

GAO

Report to the Chairmen,
Subcommittees on Homeland Security,
Committees on Appropriations, House
of Representatives and U.S. Senate

June 2004

COAST GUARD

Deepwater Program Acquisition Schedule Update Needed





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Highlights of [GAO-04-695](#), a report to the Chairmen, Subcommittees on Homeland Security, Committees on Appropriations, House of Representatives and U.S. Senate

Why GAO Did This Study

In 2002, the Coast Guard began its \$17 billion, 20-year Integrated Deepwater System acquisition program to replace or modernize its cutters, aircraft, and communications equipment for missions generally beyond 50 miles from shore. During fiscal years 2002-03, Deepwater received about \$125 million less than the Coast Guard had planned. In fiscal year 2004, Congress appropriated \$668 million, \$168 million more than the President's request.

GAO has raised concern recently about the Coast Guard's initial management of Deepwater and the potential for escalating costs. GAO was asked to review the status of the program against the initial acquisition schedule and determine the impact of the additional \$168 million in fiscal year 2004 funding on this schedule.

What GAO Recommends

GAO recommends the Coast Guard update the original 2002 Deepwater acquisition schedule in time to support the fiscal year 2006 Deepwater budget submission to the Department of Homeland Security and Congress and at least once a year thereafter to support each budget submission. The updated schedule should include the current status of asset acquisition phases, interim phase milestones, and the critical paths linking assets. In written comments, the Coast Guard generally concurred with GAO's findings and recommendation.

www.gao.gov/cgi-bin/getrpt?GAO-04-695.

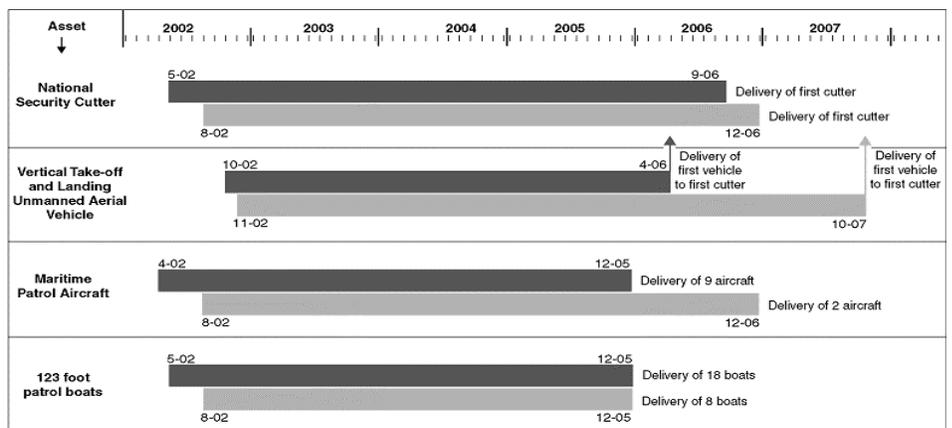
To view the full product, including the scope and methodology, click on the link above. For more information, contact Margaret Wrightson at (415) 904-2200 or wrightsonm@gao.gov.

What GAO Found

The degree to which the Deepwater program is on track with its original 2002 integrated acquisition schedule is difficult to determine because the Coast Guard has not updated the schedule. Coast Guard officials said they have not updated it because of the numerous changes Deepwater experiences every year and the cost, personnel, and time involved. However, in similar acquisitions—those of the Department of Defense (DOD)—cost, schedule, and performance updates are fundamental to congressional oversight. DOD is required to update the schedule at least annually and whenever cost and schedule thresholds are breached. In practice, DOD continually monitors and reports schedules for management on a quarterly basis. Updating the acquisition schedule—including phases such as design and fabrication, interim phase milestones, and critical paths linking assets—on a more timely basis is imperative so that annual Coast Guard budget submissions can allow Congress to base decisions on accurate information.

GAO used available data to develop the current acquisition status for a number of selected Deepwater assets and found that they have experienced delays and are at risk of being delivered later than anticipated.

GAO analysis of current acquisition of selected Deepwater assets



Source: GAO analysis of Coast Guard data.

■ Planned schedule
■ Current acquisition status

The additional \$168 million in fiscal year 2004, while allowing the Coast Guard to conduct a number of Deepwater projects that had been delayed or would not have been funded in fiscal year 2004, will not fully return the program to its original 2002 acquisition schedule. Reasons include: all work originally planned for fiscal year 2004 was not funded and some will have to be delayed to fiscal year 2005; delivery of some assets has fallen so far behind schedule that ensuring their original delivery dates is impossible; and nonfunding reasons have caused delays, such as greater than expected hull corrosion of patrol boats delaying length extension upgrades.

