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March 11, 2008

The Honorable Maria Cantwell
Chair
Subcommittee on Oceans, Atmosphere, Fisheries, and Coast Guard
Committee on Commerce, Science and Transportation
United States Senate

The Honorable Olympia J. Snowe
Ranking Member
Subcommittee on Oceans, Atmosphere, Fisheries, and Coast Guard
Committee on Commerce, Science and Transportation
United States Senate

Subject: *Status of Selected Aspects of the Coast Guard's Deepwater Program*

The Coast Guard is in the midst of the largest acquisition program in its history—one that has experienced serious performance and management problems. The Deepwater program is intended to replace or modernize the Coast Guard's fleet of vessels, aircraft, and information management capabilities in order to carry out its missions along our coastlines and farther out at sea. Deepwater incorporates acquisition of 15 major classes of new or upgraded assets—5 major classes each of vessels and aircraft, and 5 other projects, including command, control, communications, computers, intelligence, surveillance, and reconnaissance (C4ISR) systems. To carry out this acquisition, the Coast Guard contracted with a system integrator, Integrated Coast Guard Systems (ICGS).

Since 2001, we have reviewed the Deepwater program and have informed Congress, the Department of Homeland Security (DHS), and the Coast Guard of the risks and uncertainties inherent with such a large acquisition. In March 2004, we made recommendations to the Coast Guard to address three broad areas of concern: improving program management, strengthening contractor accountability, and promoting cost control through greater competition among potential subcontractors.¹ In April 2006 and June 2007, we issued follow-on reports describing efforts the Coast Guard had taken to address the recommendations.

You asked us to determine (1) how decisions are made regarding whether to purchase assets under the contract with ICGS or directly with another vendor; (2) the costs and performance trade-offs, if any, associated with the Coast Guard's

¹ GAO, *Contract Management: Coast Guard's Deepwater Program Needs Increased Attention to Management and Contractor Oversight*, GAO-04-380 (Washington, D.C.: Mar. 9, 2004)

acquisition strategy for the Fast Response Cutter (FRC); (3) cost, schedule, and performance issues associated with changes to the National Security Cutter (NSC); and (4) actions the Coast Guard has taken to address the open recommendations from our March 2004 report.

To assess these aspects of the Deepwater program, we reviewed and analyzed key Coast Guard documents, including the Deepwater Expenditure Plan and the Acquisition Program Baseline. We reviewed Deepwater contract files, plans, and reports, and reviewed cost estimates for the FRC and NSC. We also conducted interviews with Coast Guard officials, including program managers, contracting officials, and subject matter experts—such as staff at the Engineering Logistics Center—to discuss acquisition planning efforts and actions being taken by the Coast Guard and to obtain information on shipbuilding. We compared the updated status of open recommendations from our June 2007 report against current information obtained from Deepwater documentation and interviews with Coast Guard officials. We visited the shipyard in Pascagoula, Mississippi, where we toured the NSCs that were under construction and interviewed officials overseeing construction. We also met with contractor representatives and interviewed the officials in the Pacific Area that will receive the NSC upon completion. Finally, we interviewed representatives from the American Bureau of Shipping to discuss shipbuilding certification standards.

We conducted this performance audit from September 2007 to March 2008 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

In summary, we found:

- The Coast Guard has changed how decisions are made about purchasing Deepwater assets. It is moving from a “system-of-systems” acquisition model—with the contractor, ICGS, as the system integrator—to a more traditional acquisition strategy in which the Coast Guard will take a more direct role and manage the acquisition of each asset separately.
- The Coast Guard obligated approximately \$35 million on the ICGS design for the FRC, but concerns prompted officials to put the acquisition on hold. To fill its urgent need for patrol boats, the Coast Guard plans to award a contract for a commercially available design of the FRC. Coast Guard officials said this approach will help ensure competition and meet their tight time frames. The new requirements for this design of the FRC have some differences. These include a top speed that is 2 knots slower—28 instead of 30 knots—and allowance of a manual small-boat launch and recovery system that Coast Guard officials said is not as safe and requires more crew to operate than the preferred stern ramp system.
- Changes to the NSC have had cost, schedule, and performance ramifications.


- The estimated costs for the first three ships have generally doubled from the initial projected costs due to a number of contributing factors, including requirements changes as a result of September 11, Hurricane Katrina damages, and some program management actions by the Coast Guard.
- Delivery of the ship could be delayed. An aggressive trial schedule leaves little time for dealing with the unexpected, and most certifications have yet to be completed.
- Coast Guard officials expect the ship to meet all performance parameters, but will not know for certain until the ship undergoes trials. Further, Coast Guard engineers have concerns that most of the ship's available weight margin has been consumed during construction, meaning that subsequent changes to the ship will require additional redesign and engineering to offset the additional weight.
- We have closed two of the five open recommendations from our previous report, pertaining to the Coast Guard's use of models and metrics to measure the contractor's progress toward improving operational effectiveness and establishing criteria for when to adjust the total ownership cost baseline. The Coast Guard has taken actions on the three recommendations that remain open, such as designating Coast Guard officials as the lead on integrated product teams, developing a draft maintenance and logistics plan for the Deepwater assets, and potentially eliminating the award term provision from the ICGS contract. However, at this time, the actions are not sufficient to allow us to close them.

We briefed your staff on the general status of these topics in November 2007. As agreed at that time, we are following up with additional information, which provides more detail on the topics covered in the briefing.

