404 of the House-passed version of H.R. 1591 state:

> SEC. 4403. (a) IN GENERAL- Any contract, subcontract, or task order described in subsection (b) shall contain the following:
>
> (1) A requirement for a technical review of all designs, design changes, and engineering change proposals, and a requirement to specifically address all engineering concerns identified in the review before the obligation of further funds may occur.
>
> (2) A requirement that the Coast Guard maintain technical warrant holder authority, or the equivalent, for major assets.
>
> (3) A requirement for independent cost estimates of major changes.
>
> (4) A requirement for measurement of contractor and subcontractor performance based on the status of all work performed.
>
> (b) CONTRACTS, SUBCONTRACTS, AND TASK ORDERS COVERED- Subsection (a) applies to —
>
> (1) any major procurement contract entered into by the Coast Guard;
>
> (2) any subcontract entered into under such a contract; and
>
> (3) any task order issued pursuant to such a contract or subcontract.
>
> (c) PLAN FOR EXPENDITURE OF DEEPWATER FUNDS- The funds appropriated in Public Law 109-295 for the Integrated Deepwater Systems program may not be obligated until the Committees on Appropriations of the Senate and the House of Representatives receive and approve a plan for expenditure that —
>
> (1) defines activities, milestones, yearly costs, and lifecycle costs for each procurement of a major asset, including an independent cost estimate for each;
>
> (2) identifies lifecycle staffing and training needs of Coast Guard project managers and of procurement and contract staff;
>
> (3) identifies all Integrated Product Teams that are not chaired by Coast Guard personnel and explains why the Coast Guard does not chair;
>
> (4) identifies competition to be conducted in each procurement;
>
> (5) does not rely on a single industry entity or contract;

(6) contains very limited indefinite delivery/indefinite quantity contracts and explains the need for any indefinite delivery/indefinite quantity contracts;

(7) complies with all applicable acquisition rules, requirements, and guidelines, and incorporates the best systems acquisition management practices of the Federal Government;

(8) complies with the capital planning and investment control requirements established by the Office of Management and Budget, including circular A-11, part 7;

(9) includes a certification by the Chief Procurement Officer of the Department of Homeland Security that the Coast Guard has established sufficient controls and procedures to comply with all contracting requirements and that any apparent conflicts of interest have been sufficiently addressed;

(10) includes a description of the process used to act upon deviations from the contractually specified performance requirements and clearly explains the actions taken on such deviations; and

(11) is reviewed by the Government Accountability Office.

SEC. 4404. (a) IN GENERAL- With respect to contracts entered into after May 1, 2007, and except as provided in subsection (b), no entity performing lead system integrator functions in the acquisition of a major system by the Department of Homeland Security may have any direct financial interest in the development or construction of any individual system or element of any system of systems.

(b) EXCEPTION- An entity described in subsection (a) may have a direct financial interest in the development or construction of an individual system or element of a system of systems if —

(1) the Secretary of Homeland Security certifies to the Committees on Appropriations of the Senate and the House of Representatives and the House Committee on Homeland Security that —

(A) the entity was selected by the Department of Homeland Security as a contractor to develop or construct the system or element concerned through the use of competitive procedures; and

(B) the Department took appropriate steps to prevent any organizational conflict of interest in the selection process; or

(2) the entity was selected by a subcontractor to serve as a lower-tier subcontractor, through a process over which the entity exercised no control.

(c) CONSTRUCTION- Nothing in this section shall be construed to preclude an entity described in subsection (a) from performing work necessary to integrate two or more individual systems or elements of a system of systems with each other.

(d) REGULATIONS UPDATE- Not later than May 1, 2007, the Secretary of Homeland Security shall update the acquisition regulations of the Department of Homeland Security in order to specify fully in such regulations the matters with respect to lead system integrators set forth in this section. Included in such regulations shall be (1) a precise and comprehensive definition of the term `lead system integrator', modeled after that used by the Department of Defense, and (2) a specification of various types of contracts and fee structures that are appropriate for use by lead system integrators in the production, fielding, and sustainment of complex systems.

With regard to these two sections, the House report on the bill (H.Rept. 110-060 of March 20, 2007) states:

> The Committee includes a provision [Section 4403] tightening Coast Guard procurement practices. Numerous studies, including one by the Defense Acquisition University, have recommended changes to Coast Guard procurement procedures and contracting practices in order to control costs and procure equipment that works. The most recent failure in procurement resulted in eight Coast Guard cutters that are currently grounded due to hull buckling problems. In order to ensure that Coast Guard quickly reforms its major procurement systems, the Committee has included bill language mandating: technical reviews of design and design changes; independent cost estimates of major changes; and Coast Guard maintaining technical warrant holder equivalent authority and measuring contractor performance on all work performed. In addition, the provision requires a robust expenditure plan that is reviewed by the Government Accountability Office for Coast Guard's Deepwater program before any 2007 Deepwater funding is obligated.
>
> The Committee includes a provision [Section 4404] limiting the use of lead system integrator contracts, similar to requirements in law for the Department of Defense.

Senate. Section 3402 of the Senate-passed version of H.R. 1591 states:

SEC. 3402. INTEGRATED DEEPWATER SYSTEM. (a) COMPETITION FOR ACQUISITION AND MODIFICATION OF ASSETS-

(1) IN GENERAL- The Commandant of the Coast Guard shall utilize full and open competition for any contract entered into after the date of enactment of this Act that provides for the acquisition or modification of assets under, or in support of, the Integrated Deepwater System Program of the Coast Guard.

(2) EXCEPTIONS- Paragraph (1) shall not apply to the following:

(A) The acquisition or modification of the following asset classes for which assets of the class and related systems and components under the Integrated Deepwater System are under a contract for production:

(i) National Security Cutter;

(ii) Maritime Patrol Aircraft;

(iii) Deepwater Command, Control, Communications, Computer, Intelligence, Surveillance, and Reconnaissance (C4ISR) System; and

(iv) HC-130J Fleet Introduction.

(B) The modification of any legacy asset class under the Integrated Deepwater System Program being performed by a Coast Guard entity.

(b) CHAIR OF PRODUCT AND OVERSIGHT TEAMS- The Commandant of the Coast Guard shall assign an appropriate officer or employee of the Coast Guard to act as chair of each of the following:

(1) Each integrated product team under the Integrated Deepwater System Program.

(2) Each higher-level team assigned to the oversight of a product team referred to in paragraph (1).

(c) LIFE-CYCLE COST ESTIMATE- The Commandant of the Coast Guard may not enter into a contract for lead asset production under the Integrated Deepwater System Program until the Commandant obtains an independent estimate of life-cycle costs of the asset concerned.

(d) REVIEW OF ACQUISITIONS AND MAJOR DESIGN CHANGES-

(1) IN GENERAL- With the exception of assets covered under (a)(2) of this section, the Commandant of the Coast Guard may not carry out an action described in paragraph (2) unless an independent third party with no financial interest in the development, construction, or modification of any component of the Integrated Deepwater System Program, selected by the Commandant for purposes of the subsection, determines that such action is advisable.

(2) COVERED ACTIONS- The actions described in the paragraph are as follows:

(A) The acquisition or modification of an asset under the Integrated Deepwater System Program.

(B) The implementation of a major design change for an asset under the Integrated Deepwater System Program.

(e) LINKING OF AWARD FEES TO SUCCESSFUL ACQUISITION OUTCOMES- The Commandant of the Coast Guard shall require that all contracts under the Integrated Deepwater System Program that provide award fees link such fees to successful acquisition outcomes (which shall be defined in terms of cost, schedule, and performance).

(f) CONTRACTUAL AGREEMENTS-

(1) IN GENERAL- The Commandant of the Coast Guard may not award or issue any contract, task or delivery order, letter contract modification thereof, or other similar contract, for the acquisition or modification of an asset under the

Integrated Deepwater System Program unless the Coast Guard and the contractor concerned have formally agreed to all terms and conditions.

(2) EXCEPTION- A contract, task or delivery order, letter contract, modification thereof, or other similar contract described in paragraph (1) may be awarded or issued if the head of contracting activity of the Coast Guard determines that a compelling need exists for the award or issue of such instrument.

(g) DESIGNATION OF TECHNICAL AUTHORITY- The Commandant of the Coast Guard shall designate the Assistant Commandant of the Coast Guard for Engineering and Logistics as the technical authority for all engineering, design, and logistics decisions pertaining to the Integrated Deepwater System Program.

(h) REPORT ON PERSONNEL REQUIRED FOR ACQUISITION MANAGEMENT- Not later than 30 days after the date of the enactment of this Act, the Commandant of the Coast Guard shall submit to the Committees on Appropriations of the Senate and the House of Representatives; the Committee on Commerce, Science and Transportation of the Senate; and the Committee on Transportation and Infrastructure of the House of Representatives a report on the resources (including training, staff, and expertise) required by the Coast Guard to provide appropriate management and oversight of the Integrated Deepwater System Program.

(i) COMPTROLLER GENERAL REPORT ON PROGRESS- Not later than 60 days after the date of enactment of this Act, the Comptroller General of the United States shall submit to the Committees on Appropriations of the Senate and the House of Representatives; the Committee on Commerce, Science and Transportation of the Senate; and the Committee on Transportation and Infrastructure of the House of Representatives a report describing and assessing the progress of the Coast Guard in complying with the requirements of this section.

Conference. The conference report (H.Rept. 110-107) on H.R. 1591 was submitted on April 24, 2007.

Section 4402. Section 4402 of the conference report states:

SEC. 4402. (a) IN GENERAL. — Any contract, subcontract, task or delivery order described in subsection (b) shall contain the following:

(1) A requirement for a technical review of all designs, design changes, and engineering change proposals, and a requirement to specifically address all engineering concerns identified in the review before the obligation of further funds may occur.

(2) A requirement that the Coast Guard maintain technical warrant holder authority, or the equivalent, for major assets.

(3) A requirement that no procurement subject to subsection (b) for lead asset production or the implementation of a major design change shall be entered into unless an independent third party with no financial interest in the development, construction, or modification of any component of the asset, selected by the Commandant, determines that such action is advisable.

(4) A requirement for independent life-cycle cost estimates of lead assets and major design and engineering changes.

(5) A requirement for the measurement of contractor and subcontractor performance based on the status of all work performed. For contracts under the Integrated Deepwater Systems program, such requirement shall include a provision that links award fees to successful acquisition outcomes (which shall be defined in terms of cost, schedule, and performance).

(6) A requirement that the Commandant of the Coast Guard assign an appropriate officer or employee of the Coast Guard to act as chair of each integrated product team and higher-level team assigned to the oversight of each integrated product team.

(7) A requirement that the Commandant of the Coast Guard may not award or issue any contract, task or delivery order, letter contract modification thereof, or other similar contract, for the acquisition or modification of an asset under a procurement subject to subsection (b) unless the Coast Guard and the contractor concerned have formally agreed to all terms and conditions or the head of contracting activity for the Coast Guard determines that a compelling need exists for the award or issue of such instrument.

(b) CONTRACTS, SUBCONTRACTS, TASK AND DELIVERY ORDERS COVERED. — Subsection (a) applies to —

(1) any major procurement contract, first-tier subcontract, delivery or task order entered into by the Coast Guard;

(2) any first-tier subcontract entered into under such a contract;

(3) any task or delivery order issued pursuant to such a contract or subcontract.

(c) EXPENDITURE OF DEEPWATER FUNDS. — Of the funds available for the Integrated Deepwater Systems program, $650,000,000 may not be obligated until the Committees on Appropriations of the Senate and the House of Representatives receive an expenditure plan directly from the Coast Guard that —

(1) defines activities, milestones, yearly costs, and life-cycle costs for each procurement of a major asset, including an independent cost estimate for each;

(2) identifies life-cycle staffing and training needs of Coast Guard project managers and of procurement and contract staff;

(3) identifies competition to be conducted in each procurement;

(4) describes procurement plans that do not rely on a single industry entity or contract;

(5) contains very limited indefinite delivery/indefinite quantity contracts and explains the need for any indefinite delivery/indefinite quantity contracts;

(6) complies with all applicable acquisition rules, requirements, and guidelines, and incorporates the best systems acquisition management practices of the Federal Government;

(7) complies with the capital planning and investment control requirements established by the Office of Management and Budget, including circular A — 11, part 7;

(8) includes a certification by the head of contracting activity for the Coast Guard and the Chief Procurement Officer of the Department of Homeland Security that the Coast Guard has established sufficient controls and procedures and has sufficient staffing to comply with all contracting requirements, and that any conflicts of interest have been sufficiently addressed;

(9) includes a description of the process used to act upon deviations from the contractually specified performance requirements and clearly explains the actions taken on such deviations;

(10) includes a certification that the Assistant Commandant of the Coast Guard for Engineering and Logistics is designated as the technical authority for all engineering, design, and logistics decisions pertaining to the Integrated Deepwater Systems program; and

(11) identifies progress in complying with the requirements of subsection (a).

(d) REPORTS. — (1) Not later than 30 days after the date of enactment of this Act, the Commandant of the Coast Guard shall submit to the Committees on Appropriations of the Senate and the House of Representatives; the Committee on Commerce, Science and Transportation of the Senate; and the Committee on Transportation and Infrastructure of the House of Representatives: (i) a report on the resources (including training, staff, and expertise) required by the Coast Guard to provide appropriate management and oversight of the Integrated Deepwater Systems program; and (ii) a report on how the Coast Guard will utilize full and open competition for any contract that provides for the acquisition or modification of assets under, or in support of, the Integrated Deepwater Systems program, entered into after the date of enactment of this Act; and (2) within 30 days following the submission of the expenditure plan required under subsection (c), the Government Accountability Office shall review the plan and brief the Committees on Appropriations of the Senate and the House of Representatives on its findings.

Section 4404(b)(1). Section 4404(b)(1) of the conference report appropriates $30 million in additional appropriations to procure four new coastal patrol boats so as to mitigate the Coast Guard's patrol boat operational gap. In discussing this appropriation, the conference report states:

to address an urgent operational need, the conferees provide $30,000,000 for Coast Guard "Acquisition, Construction, and Improvements" to help mitigate the patrol boat operational gap. No additional appropriation was included in either the House or Senate bills. The Coast Guard is currently operating 25,000 hours, or twenty-five percent, short of its needed patrol boat mission hours. This "gap" means that undocumented migrants, drugs, and other unlawful activity are less likely to be intercepted by the Coast Guard. Funding provided in this section is to be used to acquire four new Coastal Patrol Boats, as was requested by the

Department of Homeland Security via official correspondence on March 11, 2007. This includes the production, warranty, training, spares, outfitting and project management costs for all four patrol boats. The Coast Guard has indicated these new Coastal Patrol Boats will partially relieve the burden on existing 110' patrol boats until a replacement patrol boat can be placed in service. Currently, Florida-based 110' patrol boats average more than 5,500 mission hours annually which can be performed by the smaller 87' Coastal Patrol Boats operating out of the three primary Florida ports of Tampa, Miami and Key West. This will allow the 110' patrol boats currently operating in these areas to be utilized farther south where undocumented migrant traffic and drug smuggling are more prevalent.

Section 4405. Section 4405 of the conference report states:

SEC. 4405. (a) IN GENERAL. — With respect to contracts entered into after June 1, 2007, and except as provided in subsection (b), no entity performing lead system integrator functions in the acquisition of a major system by the Department of Homeland Security may have any direct financial interest in the development or construction of any individual system or element of any system of systems.

(b) EXCEPTION. — An entity described in subsection (a) may have a direct financial interest in the development or construction of an individual system or element of a system of systems if —

(1) the Secretary of Homeland Security certifies to the Committees on Appropriations of the Senate and the House of Representatives, the Committee on Homeland Security of the House of Representatives, the Committee on Transportation and Infrastructure of the House of Representatives, the Committee on Homeland Security and Governmental Affairs of the Senate, and the Committee on Commerce, Science and Transportation of the Senate that —

(A) the entity was selected by the Department of Homeland Security as a contractor to develop or construct the system or element concerned through the use of competitive procedures; and (B) the Department took appropriate steps to prevent any organizational conflict of interest in the selection process; or (2) the entity was selected by a subcontractor to serve as a lower-tier subcontractor, through a process over which the entity exercised no control.

(c) CONSTRUCTION. — Nothing in this section shall be construed to preclude an entity described in subsection (a) from performing work necessary to integrate two or more individual systems or elements of a system of systems with each other.

(d) REGULATIONS UPDATE. — Not later than June 1, 2007, the Secretary of Homeland Security shall update the acquisition regulations of the Department of Homeland Security in order to specify fully in such regulations the matters with respect to lead system integrators set forth in this section. Included in such regulations shall be (1) a precise and comprehensive definition of the term “lead system integrator,” modeled after that used by the Department of Defense, and (2) a specification of various types of contracts and fee structures that are appropriate for use by lead system integrators in the production, fielding, and sustainment of complex systems.

Integrated Deepwater Program Reform Act (S. 924)

This bill was introduced on March 20, 2007. On April 25, 2007, the Senate Commerce, Science, and Transportation Committee ordered the bill to be reported favorably with an amendment in the nature of a substitute. The text of the bill below is the version introduced on March 20. (The text of the version reported on April 25 was not posted on LIS as of mid-afternoon on April 30.)

Section 1 provides a short title for the bill and a table of contents. The remaining sections of the bill are as follows:

SEC. 2. PROCUREMENT STRUCTURE.