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Abbreviations

C4ISR	Command, Control, Communications and Computers, Intelligence, Surveillance, and Reconnaissance
Deepwater	Integrated Deepwater Systems program
DHS	Department of Homeland Security
DOD	Department of Defense
EVMS	Earned Value Management System
GAO	General Accounting Office
ICGS	Integrated Coast Guard Systems, LLC
IMS	Integrated Master Schedule
MPA	Maritime Patrol Aircraft
OPC	Offshore Patrol Cutter
UAV	Unmanned Air Vehicle

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G A O

Accountability * Integrity * Reliability

United States General Accounting Office
Washington, DC 20548

June 14, 2004

The Honorable of Thad Cochran
Chairman, Subcommittee on Homeland Security
Committee on Appropriations
United States Senate

The Honorable Harold Rogers
Chairman, Subcommittee on Homeland Security
Committee on Appropriations
House of Representatives

In 2002, the Coast Guard began the acquisition phase of the largest and most complex procurement in its history, the Integrated Deepwater System program (Deepwater). Under this program, the Coast Guard will replace or modernize its cutters, aircraft, and communications equipment used for missions generally beyond 50 miles from shore but which may start at ports, waterways, and coasts and extend seaward to wherever the Coast Guard is required to take appropriate action. In developing the program, the Coast Guard chose a contracting approach that relies heavily on a “systems integrator”—a contractor that will translate the Coast Guard’s mission requirements into specific acquisitions and upgrades. This contracting approach also relies heavily on a steady, predictable funding stream throughout the program’s anticipated 20-year acquisition span.¹ When the program began, we expressed concern that, given this approach’s particularly heavy dependence on funding at planned levels, the Coast Guard risked schedule slippages and cost escalation if program funding fell short of planned funding amounts.² During the program’s first 2 years (fiscal years 2002-03), the total amount of funding available was nearly \$125 million less than the amount the Coast Guard had planned and \$32 million less than the President’s request. The Congress then increased the Deepwater appropriation for fiscal year 2004 to about \$668 million, or

¹The Deepwater program is scheduled to last for 30 years, the assets are expected to be delivered in the first 20 years, and the contractor is to be retained an additional 10 years to continue implementing the program.

²See U.S. General Accounting Office, *Coast Guard: Progress Being Made on Deepwater Project, but Risks Remain*, [GAO-01-564](#) (Washington, D.C.: May 2, 2001).

about \$86 million more than the agency's original plan for that year and \$168 million more than the President's request.

You asked us to assess the Deepwater program's status in light of this increased funding. We focused our work on (1) reviewing the status of the program against the initial acquisition schedule and (2) determining the impact of the additional \$168 million in fiscal year 2004 funding on returning the program to this schedule. You also asked us to provide information on the Coast Guard's status in revising Deepwater's mission to meet increased homeland security requirements and the amount of assistance the Department of Defense (DOD) has provided for Deepwater from fiscal years 2002 to 2004. On March 12, 2004, we briefed your offices on the preliminary results of our work to date. This report and the briefing slides in appendix I provide our final results.

Our work for this report involved reviewing and analyzing a variety of documents and interviewing officials from the headquarters of the Coast Guard and Integrated Coast Guard Systems, LLC, (ICGS). To determine the status of Deepwater's acquisition schedule for selected assets, we analyzed (1) the delivery task orders and their associated statements of work for individual Deepwater assets to establish what work was started, when it was started, and the period of performance for that work, and (2) the monthly assessment reports of Deepwater program managers on the performance of executing the delivery task orders. We compared these start and end dates of the delivery task orders with the acquisition schedule laid out in the original June 2002 Integrated Deepwater System Implementation Plan, which covers the first 5 years of the program. To determine the specific assets that were originally planned to have been funded by fiscal year 2004 but were not, we compared the Coast Guard's original plan listing the work scheduled to begin (contract line item numbers) for each fiscal year with the work that was actually begun (the delivery task orders that were issued for those line items). We interviewed Coast Guard and ICGS officials about the reliability of the data in the Integrated Master Schedule (IMS) management tool. On the basis of those discussions, we determined that the data within IMS were not reliable enough for use in our report. To determine the amount of funding support DOD provided to the Deepwater program from fiscal years 2002 to 2004, we interviewed officials and analyzed documents from the Navy. We also interviewed officials from other DOD components; however, they all referred us back to the Navy. We conducted our work from January through June 2004 and did our work in accordance with generally accepted government auditing standards.

Background

In June 2002, the Coast Guard awarded a contract to ICGS to begin the acquisition phase of the Deepwater program. Rather than using the traditional approach of replacing classes of ships or aircraft through a series of individual acquisitions, the Coast Guard chose to employ a “system of systems” acquisition strategy that would replace its aging assets of ships, aircraft, and communication capabilities with a single, integrated package of new or modernized assets and capabilities. The focus of the program is not just on new ships and aircraft, but rather on an integrated approach to modernizing existing or “legacy” assets while transitioning to newer, more capable assets, with improved command, control, communications and computers, intelligence, surveillance, and reconnaissance (C4ISR) capabilities. At full implementation, the Deepwater program will replace the Coast Guard’s entire fleet of current deepwater surface and air assets, comprising three classes of new cutters and their associated small boats, a new fixed-wing manned aircraft fleet, a combination of new and upgraded helicopters, and both cutter-based and land-based unmanned air vehicles (UAVs). In addition, all of these assets will be linked with state-of-the-art C4ISR capabilities and computers and will be supported by an integrated logistics management system.