We provided a draft of this report to DHS and the Coast Guard for review and comment. The Coast Guard agreed with our findings and DHS also concurred. Regarding our discussion under objective one of the enclosure, about the Coast Guard's move away from the ICGS contract and the system-of-systems model, the Coast Guard stated that its approach to the Deepwater Program "has not changed." It stated that it still uses a systems approach to determine solutions to meet Surveillance, Detection, Classification, Identification, and Prosecution. In a subsequent discussion, Coast Guard officials clarified their point, saying that, while they are moving to a more traditional, asset-by-asset acquisition strategy, they will continue to place emphasis on ensuring a common operating picture among the individual assets. The Coast Guard also provided some additional information on various aspects of the Deepwater Program. The written comments are reproduced in appendix I.

We are providing copies of this correspondence and attachment to interested congressional committees, the Secretary of Homeland Security, and the Commandant of the Coast Guard. We will also make copies available to others upon request. In addition, this report will be available on the GAO Web site at <http://www.gao.gov>.

Should you or your staff have any questions, please contact me at (202) 512-4841 or by e-mail at huttonj@gao.gov. Contact points for our Offices of Congressional Relations and Public Affairs may be found on the last page of this report. Key contributors to this report were Michele Mackin, Assistant Director; Tatiana Winger; Martin G. Campbell; Maura Hardy; Melissa Jaynes; Heddi Nieuwsma; Scott Purdy; Raffaele Roffo; and Sylvia Schatz.

A handwritten signature in black ink that reads "John P. Hutton". The signature is written in a cursive style with a large, stylized initial "J".

John P. Hutton, Director
Acquisition and Sourcing Management

Enclosure

(120680)



Background

Program Overview

The Coast Guard Deepwater program is intended to replace or modernize vessels, aircraft, and information management capabilities such as command, control, communications, computers, intelligence, surveillance, and reconnaissance (C4ISR) systems. The events of September 11, 2001, prompted a revision of the planned asset mix, capabilities, and schedule.

Key Terminology

Indefinite delivery, indefinite quantity (IDIQ) contracts provide for an indefinite quantity, within stated limits, of supplies or services during a fixed period. The contract must specify the total minimum and maximum quantity of supplies or services the government will acquire and must include a statement of work or other description of the work to be performed. The Coast Guard places orders (termed delivery/task orders [DTO] under the Deepwater contract) for individual requirements.

Award term and award fee. Based on the government's assessment of its performance, the contractor could earn one or more extensions of the contract period (award term) and/or additional money (award fee).

The **Acquisition Program Baseline** establishes key cost, schedule, and performance parameters. **Rebaselining** involves changing the parameters to reflect a program's current status when program goals change.

Status of Selected Aspects of the Deepwater Program

Deepwater Program's Acquisition Approach

The Deepwater program has been in development since the mid-1990s, when the Coast Guard began planning a recapitalization program to replace or modernize aging or technologically obsolete "deepwater" assets—those used for missions that generally occur beyond 50 miles from shore. Rather than using a traditional acquisition approach of replacing individual classes of assets, the Coast Guard chose a system-of-systems strategy, managing the program as a single integrated package. To execute this acquisition approach, the Coast Guard decided to use a system integrator—a private sector contractor responsible for designing, building, and integrating the various assets to meet projected deepwater operational requirements at the lowest possible cost, either directly or through subcontractors. Furthermore, the Coast Guard pursued a performance-based acquisition—setting broad performance requirements for the program but allowing the system integrator some latitude in meeting the requirements. The Coast Guard's three main goals for its Deepwater program were to improve operational effectiveness, reduce total ownership costs, and satisfy the customers, i.e., the users.

Between 1998 and 2001, three industry teams¹ competed to identify and provide the assets needed—including cutters, aircraft, helicopters, logistics, and C4ISR—to meet Coast Guard requirements. Each team was made up of shipbuilders; aircraft manufacturers; and manufacturers of electronic, communication, and other equipment needed for the deepwater system. The competition for the Deepwater base contract was nearing completion when the September 11 terrorist attacks occurred. Nevertheless, Coast Guard officials decided to move forward with the contract award to avoid delaying replacement of deteriorating assets, although they knew at the time that there would be changes to their mission. In June 2002, the Coast Guard awarded a system integrator contract to Integrated Coast Guard Systems (ICGS)—a business entity led and jointly owned by Lockheed Martin and Northrop Grumman Ship Systems. The award was an IDIQ contract with a 5-year base period and five potential additional award terms of up to 5 years each.

From 2005 to 2006, the Coast Guard worked to rebaseline the Deepwater program to reflect its post-9/11 mission. The Deepwater Acquisition Program Baseline, approved by the Department of Homeland Security (DHS) in May 2007, reflects the changes. In June 2007, the Coast Guard awarded ICGS its first award term extension, 43 months of the potential 60 months, based on the government's assessment of the contractor's performance.

¹ The industry teams were led by Litton/Avondale Industries, Lockheed Martin Naval Electronics and Surveillance Systems, and Science Applications International Corporation.

Objective #1

Background

When the Coast Guard awarded the Deepwater contract to ICGS, the contractor was to be a system integrator. ICGS proposed a solution, or mix of assets, to meet Coast Guard requirements and was then responsible for designing, developing, delivering, integrating, and supporting the assets. The acquisition structure of the Deepwater program allowed the two first-tier subcontractors, Lockheed Martin and Northrop Grumman—the companies that formed ICGS and that developed the Deepwater solution—to have sole responsibility for determining how assets would be acquired.

Decisions to Purchase from ICGS versus Other Vendors

Changing Approach to Deepwater Acquisition

The Coast Guard is moving away from the ICGS contract and the system-of-systems model, with the contractor as system integrator, to a more traditional acquisition strategy, where the Coast Guard will manage the acquisition of each asset separately. In a series of reports since 2001, we have noted the risks inherent in the systems integrator approach to the Deepwater program and have made a number of recommendations intended to improve the Coast Guard's management and oversight. We specifically focused on the need to improve program management, contractor accountability, and cost control. We, as well as the DHS Inspector General and others, have also noted problems in specific acquisition efforts, notably the National Security Cutter (NSC) and the 110-Foot Patrol Boat Modernization, which was permanently halted due to operational and safety concerns.