(a) In General-

(1) USE OF LEAD SYSTEMS INTEGRATOR- Except as provided in subsection (b), the United States Coast Guard may not use a private sector entity as a lead systems integrator for procurements under, or in support of, the Integrated Deepwater Program after the date of enactment of this Act.

(2) FULL AND OPEN COMPETITION- The United States Coast Guard shall utilize full and open competition for any other procurement for which an outside contractor is used under, or in support of, the Integrated Deepwater Program after the date of enactment of this Act.

(b) Exceptions-

(1) COMPLETION OF PROCUREMENT BY LEAD SYSTEMS INTEGRATOR- Notwithstanding subsection (a), the Coast Guard may use a private sector entity as a lead systems integrator —

(A) to complete, without modification, any delivery order or task order that was issued to the lead systems integrator on or before the date of enactment of this Act;

(B) for procurements of —

(i) the HC-130J and the C41SR, and

(ii) National Security Cutters or Maritime Patrol Aircraft under contract or order for construction as of the date of enactment of this Act,

if the requirements of subsection (c) are met with respect to such procurements; and

(C) for the procurement of additional National Security Cutters or Maritime Patrol Aircraft if the Commandant determines, after conducting the analysis of alternatives required by section 3, that —

(i) the justifications of FAR 6.3 are met;

(ii) the procurement and the use of a private sector entity as a lead systems integrator for the procurement is in the best interest of the Federal Government; and

(iii) the requirements of subsection (c) are met with respect to such procurement.

(2) REPORT ON DECISION-MAKING PROCESS- If the Coast Guard determines under paragraph (1) that it will use a private sector lead systems integrator for a procurement, the Commandant shall transmit a report to the Senate Committee on Commerce, Science, and Transportation and the House of Representatives Committee on Transportation and Infrastructure notifying the Committees of its determination and explaining the rationale for the determination.

(c) LIMITATION ON LEAD SYSTEMS INTEGRATORS- Neither an entity performing lead systems integrator functions for a procurement under, or in support of, the Integrated Deepwater Program, nor a Tier 1 subcontractor, for any procurement described in subparagraph (B) or (C) of subsection (b)(1) may have a financial interest below the tier 1 subcontractor level unless —

(1) the entity was selected by the Coast Guard through full and open competition for such procurement;

(2) the procurement was awarded by the lead systems integrator or a subcontractor through full and open competition; or

(3) the procurement was awarded by a subcontractor through a process over which the lead systems integrator or a Tier 1 subcontractor exercised no control.

SEC. 3. ANALYSIS OF ALTERNATIVES.

(a) IN GENERAL- Except with respect to a procurement described in subparagraph (A) or (B) of section 2(b)(1) of this Act, no procurement may be awarded under the Integrated Deepwater Program until an analysis of alternatives has been conducted under this section.

(b) INDEPENDENT ANALYSIS- Within 30 days after the date of enactment of this Act, the Commandant shall execute a contract for an analysis of alternatives with a Federally Funded Research and Development Center, an appropriate entity of the Department of Defense, or a similar independent third party entity that has appropriate acquisition expertise for independent analysis of all of the proposed procurements under, or in support of, the Integrated Deepwater Program, including procurements described in section 2(b)(1)(B), and for any future major changes of such procurements. The Commandant may not contract under this subsection for such an analysis with any entity that has a substantial financial interest in any part of the Integrated Deepwater Program as of the date of enactment of this Act or in any alternative being considered.

(c) ANALYSIS- The analysis of alternatives provided pursuant to the contract under subsection (b) shall include —

(1) a discussion of capability, interoperability, and other advantages and disadvantages of the proposed procurements;

(2) an examination of feasible alternatives;

(3) a discussion of key assumptions and variables, and sensitivity to changes in such assumptions and variables;

(4) an assessment of technology risk and maturity; and

(5) a calculation of costs, including life-cycle costs.

(d) REPORT TO CONGRESS- As soon as possible after an analysis of alternatives has been completed, the Commandant shall develop a plan for the procurements addressed in the analysis and shall transmit a report describing the plan to the Senate Committee on Commerce, Science, and Transportation and the House of Representatives Committee on Transportation and Infrastructure.

SEC. 4. CERTIFICATION.

(a) IN GENERAL- A contract, delivery order, or task order for procurement under, or in support of, the Coast Guard's Integrated Deepwater Program may not be executed by the Coast Guard until the Commandant certifies that —

(1) appropriate market research has been conducted prior to technology development to reduce duplication of existing technology and products;

(2) the technology has been demonstrated in a relevant environment;

(3) the technology demonstrates a high likelihood of accomplishing its intended mission;

(4) the technology is affordable when considering the per unit cost and the total procurement cost in the context of the total resources available during the period covered by the Integrated Deepwater Program;

(5) the technology is affordable when considering the ability of the Coast Guard to accomplish its missions using alternatives, based on demonstrated technology, design, and knowledge;

(6) reasonable cost and schedule estimates have been developed to execute the product development and production plan for the technology;

(7) funding is available to execute the product development and production plan for the technology; and

(8) the technology complies with all relevant policies, regulations, and directives of the Coast Guard.

(b) REPORT TO CONGRESS- The Commandant shall transmit a copy of each certification required under subsection (a) to the Senate Committee on Commerce, Science, and Transportation and the House of Representatives Committee on Transportation and Infrastructure within 30 days after the completion of the certification.

SEC. 5. CONTRACT REQUIREMENTS.

The Commandant shall ensure that any contract, delivery order, or task order for procurement under, or in support of, the Integrated Deepwater Program executed by the Coast Guard —

(1) incorporates provisions that address the recommendations related to award fee determination and award term evaluation made by the Government Accountability Office in its March, 2004, report entitled Coast Guard's Deepwater Program Needs Increased Attention to Management and Contractor Oversight, GAO-04-380, and any subsequent Government Accountability Office recommendations relevant to the contract terms issued before the date of enactment of this Act, including that any award or incentive fee is tied to program outcomes;

(2) provides that certification of any Integrated Deepwater Program procurement for performance, safety, and any other relevant factor will be conducted by an independent third party;

(3) does not include —

(A) for any contract extending the existing Integrated Deepwater Program contract term, minimum requirements for the purchase of a given or determinable number of specific assets;

(B) provisions that commit the Coast Guard without express written approval by the Coast Guard;

(C) any provision allowing for equitable adjustment that differs from the Federal Acquisition Regulations; and

(4) for any contract extending the existing Integrated Deepwater Program contract term, is reviewed by, and addresses recommendations made by, the Under Secretary of Defense for Acquisition, Technology, and Logistics through the Defense Acquisition University.

SEC. 6. IMPROVEMENTS IN COAST GUARD MANAGEMENT.

(a) IN GENERAL- As soon as practicable after the date of enactment of this Act, the Commandant shall take action to ensure that —

(1) the measures contained in the Coast Guard's report entitled Coast Guard: Blue Print for Acquisition Reform are implemented fully;

(2) any additional measures for improved management recommended by the Defense Acquisition University in its Quick Look Study of the United States Coast Guard Deepwater Program, dated February 5, 2007, are implemented;

(3) integrated product teams, and all higher-level teams that oversee integrated product teams, are chaired by Coast Guard personnel; and

(4) the Assistant Commandant for Engineering and Logistics is designated as the Technical Authority for all design, engineering, and technical decisions for the Integrated Deepwater Program.

(b) TRANSFER-

(1) IN GENERAL- Section 93(a) of title 14, United States Code, is amended —

(A) by striking 'and' after the semicolon in paragraph (23);

(B) by striking 'appropriate.' in paragraph (24) and inserting 'appropriate; and'; and

(C) by adding at the end thereof the following:

'(25) notwithstanding any other provision of law, in any fiscal year transfer funds made available for personnel, compensation, and benefits from the appropriation account 'Acquisition, Construction, and Improvement' to the appropriation account 'Operating Expenses' for personnel compensation and benefits and related costs necessary to execute new or existing procurements of the Coast Guard.'

(2) NOTIFICATION- Within 30 days after making a transfer under section 93(a)(25) of title 14, United States Code, the Commandant shall notify the Senate Committee on Commerce, Science, Transportation and Infrastructure, the Senate Committee on Appropriations, the House Committee on Transportation and Infrastructure, and the House Committee on Appropriations.

SEC. 7. PROCUREMENT AND REPORT REQUIREMENTS.

(a) SELECTED ACQUISITION REPORTS- The Commandant shall submit to the Senate Committee on Commerce, Science, and Transportation and the House of Representatives Committee on Transportation and Infrastructure reports on the Integrated Deepwater Program that contain the same type of information with respect to that Program, to the greatest extent practicable, as the Secretary of Defense is required to provide to the Congress under section 2432 of title 10, United States Code, with respect to major defense procurement programs.

(b) UNIT COST REPORTS- Each Coast Guard program manager under the Coast Guard's Integrated Deepwater Program shall provide to the Commandant, or the Commandant's designee, reports on the unit cost of assets acquired or modified that are under the management or control of the Coast Guard program manager on the same basis and containing the same information, to the greatest extent practicable, as is required to be included in the reports a program manager is required to provide to the service procurement executive designated by the Secretary of Defense under section 2433 of title 10, United States Code, with respect to a major defense procurement program.

(c) REPORTING ON COST OVERRUNS AND DELAYS- Within 30 days after the Commandant becomes aware of a likely cost overrun or scheduled delay, the Commandant shall transmit a report to the Senate Committee on Commerce, Science, and Transportation and the House of Representatives Committee on Transportation and Infrastructure that includes —

(1) a description of the known or anticipated cost overrun;

(2) a detailed explanation for such overruns;

(3) a detailed description of the Coast Guard's plans for responding to such overrun and preventing additional overruns; and

(4) a description of any significant delays in procurement schedules.

SEC. 8. GAO REVIEW AND RECOMMENDATIONS.

(a) AWARD FEE AND AWARD TERM CRITERIA- The Coast Guard may not execute a new contract, delivery order, or task order, nor agree to extend the term of an existing contract, with a prime contractor for procurement under, or in support of, the Integrated Deepwater Program until the Commandant has consulted with the Comptroller General to ensure that the Government Accountability Office's recommendations, in its March, 2004, report entitled Coast Guard's Deepwater Program Needs Increased Attention to Management and Contractor Oversight, GAO-04-380, and any subsequent Government Accountability Office recommendations issued before the date of enactment of this Act, with respect to award fee and award term criteria have been fully addressed.

(b) OTHER RECOMMENDATIONS- The Commandant shall ensure that all other recommendations in that report, and any subsequent recommendations issued before the date of enactment of this Act, are implemented to the maximum extent practicable by the Coast Guard within 1 year after the date of enactment of this Act. The Commandant shall report to the Senate Committee on Commerce, Science, and Transportation and the House of Representatives Committee on Transportation and Infrastructure on the Coast Guard's progress in implementing such recommendations.

(c) GAO REPORTS ON IMPLEMENTATION- Beginning 6 months after the date of enactment of this Act, the Comptroller General shall submit an annual report to the Senate Committee on Commerce, Science, and Transportation and the House of Representatives Committee on Transportation and Infrastructure on the Coast Guard's progress in implementing the Government Accountability Office's recommendations, in its March, 2004, report entitled Coast Guard's Deepwater Program Needs Increased Attention to Management and Contractor Oversight, GAO-04-380, and any subsequent Government Accountability Office recommendations issued before the date of enactment of this Act, in carrying out this Act.

SEC. 9. DEFINITIONS.

In this Act:

(1) COMMANDANT- The term `Commandant' means the Commandant of the United States Coast Guard.

(2) INTEGRATED DEEPWATER PROGRAM- The term `Integrated Deepwater Program' means the Integrated Deepwater Systems Program described by the Coast Guard in its Report to Congress on Revised Deepwater Implementation Plan, dated March 25, 2005, including any subsequent modifications, revisions, or restatements of the Program.

(3) PROCUREMENT- The term `procurement' includes development, production, sustainment, modification, conversion, and missionization.

Deepwater Accountability Act (S. 889)

Ths bill was introduced on March 15, 2007. Section 1 provides a short title for the bill. The remaining sections of the bill are as follows:

> SEC. 2. IMPROVEMENT OF ACQUISITION UNDER THE DEEPWATER PROGRAM OF THE COAST GUARD.
>
> (a) Competition Requirements for Future Acquisitions-
>
> (1) REQUIREMENT- The Secretary of Homeland Security shall, upon reaching the end of the period of performance currently under contract with Integrated Coast Guard Systems in June 2007 under the Deepwater program of the Coast Guard, acquire the completion, delivery, and acceptance of all assets under that contract through new contracts solicited under the full and open competition requirements of section 6.1 of the Federal Acquisition Regulation.
>
> (2) PROHIBITION ON USE OF LEAD SYSTEMS INTEGRATOR- The Secretary shall not utilize the services of a lead systems integrator in any manner to acquire the completion, delivery, or acceptance of assets under this subsection.
>
> (b) Exception-
>
> (1) IN GENERAL- Notwithstanding subsection (a), the Secretary may enter into a new contract with Integrated Coast Guard Systems for the completion, delivery, and acceptance of assets for which construction has commenced, but not been completed, under the contract referred to in that subsection as of the date of the enactment of this Act if the Secretary certifies that —
>
> (A) the completion, delivery, and acceptance of such assets under a contract other than with Integrated Coast Guard Systems would pose an immediate or near-term risk to the national security interests of the United States; or
>
> (B) the cost of the completion, delivery, and acceptance of such assets under a contract with other than Integrated Coast Guard Systems would exceed the cost of the completion, delivery, and acceptance of such assets under a contract with Integrated Coast Guard Systems.
>
> (2) REPORTS TO CONGRESS- If the Secretary determines under paragraph (1) to acquire the completion, delivery, and acceptance of assets under a contract with Integrated Coast Guard Systems, the Secretary shall, not later than 180 days after the date of such determination and every 180 days thereafter until the completion, delivery, and acceptance of such assets, submit to Congress a report on the current construction status of such assets.
>
> (c) Report on Proposed Acquisition to Acquire Completion, Delivery, and Acceptance of Assets- Not later than 30 days after the date of the enactment of this Act, the Secretary shall submit to Congress a report on the acquisition of assets under the Deepwater program. The report shall set forth the following:
>
> (1) A list of each asset under the Deepwater program that has not been completed, delivered, and accepted as of the date of such report.

(2) A list of each such asset of which the Secretary proposes to acquire completion, delivery, and acceptance under contracts entered into under subsection (a).

(3) A list of each such asset of which the Secretary proposes to acquire completion, delivery, and acceptance under a contract under subsection (b) with Integrated Coast Guard Systems.

(d) Inspector General Review of Deepwater Program- Not later than 180 days after the date of the enactment of this Act, the Inspector General of the Department of Homeland Security shall submit to the Secretary, and to Congress, a report on the acquisition of assets under the Deepwater program. The report shall include —

(1) a description of each decision, if any, of the Coast Guard or Integrated Coast Guard Systems relating to the acquisition of assets under the Deepwater program that directly or indirectly resulted in cost overruns or program cost increases to the United States;

(2) an assessment whether any decision covered by paragraph (1) violated the terms of the contract of Integrated Coast Guard Systems for the Deepwater program;

(3) an assessment of how much program costs under the Deepwater program have increased as a result of any such decision;

(4) an assessment of whether the Coast Guard or Integrated Coast Guard Systems is responsible for the payment of any cost overruns associated with any such decision.

(e) Definitions- In this section:

(1) The term `asset' means any product to be acquired under the contract of the Coast Guard for the Deepwater program referred to in subsection (a), including vessels, fixed-wing aircraft, and rotary-wing aircraft, and any component thereof.

(2) The term `Integrated Coast Guard Systems' means the joint venture, commonly referred to as `Integrated Coast Guard Systems' or `ICGS' between Lockheed Martin Corporation and Northrop Grumman Corporation for the purposes of completing and delivering assets to the Coast Guard under the Deepwater program.

Appendix A. DAU Quick Look Study, February 2007

The executive summary of the DAU "quick look" study on the Deepwater program[27] states:

> The Defense Acquisition University (DAU) conducted a "quick look" study of the United States Coast Guard (USCG) Deepwater Program (DW) in October and November 2006 to provide findings and recommendations to the Program Executive Officer (PEO) Integrated Deepwater System (IDS) for improvement of program performance. The study team reviewed program documentation and conducted interviews with government and industry officials and staff. Preliminary findings and recommendations were developed for the purpose of discussions with the PEO IDS and other USCG officials.
>
> This report is a synthesis of the study team's review and ensuing discussions with USCG officials, including the USCG Agency Acquisition Executive (AAE). The team experienced an extraordinary high level of cooperation and candor throughout the study and during the follow-on discussions. The study team has reviewed a USCG plan titled a *Blue Print for Acquisition Reform* that is comprehensive and responsive to the human capital, organization, process and governance related findings and recommendations in this report. The objective of the *"Blue Print"* is to establish the USCG as a model of acquisition excellence in a mid-sized agency.
>
> The USCG has consistently demonstrated the ability to successfully acquire and sustain systems of moderate complexity and scope. The Integrated Deepwater System is an acquisition program of significantly greater scope and complexity. The need to quickly recapitalize the USCG with a portfolio of new capabilities led to the Systems of Systems (SoS) acquisition strategy. The SoS strategy, however, required increased numbers of acquisition personnel, significantly greater depth of major systems acquisition management experience, and increased integration of USCG resources, oversight and governance.
>
> The significant events of 9/11 and realignment of the USCG under the Department of Homeland Security (DHS) further increased the scope and complexity of USCG maritime security missions. The extent of the changes needed in USCG acquisition competencies, numbers of personnel, organizational structure, management, oversight, governance and decision making are now recognized and addressed in the *Blue Print for Acquisition Reform*. The sustained commitment of the Commandant and other USCG leadership will be required to meet the challenge of a reform of this magnitude, concurrent with the procurement of Deepwater, other new capabilities and sustainment of current capabilities.
>
> **Overarching findings and recommendations**:
>
> - The SoS strategy for recapitalization of the USCG had the potential to optimize the acquisition of capabilities to meet a diverse portfolio of USCG missions and minimize total ownership cost. A rigorous pre-acquisition study phase and full and open competition resulted in award of a contract to Integrated Coast Guard

[27] Defense Acquisition University, *Quick Look Study, United States Coast Guard Deepwater Program*, February 2007.