ICGS, a business entity jointly owned by Northrop Grumman and Lockheed Martin, acts as the system integrator to develop and deliver the Deepwater program. They are the two first-tier subcontractors for the program and either provides Deepwater assets themselves or award second-tier subcontracts for the assets. The Coast Guard’s contract with ICGS has a 5-year base period with five additional 5-year options. The Coast Guard is scheduled to decide on whether to extend ICGS’s contract by June 2006, which is 1 year prior to the end of the first 5-year contract term. Although ICGS is responsible for designing, constructing, deploying, supporting, and integrating Deepwater assets, the Coast Guard maintains responsibility for oversight and overall management of the program. To help fulfill this responsibility, the Coast Guard uses several management tools to track progress in the program, such as monthly status reports called quad reports, a performance-based management tool called the Earned Value Management System (EVMS), and a schedule management system called IMS. The quad reports are monthly summaries of the work performed on the various deepwater assets and were developed to give managers a monthly progress report on the performance of the program in such areas as cost, schedule, and contract administration. EVMS is used to track cost and schedule for certain delivery orders that have been placed to manage the risk of the major assets and activities. IMS is a three-tiered, calendar-based schedule used to track the completion of tasks and milestones of the individual Deepwater delivery task orders. However,

data reliability with IMS has been an area of concern for the Coast Guard, and it is currently working with a private contractor and ICGS to address these concerns. Currently, the Coast Guard only maintains the lowest and most detailed level of IMS with monthly updates. These updates reflect the status of active contracts of individual assets and feed into EVMS's monthly cost performance reports of those individual contracts, which allow program management to monitor the cost, schedule, and technical performance of ongoing work at these lowest and most detailed levels.

In recent months, we have issued two reports that have raised concern about the Coast Guard's initial management of the Deepwater program and the potential for escalating costs. In March 2004,³ we reported that key components needed to manage the Deepwater program and oversee the system integrator's performance have not been effectively implemented. We recommended that the Secretary of Homeland Security direct the Commandant of the Coast Guard to take a number of actions to improve Deepwater program management and contractor oversight. In April 2004,⁴ we testified that the most significant challenge the Coast Guard faces as it moves forward in the Deepwater program is keeping the program on schedule and within planned budget estimates. We noted that the Coast Guard was at risk of having to expend funds to repair deteriorating legacy assets that otherwise had been planned for Deepwater modernization initiatives, which could potentially further delay the program and increase total program costs. We noted further that the Coast Guard's current estimate for completing the acquisition program within the 20-year schedule has risen to \$17.2 billion, an increase of \$2.2 billion over the original \$15 billion estimate.⁵

Results

The degree to which the Deepwater program is on track with regard to its original 2002 acquisition schedule is difficult to determine, because the Coast Guard has not maintained and updated the acquisition schedule. The original acquisition schedule included acquisition phases (such as concept

³See U.S. General Accounting Office, *Contract Management: Coast Guard's Deepwater Program Needs Increased Attention to Management and Contractor Oversight*, [GAO-04-380](#) (Washington, D.C.: Mar. 9, 2004).

⁴See U.S. General Accounting Office, *Coast Guard: Key Management and Budget Challenges for Fiscal Year 2005 and Beyond*, [GAO-04-636T](#) (Washington, D.C.: Apr. 7, 2004).

⁵These amounts are in nominal (current-year) dollars.

technology and design, system development and demonstration, and fabrication), interim phase milestones (such as preliminary and critical design reviews, installation, and testing), and the critical paths integrating the delivery of individual components to particular assets. However, while the Coast Guard has what is called an integrated master schedule, it currently uses it only at the lowest and most detailed levels and have not updated it to demonstrate whether individual components and assets are being integrated and delivered on schedule and in the critical sequence. There are a number of reasons why tracking the current integrated schedule on a major government investment or acquisition is important, but two stand out. First, our work has shown that it is important to identify potential risks in major acquisitions as early as possible so problems can be avoided or minimized. The ability to achieve scheduled events is a key indicator of risk. Second, cost, schedule, and performance are fundamental to the Congress's oversight of major acquisitions. In fact, by law, DOD's major defense acquisition programs have to report cost, schedule, and performance updates to the Congress at least annually and whenever cost and schedule thresholds are breached. In practice, schedules on DOD's major defense acquisitions are continually monitored and reported to management on a quarterly basis.

While Coast Guard officials indicated that the management tools they use are sufficient for tracking delivery dates throughout the acquisition, we found that these tools could not provide a ready and reliable picture of the current integrated Deepwater acquisition schedule. For example, IMS has had problems with data reliability and the monthly status reports, while assessing the progress of individual assets, do not translate those individual assessments into an overall integrated Deepwater acquisition schedule. In fact, the February 2004 status report noted that because there was no accurate overall integrated schedule for the command and control design phase, the linkages with the development of other assets were largely unknown. Although maintaining a current integrated schedule is a best practice for ensuring adequate contract oversight and management and is a requirement for DOD acquisitions, Coast Guard officials said they have not done so because of the numerous changes the Deepwater Program experiences every year and because of the cost, personnel, and time involved in crafting a revised master plan with the systems integrator on an annual basis. The officials said they have not planned to update the original acquisition schedule until just prior to deciding whether to extend the award of the next 5-year Deepwater contract in 2007. However, we have found that in acquisitions of similar scope—and in particular, acquisitions made by DOD—maintaining a current schedule is a fundamental practice that the department considers necessary.