The Coast Guard has recognized that it needs to increase government oversight and has begun to transfer system integration and program management responsibilities back to the Coast Guard. It has begun taking formal steps to reclaim authority over decision making and to more closely monitor program outcomes.

The Coast Guard has also

- begun to competitively purchase one asset (the Fast Response Cutter-B) and plans to competitively purchase other assets outside of the ICGS contract;
- expanded the role of third parties, including the U.S. Navy, to perform independent cost assessments and program technical analyses; and
- reorganized and consolidated the acquisition function to strengthen its ability to manage projects.

Additionally, because the IDIQ contract minimum was met during the 5-year base term, the government is under no further obligation to use the contract. Coast Guard officials said that they are currently evaluating whether to continue to use the ICGS contract for efforts that are already under way, such as the NSC, versus contracting directly with the subcontractors. Further, they may continue to use the ICGS contract for certain efforts, such as logistics.

Objective #2

Background

The FRC was conceived as a patrol boat with high readiness, speed, adaptability, and endurance. ICGS proposed a fleet of 58 FRCs constructed of composite materials (later termed FRC-As). Although estimates of the initial acquisition cost for these composite materials were high, they were chosen for their perceived advantages over other materials (e.g., steel), such as lower maintenance and life-cycle costs, longer service life, and lower weight.

In 2005, the Coast Guard accelerated the delivery date of the lead FRC-A from 2018 to 2007 because of problems with modifications to the 110-foot patrol boat fleet. However, in February 2006 the Coast Guard suspended FRC-A design work in order to assess and mitigate technical risks.

To fulfill its urgent need for patrol boats, the Coast Guard decided in early 2006 to pursue a dual-path acquisition approach. The Coast Guard planned to purchase 12 modified commercially available patrol boats (termed FRC-Bs) through ICGS. Concurrently, it continued to assess the possible use of composite materials for the hull of the FRC-A.

In March 2007, the Coast Guard terminated the ICGS FRC-B acquisition effort and reassigned it to the Coast Guard Acquisition Directorate. The Coast Guard believed that by issuing the request for proposals (RFP) itself, it could better ensure full and open competition while controlling costs and acquiring the patrol boats in the shortest amount of time.

Status of the Fast Response Cutter's (FRC) Cost, Schedule, and Performance

FRC-A Design Efforts Remain Suspended

Since the FRC-A acquisition effort began, the Coast Guard obligated approximately \$35 million to ICGS for the design of this asset, but a viable design has not been produced. Coast Guard officials told us that at this time design efforts remain suspended; they do not expect to incur any additional costs related to the FRC-A. The original estimate for the fleet of 58 FRC-As was approximately \$3.2 billion.

Due to high risk and uncertain cost savings, Coast Guard officials recommended to the Commandant that the Coast Guard not pursue acquisition of an FRC-A design that includes unproven composite hull technology. The officials told us this recommendation was largely based on a third-party analysis that found the composite technology unlikely to meet the desired 35-year service life under the Coast Guard's operational conditions. Therefore, officials believe that the use of the proposed composite materials would not offset high initial acquisition costs, as ICGS had initially proposed.

Cost, Schedule, and Performance of FRC-B

In June 2007, the Coast Guard issued an RFP for the design, construction, and delivery of a modified commercially available patrol boat for the FRC-B. The Coast Guard estimated, in late 2006, that the total acquisition cost for 12 FRC-Bs would be \$593 million. Coast Guard officials do not plan to update cost estimates for the FRC-B until after the contract is awarded. The Coast Guard is currently evaluating proposals and expects to award the FRC-B contract in the third quarter of fiscal year 2008, with the lead cutter to be delivered in 2010. Coast Guard officials stated that their goal is still to acquire 12 FRC-Bs by 2012. The contract will include a 2-year base period for the design and production of the lead cutter and six 1-year option periods. The first option period includes 3 low-rate initial production cutters, and the subsequent five option periods include an option of 4 or 6 cutters each. The Coast Guard intends to award a fixed price contract for design and construction of the FRC-B, with the potential to acquire a total of 34 cutters.

Regarding performance, there are some key differences in the FRC-B, as outlined in the RFP, compared with the requirements for the FRC-A. One difference is speed—the Coast Guard lowered the minimum requirement for sprint speed from 30 knots for the FRC-A to 28 for the FRC-B. Another pertains to onboard small boat launch-and-recovery mechanisms: the initial design for the FRC-A included a stern ramp launch. This capability is not required on the FRC-B. However, Coast Guard officials expressed a preference for the stern ramp launch-and-recovery system because it would be safer and require fewer crew to operate than a manual alternative. Coast Guard officials said that eliminating these design requirements would ensure more competition on the open market and meet their urgent need for patrol boats.

Objective #3

Background

The NSC is intended to be the flagship of the Coast Guard's fleet, with an extended on-scene presence, long transits, and forward deployment. The cutter and its aircraft and boat assets are to operate worldwide.

In November 2005, ICGS submitted a request for equitable adjustment (REA) of \$300 million, contending that the Coast Guard had deviated from a very detailed contractor implementation plan on which pricing was based. This matter was not resolved until August 2007, when the Coast Guard and ICGS completed negotiations of a consolidated contract action that encompasses the first three ships (NSC 1, 2, and 3). This negotiation also converted NSC 2 from a fixed price to a cost-plus incentive fee contract type and eliminated the contract clause referencing the implementation plan.