Systems (ICGS), a joint venture involving operating units of Northrop Grumman (NG) and Lockheed Martin (LM). The significant events of 9/11 and expanded USCG missions arising from alignment under (DHS), challenged execution of the DW acquisition strategy and the results have not been as planned. Primary causes include:

- Requirements changes that were necessary to accommodate increased missions, many after the completion of key systems engineering milestones
- Funding at levels below the contract negotiated with ICGS
- Contract structure that is inappropriate to the environment of changing missions and requirements, and major systems integration
- Industry emphasis on work sharing among the joint venture partners that has minimized the use of other US industry and existing USCG support infrastructure
- Insufficient numbers of USCG acquisition personnel and insufficient experience in major systems acquisition
- Lack of a management model and processes sufficient for the management and oversight of the major systems acquisition environment of DW

These causes have significantly increased the risk of procuring the DW capabilities required for USCG missions within the estimate of $24 billion. De-scoping of requirements or adjustment to the budget is needed. **The study team recommends changes in acquisition strategy, contract structure and management. In addition, changes in USCG governance, organization, processes and acquisition workforce are recommended (and specifically addressed in the *Blue Print for Acquisition Reform.***

The USCG does not now possess sufficient numbers of acquisition personnel or the level of major systems acquisition experience needed to manage the DW and other USCG acquisition programs. Major systems acquisition competency areas that are in the greatest need of infusion of experience are program management, contracting, and financial management (including earned value management and cost estimating). A package of interrelated actions including reorganization, additional acquisition personnel, training, and recruitment of acquisition professionals across the spectrum of acquisition competencies is urgently needed. Reorganization, for example, is necessary, but it will not be, of itself, sufficient alone. **The study team recommends a combination of human capital initiatives: recruitment of personnel with significant major systems acquisition experience; training and mentoring of existing personnel; and establishment of policies and processes that place acquisition excellence and the development of business competencies at a level equivalent to the value the USCG places on operational excellence and experience.**

- A combination of factors, including requirements changes, funding at levels inconsistent with the negotiated contract, and insufficient numbers and experience

of acquisition personnel, have resulted in the use of Undefinitized Contract Actions (UCAs) at an inappropriately high level. At one point, the level exceeded one billion dollars. **The study team recommends expedited negotiation of UCAs to eliminate the backlog and to increase pressure on the contractor to manage costs. A rigorous review and approval process for future UCAs is also recommended.**

- An integrated logistics support strategy that is inclusive of capabilities being procured through DW and other USCG programs is needed The limited level of integration of DW and the engineering and logistics support infrastructure of USCG has inhibited logistics planning. The level and apportionment of appropriations for DW has required the USCG, at times, to decide between procurement of urgently needed capabilities and the initial support for those capabilities. Flexibility to reallocate funds during execution has been limited by a restrictive below threshold reprogramming authority (as compared to the Department of Defense (DoD)). The roles and responsibilities of ICGS as compared to the existing USCG support infrastructure need to be rationalized, and business case analysis adopted as a practice. **The study team recommends a combination of actions: develop a policy to rationalize the role of systems integrators and USCG organic capabilities; an integrated support strategy reflecting DW and other USCG acquisition programs; a legislative initiative (coordinated with DHS) to provide greater flexibility in the reprogramming of funds during execution; and actions to ensure adequate logistics support of the introduction of the Maritime Patrol Aircraft (MPA) and the first National Security Cutter (NSC).**

- Significant improvements in major systems financial management processes and workforce experience are needed. Factors such as the significant number of requirements changes, funding at levels below those planned, and insufficient numbers and experience of acquisition personnel have made it difficult to maintain an authoritative DW life cycle cost estimate. The study team also noted that independent cost estimates are not routinely developed in the USCG.

  Drawing upon its DoD experience, the study team believes that government and industry are incentivized to underestimate the cost of new systems and their support. The business of defense is serious and there are numerous incentives to be optimistic when scoping and estimating the cost of new capabilities. As a balance, major systems acquisition management processes have developed, including independent cost estimates. **The study team recommends immediate action to update the DW cost estimate, an independent cost estimate of the program, and policy to require independent cost estimates of major changes.** Until then, there should be low confidence that the DW program will be acquired and supported within the current budget.

During the study and follow-on discussions with USCG officials, the team noted significant actions being taken to improve the performance of DW and other USCG acquisition programs and support. Actions resulting from the Commandant's written orders are now codified in an integrated plan to reform USCG acquisition. With respect

to Deepwater, actions taken subsequent to the study team's preliminary findings and recommendations include:

- The Commandant and AAE have initiated discussions with the Chief Executive Officers of NG and LM to examine the government/industry relationship with the aim of reframing the contractual relationship in the light of lessons learned over the last five years
- PEO IDS has initiated actions to improve acquisition and logistics planning and execution, including reduction of the backlog of UCAs
- Alternative acquisition plans have been developed and forwarded to the Department of Homeland Security (DHS) to accelerate the acquisition of selected critical operational capabilities
- In collaboration with the Assistant Commandant for Acquisition, the PEO has defined a structure and plan to integrate acquisition functions of DW and other USCG acquisition programs (*consistent with the Blue Print for Acquisition Reform*)
- The PEO has collaborated with the Acquisition Directorate to conduct business case analyses to support DW decisions
- The PEO has identified initial increases in acquisition workforce to DHS
- The PEO has expanded the involvement of CG-4 engineering and logistics professionals involved in DW, in collaboration with the Assistant Commandant, Logistics and Engineering
- The PEO has collaborated with the Assistant Commandant for Command, Control, Communications, Computers and Information Technology (C4-IT) to review and ensure alignment of DW C4ISR to the USCG C4-IT architecture and DW C4ISR affordability

Appendix B. DHS IG Testimony And Reports

May 17, 2007, Testimony

At a May 17, 2007, joint hearing before the Border, Maritime, and Global Counterterrorism subcommittee and the Management, Investigations, and Oversight subcommittee of the House Homeland Security Committee, the DHS IG testified in part:

Deepwater Program Management and Oversight

We have identified several common themes and risks from our audits of assets and information technology systems being acquired under the Deepwater contract. These include the dominant influence of expediency, unfavorable contract terms and conditions, poorly defined performance requirements, and inadequate management and technical oversight. These deficiencies contributed to schedule delays, cost increases, and asset designs that did not meet minimum Deepwater performance requirements.

Systems Integrator Approach -- The Coast Guard's decision to outsource program management to the systems integrator fully empowered the contractor with authority for making day-to-day decisions regarding all aspects of the contract. According to the Coast Guard, its acquisition workforce did not have the requisite training, experience, and certification to manage an acquisition the size, scope, and complexity of the Deepwater Program. Further, the Coast Guard was reluctant to exercise a sufficient degree of authority to influence the design and production of its own assets. As a result, the Systems Integrator (ICGS) assumed full technical authority over all asset design and configuration decisions while the Coast Guard's technical role was limited to that of an expert "advisor."

However, there was no contractual requirement that the Systems Integrator accept or act upon the Coast Guard's technical advice, regardless of its proven validity. Furthermore, there are no contract provisions ensuring government involvement into subcontract management and "make or buy" decisions. The Systems Integrator decided who is the source of the supply. Also, as the primary management tool for the Coast Guard to contribute its input on the development of Deepwater assets, the effectiveness of the contractor-led Integrated Product teams (IPTs) to resolve the Coast Guard's technical concerns, has been called into question by both the Government Accountability Office (GAO) and my office.

Contractor Accountability -- Our reviews have raised concerns with the definition and clarity of operational requirements, contract requirements and performance specifications, and contractual obligations. For example, in our National Security Cutter (NSC) report, we reported that the Coast Guard and the American Bureau of Shipping jointly developed standards that would govern the design, construction, and certification of all cutters acquired under the Deepwater Program. These standards were intended to ensure that competing industry teams developed proposals that met the Coast Guard's unique performance requirements. Prior to the Phase 2 contract award, the Coast Guard provided these design standards to the competing industry teams. Based on their feedback, the Coast Guard converted the majority of the standards (85% of the 1,175 standards) to guidance and permitted the industry teams to select their own

alternative standards. Without a contractual mechanism in place to ensure that those alternative standards met or exceeded the original guidance standards, the competing teams were allowed to select cutter design criteria.

Additionally, the Deepwater contract gave the Systems Integrator the authority to make all asset design and configuration decisions necessary to meet system performance requirements. This condition allowed ICGS to deviate significantly from a set of cutter design standards originally developed to support the Coast Guard's unique mission requirements, and ICGS was further permitted to self-certify compliance with those design standards. As a result, the Coast Guard gave ICGS wide latitude to develop and validate the design of its Deepwater cutters, including the NSC.

Deepwater Performance Requirements Are Ill-Defined -- Vague contract terms and conditions have also compromised the Coast Guard's ability to hold the contractor accountable by making possible competing interpretations of key performance requirements. For example, the performance specifications associated with upgrading the information systems on the Coast Guard's 123' Island Class Patrol Boats did not have a clearly defined expected level of performance. Also, in our review of the Helicopter Interdiction Tactical Squadron (HITRON) lease, we determined that vague contract performance requirements challenged the Coast Guard's ability to assess contractor performance. In another example, the performance specifications for the NSC were not clearly defined, which resulted in disagreements, both within the Coast Guard and between the Coast Guard and ICGS, regarding the actual intent behind the cutter performance requirements.

Deepwater Cost Increases -- The cost of NSCs 1 and 2 is expected to increase well beyond the current $775 million estimate, as this figure does not include a $302 million Request for Equitable Adjustment (REA) submitted to the Coast Guard by ICGS on November 21, 2005. The REA represents ICGS's re-pricing of all work associated with the production and deployment of NSCs 1 and 2 caused by adjustments to the cutters' respective implementation schedules as of January 31, 2005. The Coast Guard and ICGS are currently engaged in negotiations over the final cost of this REA. ICGS has also indicated its intention to submit additional REAs for adjusted work schedules impacting future NSCs, including the additional cost of delays caused by Hurricane Katrina.

In addition, the $775 million cost estimate for NSCs 1 and 2 does not include the cost of structural modifications to be made to mitigate known design deficiencies. The cost of these modifications and the cost of future REAs could add hundreds of millions of dollars to the total NSC acquisition cost. We remain concerned that these and other cost increases within the Deepwater Program could result in the Coast Guard acquiring fewer and less capable NSCs, FRCs, and OPCs under the Deepwater contract.

Impact on Coast Guard Operational Capabilities -- Short and Long Term

The problems the Coast guard is experiencing with the Deepwater Program could impact the Coast Guard's short and long-term operational capabilities. For example, while the reengining of the HH-65B helicopters resulted in aircraft with significantly improved capabilities, the program has experienced schedule delays and cost increases. The delivery of the first 84 re-engined HH-65Cs will be

completed by the end of this month, 11 months beyond the Commandant's original July 2006 deadline. Extending the delivery schedule unnecessarily exposed HH-65B aircrews to additional risk due to the rate in which in-flight loss of power mishaps were occurring.

There are also problems with Coast Guard's acquisition of the Vertical Unmanned Aerial Vehicle (VUAV). VUAVs have the potential to provide the Coast Guard's flight-deck-equipped cutters with expanded air surveillance, detection, classification, and identification capabilities. Currently, the VUAV acquisition is over budget and more than 12 months behind schedule. On May 8, 2007, the Coast Guard issued a second work stop order and the Commandant recently testified that the VUAV was under review by Coast Guard's Research and Development Center. The review is expected to provide recommendations for the way ahead with the VUAV.

Not having VUAV capability would significantly reduce the long-range surveillance capability of the NSC and the Offshore Patrol Cutter (OPC) from 58,000 square nautical miles to that of the Coast Guard's Hamilton class high endurance cutters (13,500 square nautical miles). This represents a 76% reduction in Deepwater surveillance capability. The Coast Guard's Revised Deepwater Implementation Plan of 2005 called for the acquisition of 45 VUAVs at a total cost of approximately $503.3 million. As of March 31, 2007, the Coast Guard had obligated $113.6 million (76.9%) of the $147.7 million to the project. According to the Coast Guard estimates, it would take an additional $50 million and 18 months to deliver the first two VUAV systems.

The increased cost, schedule delays, and structural design problems associated with the 123-foot patrol boat have further impacted the Coast Guard's patrol boat operational hour and capability gap. The Coast Guard is attempting to mitigate the problem by extending an agreement with the U.S. Navy to continue the operation of the 179-foot "Cyclone" class patrol boats from 2009 to 2011, and to extend the operational capability of the 110-foot Island Class fleet through the use of multiple crews. While the increased operations tempo will help in the short-term, it will further increase the wear and tear (e.g., equipment breakdowns and other unscheduled casualties, etc.), on these aging patrol boats in the long term. As a result, we expect the maritime patrol boat gap (which has been reported to be in excess of 20,000 hours) to increase rather than decrease until which time the service life extensions on the 110's are completed and the FRC-Bs deployed....

Coast Guard's "Way Forward" - Blueprint for Acquisition Reform

To its credit, the Coast Guard recognizes that urgent and immediate changes are needed to meet the management challenges facing its Deepwater acquisitions program. As part of its endeavors to improve the Deepwater Program, the Coast Guard recently issued its *Blueprint for Acquisition Reform* (Blueprint), which catalogues many of the aforementioned challenges and risks that have impeded the efficient execution of the Deepwater contract. According to the Coast Guard, implementing this Blueprint will enhance its ability to execute asset-based "traditional" acquisition projects, effectively use a governmental or commercial entity as a systems integrator for complex acquisitions, and execute minor acquisitions contracts for goods and services.

According to the Coast Guard, the Blueprint outlines its plans for reorganizing and rebuilding its acquisition workforce. Specifically, the Blueprint calls for the:

• Consolidation of all Coast Guard acquisition functions under one directorate;

• Reassertion of Coast Guard's technical authority;

• Use of independent, third party assessments; and,

• Redefinition of the contract terms and conditions.

While the Blueprint contains a number of key initiatives, the Coast Guard should adopt measures of performance or desired outcomes that would enable it to assess the progress being made. These include the specific numbers and types of acquisition professionals needed, when they are scheduled to arrive onboard, and the financial cost associated with the realignment, reorganization, retraining, and rebuilding of its acquisition workforce.

The Coast Guard is beginning to take aggressive action to resolve some of the management oversight issues identified in recent OIG reports. In the long term, if all goes as planned, the Coast Guard's reorganization of its Acquisitions Directorate will be fully implemented during FY 2010. But in the meantime, the Coast Guard is planning to move ahead with the second phase of the Deepwater contract with Award Term I, which will entail the estimated expenditure of more than $3 billion dollars over a 43 month period starting June 2007.

Conclusion

We are encouraged that the Coast Guard recognizes these challenges and is beginning to take aggressive action to strengthen program management and oversight—such as technical authority designation; use of independent, third party assessments; consolidation of acquisition activities under one directorate; and redefinition of the contract terms and conditions, including award fee criteria. Furthermore, the Coast Guard is beginning to implement its plan to increase its staffing for the Deepwater Program, and to reinvigorate its acquisition training and certification processes to ensure that staff has the requisite skills and education to manage the program.

These steps should improve the Coast Guard's ability to oversee major acquisitions. However, we are mindful that the Coast Guard's system-of-systems approach will require the highest levels of planning and coordination to mitigate cost overruns, schedule delays, asset performance shortcomings, or potential operational gaps due to delays in asset acquisition. Most importantly, we believe that there is considerable risk associated with Coast Guard assuming the lead systems integrator role at this time without having fully implemented its *Blueprint for Acquisition Reform*, specifically without having closed the Deepwater human capital gap. We also believe the Coast Guard should exercise caution and take a slower or phased approach to assuming the systems integrator role.