While the Coast Guard could not provide us with an updated integrated schedule, we developed the current acquisition status of a number of selected Deepwater assets from documents provided by the Coast Guard. Our analysis indicates that several Deepwater assets and capabilities have experienced delays and are at risk of being delivered later than anticipated in the original implementation plan. For example, the delivery of the first two maritime patrol aircraft is behind schedule by about 1 year, and the delivery and integration of the vertical-take-off-and-land unmanned air vehicle to the first national security cutter has been delayed 18 months.

The \$168 million appropriated in fiscal year 2004 for the Deepwater program above the President's request of \$500 million will allow the Coast Guard to conduct a number of projects that had been delayed or would not have been funded in fiscal year 2004, but it will not fully return the program to its original 2002 acquisition schedule. Our analysis indicates there are several reasons for this result. First, even with the additional amount, the program still had a cumulative funding shortfall of \$39 million through fiscal year 2004, as compared to the Coast Guard's planned funding amount. Second, because part of the additional \$168 million was needed to start work delayed from fiscal year 2003, it did not provide enough funding for the delayed work and for all the work that the Coast Guard had originally planned for fiscal year 2004. As a result, some of this work will have to be delayed to fiscal year 2005. Third, the delivery of some assets has fallen so far behind schedule that it is impossible to ensure their delivery according to the original 2002 implementation schedule by simply providing more money. For example, according to the 2002 implementation schedule, nine maritime patrol aircraft were to be delivered by the end of 2005; according to the current contract, none will be delivered in 2005 and two will be delivered by the end of 2006. Similarly, the original schedule called for completing 18 123-foot patrol boat conversions by the end of 2005; according to the current contract, 8 will be completed by the end of 2005.⁶ Fourth, the acquisition of some assets has been delayed for reasons other than funding. For example, greater than anticipated hull corrosion in the 110 ft. patrol boats has delayed the conversion of those into 123 footers and delays in the availability of faster satellite service for legacy cutters has delayed the delivery of those upgraded legacy cutters. Finally, in keeping with appropriations conference committee directives for how the additional

⁶The conversion is to extend the 110-foot patrol boats by 13 feet to incorporate a stern ramp.

amount was to be spent, part of the additional funding went for design of the offshore patrol cutter, work that, under the original schedule, would not begin for another 6 to 8 years. This work may speed up acquisition of these assets, but they were not on the original schedule this early in the program.

The Coast Guard is currently revising Deepwater's mission needs statement in response to increased homeland security requirements resulting from the terrorist attacks of September 11, 2001. According to the Coast Guard, in May 2004 it submitted the revised statement to the Department of Homeland Security's (DHS) Joint Requirements Council, which conditionally accepted it until the Deepwater contractor, ICGS, completes a new estimate of the costs needed to acquire the necessary functional capabilities resulting from the revised mission needs statement. The council further directed the Coast Guard to complete the new cost estimate in order to brief the DHS Investment Review Board in October 2004. Acting as an agent of the DHS, the board will approve any increases in the Deepwater total ownership cost associated with the revised mission needs statement and any growth in the Deepwater budget. Specifications for some specific Deepwater assets—most notably the National Security Cutter—will be changed in light of the Coast Guard's added homeland security responsibilities. Coast Guard officials said the main impact of the revision would be to close the gaps in Deepwater asset capabilities created by the expansion of Coast Guard mission requirement after September 11.⁷

Regarding DOD's assistance to the Coast Guard for Deepwater, the Navy budgeted \$25 million for the Deepwater program in fiscal years 2002-04, mainly to help outfit the National Security Cutter. The Navy budgeted these funds to provide capabilities and equipment it regarded as important for the Coast Guard to have for potential national defense missions that would be carried out in conjunction with Navy operations.⁸

⁷An April 2004 RAND Corporation study concluded that the Coast Guard will need twice the number of cutters and 50 percent more aircraft to meet new national security requirements. *U.S. Coast Guard's Deepwater Force Modernization Plan: Can it Be Accelerated? Will Meet Changing Security Needs?*, The Rand Corporation, Santa Monica, Calif., April 2004.

⁸Through a 1987 agreement, the Navy provides to the Coast Guard all Navy-owned, military readiness equipment and associated support materials that the Navy deems necessary to enable the Coast Guard to carry out assigned missions while operating with the Navy. Upon declaration of war, or when the President directs, the Coast Guard operates as a service of the Navy and is subject to the orders of the Secretary of the Navy.

Conclusions

The 2002 Deepwater acquisition schedule showed not only the individual planned phases and interim milestones for designing, testing, and fabricating assets but also the integrated schedules of critical linkages between assets. The absence of an up-to-date integrated acquisition schedule for the Deepwater program is a concern, because it is a symptom of the larger issues we reported in March 2004 that are related to whether this complicated acquisition is being adequately managed and whether the government's interests are being properly safeguarded. Since the inception of the unique contracting approach to this project, we have pointed out that it poses risks, in that it would be expensive to alter and, because of the unique "systems integrator" approach, does not operate like a conventional acquisition. The recent disclosure that, just 3 years into the acquisition, costs have risen by \$2.2 billion points to the need for a clear understanding of what assets are being acquired, when they are being acquired, and at what cost. This lack of such a current schedule lessens the Coast Guard's ability to monitor the contractor's performance and to take early action on potential risks before they become problems later in the program.