Additionally, the Coast Guard and ICGS disagreed over the ship's expected 30-year fatigue life. Fatigue is physical weakening due to age, stress, or vibration. A U.S. Navy analysis done for the Coast Guard determined that the ship's design was unlikely to meet fatigue life expectations. The Coast Guard decided to correct the structural deficiencies for the first two NSCs at scheduled drydocks to avoid stopping the production lines and to incorporate structural enhancements into the design and production for future ships. The structural enhancements were included as part of the consolidated contract action.

Status of National Security Cutter (NSC): Cost

NSC Cost Growth Driven by Various Factors

The NSC's projected costs have increased compared to the initial baseline, as shown in table 1.

Table 1: Cost Growth for NSC 1 - 3 (Dollars in millions)

	NSC 1	NSC 2	NSC 3
Design	\$67.7		
Build	264.4	\$200.7	\$189.2
Govt. furnished equipment (GFE)	52.8	50.0	40.0
Initial projected costs (2002)	\$384.9	\$250.7	\$229.2
Requirements changes	75.9	60.0	60.0
Hurricane Katrina	40.0	44.4	38.7
Economic changes	58.3	69.9	86.8
Structural enhancements	40.0	30.0	16.0
Other GFE	41.5	40.7	73.9
Current projected costs (2008)	\$640.7	\$495.7	\$504.6

Source: Coast Guard.

Note: Economic changes include, for example, escalation of material/labor and some costs associated with settling the REA. Other GFE includes certifications, tests, and training. For NSC 3, other GFE also includes additional government oversight.

Requirements changes to address post-9/11 needs are one of the main reasons for the cost increases. The new requirements include

- expanded interoperability with the Department of Defense, DHS, and local first responders;
- increased self-defense and survivability, including chemical, biological, and radiological measures;
- increased flight capability via longer and enhanced flight deck;
- upgraded weapon systems; and
- improved classified communication capabilities.

Another contributing factor was Hurricane Katrina, which not only caused considerable damage to the shipyard, including tooling, equipment, shops, and other facilities, but also caused an exodus of the experienced workforce. The overall number of shipworkers declined significantly, causing the contractor to use more overtime hours. The loss of workers, in turn, considerably disrupted the ship's learning curve, which normally results in greater efficiencies in production of subsequent ships.

However, some of the increase can be attributed to Coast Guard actions. For example, the contractor used the Coast Guard's failure to precisely execute the contract according to the implementation plan as basis for requesting an equitable adjustment. Furthermore, even though the Coast Guard's own technical staff raised fatigue life concerns—later confirmed by a U.S. Navy study—during the design phase, the decision was made to proceed with production of the first two NSCs and enhance the structure later.

Objective #3

Key Terminology

Ship trials: Before the NSC 1 is delivered to the Coast Guard, it will undergo three sets of trials.

Machinery trials and builder's trials are the contractor's demonstrations to the Coast Guard of machinery and ship capabilities, respectively.

Acceptance trials, conducted by the U.S. Navy Board of Inspection and Survey (INSURV), determine compliance with contract requirements and test system capabilities.

Ship certification process: The certification process for the NSC includes verification of all standards by either a third-party agency such as the American Bureau of Shipping (ABS) or by the Coast Guard Technical Authority independent of the Deepwater program office. There are 987 certification standards in total for the NSC 1.

TEMPEST inspection: An inspection of a ship's ability to ensure that data-related or intelligence-bearing signals will not be unintentionally radiated from equipment and the ship's structure is known as a TEMPEST (Telecommunications Electromagnetic Performance and Emission Standards) inspection. TEMPEST inspections are intended to identify the potential for such an occurrence through communications systems or any equipment or system that processes classified information in an electrical form. Inspectors may conduct visual and instrumented inspections.

Status of NSC: Delivery Schedule

NSC 1 Delivery Schedule May Be Delayed

The first NSC was initially projected for delivery in 2006, but slipped to August 2007 after the 9/11 requirements changes. However, delivery was again delayed until April 2008. It is uncertain at this time whether the new delivery date will be met due to several factors involving testing, certifications, and other areas of technical risk.

Machinery trials occurred in early December and builder's trials occurred February 8 - 11, 2008. The current schedule leaves little margin for delay. Acceptance trials are scheduled to begin April 7, 2008. The contract requires 30 days between acceptance trials and ship delivery, but the scheduled dates for these events are about 3 weeks apart. The Coast Guard and the contractor are aware of the discrepancy; however, no decision has been made on how to resolve this issue. The Coast Guard will have to either extend the delivery date of the ship to meet the requirement or waive it. Our prior work has shown that event-driven rather than schedule-driven decisions are preferable, thus it may be in the best interest of the Coast Guard to delay acceptance of the first NSC until a number of these issues are resolved.

Of the 987 certification standards, ICGS was to submit documentation on 892 for review and acceptance by the Coast Guard Technical Authority. Almost all remain outstanding. In addition, the Coast Guard and contractor differed in their understanding of the number of certifications for which ABS was responsible. Northrop Grumman had contracted with ABS to certify 60 standards; however, the Coast Guard believed ABS was responsible for 84. According to Coast Guard officials, the issue has been resolved and ABS will now be responsible for 86 certifications. Further, for NSC 3 and later ships, ABS will be responsible for about 200 certifications. Other third parties will certify 11 of the standards.

The Coast Guard has identified 13 issues pertaining to C4ISR and Hull, Mechanical, and Electrical as risk areas, 8 of which have moderate to high risk of occurrence or impact if not resolved. One of these relates to the results of the July 2007 visual TEMPEST inspection, conducted by a team of Coast Guard officials. The team reported hundreds of discrepancies, over 40 percent of which pertain to cable grounding and separation, such as cables intended for classified information not being adequately separated from those intended for nonclassified information. Coast Guard officials told us that they requested the test be done earlier than usual so that issues could be identified and corrected sooner.