In conclusion, we remain committed to the oversight of the Deepwater Program and other major acquisitions within the department. We are working with the Coast Guard to identify milestones and due dates to assess the most

appropriate cycle for reporting the program's progress. If properly and fully-implemented, Coast Guard's steps should significantly increase its level of management oversight over the air, surface, and C4ISR assets that are acquired or modernized under the Deepwater Program. We look forward to working closely with the Coast Guard to continue the improvement of the efficiency, effectiveness, and economy of the Deepwater Program.[28]

January 2007 Report on NSC

A January 2007 DHS IG report on the NSC effort states in part:

The NSC, as designed and constructed, will not meet performance specifications described in the original Deepwater contract. Specifically, due to design deficiencies, the NSC's structure provides insufficient fatigue strength to be deployed underway for 230 days per year over its 30-year operational service life under Caribbean (General Atlantic) and Gulf of Alaska (North Pacific) sea conditions. Coast Guard technical experts believe the NSC's design deficiencies will also increase the cutter's maintenance costs and reduce its service life. To mitigate the effects of these deficiencies, the Coast Guard intends to modify the NSC's design to support an operational profile of 170 to 180 days underway per year in the North Pacific region, lower than the 230-day performance standard required by the Deepwater contract.

The NSC's design and performance deficiencies are fundamentally the result of the Coast Guard's failure to exercise technical oversight over the design and construction of its Deepwater assets. The Coast Guard's technical experts first identified and presented their concerns about the NSC's structural design to senior Deepwater Program management in December 2002, but this did not dissuade the Coast Guard from authorizing production of the NSC in June 2004 or from awarding ICGS a contract extension in May 2006.

Since the Deepwater contract was signed in June 2002, the combined cost of NSCs 1 and 2 has increased from $517 million to approximately $775 million, resulting primarily from design changes necessary to meet post 9/11 mission requirements and other government costs not included in the original contract price. The $775 million estimate does not include costs to correct or mitigate the NSC's structural design deficiencies, additional labor and materials costs resulting from the effects of Hurricane Katrina, and the final cost of a $302 million Request for Equitable Adjustment (REA) that the Coast Guard is currently negotiating with ICGS....

Finally, we encountered resistance from the Coast Guard and ICGS in our effort to evaluate the structural design and performance issues associated with the NSC. The impediments we experienced in obtaining access to personnel, information, and documentation associated with the NSC acquisition are unacceptable in light of the statutory mandates of our office; the severity of the NSC design and performance deficiencies; the importance of the NSC to the

---

[28] Statement of Richard L. Skinner, Inspector General, U.S. Department of Homeland Security, Before the Committee on Homeland Security. Subcommittee on Border, Maritime, and GLobal Counterterrorism and Committee on Homeland Security Sebcommittee on Management, INvetigations and Oversight, U.S. House of Representatives, "Deepwater: Charting a Course for Safer Waters," May 17, 2007, pp. 3-5, 8-10.

Coast Guard's national security and Deepwater missions; and the expenditure of billions of taxpayer dollars that are being invested in this critical acquisition.

We are making five recommendations to the Coast Guard, and one to the Department's Chief Procurement Officer and Office of General Counsel. Our recommendations are intended to: (1) ensure the National Security Cutter is capable of fulfilling all performance requirements outlined in the Deepwater contract; (2) improve the level of Coast Guard technical oversight and accountability; and (3) ensure Office of Inspector General access to all records, personnel, and contractors of the department during all current and future audits and inspections.[29]

The report also stated:

The Deepwater contract gives the Systems Integrator the authority to make all asset design and configuration decisions necessary to meet system performance requirements. This condition allowed ICGS to deviate significantly from a set of cutter design standards originally developed to support the Coast Guard's unique mission requirements, and ICGS was further permitted to self-certify compliance with those design standards. As a result, the Coast Guard gave ICGS wide latitude to develop and validate the design of its Deepwater cutters, including the NSC.

Conversely, the Coast Guard chose to limit the technical oversight role of the Systems Directorate on Deepwater to providing "expertise and credible advice in core integrated engineering and logistics competencies."... However, the Deepwater contract does not require that ICGS or its subcontractors accept or act upon the advice of the Coast Guard's designated technical experts. As a result of this relationship, the Coast Guard is limited in its ability to exercise technical oversight over its assets acquired under the Deepwater contract. This, in our opinion, is the primary factor contributing to the inclusion of the structural deficiencies that currently compromise the NSC's operational viability.

In contrast to the Coast Guard's approach, the U.S. Navy retains technical authority and accountability over the design and construction of its ships through the institution of Technical Warrant Holder (TWH) authority....

TWHs ensure that the technical aspects of Navy asset designs are given independent consideration by providing technical authority that is separate from program authority for cost, schedule, and performance. Navy surface asset Program Managers yield to TWH decisions on technical issues and must secure TWH approval for design changes. Efforts of the Coast Guard's technical experts to resolve their long-standing concerns with the NSC design were thwarted because they lack a similar degree of authority on Deepwater.[30]

The report also stated that the Coast Guard and the American Bureau of Shipping (ABS):

---

[29] Department of Homeland Security, Office of Inspector General, *Acquisition of the National Security Cutter*, OIG -07-23, January 2007. The report is available online at [http://www.dhs.gov/xoig/assets/mgmtrpts/OIG_07-23_Jan07.pdf].

[30] Ibid., pp. 12-13.

> initially specified a certifying agent for each standard to ensure that all cutters would be objectively evaluated for compliance. However, the Coast Guard ultimately allowed the competing industry teams to determine the certifying entity for any non-ABS standards it selected and, to the extent that it was permitted, ICGS elected to self-certify compliance with these standards.20 This decision to permit contractor self-certification contrasts sharply with the intended role of an independent certifying authority, as articulated in the Deepwater contract...
>
> U.S. Navy and classification community subject matter experts expressed similar opinions, that, "self-certification is no certification." By allowing contractor self-certification, the Coast Guard eliminated yet another oversight tool for ensuring that cutter designs developed under the Deepwater Program would meet both contractual and Deepwater mission performance requirements.[31]

The report also stated that:

> the Coast Guard's acquisition management capacity lacks the appropriate work force, business processes, and management controls for executing a major acquisition program such as the Integrated Deepwater System. Key positions are still being identified and filled. The Coast Guard is still trying to come from behind and create the organization needed to manage the program. That is why we believe the Coast Guard needs to proceed with caution as it moves forward with the implementation of the Integrated Deepwater System initiative. Expediency and urgency should not drive the acquisition; instead, the Coast Guard needs to ensure that it has the capacity to manage such an initiative. Then, and only then, can it provide assurances that it is being a good steward of the taxpayers' dollar. Also, the Coast Guard needs to ensure performance management systems and processes are in place and functioning. The design flaws of the NSC, as well as the problems that the Coast Guard has experienced with the System Integrator's design of the Fast Response Cutters and the 123-Cutters, clearly demonstrate that improvements are needed. The Coast Guard needs to build the management and oversight capacity that will allow it to acquire the needs to build a performance management system that will ensure:
> — Transparency — a clear roadmap on how the systems integrator plans to meet the Coast Guard's deepwater objectives.
> — Visibility — a clear, open line of communications with all stakeholders on the progress of the initiative.
> — Accountability — the means to determine, on a real time basis, what is working and what is not working.
> — Oversight — including not only by the Coast Guard's technical and program management offices, but also by the OIG and the Congress.[32]

---

[31] Ibid., p. 14.

[32] Ibid., pp. 35-36. Underlining as in the original.

February 2007 Report on 110-Foot Modernization

The February 2007 DHS IG report on the 110-foot patrol boat modernization program states in part:

> On February 10, 2006, our office received a Hotline Complaint alleging that the Coast Guard's 123-foot Island Class Patrol Boats (123' cutter) and short-range prosecutor (prosecutor) contained safety and security vulnerabilities. The 123' cutter is a modification of the 110' Island Class patrol boat and was phased into service as part of the Deepwater project. The original Deepwater plan projected the conversion of forty-nine 110' patrol boats into 123' patrol boats as a bridging strategy to meet patrol boat needs until the new Fast Response Cutter was introduced. The prosecutor is a 24' 6" small boat that can be deployed from the National Security Cutter, Fast Response Cutter, and Offshore Patrol Cutter. The revised Deepwater Implementation Plan calls for the acquisition of 91 prosecutors. The complaint said that these vulnerabilities were the result of the contractor's failure to comply with Command, Control, Communications, Computer, Intelligence, Surveillance, and Reconnaissance (C4ISR) design requirements as defined in the Deepwater contract. Specifically, the complainant alleged that:
> — The safety of the 123' cutter's crew was compromised by the contractor's failure to utilize low smoke cabling;
> — The contractor knowingly installed aboard the 123' cutter and prosecutor external C4ISR equipment that did not meet specific environmental requirements outlined in the Deepwater contract;
> — The cable installed during the upgrade to the cutter's C4ISR system represented a security vulnerability; and,
> — The video surveillance system installed aboard the 123' cutter does not meet the cutter's physical security requirements.
>
> Finally, the complainant provided information detailing his attempts, over a 2 ½ year period, to compel the contractor to comply with Deepwater contract requirements....
>
> Aspects of the C4ISR equipment installed aboard the 123' cutters do not meet the design standards set forth in the Deepwater contract. Specifically, two of the four areas of concern identified by the complainant were substantiated and are the result of the contractor not complying with the design standards identified in the Deepwater contract. For example, the contractor did not install low smoke cabling aboard the 123' cutter, despite a Deepwater contract requirement that stated, "all shipboard cable added as a result of the modification to the vessel shall be low smoke." The intent of this requirement was to eliminate the polyvinyl chloride jacket encasing the cables, which for years produced toxic fumes and dense smoke during shipboard fire. Additionally, the contractor installed C4ISR topside equipment aboard both the 123' cutters and prosecutors, which either did not comply or was not tested to ensure compliance with specific environmental performance requirements outlined in the Deepwater contract.
>
> The remaining two areas of concern identified by the complainant were in technical compliance with the Deepwater contract and deemed acceptable by the Coast Guard. Specifically, while the type of cabling installed during the C4ISR system upgrade to the 123' cutter was not high-grade braided cable; the type of cable used met the Coast Guard's minimum-security standards as required by the Deepwater contract. Concerning the installation of the video surveillance system,

while the system did not provide 360 degrees of coverage, it met minimum contract requirements.[33]

December 2006 Report On DHS Management Challenges

A December 2006 DHS IG report on major DHS management challenges stated:

> USCG has also encountered a number of challenges in executing its Deepwater Acquisition program despite the expenditure of more than $3 billion over four years. This is particularly true within the Deepwater surface and air domains. For example, the 110-foot patrol boat conversion project was curtailed at eight cutters due to design, construction, performance, and cost concerns. Further, strict operational restrictions have been imposed on these cutters until additional structural analyses can be completed. In response to these challenges, USCG accelerated plans to design, construct, and deploy the composite Fast Response Cutter (FRC) by more than 10 years as a replacement for the 110-foot patrol boat. However, an independent analysis confirmed that the FRC design is outside patrol boat design parameters, i.e., too heavy, too overpowered, and not streamlined enough to reduce resistance. These concerns led to USCG's April 2006 decision to suspend work on the FRC until these issues could be resolved or an alternative commercial off-the-shelf design identified. In the Deepwater air domain, the HH-65C helicopter7 and unmanned aerial vehicle (VUAV) acquisitions have encountered schedule delays and cost increases. These Deepwater design, construction, performance, scheduling, and cost issues are expected to present significant challenges to USCG's Deepwater Program during FY 2007.[34]

August 2006 Report On Deepwater IT

An August 2006 report by the DHS Inspector General (IG) on the Coast Guard's acquisition of information technology (IT) for the Deepwater program stated:

> We audited the Coast Guard's efforts to design and implement command, control, communications, computers, intelligence, surveillance, and reconnaissance (C4ISR) systems to support the Integrated Deepwater System program. As a result of our audit, we determined that the Coast Guard's efforts to develop its Deepwater C4ISR systems could be improved. Although Coast Guard officials are involved in high-level Deepwater IT requirements definition processes, they have limited influence over contractor decisions toward meeting these requirements. A lack of discipline in requirements change management processes provides little assurance that the requirements remain up-to-date or effective in meeting program goals. Certification and accreditation of Deepwater C4ISR equipment has been difficult to achieve, placing systems security and operations at risk. Further, although the Deepwater program has established IT testing procedures, the contractor has not followed them consistently to ensure

---

[33] Department of Homeland Security, Office of Inspector General, 110'/123' Maritime Patrol Boat Modernization Project, OIG -07-27, January 2007. The report is available online at [http://www.dhs.gov/xoig/assets/mgmtrpts/OIG_07-27_Feb07.pdf].

[34] U.S. Department of Homeland Security, Office of Inspector General, *Major Management Challenges Facing the Department of Homeland Security (Excerpts from the FY 2006 DHS Performance and Accountability Report)*, December 2006. (OIG-07-12) p. 6.

> that C4ISR systems and the assets on which they are installed perform effectively.
>
> Additionally, the Coast Guard faces several challenges to implementing effectively its Deepwater C4ISR systems. Due to limited oversight as well as unclear contract requirements, the agency cannot ensure that the contractor is making the best decisions toward accomplishing Deepwater IT goals. Insufficient C4ISR funding has restricted accomplishing the "system-of-systems" objectives that are considered fundamental to Deepwater asset interoperability. Inadequate training and guidance hinder users from realizing the full potential of the C4ISR upgrades. Instituting effective mechanisms for maintaining C4ISR equipment have been equally challenging.[35]

A December 2006 DHS IG report on major DHS management challenges reiterated these points.[36]

---

[35] U.S. Department of Homeland Security, Office of Inspector General. *Improvements Needed in the U.S. Coast Guard's Acquisition and Implementation of Deepwater Information Technology Systems*, August 2006. (Office of Information Technology, OIG-06-55) p. 1.

[36] U.S. Department of Homeland Security, Office of Inspector General, *Major Management Challenges Facing the Department of Homeland Security (Excerpts from the FY 2006 DHS Performance and Accountability Report)*, December 2006. (OIG-07-12) p. 13.

Appendix C. GAO Testimony

March 8, 2007, and February 14, 2007, Testimony

At a March 8, 2007, hearing on the Coast Guard's proposed FY2008 budget before the Coast Guard and Maritime Transportation subcommittee of the House Transportation and Infrastructure Committee, and at a February 14, 2007, hearing on the Deepwater program before the Oceans, Atmosphere, Fisheries, and Coast Guard subcommittee of the Senate Commerce, Science and Transportation Committee, GAO provided its views on the Deepwater program. At the March 8, 2007, hearing, GAO testified in part:

Summary

In 2001, we described the Deepwater program as "risky" due to the unique, untried acquisition strategy for a project of this magnitude within the Coast Guard. The Coast Guard used a system-of-systems approach to replace deteriorating assets with a single, integrated package of aircraft, vessels, and unmanned aerial vehicles to be linked through systems that provide command, control, communications, computer, intelligence, surveillance, and reconnaissance (C4ISR), and supporting logistics. In a system-of-systems, the delivery of Deepwater assets are interdependent, thus schedule slippages and uncertainties associated with potential changes in the design and capabilities of any one asset increases the overall risk that the Coast Guard might not meet its expanded homeland security missions within given budget parameters and milestone dates. The Coast Guard also used a systems integrator — which can give the contractor extensive involvement in requirements development, design, and source selection of major system and subsystem subcontractors. The Deepwater program is also a performance-based acquisition, meaning that it is structured around the results to be achieved rather than the manner in which the work is performed. If performance-based acquisitions are not appropriately planned and structured, there is an increased risk that the government may receive products or services that are over cost estimates, delivered late, and of unacceptable quality.

In 2004 and in subsequent assessments in 2005 and 2006, we reported concerns about the Deepwater program related to three main areas — program management, contractor accountability, and cost control. The Coast Guard's ability to effectively manage the program has been challenged by staffing shortfalls and poor communication and collaboration among Deepwater program staff, contractors, and field personnel who operate and maintain the assets. Despite documented problems in schedule, performance, cost control, and contract administration, measures for holding the contractor accountable resulted in an award fee of $4 million (of the maximum $4.6 million) for the first year. Through the first 4 years of the Deepwater contract, the systems integrator received award fees that ranged from 87 percent to 92 percent of the total possible award fee (scores that ranged from "very good" to "excellent" based on Coast Guard criteria), for a total of over $16 million. Further, the program's ability to control Deepwater costs is uncertain given the Coast Guard's lack of detailed information on the contractor's competition decisions. While the Coast Guard has taken some actions to improve program outcomes, our assessment of the program and its efforts to address our recommendations continues, and we plan to report on our findings later this year.

Of the 10 classes of upgraded or new Deepwater aircraft and vessels, the delivery record for first-in-class assets (that is, the first of multiple aircraft or vessels to be delivered within each class) is mixed. Specifically, 7 of the 10 asset classes are on or ahead of schedule. Among these, five first-in-class assets have been delivered on or ahead of schedule; and two others remain on schedule but their planned delivery dates are in 2009 or beyond. Three Deepwater asset classes are currently behind schedule due to various problems related to designs, technology, or funding. For example, the Fast Response Cutter (a new vessel), which had been scheduled for first-in-class delivery in 2007, has been delayed by at least 2 years in part because work on its design was suspended until technical problems related to its hull and other issues can be addressed. The Vertical Unmanned Aerial Vehicle (a new aircraft), which had also been scheduled for delivery in 2007, has been delayed by 6 years due to evolving technological developments, among other things. In addition, the Offshore Patrol Cutter, which had a planned delivery date in 2010, has now been delayed by 5 years.