The Coast Guard has so far maintained that it is not worth the time and cost involved to update the acquisition schedule until just before the award of the next 5-year Deepwater contract, but we disagree. We recognize that there are costs involved with keeping an acquisition schedule updated. However, for Department of Defense acquisitions of such scope, maintaining a current schedule is a fundamental and necessary practice. Deepwater remains a program in transition, in that the Coast Guard is currently revising the program's mission requirements to include increased homeland security requirements. The major modifications that may result to key assets make keeping the program on track that much harder. As evolving mission requirements are translated into decisions about what assets are needed and what capabilities they will need to have, it becomes even more imperative that Coast Guard officials update the acquisition schedule on a more timely basis, so that budget submissions by the Coast Guard can allow DHS and Congress to base decisions on accurate information.

Recommendation for Executive Action

We recommend that the Secretary of Homeland Security direct the Commandant of the Coast Guard to update the original 2002 Deepwater acquisition schedule in time to support the fiscal year 2006 Deepwater budget submission to DHS and Congress and at least once a year thereafter to support each budget submission. The updated schedule should include the current status of asset acquisition phases (such as

concept technology and design, system development and demonstration, and fabrication), interim phase milestones (such as preliminary and critical design reviews, installation, and testing), and the critical paths linking the delivery of individual components to particular assets.

Agency Comments

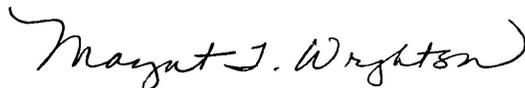
We provided a draft of this report to DHS and the Coast Guard for their review and comment. In written comments, which are reproduced in appendix II, the Coast Guard generally concurred with the findings and recommendations in the report. The Coast Guard also provided technical comments, which we incorporated as appropriate.

The Coast Guard, however, did not concur with three areas of discussion. First, the Coast Guard said that our draft report did not accurately portray its current acquisition tools and disagreed with our determination that data within one of those tools, the IMS, was not reliable enough for use in our report. As we noted in the report, at the time of our review Coast Guard officials expressed concerns about the reliability of IMS data, such as out-dated data and less than adequate data input and adjustment, and told us that they had hired a consultant to address those concerns. For that reason and with Coast Guard and ICGS agreement on our methodology, we based our analysis on the same source documents the Coast Guard uses as inputs to IMS's lowest, most detailed level. The Coast Guard stated in its written comments that while not in the form of an acquisition schedule, IMS's lower level data are reliable. According to its written comments, the Coast Guard is making improvements in updating IMS at all levels.

Second, the Coast Guard said that we did not highlight that delays in the delivery schedule have been caused by a lack of funding and the subsequent need to sustain legacy assets rather than a lack of acquisition schedule updates. The scope of our review was to determine the impact of the additional \$168 million in fiscal year 2004 on returning Deepwater to its original 2002 schedule, not to determine effects of receiving appropriations that were less than requested in previous years. However, in explaining why the \$168 million will not return the Deepwater to its original schedule, we did note that part of the \$168 million was needed to start work delayed from fiscal year 2003, and that the acquisition of some assets had been delayed due to greater than anticipated hull corrosion in legacy 110-foot patrol boats causing the delay in converting them to 123-footers.

Finally, we did not intend to imply that the lack of acquisition schedule updates caused delays in delivery schedule. However, we continue to believe that not updating an integrated schedule to show the acquisition linkages between critical assets is a management concern. We believe in the importance of updating acquisition schedules at least annually not only as a best practice for managing and overseeing a complex integrated acquisition such as Deepwater but also as a up-to-date source of information on which DHS and the Congress can base annual budget decisions.

As agreed with your office, unless you publicly announce its contents earlier, we plan no further distribution of this report until 15 days from its issue date. At that time, we will send copies of this report to the Secretary of Homeland Security, the Commandant of the Coast Guard, appropriate congressional committees, and other interested parties. The report will also be available at no charge on GAO's Web site at <http://www.gao.gov>. If you or your staffs have any questions about this report, please contact me at (415) 904-2200 or by email at wrightsonm@gao.gov, or Steve Calvo, Assistant Director, at (206) 287-4839 or by email at calvos@gao.gov. Other key contributors to this report were Shawn Arbogast, Leo Barbour, David Best, Michele Fejfar, Paul Francis, Sam Hinojosa, David Hooper, Michele Mackin, and Stan Stenersen.



Margaret T. Wrightson
Director, Homeland Security
and Justice Issues

Appendix I: Briefing Slides



Coast Guard: Deepwater Acquisition Schedule Update Needed

**Briefing to the Subcommittees on Homeland
Security
Senate Appropriations Committee
House Appropriations Committee**



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Objectives

During the Integrated Deepwater System (Deepwater) program's first 2 years (fiscal years 2002-03), the total amount of funding available was nearly \$125 million less than the Coast Guard had planned. In fiscal year 2004, Congress appropriated an additional \$168 million above the President's request of \$500 million to help return Deepwater to its original 2002 acquisition schedule.