Coast Guard and Navy personnel noted that having open issues with a ship—particularly for the first in class—at the time of delivery is normal. After acceptance, the Coast Guard plans to conduct operational testing at sea for approximately 2 years, during which time open issues can be resolved. The ship will officially become operational thereafter, which, based on the current schedule, will be March 2010.

Objective #3

Key Terminology

Key performance parameters (KPP) are the acceptable standards of performance for a system. The number of KPPs should be the minimum needed to characterize operational and technical performance, but should include all parameters considered mission critical.

KPPs include **threshold and objective values**. A performance parameter threshold is the minimum value necessary to satisfy a requirement. A parameter's objective is a measurable, cost-effective value greater than the threshold. In some cases, the threshold and objective are the same.

Status of NSC: Performance

NSC Performance

Key performance parameters for the NSC were first defined in the Acquisition Program Baseline submitted for DHS approval in November 2006. Coast Guard officials explained that the key performance parameters were derived from performance specification requirements that had been in place before contract award.

The key performance parameters for the NSC are shown below:

Parameter	Threshold	Objective
Sprint speed (knots)	28	31
Patrol speed (knots)	15	
Operating range—nautical miles (NM)	12,000	
Detection range—NM	11.7	
Continuous efficient operations (sea state)	Mid 5	Through 6
Operational availability	0.80	0.90

Source: Coast Guard.

The key performance parameters have not been changed due to post-9/11 mission requirements. Coast Guard officials expect the NSC to meet the current threshold parameters, but they will not know for certain until the ship undergoes sea trials.

However, the Coast Guard's Engineering Logistics Center officials expressed concern about the ship's weight margin. Ship designs typically include a margin for additional weight to accommodate service enhancements during the ship's service life. The officials noted that most of the available weight margin has already been consumed during construction—not including the fatigue life structural enhancements. The officials further noted that subsequent changes to the ship will cost more than they would have otherwise due to additional redesign and engineering that may be necessary to offset the additional weight. Coast Guard officials noted, however, that a mitigation strategy is in place and adjustments are being made that will increase the service life weight margin.

Objective #4

Background

Our March 2004 report, *Contract Management: Coast Guard's Deepwater Program Needs Increased Attention to Management and Contractor Oversight* (GAO-04-380) contained a number of recommendations to DHS and the Coast Guard. As of June 2007, five remained open.

We have provided status updates on the 2004 recommendations in the following GAO reports and testimonies:

- *Coast Guard: Changes to Deepwater Plan Appear Sound, and Program Management Has Improved, but Continued Monitoring Is Warranted* (GAO-06-546), April 2006.
- *Coast Guard: Preliminary Observations on Deepwater Program Assets and Management Challenges* (GAO-07-446-T), February 15, 2007.
- *Coast Guard: Status of Efforts to Improve Deepwater Program Management and Address Operational Challenges* (GAO-07-575T), March 8, 2007.
- *Coast Guard: Challenges Affecting Deepwater Asset Deployment and Management and Efforts to Address Them* (GAO-07-874), June 2007.

Status of Prior GAO Recommendations

Table 2: Recommendation Status

GAO's 2004 recommendation	Status we reported in June 2007	Status as of December 2007 (following pages contain additional detail)
Program management		
A) In collaboration with the system integrator, take the necessary steps to make Integrated Product Teams (IPT) effective including: (1) training IPT members in a timely manner, (2) chartering the sub-IPTs, and (3) making improvements to the electronic information system that would result in better information sharing among IPT members (government and ICGS) who are geographically dispersed.	Partially implemented: The Coast Guard had taken over IPT leadership and planned to update the program management plan to reflect changing roles and responsibilities between the Coast Guard and ICGS.	Partially implemented: The Coast Guard is in the process of restructuring IPTs and chartering new ones. With decreased reliance on ICGS, chartering sub-IPTs and improving the current electronic information system may become less of an issue.
B) As Deepwater assets begin to be delivered to operational units, ensure that field operators and maintenance personnel are provided with timely information and training on how the transition will occur and how maintenance responsibilities are to be divided between system integrator and Coast Guard personnel.	Partially implemented: The Coast Guard was reaffirming its role as technical authority and became the default provider of operations and logistics.	Partially implemented: The Coast Guard has taken over maintenance and logistics responsibilities for the assets and plans to use contractor support on an as-needed basis. However, the Commandant instruction formalizing this decision has not yet been issued.
Contractor accountability		
C) Based on the current schedule for delivery of Deepwater assets, establish a time frame for when the models and metrics will be in place with the appropriate degree of fidelity to be able to measure the contractor's progress toward improving operational effectiveness.	Partially implemented: Key performance parameters were added to criteria for measuring operational effectiveness; however, the models still lacked the fidelity to attribute improvements to the contractor or the Coast Guard.	Closed: overcome by events. The Coast Guard is no longer using operational effectiveness to measure contractor performance.
D) Establish criteria to determine when the total ownership cost (TOC) baseline should be adjusted and ensure that the reasons for any changes are documented.	Partially implemented: DHS had not approved the Coast Guard's most recent baseline update (Nov. 2006).	Closed: implemented. DHS approved the Coast Guard's Acquisition Program Baseline for Deepwater, which includes criteria for TOC adjustments, in May 2007.
Cost control through competition		
E) Develop a comprehensive plan for holding the system integrator accountable for ensuring an adequate degree of competition among second-tier suppliers in future program years. This plan should include metrics to measure outcomes and consideration of how these outcomes will be taken into account in future award fee decisions.	Partially implemented: The Coast Guard did not have information from ICGS to determine the level of competition achieved and planned to perform additional analyses to gain insight on the level of competition.	Partially implemented. The Coast Guard has decreased its reliance on ICGS, moving toward full and open competition, and intends to eliminate award term evaluation criteria from the current contract with ICGS. The ICGS contract no longer contains award fee provisions.