The Coast Guard is facing operational challenges because of performance and design problems with Deepwater patrol boats. Specifically, the conversion of legacy 110-foot patrol boats to upgraded 123-foot patrol boats was stopped at eight hulls (rather than the entire fleet of 49) due to deck cracking, hull buckling, and shaft alignment problems. These patrol boat conversion problems ultimately led the Coast Guard to suspend all normal operations of the eight converted 123-foot patrol boats on November 30, 2006. The Coast Guard is now exploring options to address the resulting short-term operational gaps. There have also been design problems with the new Fast Response Cutter (FRC), intended to replace all 110-foot and 123-foot patrol boats. In February 2006, the Coast Guard suspended design work on the FRC due to design risks, such as excessive weight and horsepower requirements.2 According to the Coast Guard, it has decided to acquire two classes of FRCs in an effort to not delay delivery of the FRCs further. One class is to be based on an adapted design from a patrol boat already on the market and another class is to be redesigned to address the problems in the original FRC design plans. As with the 123-foot patrol boats, the Coast Guard is looking at options to address these long-term operational gaps....

Deepwater Indicative of Broader, Systematic Acquisition Challenges

Some of the problems the Coast Guard is experiencing with the Deepwater program are similar to problems we have reported on in other complex, developmental systems. These problems stem from:

• Program requirements that are set at unrealistic levels, then changed frequently as recognition sets in that they cannot be achieved. As a result, too much time passes; threats may change; and/or members of the user and acquisition communities may simply change their minds. The resulting program instability causes cost escalation, schedule delays, fewer quantities, and reduced contractor accountability.
• Program decisions to move into design and production without adequate standards or knowledge.
• Contracts, especially service contracts, that often do not have measures in place at the outset in order to control costs and facilitate accountability.
• Contracts that typically do not accurately reflect the complexity of projects or appropriately allocate risk between the contractors and the taxpayers.

• Agency acquisition workforces that are challenged because of size, skills, insufficient knowledge, and succession planning.
• Incentive and award fees that are often paid based on contractor efforts versus positive results, such as cost, quality, and schedule.
• Inadequate government oversight that results in little to no accountability for recurring and systemic problems.

Preliminary Observations on Deepwater Program Management, Contractor Accountability, and Cost Control

Since the inception of the Deepwater program, we have expressed concerns about the risks involved with the Coast Guard's system-of-systems acquisition approach and the Coast Guard's ability to manage and oversee the program. Our concerns have centered on three main areas: program management, contractor accountability, and cost control through competition. We have made a number of recommendations to improve the program — most of which the Coast Guard has agreed with and is working to address. However, while actions are under way, a project of this magnitude will likely continue to experience other problems as more becomes known.

Program Management

In 2004, we reported that the Coast Guard had not effectively implemented key components needed to manage and oversee the systems integrator. Specifically, we reported at that time and subsequently on issues related to integrated product teams (IPT), the Coast Guard's human capital strategy, and communication with field personnel (individuals responsible for operating and maintaining the assets). Our preliminary observations on the Coast Guard's progress in improving these program management areas, based on our ongoing work, follow.

Integrated Product Teams

In 2004, we found that IPTs, the Coast Guard's primary tool for managing the Deepwater program and overseeing the contractor, had not been effective due to changing membership, understaffing, insufficient training, lack of authority for decision making, and inadequate communication. We recommended the Coast Guard take actions to address IPT effectiveness. We subsequently reported that IPT decision-making was to a large extent stovepiped, and some teams lacked adequate authority to make decisions within their realm of responsibility.8 Coast Guard officials stated that they believed collaboration among the subcontractors was problematic and that the systems integrator wielded little influence to compel decisions among them. For example, proposed design changes to assets under construction were submitted as two separate proposals from both subcontractors rather than one coherent plan. More recently, Coast Guard performance monitors reported this approach complicated the government review of design changes because the two proposals often carried overlapping work items, thereby forcing the Coast Guard to act as the systems integrator in those situations. Although some efforts have been made to improve the effectiveness of the IPTs — such as providing them with more timely charters and entry-level training — our preliminary observations are that more improvements are needed.

Despite changes to the metrics, the Coast Guard's ability to assess IPT performance continues to be problematic. Former assessments of IPT effectiveness simply focused on measures such as frequency of meetings, attendance, and training. As a result, IPTs received positive assessments while the assets under their realm of responsibility — such as the National Security Cutter — were experiencing problems. While the Coast Guard's new IPT measurements include outcome-based metrics, such as cost and schedule performance of assets, Deepwater's overall program management quarterly reports, which are prepared by Coast Guard in collaboration with ICGS, show that the connection between IPT performance and program results continues to be misaligned. For example, the first quarterly report to incorporate the new measurements, covering the period October to December 2006, indicates that the IPTs' performance for all domains is "on-schedule or non-problematic" even while some assets' cost or schedule performance is rated "behind schedule or problematic." Further, even though the Deepwater program is addressing fundamental problems surrounding the 123-foot patrol boat and FRC, IPTs no longer exist for these assets. In some cases, Coast Guard officials stated they have established work groups outside of the existing IPT structure to address identified issues and problems related to assets, such as the NSC.

Human Capital

We also reported in 2004 that the Coast Guard had not adequately staffed its program management function for Deepwater. Although its Deepwater human capital plan set a goal of a 95 percent or higher "fill rate" annually for both military and civilian personnel, funded positions were below this goal. We recommended that the Coast Guard follow the procedures in its Deepwater human capital plan to ensure that adequate staffing was in place and that turnover of Coast Guard military personnel was proactively addressed. The Coast Guard subsequently revised its Deepwater human capital plan in February 2005 to emphasize workforce planning, including determining needed knowledge, skills, and abilities and developing ways to leverage institutional knowledge as staff rotate out of the program. We reported in 2005 that the Coast Guard also took some short-term steps to improve Deepwater program staffing, such as hiring contractors to assist with program support functions, shifting some positions from military to civilian to mitigate turnover risk, and identifying hard-to-fill positions and developing recruitment plans specifically for them.

However, more recently we have learned that while the Coast Guard has revised a human capital plan, key human capital management objectives outlined in the revised plan have not been fully implemented. Thus, key human capital management objectives outlined in the revised plan have not been accomplished and the staffing levels needed to accomplish the known workload have not been achieved. In one example, a manager cited the need for five additional staff per asset under his domain to satisfy the current workload in a timely manner: contracting officer's technical representative, scheduler, cost estimator, analyst, and configuration manager. Further, a February 2007 independent analysis found that the Coast Guard does not possess a sufficient number of acquisition personnel or the right level of experience needed to manage the Deepwater program.11 The Coast Guard has identified an acquisition structure re-organization that includes human capital as one component of the reform.

Communication with Operations and Maintenance Personnel

In 2004, we found that the Coast Guard had not adequately communicated to operations and maintenance personnel in field locations about decisions on how the new and old assets were to be integrated during the transition and whether Coast Guard or systems integrator personnel — or both — would be responsible for maintenance. We recommended that the Coast Guard provide timely information and training on the transition to Deepwater assets. In 2006, we reported that the Coast Guard had taken some steps to improve communications between Deepwater program and field personnel, including having field personnel as members on some IPTs. However, we continued to express concerns that field personnel were not receiving important information regarding training, maintenance, and integration of new Deepwater assets.

During our ongoing work, the field personnel involved in operating and maintaining the assets and Deepwater program staff we interviewed expressed continued concern that maintenance and logistics plans had not been finalized. Another official commented that there continues to be a lack of clarity defining roles and responsibilities between the Coast Guard and systems integrator for maintenance and logistics. Coast Guard officials stated in fall 2006 that the systems integrator was contractually responsible for developing key documents related to plans for the maintenance and logistics for the NSC and Maritime Patrol Aircraft. However, Deepwater program officials stated that because the Coast Guard was not satisfied with the level of detail provided in early drafts of these plans, it was simultaneously developing "interim" plans that it could rely on while the systems integrator continued to develop its own versions.

Concerns Remain with Holding Systems Integrator Accountable

Our 2004 review revealed that the Coast Guard had not developed quantifiable metrics to hold the systems integrator accountable for its ongoing performance. For example, the process by which the Coast Guard assessed performance to make the award fee determination after the first year of the contract lacked rigor. At that time, we also found that the Coast Guard had not yet begun to measure contractor performance against Deepwater contract requirements — the information it would need by June 2006 to decide whether to extend the systems integrator's contract award term by up to another 5 years. Additionally, we noted that the Coast Guard needed to establish a solid baseline against which to measure progress in lowering total ownership cost — one of the three overarching goals of the Deepwater program. Furthermore, the Coast Guard had not developed criteria for potential adjustments to the baseline.

Award Fee Criteria

In 2004 we found the first annual award fee determination was based largely on unsupported calculations. Despite documented problems in schedule, performance, cost control, and contract administration throughout the first year, the program executive officer awarded the contractor an overall rating of 87 percent, which fell in the "very good" range as reported by the Coast Guard award fee determining official. This rating resulted in an award fee of $4 million of the maximum $4.6 million. The Coast Guard continued to report design, cost, schedule, and delivery problems, and evaluation of the systems integrator's performance continued to result in award fees that ranged from 87 percent to 92 percent of the total possible award fee (with 92 percent falling into the

"excellent" range), or $3.5 to $4.8 million annually, for a total of over $16 million the first 4 years on the contract.

The Coast Guard continues to refine the award fee criteria under which it assesses the systems integrator's performance. The current award fee criteria demonstrate the Coast Guard's effort to use both objective and subjective measures and to move toward clarity and specificity with the criteria being used. For example, the criteria include 24 specific milestone activities and dates to which the systems integrator will be held accountable for schedule management. However, we recently observed two changes to the criteria that could affect the Coast Guard's ability to hold the contractor accountable. First, the current award fee criteria no longer contain measures that specifically address IPTs, despite a recommendation we made in 2004 that the Coast Guard hold the systems integrator accountable for IPT effectiveness. The Coast Guard had agreed with this recommendation and, as we reported in 2005, it had incorporated award fee metrics tied to the systems integrator's management of Deepwater, including administration, management commitment, collaboration, training, and empowerment of the IPTs. Second, a new criterion to assess both schedule and cost management states that the Coast Guard will not take into account milestone or cost impacts determined by the government to be factors beyond the systems integrator's control. However, a Coast Guard official stated that there are no formal written guidelines that define what factors are to be considered as being beyond the systems integrator's control, what process the Coast Guard is going to use to make this determination, or who is ultimately responsible for making those determinations.

Award Term Evaluation

The Deepwater program management plan included three overarching goals of the Deepwater program: increased operational effectiveness, lower total ownership cost, and customer satisfaction to be used for determining whether to extend the contract period of performance, known as the award term decision. We reported in 2004 that the Coast Guard had not begun to measure the systems integrator's performance in these three areas, even though the information was essential to determining whether to extend the contract after the first 5 years.12 We also reported that the models the Coast Guard was using to measure operational performance lacked the fidelity to capture whether improvements may be due to Coast Guard or contractor actions, and program officials noted the difficulty of holding the contractor accountable for operational effectiveness before Deepwater assets are delivered. We made a recommendation to Coast Guard to address these issues.

According to a Coast Guard official, the Coast Guard evaluated the contractor subjectively for the first award term period in May 2006, using operational effectiveness, total ownership costs, and customer satisfaction as the criteria. The result was a new award term period of 43 of a possible 60 months. To measure the system's operational effectiveness, the Coast Guard has developed models to simulate the effect of the Deepwater assets' capabilities on its ability to meet its missions and to measure the "presence" of those assets. However, in its assessment of the contractor, the Coast Guard assumed full operational capability of assets and communications and did not account for actual asset operating data. Furthermore, the models still lacked the fidelity to capture whether operational improvements are attributable to Coast Guard or contractor actions. As a result the contractor received credit for factors that may

have been beyond its control — although no formal process existed for approving such factors. Total ownership cost was difficult to measure, thus the contractor was given a neutral score, according to Coast Guard officials. Finally, the contractor was rated "marginal" in customer satisfaction.

The Coast Guard has modified the award term evaluation criteria to be used to determine whether to grant a further contract extension after the 43-month period ends in January 2011. The new criteria incorporate more objective measures.

• While the three overall Deepwater program objectives (operational effectiveness, total ownership costs, and customer satisfaction) carried a weight of 100 percent under the first award term decision, they will represent only about a third of the total weight for the second award term decision. The criteria include items such as new operational effectiveness measures that will include an evaluation of asset-level key performance parameters, such as endurance, operating range, and detection range.

• The new award term criteria have de-emphasized measurement of total ownership cost, concentrating instead on cost control. Program officials noted the difficulty of estimating ownership costs far into the future, while cost control can be measured objectively using actual costs and earned value data. In 2004, we recommended that the Coast Guard establish a total ownership cost baseline that could be used to periodically measure whether the Deepwater system-of-systems acquisition approach is providing the government with increased efficiencies compared to what it would have cost without this approach. Our recommendation was consistent with the cost baseline criteria set forth in the Deepwater program management plan. The Coast Guard agreed with the recommendation at the time, but subsequently told us it does not plan to implement it.

Establishing Criteria and Documenting Changes to the Baseline

Establishing a solid baseline against which to measure progress in lowering total ownership cost is critical to holding the contractor accountable. The Coast Guard's original plan, set forth in the Deepwater program management plan, was to establish as its baseline the dollar value of replacing assets under a traditional, asset-by-asset approach as the "upper limit for total ownership cost." In practice, the Coast Guard decided to use the systems integrator's estimated cost of $70.97 billion plus 10 percent (in fiscal year 2002 dollars) for the system-of-systems approach as the baseline. In 2004, we recommended that the Coast Guard establish criteria to determine when the total ownership cost baseline should be adjusted and ensure that the reasons for any changes are documented.

Since then, the Coast Guard established a process that would require DHS approval for adjustments to the total ownership cost baseline. The Deepwater Program Executive Officer maintains authority to approve baseline revisions at the asset or domain level. However, depending on the severity of the change, these changes are also subject to review and approval by DHS. In November 2005, the Coast Guard increased the total ownership cost baseline against which the contractor will be evaluated to $304 billion. Deepwater officials stated that the adjustment was the result of incorporating the new homeland security mission requirements and revising dollar estimates to a current year basis. Although the Coast Guard is required to provide information to DHS on causal

factors and propose corrective action for a baseline breach of 8 percent or more, the 8 percent threshold has not been breached because the threshold is measured against total program costs and not on an asset basis. For example, the decision to stop the conversion of the 49 110-foot patrol boats after 8 hulls did not exceed the threshold; nor did the damages and schedule delay to the NSC attributed to Hurricane Katrina. During our ongoing work, Coast Guard officials acknowledged that only a catastrophic event would ever trigger a threshold breach. According to a Coast Guard official, DHS approval is pending on shifting the baseline against which the systems integrator is measured to an asset basis.

Limited Knowledge of Cost Control Achieved Through Competition

Our 2004 report also had recommendations related to cost control through the use of competition. We reported that, although competition among subcontractors was a key mechanism for controlling costs, the Coast Guard had neither measured the extent of competition among the suppliers of Deepwater assets nor held the systems integrator accountable for taking steps to achieve competition. As the two first-tier subcontractors to the systems integrator, Lockheed Martin and Northrop Grumman have sole responsibility for determining whether to provide the Deepwater assets themselves or hold competitions — decisions commonly referred to as "make or buy." We noted that the Coast Guard's hands-off approach to make-or-buy decisions and its failure to assess the extent of competition raised questions about whether the government would be able to control Deepwater program costs.

The Coast Guard has taken steps to establish a reporting requirement for the systems integrator to provide information on competition on a semi-annual basis. The systems integrator is to provide detailed plans, policies, and procedures necessary to ensure proper monitoring, reporting, and control of its subcontractors. Further, reports are to include total procurement activity, the value of competitive procurements, and the subcontractors' name and addresses. The systems integrator provided the first competition report in October 2006. However, because the report did not include the level of detail required by Coast Guard guidelines, a Coast Guard official deemed that the extent of competition could not be validated by the information provided and a request was made to the systems integrator for more information. We will continue to assess the Coast Guard's efforts to hold the systems integrator accountable for ensuring an adequate degree of competition....

Performance and Design Problems Creating Operational Challenges

In addition to the overall management problems, there have been problems with the performance and design of Deepwater patrol boats and its replacement vessel, the FRC, that pose significant operational challenges for the Coast Guard.

Performance Problems with the Converted 123-foot Patrol Boats

Between January 2001 and November 2006, numerous events led up to the failure of the Coast Guard's bridging strategy to convert the legacy 110-foot patrol boats into 123-foot patrol boats. In January 2001, an independent study found that the 110-foot patrol boats based in south Florida and Puerto Rico were experiencing severe hull corrosion and that their structural integrity was deteriorating rapidly. To address these issues, the Coast Guard's original (2002)

Deepwater plan included a strategy to convert all 49 of the 110-foot patrol boats into 123-foot patrol boats and to strengthen the hulls. Also, the plan was to provide additional capabilities, such as stern launch and recovery capabilities and enhanced C4ISR. While Coast Guard originally planned to convert all 49 of its 110-foot patrol boats to 123-foot patrol boats, it halted the patrol boat conversion program after 8 boats because of continued deck cracking, hull buckling, and the inability of these converted patrol boats to meet post-September 11, 2001 mission requirements. The Commandant then decided to remove these 8 converted boats from service on November 30, 2006 because of operational and safety concerns.