Our work for congressional requesters has focused on the following:

- Reviewing the status of the program against the initial acquisition schedule.
- Determining the impact of the additional \$168 million in fiscal year 2004 funding on returning the program to the original 2002 acquisition schedule.
- Providing information on
 - the Coast Guard's status in revising Deepwater's mission to meet increased homeland security requirements and
 - the amount of funding support the Department of Defense (DOD) has provided for the Deepwater program for fiscal years 2002-2004.



Scope and Methodology

- Interviewed Coast Guard and contractor officials.
- Examined delivery task orders and associated statements of work for individual Deepwater assets to establish what work was actually started, when it began, and the period of performance for that work; and monthly status reports of Deepwater program managers assessing the performance of the work.
- Compared the actual start and end dates of work with what was planned in the original 2002 acquisition schedule.
- Compared the original plan's listing of the work scheduled to begin for each fiscal year with the work that was actually begun.
- Interviewed program officials regarding the reliability of data in the Deepwater integrated master schedule.
- Interviewed DOD officials and examined Navy budget documents to determine DOD funding support for Deepwater.



Summary of Results

- The degree to which the Deepwater program is on track with regard to its original 2002 acquisition schedule is difficult to determine, because the Coast Guard has not kept the acquisition schedule updated. Several assets are experiencing delays and are at risk for being delivered later than originally planned.
 - The additional \$168 million appropriated in fiscal year 2004 will allow the Coast Guard to conduct a number of projects that had been delayed or would not have been funded in fiscal year 2004, but it will not fully return the program to its original 2002 acquisition schedule.
 - Additional information on the Deepwater Program.
 - The Coast Guard submitted a revised Mission Needs Statement to the Department of Homeland Security in May 2004.
 - Navy budgeted \$25 million in fiscal years 2002-04 for intermediate gun and combat systems for cutters.
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Background

- Deepwater is a \$17 billion, 20-year acquisition to modernize and/or replace of over 90 cutters and 200 aircraft used for missions that generally occur beyond 50 miles from shore but may start at coasts and extend seaward to wherever the Coast Guard is required to take appropriate action.
- In June 2002, the Coast Guard awarded a 5-year base contract to Integrated Coast Guard Systems (ICGS), Inc., to begin the acquisition phase of the Deepwater program, with five additional 5-year options.
- The Coast Guard is scheduled to decide on whether to extend ICGS's contract by June 2006, 1 year prior to the end of the first 5-year contract term.
- The Coast Guard chose to employ a "system of systems" acquisition strategy that would replace its aging Deepwater assets with a single, integrated package of new or modernized assets.
- ICGS acts as the system integrator to develop and deliver an improved integrated system of ships, aircraft, unmanned air vehicles, command, control, communications, computers, intelligence, surveillance and reconnaissance (C4ISR), and supporting logistics.



Background (cont'd)

- ICGS is responsible for designing, constructing, deploying, supporting, and integrating Deepwater assets. The Coast Guard maintains responsibility for oversight and overall management of the program.
 - The Coast Guard uses several management tools to track progress in the program, such as monthly status reports, Earned Value Management System (EVMS), and an integrated master schedule.
 - However, because data reliability with the integrated master schedule has been an area of concern for the Coast Guard, they are currently working with a private contractor and ICGS to address these concerns.
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Background (cont'd)

- GAO recently reported concerns with the Coast Guard's initial management of the Deepwater program and the potential for escalating costs.
 - Key components needed to manage the Deepwater program and oversee the system integrator's performance have not been effectively implemented. *Contract Management: Coast Guard's Deepwater Program Needs Increased Attention to Management and Contractor Oversight*, GAO-04-380 (Washington, D.C.: Mar. 9, 2004).
 - The most significant challenge to the Coast Guard is keeping the Deepwater program on schedule and within planned budget estimates through a well-managed and adequately funded effort. The Coast Guard estimates that the project's cost is now \$2.2 billion more than the initial estimate. *Coast Guard: Key Management and Budget Challenges for Fiscal Year 2005 and Beyond*, GAO-04-636T (Washington, D.C.: Apr. 7, 2004).
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Status of Acquisition Schedule

- The degree to which the program is on track with regard to its original 2002 acquisition schedule is difficult to determine, because the Coast Guard does not maintain and update the acquisition schedule. The Coast Guard cannot readily and reliably present the integrated acquisition status of the Deepwater program.
- The Coast Guard's reasons for not updating the schedule include:
 - Updating more regularly is impractical and unnecessary because Deepwater experiences numerous program changes each year and keeping track of those changes would consume too much funding, time, and personnel.
 - Monthly status reports, EVMS, and other management tools are adequate for tracking Deepwater's acquisition.
- The Coast Guard intends to update the schedule prior to deciding whether to extend the first 5-year option to the contractor in 2007.