Objective #4

Background

We reported in 2004 that Integrated Product Teams (IPT)—composed of Coast Guard, ICGS, and subcontractor employees (Lockheed Martin and Northrop Grumman)—were the Coast Guard's primary tool for managing the program and overseeing the contractor. IPT responsibilities included such things as guiding development, allocating resources and budgets, measuring performance, performing product level design/performance cost trade-offs, and delivering and fielding tangible products and processes in accordance with the overall Deepwater program. The IPTs were chaired by contractor personnel.

We recommended that the Coast Guard, in collaboration with the system integrator, take the necessary steps to improve the effectiveness of IPTs, including (1) training IPT members in a timely manner, (2) chartering sub-IPTs, and (3) making improvements to the electronic information system that would result in better information sharing among geographically dispersed IPT members. We reported in July 2005 that the training portion of this recommendation had been addressed.

Take Steps to Make Integrated Product Teams Effective

Current Status: Partially Implemented

The Coast Guard is in the process of restructuring the IPTs, which remain a key program management tool. Coast Guard program managers, rather than ICGS representatives, now chair the IPTs. The IPTs' current role is to discuss options for problem solving related to cost, schedule, and performance objectives, but the program manager is ultimately responsible for making decisions. In addition to evaluating and rechartering some existing IPTs, the Coast Guard has organized two new ones and is in the process of establishing several others.

Since the Coast Guard will now chair IPTs, the chartering of sub-IPTs to clarify roles and responsibilities is no longer an issue. Coast Guard officials plan to use working groups established under the authority of the IPTs to address specific issues. Working groups are more informal and can come together and disband on an as-needed basis.

Finally, the electronic information system, built and managed by ICGS, is still used as a tool used to share information among geographically dispersed IPT members—specifically, ICGS and the Coast Guard. However, with the decreasing reliance on ICGS as the system integrator, this particular contractor-led electronic information-sharing system may become less integral to effective management of the Deepwater program.

Due to the ongoing chartering, restructuring, and re-evaluation of the roles and responsibilities of the IPTs within the new construct of the Deepwater program, this recommendation remains open as partially implemented.

Objective #4

Background

In 2004, we reported that the Coast Guard had not adequately communicated with operational units, field operators, and maintenance personnel regarding how maintenance and logistics responsibilities would be handled when Deepwater assets were delivered. We recommended that these personnel be provided with timely information and training on how the transition will occur and how maintenance responsibilities are to be divided between the system integrator and Coast Guard personnel.

Provide Information on Maintenance and Logistics Responsibilities

Current Status: Partially Implemented

In June 2007, we reported that the Coast Guard announced it was assuming the role of the default provider of maintenance and logistics, supplemented by contractors as necessary. The Coast Guard is still formalizing its assumption of maintenance and logistics responsibilities. The Coast Guard technical authority is developing a commandant instruction that outlines policies, processes, roles, and responsibilities for maintenance and logistics support for Deepwater assets. The Coast Guard plans for Deepwater assets to follow the same maintenance program—already familiar to Coast Guard maintenance personnel—as its other assets. However, the Coast Guard expects that some areas, such as command, control, communications, and computer electronics, will require contractor support until Coast Guard personnel can be trained or new personnel can be hired to fill these roles.

Because the Coast Guard has not yet issued the final commandant instruction that assigns maintenance and logistics responsibilities to Coast Guard personnel instead of ICGS, we are leaving this recommendation open as partially implemented. Once the instruction that addresses our recommendation is issued, we plan to close this recommendation as implemented.

Objective #4

Background

In 2004, we reported that the Coast Guard planned to use operational effectiveness as one of the criteria for evaluating the contractor's performance. "Operational effectiveness" was measured by the number of missions, such as search and rescue or drug interdiction, carried out by current assets; however, because Deepwater assets had not been delivered, their contribution to operational effectiveness was difficult to determine. In 2007, we noted that because assets were not available at the time of the evaluation, the model used to measure the contractor's performance credited the contractor for planned, not actual, capabilities.

We recommended that the Coast Guard establish a time frame, based on its current schedule for delivery of Deepwater assets, for when models and metrics would be in place with the appropriate degree of fidelity in order to measure the contractor's progress toward improving operational effectiveness.

Establish Time Frame for Measuring Operational Effectiveness

Current Status: Closed as Overcome by Events

The Coast Guard has drafted revised award term criteria and no longer plans to measure operational effectiveness. Instead, the Coast Guard is considering criteria—primarily subjective and objective measures of cost, schedule, and performance—that would measure past performance for work on Deepwater assets. The model will no longer be used to measure contractor performance. In fact, in June 2007, the Coast Guard transferred possession of the model to the research and development group for use in business case and force structure analyses.

Because the Coast Guard is no longer using operational effectiveness as a measure of contractor performance, this recommendation has been overcome by events and we consider it closed.

Objective #4

Background

We reported in 2004 that proposed changes to the Deepwater total ownership cost (TOC) baseline, due to variables such as fuel costs, would be approved by the program executive officer on a case-by-case basis. The Coast Guard had no criteria in place for potential upward or downward adjustments to the baseline. We recommended that the Coast Guard establish criteria to determine when the TOC baseline should be adjusted and ensure that the reasons for any changes were documented.

Establish Criteria for Changing Total Ownership Cost Baseline

Current Status: Closed as Implemented

We previously reported that in November 2005, the Coast Guard had increased the total ownership cost baseline to \$304 billion.¹ We noted, however, that although the Coast Guard was required to provide information to DHS for a baseline cost breach of 8 percent or more, the 8 percent threshold had not been breached because the threshold was measured against total program costs and not on an asset basis. At the time, Coast Guard officials acknowledged that only a catastrophic event would trigger such a breach.