The Coast Guard is taking actions to mitigate the operational impacts resulting from the removal of the 123-foot patrol boats from service. Specifically, in recent testimony, the Commandant of the Coast Guard stated that Coast Guard has taken the following actions:

• multi-crewing certain 110-foot patrol boats with crews from the 123-foot patrol boats that have been removed from service so that patrol hours for these vessels can be increased;
• deploying other Coast Guard vessels to assist in missions formerly performed by the 123-foot patrol boats; and
• securing permission from the U.S. Navy to continue using 179-foot cutters on loan from the Navy for an additional 5 years (these were originally to be returned to the Navy in 2008) to supplement the Coast Guard's patrol craft.

Design Problems with the Fast Response Cutter

The FRC — which was intended as a long-term replacement for the legacy 110-foot patrol boats — has experienced design problems that have operational implications. As we recently reported, the Coast Guard suspended design work on the FRC due to design risks such as excessive weight and horsepower requirements. Specifically, beginning in January 2005, Coast Guard engineers raised concerns about the viability of the FRC design (which involved building the FRC's hull, decks, and bulkheads out of composite materials rather than steel). Then, in February 2006, the Coast Guard suspended FRC design work after an independent design review by third-party consultants demonstrated, among other things, that the FRC would be far heavier and less efficient than a typical patrol boat of similar length, in part, because it would need four engines to meet Coast Guard speed requirements.

To address the design problems and schedule delays that have occurred with the FRC, the Coast Guard is proceeding with a "dual-path approach" for acquiring new patrol boats. The first component of the dual-path approach is to have the Deepwater systems integrator purchase a commercial off-the-shelf patrol boat design that can be adapted for Coast Guard use. The purpose of designing the first class of FRCs based on an adaptation of a patrol boat already on the market is to expedite delivery. According to Coast Guard officials, unlike the original plans, this FRC class is not expected to meet all performance requirements originally specified, but is intended as a way to field an FRC more quickly than would otherwise occur and that can, therefore, serve as an interim replacement for the deteriorating fleet of 110-foot patrol boats.

The second component of the dual-path approach would be to completely redesign an FRC to address the problems in the original FRC design plans.

However, due to continuing questions about the feasibility of its planned composite hull, the Coast Guard has delayed a decision about its development or acquisition until it receives results from a business case analysis comparing the use of composite versus steel hulls., as well as a study by DHS's Science and Technology Directorate on composite hull technology. Until recently, the Coast Guard anticipated delivery of the redesigned FRC in 2010. However, the decision to not request funding for this redesigned FRC in fiscal year 2008, and to await the results of both studies before moving forward, will likely further delay delivery of the redesigned FRC. In regard to the suspension of FRC design work, as of our June 2006 report, Coast Guard officials had not yet determined how changes in the design and delivery date for the FRC would affect the operations of the overall system-of-systems approach.[37]

---

[37] Government Accountability Office, *Coast Guard[:] Status of Efforts to Improve Deepwater Program Management and Address Operational Challenges, Statement of Stephen L. Caldwell, Acting Director Homeland Security and Justice Issues, Testimony Before the Subcommittee on Coast Guard and Maritime Transportation, Committee on Transportation and Infrastructure, House of Representatives*, GAO-07-575T, March 8, 2007. See also Government Accountability Office, *Coast Guard[:] Coast Guard Efforts to Improve Management and Address Operational Challenges in the Deepwater Program, Statement of Stephen L. Caldwell, Acting Director Homeland Security and Justice Issues, Testimony Before the Subcommittee on Oceans, Atmosphere, Fisheries, and Coast Guard, Committee on Commerce, Science and Transportation, U.S. Senate*, GAO-07-460T, February 14, 2007.

Appendix D. Coast Guard Testimony

May 17, 2007, Testimony

At a May 17, 2007, joint hearing before the Border, Maritime, and Global Counterterrorism subcommittee and the Management, Investigations, and Oversight subcommittee of the House Homeland Security Committee, the Coast Guard testified in part:

Past as Prologue

Before I discuss the current state of Deepwater and the program's way ahead, I ask you to bear with me briefly to consider how we got here. By the mid 1990s, most of our ships and aircraft were approaching the end of their service lives. Our cutter fleet was then, and remains, one of the oldest among the world's naval fleets. Some of our cutters are old enough to be eligible for Social Security! In light of a looming aviation and surface fleet block obsolescence, it wasn't sensible to attempt piecemeal, one-for-one replacement of each class of assets. We also didn't have the capacity in the late 1990's to manage that many projects in parallel.

Because of these anticipated challenges, we knew an innovative approach was required. And because maritime threats were evolving in the post-Cold War environment in which Deepwater was conceived, we knew expectations for maritime security were changing as well, so our asset mix would need to support these dynamic requirements. We determined, therefore, that it would be most cost effective and efficient to acquire a wholly-integrated system of ships, aircraft, sensors and communications systems, or, as it is commonly called, a "system of systems". The idea is based on the concept that the whole is greater than the sum of its parts; all elements combine to generate greater capabilities across the entire system. Given that, our goal is not to replace ships, aircraft, and sensors with more ships, aircraft, and sensors, but to provide the Coast Guard with the functional capabilities required to safely achieve mission success.

This wholly-integrated acquisition strategy called for progressive modernization, conversion and recapitalization using a mix of new and legacy assets, replacing those that are obsolete, while upgrading existing ones until a new fleet is acquired. This complex strategy, and the fact that the Coast Guard had not built a ship the size of the National Security Cutter for more than three decades, drove our decision to engage the services of a commercial systems integrator with proven technical expertise in the acquisition of large systems. Following a rigorous, multiple year selection process, the result was our contract with Integrated Coast Guard Systems (ICGS), a joint venture of Lockheed Martin and Northrop Grumman.

Adding to the program's complexity was adoption of an innovative performance-based acquisition strategy. Compared to more traditional methods, performance-based acquisition is designed to promote innovation and spread risk more evenly between government and industry.

Following nearly ten years of planning, beginning in 1993, the Coast Guard moved toward contract award believing that we had addressed many of the concerns likely to arise from this transformational acquisition strategy. However,

like most Americans, we never expected the larger challenge that lay ahead for the Coast Guard and the nation in the wake of the terrorist attacks of September 11, 2001. Following the Service's transfer to the Department of Homeland Security in March 2003, we conducted a Performance Gap Analysis, drafted a new Mission Needs Statement, and developed a revised, post-September 11th Implementation Plan to ensure Deepwater capabilities would support new mission sets assigned to the Coast Guard. All of these steps were carried out in full consultation with the Administration and Congress. As Deepwater requirements were expanded in the post-September 11th environment, the program's timeline expanded and its overall projected cost increased from $17 to $24 billion.

Where we are Today in Deepwater

Last month, I completed my first year at the helm of the largest acquisition program in Coast Guard history. Five years into this 25 year acquisition we've achieved many successes, but also faced daunting challenges – and indeed learned some lessons the hard way – but I assure you that education has not been wasted. As a result of those lessons learned and with the full support of the Commandant and the Department of Homeland Security (DHS), we are taking aggressive action every day to strengthen program management and execution and to ensure past mistakes will not be repeated.

While acknowledging that we need to learn from past mistakes, we also need to leverage off the positive experience of significant recent accomplishments. Deepwater assets are in the fleet today, contributing to the successful execution of an array of Coast Guard missions.

Phase 1 of our three-phase conversion of our workhorse helicopter, the HH65, is on schedule. As of the end of March, all air stations with HH-65 Dolphin helicopters are now flying the "C" model with new Turbomeca Arriel 2C2 engines and upgraded gearboxes, installed as part of our legacy asset modernization program. With a 40 percent power increase and greater reliability, the HH-65C has re-established itself as the deployable mainstay of our helicopter fleet and played an invaluable part during the Coast Guard's response to Hurricane Katrina. And, just last July, a hiker in the Olympic National Forest fell down the side of a mountain and owes his life to a daring rescue by a well-trained Coast Guard aircrew, flying a newly delivered HH-65C helicopter — recently re-engined as part of the Deepwater program. That rescue would not have been possible without Deepwater.

We have also recently marked crucial shore-based facility milestones. During a ribbon cutting ceremony on March 14, a new Deepwater training facility was dedicated at the Coast Guard's training center in Petaluma, CA. The facility houses high-tech shipboard operation simulators and state-of-the-art radar and electronics systems and will provide critical command, control, communications, computers, intelligence, surveillance, and reconnaissance (C4ISR) training for Coast Guard and U.S. Navy crews. And, the Coast Guard Communications Area Master Station Atlantic (CAMSLANT) in Chesapeake, VA is being remodeled and upgraded to support Deepwater's interoperable systems. Specifically, the 22-year old building is being outfitted with High Frequency Automatic Link Establishment (HF-ALE) systems, Automatic Identification Systems (AIS), and a Global Positioning System/Differential Global Positioning System (GPS/DGPS). This new Deepwater-funded equipment

will allow CAMSLANT to execute its core mission to maintain and deploy contingency communications and provide command and control support for disaster recovery, special operations, and other emergencies.

Also in late March, the crew of CGC SHERMAN made use of Deepwater-enhanced command and control capabilities while seizing more than 42,000 tons of cocaine from the Motor Vessel GATUN off the coast of Panama. SHERMAN's commanding officer noted that this largest bust in Coast Guard history would not have been possible before the service's high- and medium-endurance cutters were equipped with Deepwater-provided upgraded tracking capabilities and the ability to communicate securely over great distances, which was provided by Deepwater.

On April 26, 2007, the first 110-foot Island Class patrol boat to enter the Deepwater-funded Mission Effectiveness Project (MEP) – CGC TYBEE – was returned to the fleet following a very successful year-long MEP process. This project includes refurbishing and replacing aging and obsolete equipment on the ships and is improving operational effectiveness across the fleet. The goal of the MEP is to maintain effective missions for legacy cutters and patrol boats until those vessels can be replaced by new and more capable Deepwater assets such as the Offshore Patrol Cutter (OPC) and the Fast Response Cutter (FRC).

This is an exciting time, with two National Security Cutters (NSC) under construction in Mississippi and HC-144A maritime patrol aircraft Nos. 1 and 2—the first new aviation assets acquired under Deepwater—being missionized at the Aviation Repair & Supply Center in North Carolina. Aircraft No. 3 is expected to be delivered for missionization later this year and Nos. 4 and 5 are already in production. Aircraft Nos. 4 and 5 were contracted for in January 2007 at a cost of approx. $34.89 million per aircraft. Earlier this month, we put aircraft Nos. 6 thru 8 on contract, at a price of approx. $33.99 million per aircraft. This is a cost reduction of almost $900,000 per aircraft between Nos. 4 and 5 and Nos. 6 thru 8. These are but a few examples of the program's progress and results.

These milestones and successes just begin to illustrate the tremendous need for Deepwater. As Deepwater's system of assets continue to be delivered, we'll meet or exceed not just capability requirements, but patrol and response capacity needs as well....

Room for Reflection

As I indicated earlier, we are committed to benefiting from lessons learned. Obviously, one area where we are very disappointed is the 123-foot patrol boats. Based on initial budget constraints, the conversion of these cutters was planned as a bridging strategy until we could deliver the more capable Fast Response Cutter (FRC). The decision to proceed with these conversions was based on consideration of limited resources, a growing gap in patrol boat hours, and identified risk associated with the conversion design. At the time, the conversion was seen as the lowest risk option given available resources and operational requirements.

But, early hull deformation led the Coast Guard to re-examine the plan for the 123-foot patrol boats and halt conversions in May 2005 at just eight hulls, instead of 46 as originally planned. When repeated efforts to repair the hulls proved unsuccessful and even more significant structural problems surfaced, last

November Admiral Allen suspended operation of the cutters until a comprehensive engineering solution was identified. When a feasible solution couldn't be found, the Commandant announced his decision last month that these eight cutters will be permanently decommissioned. As the Program Executive Officer for Deepwater, I have worked with the Commandant, DHS OIG, GAO, and this Congress to ensure that adequate managerial and oversight changes have been made in this acquisition program to prevent false starts, such as the 123-foot patrol boat program, from being repeated.

I'd also like to take just a moment to discuss the National Security Cutter (NSC). TheInspector General reported his findings earlier this year from an audit of the NSC earlier this year. That report highlighted concerns with our approach to potential fatigue structural integrity issues with the NSC hull. The issue here, which we have communicated to the DHS OIG and which we have been actively addressing for several years, is a question of fatigue life over the course of the cutter's 30-year service life.

I want to be very clear that there has never been a question of crew or ship safety related to the ship's structure, nor have we ever anticipated any operational restrictions related to its design. As you are well aware, we drive our ships hard, so service and fatigue life of new cutters is of critical concern to us. An early Coast Guard review of the design of the NSC indicated that the ship might experience fatigue-level stresses sooner than anticipated. Because we want to ensure that all of our ships meet the service and fatigue life requirements our missions demand, we are implementing changes and enhancements to the design of the NSC.

Some have wondered why we didn't suspend construction of the first NSC when we learned of these concerns. The Coast Guard's decision to continue production of the NSC reflects more than simply the naval engineering perspective. It also encompasses considerations of cost, schedule, and performance. After extensive research and deliberation and with all of these considerations in mind, the Coast Guard decided that the need for enhancements to NSC No. 1 could be effectively addressed by later retrofits and did not justify the schedule and cost risk associated with stopping the production line. These kinds of issues are not unusual in production of a first-in-class vessel, and I believe the decision to move forward was prudent. We will fix NSC No. 1 and 2 during post-delivery availabilities and design the fix into future hulls' production. In fact, through ongoing meetings and negotiations between the Coast Guard and CEOs from Northrop Grumman and Lockheed Martin, we've recently reached agreement on the engineering solution to resolve all fatigue concerns with NSCs No. 3-8.

Moving Beyond

As the Deepwater program has evolved, we have reinvigorated our workforce planning process and continue the effort to increase staff to the appropriate level to allow effective government oversight and ability of the government to perform as the system integrator. I appreciate Congress acting to authorize additional billets for this endeavor. As a direct result of these efforts, the Coast Guard will have 52 full-time government personnel at our Gulf Coast PMRO by the end of this fiscal year. The Navy's Supervisor of Shipbuilding Office (SUPSHIP) also assigned 12 people to our PMRO in Pascagoula, Miss., where they are supporting construction of the NSC at Northrop Grumman Ship

Systems. During a trip to Pascagoula last month, I had a chance to visit with many of these acquisition and technical professionals and I am confident their active oversight of contractor performance during NSC construction will pay dividends.

Obtaining more appropriate staffing levels also means the Coast Guard is able to better respond to contractor requests for deviation and waivers. These requests demand intense scrutiny from the government prior to any action being taken; to facilitate this, we've developed a new Class I Engineering Change Proposal (ECP)/Request for Deviation (RFD)/Request for Waiver (RFW) review process, a recommendation of our DHS OIG. This process requires that, prior to implementation; each ECP/RFD/RFW is reviewed in detail by a board of technical experts and contracting officers, based on pre-determined guidelines. It also mandates thorough documentation of each contractor request, the formal review process, and decision of the Coast Guard in regard to each request. This will facilitate timely and consistent handling of each ECP/RFD/RFW.

The Coast Guard will use the American Bureau of Shipping (ABS) to certify Deepwater equipment and vessels according to High Speed Naval Craft (HSNC) and Naval Vessel rules as appropriate. Specifically, the Coast Guard is working with industry to maximize the use of HSNC standards for our patrol boats and smaller surface assets and Naval Vessel rules for the National Security Cutter and Offshore Patrol Cutter. By implementing this certification expectation, we can ensure that equipment and assets meet requirements and that standards are enforced consistently. There is a growing market today for external rules and standards bodies, and we'll use those rules and bodies to assist with certification in the future. But, the government needs to be the final arbiter of those standards.

Leading Change

The lessons we have are being applied across the program. In fact, these lessons are improving acquisition management throughout the Coast Guard.

The role of the Coast Guard's technical authority has been reaffirmed and the dynamic relationship between the technical authority and acquisition programs has been strengthened. This means that for all vessel designs and design changes, the Coast Guard will not proceed with contract award or contract changes without agreement from the technical authority. Fatigue enhancements to the National Security Cutter are an illustration of this constructive relationship. While contractors follow direction from program and contracting officers, those officers don't give direction until first consulting and reaching agreement with the Coast Guard technical authority.

We are also improving the effectiveness of our Integrated Product Teams (IPTs). These teams can serve a useful function by enabling regular oversight of the contractor and by providing an avenue for resolution of non-major technical concerns or, where concerns persist, an avenue for them to be raised to program managers and contracting officers. Our IPTs were previously chaired by Integrated Coast Guard Systems (ICGS) and haven't always functioned as envisioned. That needed to change. So, based on direction to all program managers, each IPT is now led by a government employee and IPT charters are being examined to determine if/where additional changes should be made.

The complexity of the Deepwater program and the diverse missions of planned assets makes design review a crucial element of the successful execution of this program. To ensure that designs and assets will meet Coast Guard needs, we have increased our use of independent, third-party review and analysis for all new starts or substantial design changes. Inherent in this initiative is a renewed commitment to utilize full business case analyses for all new acquisition decisions to instill confidence that we are building and buying the right tools for our Coast Guard men and women and at best value for taxpayers.