Status of Acquisition Schedule (cont'd)

- Tracking the current integrated schedule on a major government investments or acquisitions similar to the Deepwater program is important because
 - identifying potential risks in major acquisitions as early as possible is important so problems can be avoided or minimized. The ability to achieve scheduled events is a key indicator of risk.
 - cost, schedule, and performance are fundamental to the Congress's oversight of major acquisitions.
 - By law, DOD's major defense acquisition programs have to report cost, schedule, and performance updates to the Congress at least annually and whenever cost and schedule thresholds are breached.
 - 10 U.S.C. Sections 2430, 2432, 2433, and 2435, on major defense acquisition programs.
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Status of Acquisition Schedule (cont'd)

- In practice, schedules on major defense acquisitions are continually monitored and reported to DOD management on a quarterly basis.
 - DOD Practice: Interim Defense Acquisition Guidebook (October 2002).
 - GAO best practices reports: *Best Practices: Better Matching of Needs and Resources will Lead to Better Weapon System Outcomes*, GAO-01-288 (Mar. 8, 2001); *Defense Acquisitions: DOD's Revised Policy Emphasizes Best Practices, but More Controls are Needed*, GAO 04-53 (Nov. 10, 2003); and *Defense Acquisitions: Assessments of Major Weapons Programs*, GAO-04-248 (Mar. 31, 2004).
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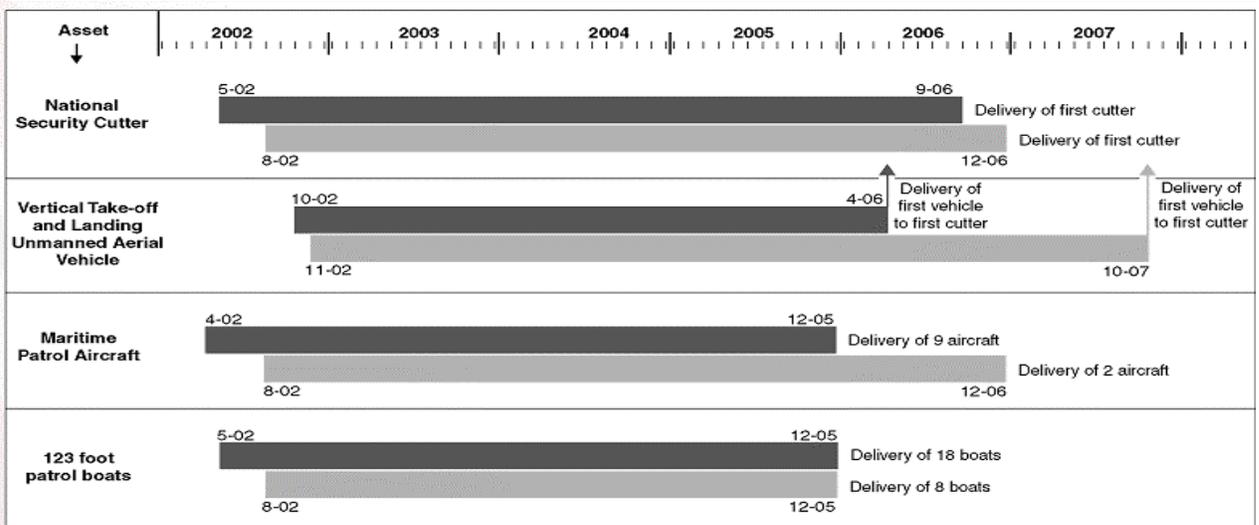


Status of Acquisition Schedule (cont'd)

- Although Coast Guard officials indicated that the management tools they use are sufficient for tracking delivery dates throughout the course of the acquisition, we found these tools could not provide a ready and reliable picture of the current integrated acquisition schedule.
 - They only track the schedules of individual assets at the lowest, most detailed level and not at the integrated level.
 - The integrated master schedule has data reliability problems.
 - The monthly status reports do not translate the progress of individual assets into an overall Deepwater acquisition schedule. A February 2004 status report noted that because there was no accurate overall integrated schedule for the command and control design, the linkages with the development of other assets were largely unknown.
- While the Coast Guard could not provide an updated integrated acquisition schedule, our analysis showed that a number of key Deepwater assets would be delivered later than originally scheduled.



Status of Acquisition Schedules for Selected Assets (cont'd)



Source: GAO analysis of Coast Guard data.

Planned schedule
 Current acquisition status

Note: The award of the Deepwater contract was originally planned for April 2002 but was awarded 2 months later in June 2002.



Impact of Additional Funding

- Part of the additional \$168 million in funding allowed the Coast Guard to start work delayed from fiscal year 2003 or to start work originally scheduled for fiscal year 2004.

Type of asset or work planned to be started	Original fiscal year to start work
1 MPA w/o missionization and initial spares	2003
Detail Design and Long Lead Material for VUAV	2003
Options on four 110-123 Patrol Boat Upgrades	2003
4 Short Range Prosecutors to be delivered with 123 ft. Patrol Boats	2004
Command & Control System Upgrades on two 210' Cutters	2004
Additional C4ISR shore site upgrades at:	
Atlantic area	2004
Pacific area	2004
Greater antilles section, San Juan, P.R.	2004



Impact of Additional Funding (cont'd)

- However, for several reasons, the additional \$168 million in fiscal year 2004 will not fully return Deepwater to its original 2002 acquisition schedule.
 - Reason 1: A cumulative shortfall of \$39 million still exists.
 - Reason 2: The additional amount did not fund all work planned for fiscal year 2004; some will be delayed to fiscal year 2005 or beyond.