In November 2006, the Coast Guard submitted a revised Acquisition Program Baseline (APB) to DHS that set forth criteria for baseline adjustments. DHS approved the document in May 2007. The APB includes criteria for baseline adjustments to cost, schedule and performance for the total system or individual asset classes and states that breaches will be reported in accordance with DHS policy. See table 3.

Table 3: Criteria for Baseline Adjustments

Key parameter	threshold for adjustment
Cost	Total system or asset class acquisition, construction, and improvement cost increases exceeding 8 percent
Performance	Any mission, system or asset class performance parameters not met or are anticipated to fail to meet the threshold key performance parameter
Schedule	Any system schedule baseline or asset class key schedule parameter slip by more than 180 days

Source: Coast Guard documentation.

Since then, the Coast Guard has reported two cost breaches to DHS: one for the NSC and another for an aviation asset, the C-130J Missionization Project. For the NSC, the breach was reported upon submission of the individual APB for the NSC in September 2007.² The total acquisition cost increased from \$3.45 billion to \$3.97 billion, which was attributed to the structural/fatigue enhancements to the ship, the impact of the shipyard strike, and C4ISR cost growth. With respect to the C-130J missionization project, a November 2007 notification memorandum provides that the estimate at completion is now projected to be 10 to 20 percent over the original contract price of \$117.95 million because of parallel design and installation activities resulting in rework, among other things. The Coast Guard committed to providing a revised APB and remediation plan within 30 days of the notification that will include a root cause analysis, identification of corrective actions, and a plan for monitoring future progress. At this time, the revised APB and remediation plan have not been finalized.

Given the fact that criteria for adjusting the baseline have been incorporated in the Deepwater ABP and approved by DHS, we are closing this recommendation as implemented.

¹ GAO, *Coast Guard: Status of Efforts to Improve Deepwater Program Management and Address Operational Challenges*, GAO-07-575T (Washington, D.C.: Mar. 8, 2007).

² The Coast Guard is planning to develop individual APBs for each asset.

Objective #4

Background

In 2004, we reported that although competition is a key method for controlling costs, the Coast Guard had no insight into the extent of competition among the suppliers of Deepwater assets. Lockheed Martin and Northrop Grumman, the first-tier subcontractors, had sole responsibility for determining whether to compete assets among lower-tier subcontractors or provide the assets themselves. We reported that ICGS did not leverage competition to deliver the best value for certain Deepwater assets.

We recommended that the Coast Guard develop a comprehensive plan for holding the system integrator accountable for ensuring an adequate degree of competition among second-tier suppliers in future program years. We also recommended that the plan include metrics to measure outcomes and consider how these outcomes will be taken into account in future award fee decisions.

Key Terminology

Make-or-buy. In performing a contract, the contractor may decide to make or buy an item. To make means that the contractor, its affiliates, subsidiaries, or divisions will produce an item or perform a work effort. To buy suggests that the contractor will subcontract for an item or work effort.

Cost-plus-incentive-fee contracts reward the contractor for cost-effectiveness or performance. Incentive fees are determined by a formula, while award fees are based on the government's judgmental evaluation of the contractor's overall performance.

Hold System Integrator Accountable for Competition among Subcontractors (Make-or-Buy Decisions)

Current Status: Partially Implemented

The Coast Guard has taken steps to increase its insight into make-or-buy decisions for Deepwater assets under the ICGS contract. In 2005, the Coast Guard asked ICGS to notify the government of make-or-buy decisions of \$10 million or more. However, in December 2006, the Coast Guard reported that contractor data were inadequate to determine the level of competition achieved. Subsequently, the June 2007 award term modification incorporated a formal requirement for reporting make-or-buy decisions. ICGS must submit a make-or-buy plan that outlines rationale and justification for each DTO proposal that contains work items or work efforts priced at more than \$5 million and/or that would typically require company management review because of complexity, cost, need for large quantities, or requirement for additional production facilities. The rationale should consider overall benefit to the government, including:

- (1) long-term and/or near-term cost benefit;
- (2) adequacy of considerations made in the make-or-buy determination;
- (3) impacts on product performance;
- (4) present and future supportability, maintenance and/or upgrade potential; and
- (5) proprietary data or other restrictions that could limit pursuit of future cost-effective alternatives.

The Coast Guard is putting less emphasis on the subcontractor competition issue due to the move away from using the ICGS contract and more toward full and open competition. In fact, Coast Guard officials told us that because of potential legislation that would prohibit them from using ICGS as the system integrator, they are considering eliminating award term provisions from the contract.

In addition, the Coast Guard no longer uses award fees under the ICGS contract. However, it has incorporated an incentive fee for the NSC.

We are leaving this recommendation open as partially implemented pending Coast Guard documentation regarding the award term provision.

Related GAO Products

Related GAO Products

Coast Guard: Challenges Affecting Deepwater Asset Deployment and Management and Efforts to Address Them, GAO-07-874 (Washington, D.C.: June 18, 2007).

Coast Guard: Status of Efforts to Improve Deepwater Program Management and Address Operational Challenges, GAO-07-575T (Washington, D.C.: Mar. 8, 2007).

Coast Guard: Preliminary Observations on Deepwater Program Assets and Management Challenges, GAO-07-446-T (Washington, D.C.: Feb. 15, 2007).

Coast Guard: Changes to Deepwater Plan Appear Sound, and Program Management Has Improved, but Continued Monitoring Is Warranted, GAO-06-546 (Washington, D.C.: Apr. 28, 2006).