Of particular note, we recently contracted with the Defense Acquisition University (DAU) to conduct a "quick-look" review of Deepwater to examine the program's key management and technical processes, performance-based acquisition strategy, organizational structure and our contract with ICGS. The Coast Guard's Research and Development Center has also completed a study of the planned Deepwater Vertical-Launch Unmanned Aerial Vehicle; in he study's second phase, we are re-examining the way ahead for unmanned vehicles based on recommendations from that analysis. And, we've initiated an independent review of workload and workforce management issues. Based on findings and recommendations from these and other independent reviews, we will make "course corrections" where needed in order to guarantee successful execution of the Deepwater program.

Our ongoing and positive relationship with the Naval Sea and Air Systems Commands have provided the Coast Guard with valuable third party assessments. It is the preference of the Coast Guard that future third party assessments be kept within the government whenever possible. Specifically, NAVSEA's Carderock Surface Warfare Center has provided us with valuable design reviews and recommendations. As funding allows, we will continue this exchange to the maximum extent possible.

Our partnerships and cooperative relationships with the U.S. Navy and others extend beyond third party assessments. The Coast Guard is leveraging sound principles of systems engineering and integration to derive high levels of sub-system and component commonality, improve interoperability with the U.S. Navy and other agencies, and achieve significant cost avoidances and savings. This approach conforms with and directly supports the National Fleet Policy.

As the Program Executive Officer of Deepwater, I have a formalized collaborative partnership with my Navy counterparts in order to identify common systems, technologies and processes for improved interoperability. By incorporating common and interoperable Navy systems into Deepwater assets, the Coast Guard has also avoided paying unnecessary costs.

As examples, the National Security Cutter (NSC) and Off-Shore Patrol Cutter (OPC) will use 75 percent of the Navy's AEGIS Command and Decision System. Deepwater assets also will incorporate Navy Type/Navy Owned systems, including the 57mm deck gun, selected for major Deepwater cutters and the Navy's Littoral Combat Ship and DD(X) programs. The Operation Center Consoles on the NSC use 70 percent of the design of the Navy's Display Systems (AN/UYQ-70). And, by using more than 23,000 lines of software code from the Navy's Antisubmarine Warfare Improvement Program (AIP) in the CASA Maritime Patrol Aircraft's command and control systems, we are maximizing the use of mission systems that are installed on more than 95 percent of the world's maritime surveillance aircraft. The CASA Maritime Patrol Aircraft will utilize

more than 50 percent of the functionality of the Navy's P-3 Aircraft Improvement Program system. For example, the U.S. Navy and Coast Guard personnel routinely train side-by-side at the Coast Guard's training facility in Petaluma, California.

A Consolidated Coast Guard Acquisition Directorate

One of the most significant changes we are making in the Coast Guard's acquisition community is bringing together all acquisition-related activities–traditional programs as well as system-of-system, policy, and research and development–under one organization. Consolidating our acquisition efforts will provide immediate benefits, including better allocation of human capital assets (such as contracting officers and acquisition professionals) along with an integrated "product line" approach to our management of acquisitions, thereby allowing projects to be handled by knowledgeable and experienced personnel with the same linkages to the technical authorities.

Defense Acquisition University's (DAU) Quick Look study report of the Deepwater program concluded that our recently developed Blueprint for Acquisition Reform plan, which outlines many of the change management efforts related here, "is comprehensive and responsive to the human capital, organization, process and governance related findings and recommendations."

Along with our analysis to right-size staffing levels, we have reinvigorated our acquisition training and certification process to ensure that technical and support staff, program managers and contracting officers have the requisite skills and education needed to manage complex acquisitions. Our desired end state is to become the model for mid-sized federal agency acquisition and procurement, in full alignment with the Department of Homeland Security acquisition objectives.

Other Insights

Some insights gained over the past year and during the program's first five years, may not be as intuitive as the need to increase staffing or refine oversight processes. In that vein—and this has particular relevance to the 123-foot patrol boats—we must consider the ever-present tension between the trend in government agencies to seek to purchase Commercial Off-the-Shelf (COTS) equipment and the sometimes conflicting requirement to certify that equipment to federal agency standards. Often, these competing desires cannot be reconciled without making trade-offs from one or the other. The fact is, while COTS equipment is often less expensive, easier to buy and more available, it seldom meets the sometimes very long list of federal agency performance requirements. The practical impact is that contracting officers and program managers are left trying to balance affordability, schedule and risk in meeting contract requirements.

The requirement on the 123-foot patrol boats for low-smoke cabling is one example of this challenge. When this safety-related requirement is pitted against the competing requirement to use COTS equipment in onboard systems, program and contracting officers must consider trade-offs. If COTS equipment contains pre-fabricated circuitry that utilizes non-low smoke cables, the cost to modify that equipment can be very steep– not to mention schedule impacts from such modifications. Often, COTS equipment may even have components that meet

certification standards but that lack manufacturer testing data to the needed level of specificity. Program and contracting officers must thus seek to balance performance, cost, and schedule factors and make decisions based on perceived risk. The federal government needs to balance using COTS equipment and certifying that equipment to all federal agency standards, in order to best serve the public.

We've also learned a great deal about performance-based contracts, especially as they relate to complex acquisitions like a Coast Guard cutter. When Deepwater was developed it was envisioned as a purely performance-based acquisition. The thought was that we'd simply lay out performance requirements of our assets and then allow industry the freedom to design and build assets that met those requirements. What we've found is that this approach doesn't work in our complex system acquisition.

While there may be some elements of performance-based acquisition that we would wish to retain, we have concluded that our Deepwater ship contracts should be much more specification-based. That means the government has a responsibility to establish specifications, including certification requirements, and to not change them mid-stream without good cause. Requirements are dynamic and the need for detailed specification and constant collaboration and oversight from the government is intense. Based on this realization, we're working with industry to redefine future procedures and contract development to ensure more adequate, detailed specification and oversight. In fact, Admiral Allen recently signed a joint letter of strategic intent with the CEOs of Lockheed Martin and Northrop Grumman to encourage further alignment as we move toward the new award term.

This leads me to a final, critical point–one which perhaps seems obvious on the face of it, but which has been brought home to me in more ways over the last 12 months than I can enumerate. The contract is the key to a successful acquisition. It's while the contract is being developed and negotiated that the government maintains the greatest influence in the acquisition process. Granted, the government must always be heavily involved in contractor oversight to ensure that assets are designed, constructed and delivered to meet requirements. But, those requirements and specifications must be clearly established within the contract document. In fact, while the contract is the key to a successful acquisition – stable requirements are a key to a successful contract. It is absolutely essential that the contract be precise. Specifications must be clear. Requirements must be documented. Construction parameters must be defined. Expectations must be understood. And swift and appropriate action must be taken to enforce contracts when contractor performance falls short of our expectations.

In Summary

All of the program management changes I have described are positioning the Coast Guard to take on more responsibility as the system integrator for the Deepwater program, and to be sound and effective stewards, regardless of who the integrator is. In conclusion, I want to assure you we are listening to concerns of the Inspector General, the Government Accountability Office, Congress, and this committee, and are benefiting from their recommendations. We've learned from our past and are making changes to successfully step out into the future. Open and honest dialogue between the Coast Guard and our stakeholders is

essential and we'll continue to advise you of challenges and successes, and to make additional changes where needed.

This is an exciting time for the Coast Guard and for Deepwater. Our past challenges have made us stronger today. All one has to do is look at the operational capabilities already being provided to the fleet to see the tremendous impact Deepwater is making. From the Coast Guard's record drug seizure in March to the enhanced rescue and response capabilities demonstrated in Olympic National Forest and during our response to Hurricane Katrina, Deepwater-upgraded assets are contributing to overall mission success. Deepwater is helping to build a 21st Century Coast Guard. The capabilities and capacity we are delivering will better enable the service to push out and secure our maritime borders and protect Americans all along our shores.

Together, we're going to deliver those capabilities. We are making the changes necessary to propel the program to ultimate success and provide the critical cutters, aircraft and sensors needed to meet our dynamic mission requirements. We are all anxious for positive results. We are on the path to change and I am confident that it is the correct path.[38]

---

[38] Departmentof Homeland Security, U.S. Coast Guard, Statement of Rear Admiral Gary T. Blore and Captain Steven Baynes on Deepwater: Charting a Course For Safer Waters, Before the Committee on Homeland Security, U.S. House of Representatives, Subcommittees on Management, Investigations, and Oversight and Border, Maritime and Global Counterterrorism, May 17, 2007, pp. 2-11.

Appendix E. NGSS Testimony

May 17, 2007, Testimony

At a May 17, 2007, joint hearing before the Border, Maritime, and Global Counterterrorism subcommittee and the Management, Investigations, and Oversight subcommittee of the House Homeland Security Committee, Northrop Grumman Ship Systems (NGSS), one of the two firms involved in the joint venture that is the LSI for the Deepwater program, testified in part:

> The Coast Guard's current 110 foot patrol boats were built in the 1980s and early 1990s by Bollinger Shipyards, Inc. These boats have seen extensive duty in support of the Coast Guard mission to save lives, interdict aliens and seize drugs. ICGS and its teammate, Halter Bollinger Joint Venture (HBJV), proposed to convert the 110 foot boats to 123 foot boats as an interim measure to improve the capability of this vessel until its FRC replacement entered operation in 2018.
>
> ICGS proposed the conversion concept as a means to provide the Coast Guard with the capability to continue to meet its mission objectives while remaining within the confines of program funding requirements. Deepwater competitors were required to propose a "system of systems" solution that did not exceed the funding limitation of $500 million per year. With new assets such as the National Security Cutter (NSC), Maritime Patrol Aircraft (MPA) and the Vertical Unmanned Air Vehicle (VUAV) being developed early in the program, it was not possible to design, develop and construct new patrol boats at program inception while keeping within annual funding limitations.
>
> Bollinger had designed and built the original 110 foot boats and was very familiar with their construction. Bollinger was awarded a contract for 16 110' Island class boats in August 1984 and another contract for 33 more boats in 1986. The design of the 110' Island class was approximately 20 years old and was based on an existing patrol boat developed by a British firm, Vosper Thornycroft (UK) Ltd. The 110' Island Class boats were commissioned between November 1985 and 1992. Notably, after the first boats came into service, it was discovered that the 110s suffered from hull problems when operated in heavy seas. As a correctional measure, heavier bow plating was added to hulls 17 through 49 during construction and additional stiffeners were retrofitted to earlier hulls.
>
> Under the proposed Deepwater conversion plan, HBJV added a 13 foot extension to the 110', which was similar to the 9 foot extension they had successfully added to the Cyclone patrol boats starting in 2000. This extension accommodated a stern ramp for the launch and recovery of a small boat, used primarily to support boarding and rescue operations. In addition, the conversion installed an improved pilot house, enhanced C4ISR capabilities, and extensively improved habitability and maintenance. During the conversion process HBJV identified and renewed hull plating in areas where an ultrasonic thickness inspection indicated that the existing plating was deteriorated.
>
> At the time the proposal was submitted, some general knowledge about the condition of the 110s was available, and ICGS believed that replacement of the hull plating would adequately address and offset their deteriorated condition. This is consistent with the findings of the Coast Guard's 110' WPB Service Life Extension Board, published in March 2002, which recommended a program of

systematic hull repairs, predominantly in documented problem areas, to address the hull deterioration problems that were impacting the operational availability of the 110s.

As is typical of ship construction projects, periodic reviews of the 123' conversion design were held. Prior to each review, the contractors submitted numerous design documents, including engineering data, calculations and model test results, to the Coast Guard for its review and comment. Coast Guard comments were received in conjunction with each of the three primary design reviews, all of which included Coast Guard, NGSS, ICGS and HBJV representatives.

The first such review was the Preliminary Design Review (PDR). The Preliminary Design Review was not a contract requirement, but was conducted by ICGS as part of the 110' to 123' design process. As part of the PDR process, approximately 43 contract-required data items (CDRLs), including 23 drawings and 14 analyses were delivered to the Coast Guard for consideration and review. During PDR, the Coast Guard was provided with an overview of procurement, model testing procedures and schedule, as well as the planned hull/structure inspection process, which included blasting the hull to the main deck, ultrasonic and visual inspection, as well as bulkhead Ultra Sonic Testing allowance. The Coast Guard represented 23 of the 46 attendees at PDR.

The next phase was the Critical Design Review (CDR). In connection with CDR, the Coast Guard reviewed 47 design deliverables. In addition to 123' conversion design information and drawings, CDR presentations included design tests such as model basin testing for bare hull resistance, propeller and open water cavitation, self propulsion, planar motion maneuvering and course keeping, numerical simulations of turning circle and course keeping, and sea keeping. The Coast Guard represented 34 of the 75 in attendance at CDR.

CDR was followed by a Production Readiness Review (PRR). During the PRR, the production process, procedures and state of the design to convert the 110' vessel into a 123' were presented. Following the PRR, ICGS received notification from the Coast Guard that "ICGS had presented a comprehensive assessment of the state of the design development and readiness for production." The Coast Guard did not identify any risks associated with hull deformation or buckling. Four days later the USCG delivered Matagorda to Bollinger at Lockport, Louisiana for conversion.

In addition to these various reviews with the Coast Guard, during the conversion of the first vessel, the Matagorda, the American Bureau of Shipping (ABS) examined the design of the hull extension and new deckhouse and monitored key elements of the work being performed. The Coast Guard had a Program Management Resident Office on site at Bollinger to oversee the 123' conversions. At the completion of each conversion and as part of the acceptance process, the Coast Guard established an INSURV board to examine the performance of the converted cutter and make a formal recommendation of acceptance. At the conclusion of the Matagorda work, ABS issued a letter of approval for the conversion work and expressed no reservations with the feasibility of the conversion. Based on all of these reviews and actions, the Coast Guard accepted delivery of the Matagorda. This same process was applied to each of the other seven patrol boats delivered to and accepted by the Coast Guard.

The Performance Specification requirement calls for the 123' to be capable of unrestricted operation up through sea state 3, or seas averaging approximately four feet or less. Coast Guard operation restrictions are imposed beginning at sea state four, or seas less than eight feet, where the boats are to be able to sustain limited operations, altering course or reducing speed as required to maintain a ride which does not damage the boat or its machinery or overly fatigue the crew. The Performance Specification requires the 123' to be able to survive sea state 5, or seas averaging between eight and 13 feet, maneuvering as necessary to minimize damage or injury to the crew, and then be capable of returning to port under its own power once the seas have subsided.

In September of 2004, after all 8 hulls had entered the conversion program and the first 4 hulls had been delivered, the Matagorda was forced to conduct a high speed transit to avoid Hurricane Ivan. This operational necessity forced the Coast Guard to transit in a sea state and speed where the cutter was operating near or above the design limits of the 123' conversion. Upon arrival at their destination, the crew discovered buckling of the side shell and main deck on the starboard side near midship. An engineering tiger team was formed consisting of Coast Guard and NGSSpersonnel. This team was dispatched to investigate the problem where it was discovered that the Matagorda had an inherent workmanship issue in the baseline 110' that existed prior to the conversion and contributed to the hull buckling. Specifically, a hidden, unwelded aluminum deck stringer was discovered immediately beneath the area where the failure occurred. Other boats were examined, and this unwelded stringer was also found on one additional hull undergoing conversion. When modeled using finite element analysis, the stresses in the panels which failed on Matagorda were significantly higher than the stresses shown when the model was run with this stringer intact. Based on this finding, the team believed this to be the primary cause of the buckling on Matagorda, and repairs were made accordingly.

In addition, a reconstruction of the engineering analysis of the 123' structure was conducted. Based on this, it was also discovered that an early calculation overstated the strength margin for the boat. A revised calculation using a common, agreed to set of assumptions by a Coast Guard, Northrop Grumman and Bollinger engineering team showed the 123' would still meet the required operations defined in the Performance Specification.

In an effort to further improve the structural integrity on the 123s, three stiffener bands were installed; one at the upper edge of the side shell, one below this one and another on the edge of the main deck to increase the overall structural strength. While the finite element analysis and conventional calculations both agreed that the original hull, with the stringer under the deck intact, should be sufficient throughout the operating range of the 123', these additional stiffeners were considered to provide an added margin of strength.

By March, 2005, 6 of the 123s had received the structural upgrade and had been delivered. Certain operational restrictions imposed on these boats by the Coast Guard following repairs to the Matagorda had been lifted. Then, during a transit from Key West to Savannah, Georgia, the Nunivak experienced hull deformation in an area aft of the new reinforcing straps. This deformation occurred in a different area from that of the Matagorda. Further, this was not an area which had indicated potential for high stresses under any conditions modeled in the earlier finite element analysis.

An outside engineering firm, Designers and Planners, was engaged by the Coast Guard to perform a more detailed finite element analysis of the 123' hull, which showed that the overall hull structure design was adequate under all expected operating conditions up to the worst operating condition modeled. The analyses were not able to replicate the deformation seen on Nunivak. A more detailed look at specific regions on the hull showed an area with high potential for localized buckling in a section of the side shell where the original 110' hull had been constructed of exceptionally thin four-pound plate. Despite this finding, no actual failures had ever been experienced in this area on 110' or 123' patrol boats. As a precaution, this thin plate was replaced with heavier plating on those cutters undergoing the Post Delivery Maintenance Availability, with plans to eventually upgrade all the boats. Lastly, a metallurgical analysis of the deck material determined that the particular grade of aluminum used on the 110s is prone to corrosion and cracking in elevated heat and marine conditions. We provided that information as input to the testing and analysis that was being conducted by the USCG.

In July 2005, then Coast Guard Commandant Admiral Collins' written testimony before Congress outlined the twofold reason for stopping the conversion process as follows: "As the first eight 110' to 123' conversions were conducted, the Coast Guard found that the 110' WPB hulls were in much worse condition than anticipated. This extended the conversion timeline and would have increased projected costs for conversions after the first eight (the first eight were negotiated under a firm-fixed-price contract). An operational analysis of the 123' WPBs also identified high risks in meeting mission needs, particularly in the post-9/11 environment." Based on the deteriorated condition of the 110' hulls and post 9/11 requirements, the Coast Guard accelerated FRC design and construction by ten years to meet the shortfall in patrol boat hours.

On April 13, 2007, Admiral Allen decided to decommission the eight 123 patrol boats converted under the Deepwater Program. To date the problems associated with the 123' conversion include buckling or hull deformation and shaft alignment problems. In addition to the actions previously described, additional and substantial work has been (and continues to be) done to determine cause or causes. In addition to the repairs and reviews of structural calculations, the review process has continued by conducting two independent finite element analyses, modeling both the original and the upgraded hull, and completing metallurgical testing that revealed an issue in the main deck which exists on both the 123s and across the legacy 110 fleet. Extensive strain gage testing has been conducted on a 123' hull to validate the finite element model and to identify potential problem areas which the model may not show. The parent craft designer, Vosper Thornycroft, was engaged by the Coast Guard to evaluate the 123' hull and provide recommendations. Data has been collected on shaft alignment and maintenance procedures both during the conversion and since, so that the procedures for checking and correcting alignment can be validated for both the 110' and the 123'. Elements of the 123' design, including the propellers and the SRP stern-launch system are being reexamined and validated.

We are committed and determined to identify the root cause of the structural problems. Reviews and analyses of available data on the 110' and 123' patrol boats continue in an effort to better understand the cause or causes of both hull buckling and shaft alignment problems. Until these efforts are complete, it is premature to speculate on the final cause.

I want to assure the Subcommittees that Northrop Grumman will continue to work with the Coast Guard to address its mission requirements throughout the life of the Deepwater Program.[39]

[39] Statement for the Record, Mr. James E. Anton, Vice President Deepwater Program, Northrop Grumman Ship Systems (NGSS), Testimony Before: The House Maritime and Global Counter-Terrorism Subcommittee And The House Management, Investigations and Oversight Subcommittee, May 17, 2007, pp. 2-5.

Appendix F. Lockheed Martin Testimony

May 17, 2007, Testimony

At a May 17, 2007, joint hearing before the Border, Maritime, and Global Counterterrorism subcommittee and the Management, Investigations, and Oversight subcommittee of the House Homeland Security Committee, Lockheed Martin, one of the two firms involved in the joint venture that is the LSI for the Deepwater program, testified in part:

The Deepwater Program

The Deepwater program began in 1997 as competing teams were established to develop proposed solutions for bidding the program. In fact, proposals were submitted to the government less than two weeks after 9/11. Since then, the Deepwater program has successfully accomplished a number of changes. Most significant were those resulting from the dramatically increased Coast Guard operating tempo and new capability requirements in the post-9/11 environment. An excellent example is the HH-65 helicopters as legacy equipment began to wear out far more rapidly than had been projected. While the plan always included re-engining of this equipment, the original plan was to be accomplished over a longer time period. Nevertheless, the team was able to process the urgent requirement for re-engining and most of the fleet has already been upgraded and returned to service. It is this inherent flexibility that will facilitate our working with the new acquisition organization planned by the Coast Guard.

Lockheed Martin is primarily responsible for four Deepwater domains: system engineering & integration, C4ISR (the command and control network), logistics and aviation (refurbishment of existing assets and production of new assets). Implementation of the Deepwater system-wide command and control network, C4ISR (command and control, computers, communications, intelligence, surveillance and reconnaissance), is important as this is the network 'glue' that permits various assets including ships, aircraft and shore stations to work together to more effectively and efficiently achieve a common purpose. Use and reuse of commercial-off-the-shelf, government-off-the-shelf and fielded maritime systems are being maximized for commonality and interoperability. The application of off-the-shelf software permits the Deepwater program to take advantage of the rapid changes in the commercial marketplace and the investments which commercial firms make in their 'best of class' technologies. This will facilitate Coast Guard interoperability with civil and international systems, a key consideration given their mission mix. The National Security Cutter is using 75 percent of the U.S. Navy's open architecture command and decision system. The command and control system for the maritime patrol aircraft employs more than 50 percent of the functionality of the Navy's P-3 Anti-Surface Warfare Improvement Program. The operations center consoles on the National Security Cutter utilize more than 70 percent of the design of the Navy's UYQ-70 display systems. Use and reuse of available software and systems is the key to commonality. In addition, this approach takes advantage of the work undertaken with the Navy to establish the best human system interface including workspace ergonomics, viewing characteristics, input devices and overall system architecture.

The common architecture deployed across multiple types of assets allows for commonality of equipment and software systems and supportability of the entire Deepwater system. In general, the Deepwater C4ISR architecture ensures an 'open systems' approach for design and implementation, providing a true web-enabled infrastructure. The Deepwater architecture adapts to technology insertion and enables the progression to future Coast Guard-wide C4ISR architectures. In ports and coastal areas, one of Deepwater's most significant capability enhancements will be its robust C4ISR system. This fundamental building block will improve the Coast Guard's ability to maintain maritime domain awareness focused on meeting the needs of decision makers engaged in operations at sea, ashore, and in the air. The network-wide system will ensure the Coast Guard possesses and maintains seamless interoperability with the forces and agencies of the Department of Homeland Security, the Department of Defense, and other federal and regional agencies—a true force multiplier in the fullest sense.

I would like to specifically address concerns about competition as Deepwater continues to perform well in this area. The Federal Acquisition Regulations stipulate that a contractor is responsible for awarding and managing subcontracts as well as determining whether to make or buy particular items to ensure the lowest overall cost and technical risk to the government. The applicable regulations also require competition to be assessed regularly via formal government-conducted purchasing system reviews. These government audits evaluate the degree of price competition obtained and the treatment of affiliates.

Lockheed Martin is currently subcontracting with nearly 350 suppliers in 28 states. More than 200 of these are small or small disadvantaged businesses. In the period from September 2003 through December 2006, Lockheed Martin placed more than $606 million of orders with these suppliers. Competitive procurements in accordance with our government-approved procurement system total 43 percent of the subcontracts awarded. To assure price reasonableness to the government, the Competition in Contracting Act of 1984 excepts from the otherwise applicable requirement for competition follow-on procurements for continued development, production or highly specialized services, unique supplies or services available from only one source, or an unusual and compelling urgency that precludes full and open competition. When these are appropriately applied to each subcontract, the qualified percentage is raised to 94 percent of the subcontracts awarded.

In fact, of every $100 of Deepwater funding obligated to the prime contract:

• $27 is used by Lockheed Martin for engineering and program management

• $37 is subcontracted by Lockheed Martin to third-party suppliers for goods and services

• $36 is used by other Deepwater partners (ICGS, Northrop Grumman and Northrop Grumman's third-party suppliers)

We continually search for the most appropriate products, services and technology to assure best value to the Coast Guard customer. We have participated in six Innovation & Industry Days across the country and have more than 3,000 prospective supplier-product applications in our purchasing database.

Lockheed Martin Deepwater Program Progress

Working with our Coast Guard customer, Lockheed Martin has enabled deployment of more than 80 upgraded HH-65 helicopters featuring more powerful engines; delivered two new HC-144A maritime patrol aircraft with six more in various stages of contracting and construction; progressed through developmental test and evaluation of the HC-144A electronic mission system; commenced mission system and sensor installation on all six J-model HC-130 long range search aircraft; and sustained service of the eight MH-68A armed helicopters comprising the Coast Guard's helicopter interdiction squadron.

We have upgraded command and control systems aboard all of the Coast Guard's 39 medium- and high-endurance cutters resulting in significant increases of illicit drug seizures. An important program milestone was recently achieved. The Coast Guard issued full authority to operate the Deepwater command and control system at its district command center in Miami. This system provides enhanced mission planning tools and facilitates rapid exchange of information through a common operating picture among Coast Guard commands, cutters and aircraft. The system is now being installed in San Juan, Puerto Rico, soon to be followed at major Coast Guard commands in Massachusetts, Virginia, Alaska, Washington, Hawaii, California and Louisiana.

The Deepwater program is delivering and is making a real difference — impacting drug seizures, migrant interdictions and lives saved. In Washington, earlier this year, the Coast Guard performed a rescue utilizing an HH-65C helicopter under conditions that would have been impossible for the aircraft it replaced. This month, the cutter Sherman utilized its Deepwater-installed electronics to passively track a ship of interest, to board her without alerting her, and to coordinate the seizure of a record 21 tons of cocaine, with a street value of $300M, via secure satellite communications.

Recent customer statements show how well the upgrades, equipment and new capabilities are being received:

• HH-65 Helicopter Re-Engining - "Restoring this kind of reliability and stability to our HH-65 fleet is a crucial milestone in improving readiness. The fact that it's being accomplished ahead of schedule reflects a true team effort by industry and our engineers, acquirers and operators." Coast Guard Chief of Aviation Forces

• Legacy Cutter C4ISR Upgrades – "The Deepwater Upgrade provides vastly improved communications and interoperability. In the past year this ship has operated from above the Arctic Circle to well below the equator. We have enjoyed 24/7 real time links to operational commanders and data base management regardless of our physical location. The upgrades have proven to be tough, dependable, and easily maintained." Commanding Officer of the USCGC Morgenthau

• National Security Cutter C4ISR Training Center - "The contrast between our tools of 1983, and the tools of the future ships like the BERTHOLF is significant. I remember analog radar, message traffic by teletype, paper charts and maneuvering boards, Polaroid cameras, and slow criminal history checks by EPIC. No cell phones, no email – imagine that. I remember a true sense of independent operations. We were proud, but probably not as effective as we might have been if we had the tools of today. By contrast, our new National

Security cutters will train … on computerized digital sensors, radar and charts, live sharable digital video, message traffic by PC, voice communications with anyone, clear or secure, and real time criminal histories and intelligence checks. They will benefit from a sense of connectedness and systemic information sharing making their days at sea safer and more efficient. The Coast Guard will have increased Maritime Domain Awareness to identify threats, and a Common Operating Picture to act when necessary – all to protect our coastlines and our citizens." Commanding Officer Coast Guard Training Center

• Maritime Patrol Aircraft - "Today's delivery of the first MRS MPA is a critical milestone in our ongoing efforts to acquire and deliver more capable and interoperable assets and systems to our Coast Guard crews. When this aircraft and others like it enter operational service, they will help to narrow our existing gaps in maritime surveillance in many important ways." Deepwater Program Executive Officer

Deepwater C4ISR is the enabler for the integrated system and is the major contributor to improved performance. It permits the Coast Guard to operate effectively with DoD, DHS, state and local government agencies. C4ISR provides coordinated tactics, multi-agency interoperability and common situational awareness necessary to achieve mission success. These capabilities are needed for all Deepwater assets including ships, aircraft, and shore site command centers.

Commitment to Congress and the Coast Guard

We have deep respect for Congressional oversight and are committed to achieving our very best for our nation and the Coast Guard. We have continually sought to improve on this program. In particular, we are attentive to the concerns that have been raised by the DHS Inspector General, the Government Accountability Office and Members of this and other Committees with Coast Guard oversight responsibilities. As such, we are continuing to improve engineering and program management processes to better meet the needs of the Coast Guard customer.

I would like to take this opportunity to address the concerns raised by the DHS Inspector General. We have carefully reviewed each of the findings, and, where appropriate, have made improvements to Deepwater program processes to avoid past mistakes being repeated. I address each of the issues raised by the DHS Inspector General.

Low Smoke Cables

During a Lockheed Martin review of 123-foot Patrol Boat C4ISR specifications, it was determined that 85 out of approximately 490 cables per ship could not be confirmed as having low-smoke properties. Many of these 85 "cables" are not large electrical cables. They are small cables such as those linking personal computers to printers. Others were small cables located inside commercial equipment, purchased as a result of the mandate to use as much commercial product as possible. The remainder of the 85 cables extend outside onto the mast or deck, and pose no threat to the boat or its personnel. Consistent with other military programs, a collaborative analysis of the non-low smoke cables determined that their use did not pose an undue safety risk. During the process of certifying the 123-foot patrol boat C4ISR design to the cutter

certification matrix, the Coast Guard recommended submission of a 'request for relief' from the low smoke requirement for specific cables. The program proceeded to make progress with a reasonable expectation that the request for waiver would be approved. As the Inspector General determined, approval of the request for waiver was secured after four 123-foot patrol boats had been delivered. Collaboratively, with our Coast Guard customer, we have established additional process controls to help avoid a future recurrence of such a documentation issue.

C4ISR Environmental Requirements

A Lockheed Martin engineering review in mid-2005 identified a potential issue regarding C4ISR environmental requirements. We immediately informed the Coast Guard of this issue, and a joint Coast Guard and Lockheed Martin working group was established to resolve this issue. Rather than embark on a costly and continuous certification test process, Lockheed Martin engineers evaluated each of the components and the associated environmental performance information. Where possible, Lockheed Martin obtained ruggedized components, such as a de-icing capability for the FLIR sensor. After the joint working group's consideration of the mission criticality of each component, its specification compliance, and its function aboard the boat, a request for waiver was jointly determined the best choice given customer imperatives and objectives. This approach permitted reconciliation of the program's acquisition strategy to maximize the use of ruggedized off-the-shelf commercial and government equipment with a multitude of military standards incorporated into the requirements. By submission of a contractor requested waiver, the Coast Guard was afforded the ultimate decision as to a course of action. Much like the findings regarding low-smoke cabling, the Inspector General recommended that the Coast Guard develop and implement a plan to improve the process for reviewing and adjudicating contractor requests for deviations and waivers to ensure that all requests are resolved and fully documented prior to implementation. We are actively supporting implementation of this and other Coast Guard program oversight process improvements.

TEMPEST

Next, in response to concerns regarding C4ISR TEMPEST capabilities, we note that the government determined that the installed C4ISR system is not a security vulnerability. In fact, an independent third-party, the U.S. Navy Space and Naval Warfare Systems Center (SPAWAR), performed a visual inspection and instrumented testing. All identified discrepancies were resolved to the customer's satisfaction and the 123-foot patrol boat C4ISR system was subsequently approved by the Coast Guard to operate in a classified environment. Lockheed Martin engineers chose a particular type of cable that was fully shielded and securely mounted to preclude compromising emissions as well as potential shielding degradation over time. Furthermore, SPAWAR determined that the system did not have compromising emissions and it was approved by the Coast Guard to operate in a classified environment. Based on input from the Coast Guard, the C4ISR system on the 123-foot patrol boat operated effectively and securely during the time the patrol boats were operational and was highly regarded by their crews. The capabilities provided by the C4ISR system enabled the crews to develop new and highly-effective operational techniques for intercepting drug traffickers and illegal immigrants.

Before the February 2007 report of the Inspector General, we improved the C4ISR design process for the National Security Cutter. Electronic equipment cabinets have been designed with improved electro-magnetic interference, cryptographic system configuration and cable shielding. Classified network designs were provided to the certified TEMPEST test authority prior to customer design reviews to facilitate risk mitigation early in the design. Representatives of industry, the customer and an independent reviewer, Craig Ocean Systems, participated in a number of technical interchange meetings to review current designs and make changes prior to equipment production efforts. During cabinet production, integration and test, periodic technical interchange meetings were conducted with the customer to review all emergent TEMPEST issues and correct the associated documentation. Prior to system testing, the customer conducted a final design review with government experts to identify potential issues and make any necessary design changes. We believe the approach of mitigating potential problems before customer visual and instrumented testing is essential. Close customer involvement, including early reviews of the design documentation and delivery schedules will continue to assure that Congressional and customer interests are best served.

Surveillance Cameras

Finally, as the Inspector General found, the camera system on the 123-foot patrol boats fully complies with the video surveillance system requirements. It was designed as part of an overlapping series of measures, including sentries and an intruder detection system. Lockheed Martin did not consider it prudent to unilaterally increase costs by providing functionality that the customer did not want or need.

The Way Ahead

We agree with the Coast Guard that the oversight has provided important recommendations for improvements to the Deepwater program. We are working with the Coast Guard as they have already begun to take the necessary steps to ensure successful execution of the Deepwater program. Our goal is to provide more capability to the Coast Guard sooner. We are dedicated to analyzing and recommending approaches for maximizing the value delivered to the Coast Guard, in accordance with the customer's view of value, not that of industry. This requires the best talent from each corporation. Lockheed Martin will continue to work closely with Coast Guard personnel to assure constant communications and improved working relationships. The strategic policy changes that have occurred since 9/11 must be factored into problem solving. The Coast Guard and the Department of Homeland Security have needs that can be satisfied by the Deepwater program and its approach to value delivery. The way forward will be challenging, but given the capabilities of the participants and the strategic imperative to better outfit our Coast Guard so the safety and security of our nation is improved, the Deepwater program is eminently achievable.[40]

crsphpgw

---

[40] Testimony of Fred P. Moosally, President, Lockheed Martin Maritime Systems and Sensors, to The House Committee on Homeland Security Subcommittee on Border, Maritime and Global Counterterrorism, May 17, 2007, pp. 1-6.