Coast Guard: Progress Being Made on Addressing Deepwater Legacy Asset Condition Issues and Program Management, but Acquisition Challenges Remain, GAO-05-757 (Washington, D.C.: July 22, 2005).

Contract Management: Coast Guard's Deepwater Program Needs Increased Attention to Management and Contractor Oversight, GAO-04-380 (Washington, D.C.: Mar. 9, 2004).

Coast Guard: Progress Being Made on Deepwater Project, but Risks Remain, GAO-01-564 (Washington, D.C.: May 2, 2001).



Assistant Commandant for Acquisition (CG-9)
Chief Acquisition Officer (CAO)
United States Coast Guard
Washington, D.C. 20593-0001

February 20, 2008

John P. Hutton
US Government Accountability Office
Washington, DC 20548


Subject: Draft Report titled "Status of Selected Aspects of the Coast Guard's Deepwater Program"

This letter provides the United States Coast Guard's comments on the Government Accountability Office's (GAO) draft report titled "Status of Selected Aspects of the Coast Guard's Deepwater Program."

The Coast Guard remains grateful for all that the GAO has done to bring attention to issues with our Deepwater program's challenges and concurs in the findings of this report. We appreciate the commitment the GAO has towards making the Deepwater program successful and value the opinions of the GAO. We benefit from the oversight and are prudently implementing the recommendations to ensure improvement to our acquisition program in the future.

We thank you for considering our comments on these very important issues. We look forward to working with the GAO on future issues to aid in strengthening the Coast Guard.

Sincerely,


Gary T. Blore, RADM
Chief Acquisition Officer
U.S. Coast Guard

Enclosure: USCG Comments to Draft GAO Report titled Status of Selected Aspects of the Coast Guard's Deepwater Program

Copy: CG-91
CG-93
CG-4
CG-8

Enclosure: USCG comments on the GAO draft report titled "Status of Selected Aspects of the Coast Guard's Deepwater Program"

Purpose:

The purpose of this document is to serve as supplemental information to the GAO's findings addressed in the draft report titled "Status of Selected Aspects of the Coast Guard's Deepwater Program". Each point outlined below serves as a clarification to the findings represented in GAO's draft report. Overall, the Coast Guard supports the findings as written in this draft report.

USCG Comments:

- 1. FRC-B Stern Ramp Requirement:** To clarify the statements discussed in the letter to Senator Cantwell and Senator Snowe as well as in the draft report, the Coast Guard does not intend to allow a less-safe requirement for the cutter boat launch and recovery system in the FRC-B. The companies bidding on the FRC-B have the option as to whether they want to include a stern ramp or other cutter boat launch and recovery system as long as it follows the specific guidelines outlined in the Circular of Requirements (COR) for the FRC-B. The Circular of Requirements provides general guidelines the proposal has to meet (e.g. No more than three crew members are required to operate the system regardless of the system proposed) as well as specific guidelines if the company chooses to bid a stern ramp or davit launch and recovery system. There is also technical evaluation criteria which specifically addresses the safety element of the cutter boat stern launch and recovery system and ensures compliance with the specific requirements outlined in the COR. A stern launch is one alternative to potentially meet this requirement.
- 2. NSC's Available Weight Margin:** To clarify the statements discussed in the letter to Senator Cantwell and Senator Snowe as well as in the draft report, the Coast Guard acknowledges that there is a reduced weight margin after the structural enhancements are installed on NSC #1 and #2, but according to the USCG Technical Authority for Engineering and Logistics (CG-4), the overall displacement can be increased without detriment to any of the NSC's other requirements. CG-4 is currently engaged in a detailed analysis prior to making a recommendation to increase the displacement from 4300LT to 4500LT (which includes more weight margin than before the structural enhancements). We anticipated the cost for accomplishing this and already included it in the cost for NSC 1 and 2.
- 3. Background of Deepwater Contract:** To clarify that the background section of Objective #1, "Decisions to Purchase From ICGS Versus Other Vendors," although the Integrated Coast Guard Systems (ICGS) had proposed a solution to meet Coast Guard requirements as well as how those assets would be acquired, the Coast Guard did have final approval authority for all decisions made concerning the Deepwater program. The Coast Guard approved contract awards and



**Acquisition
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CG-9 | USCG comments on GAO draft report titled "Status of Selected Aspects of the Coast Guard's Deepwater Program" | RADM Gary T. Blore | 20 February 2008

Enclosure: USCG comments on the GAO draft report titled "Status of Selected Aspects of the Coast Guard's Deepwater Program"

obligated funding against those contracts – this is the essence of final authority.

4. Changing Approach to Deepwater Acquisition: The approach has not changed. The Coast Guard uses a systems approach in determining the community of capabilities needed to meet Surveillance, Detection, Classification, Identification, and Prosecution (SDCIP), and models this in DMOES. A systems approach does not preclude an asset by asset execution of the acquisition strategy. A systems approach is a means by which to determine solutions – not necessarily a tactical acquisition strategy.

5. The use of the US Navy Board of Inspection and Survey (INSURV): As discussed in the "Key Terminology" in Objective #3 "Status of NSC: Delivery Scheduled," the GAO auditors point out the Coast Guard's use of INSURV during Acceptance Trials to determine compliance with contract requirements and test system capabilities. The Coast Guard has taken many steps to include third party assessments to assist and serve as subject matter experts to ensure asset compliance with the Coast Guard's requirements. It was the Coast Guard's decision to use INSURV to serve as its inspection agent during Acceptance Trials due to its long standing and approved acceptance standards that have been used and proven throughout the U.S. Navy.

6. The NSC KPP for speed: As discussed in Objective #3 "Status of NSC: Performance," the Coast Guard was able to demonstrate and meet the key performance parameter threshold for speed during both the Machinery Trials in December 2007 and Builders Trials in February 2008.



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