Type of asset or work delayed to fiscal year 2005 or beyond
C4ISR Modification of 270 Class Cutter ships 10,13
CAMS CC-2 Low Rate of Initial Production
COMMSTA CC-2 Low Rate of Initial Production (CSTA-01,02,03,04,05,06)
Production and Deployment for Major Modification of 110/123 Class Patrol Cutter Lot 5 (follow ships 13-20)
Coast Guard Air Station (CGAS) Production and Deployment
Aircraft Repair and Supply Center (AR&SC) Production and Deployment
Aircraft Training Center (ATC) Production and Deployment
Aviation Technical Training Center (ATTC) Production and Deployment
Production and Deployment of MPA Low rate of initial production (aircraft 7-9)



Impact of Additional Funding (cont'd)

- Reason 3: Some assets are so far behind schedule that it is impossible to return them to their original schedule.
 - Nine maritime patrol aircraft were originally planned for delivery by the end of 2005; current plans show 2 to be delivered by the end of 2006.
 - Eighteen conversions of 110-foot patrol boats to 123 feet were originally planned for delivery by the end of 2005; current plans show 8 to be completed by the end of 2005.
-



Impact of Additional Funding (cont'd)

- Reason 4: Acquisition of some assets has been delayed for reasons other than funding.
 - Greater than anticipated hull corrosion in the 110-foot patrol boats has delayed their conversion to 123 feet and delivery several months.
 - Legacy cutters are scheduled to receive a C4ISR upgrade of higher speed International Maritime Satellite service. However, the availability of the higher speed service has been delayed several times from early 2003 to the Coast Guard's current projection of June 2004.
-



Impact of Additional Funding (cont'd)

- Reason 5: Some of the additional funding went for a project originally not scheduled to begin for several years.
 - In keeping with fiscal year 2004 appropriations conference committee directives for how the additional amount was to be spent, \$20 million went to begin the design phase for the Offshore Patrol Cutter (OPC).
 - The Coast Guard had planned to begin the design phase about 2010 for delivery of the first OPC in 2012; current estimate is that the acquisition schedule has been accelerated by several years.
-



Additional Information on the Deepwater Program

- Incorporation of new homeland security requirements into the Deepwater mission needs statement is still under way. In May 2004, the DHS Joint Requirements Council conditionally accepted it and directed the Coast Guard to develop new total ownership cost estimates for submission to and approval by the DHS Investment Review Board in October 2004.
- Coast Guard officials said the revision's main impact will be an increase in number of assets. RAND concluded in an April 2004 study that the Coast Guard probably needs twice as many cutters and 50 percent more aircraft.
- In the interim, some requirements changes have been made to individual assets, mainly the National Security Cutter.
 - Operating requirement for chemical-biological-radiological-nuclear defense capabilities was expanded to enable the cutter to operate in a contaminated environment, not just pass through it.
 - Size of flight deck enlarged to accommodate Navy, Army, and Customs and Border Protection Agency models of the H-60 helicopter.
 - Shipboard sensitive compartmented information facility added for collection and use of intelligence.



Additional Information on the Deepwater Program (cont'd)

- Navy budgeted \$25.1 million in fiscal years 2002-04 to support equipment used for Deepwater program.
 - \$12.6 million in fiscal years 2002-03 was for testing/evaluating an intermediate gun system for the National Security Cutter (and possibly other cutters).
 - \$12.5 million in fiscal year 2004 was for combat systems suites for the National Security Cutter.
 - The Navy did not transfer the \$25.1 million to the Coast Guard but will transfer the resulting equipment. Through a 1987 agreement, the Navy provides to the Coast Guard all Navy-owned, military readiness equipment and associated support materials that the Navy deems necessary to enable the Coast Guard to carry out assigned missions while operating with the Navy. Upon declaration of war, or when the President directs, the Coast Guard operates as a service of the Navy and is subject to the orders of the Secretary of the Navy.
-



Conclusions

- We disagree with the Coast Guard that updating the acquisition schedule is not worth the time and cost involved.
- Absence of an up-to-date integrated acquisition schedule for Deepwater is a concern, because it is a symptom of the larger issues related to whether this complicated acquisition is being adequately managed.
- The recent disclosure by the Coast Guard that Deepwater costs have risen by an estimated \$2.2 billion points to the need for a clear understanding of what is being acquired, when it is being acquired, and at what cost.
- Maintaining a current integrated schedule for a DOD acquisition of such scope is a fundamental and necessary practice.
- Evolving mission requirements and the need to evaluate contractor performance for contract renewal heighten need for timely and accurate information so the Coast Guard and Congress can base decisions on accurate information.



Recommendation

- We recommend the Secretary of Homeland Security direct the Commandant of the Coast Guard to update the original 2002 Deepwater acquisition schedule in time to support the fiscal year 2006 Deepwater budget submission to the Department of Homeland Security and Congress and at least once a year thereafter to support each budget submission. The updated schedule should include
 - the current status of asset acquisition phases (such as concept technology and design, system development and demonstration, and fabrication);
 - interim phase milestones (such as preliminary and critical design reviews, installation, and testing); and
 - the critical paths linking the delivery of individual components to particular assets.
-

Appendix II: Coast Guard's Comments

U.S. Department of
Homeland Security
United States
Coast Guard



Commandant
United States Coast Guard

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3800
27 May 2004

Mr. Steven Calvo
U.S. General Accounting Office
441 G Street, NW
Washington, DC 20548

Dear Mr. Calvo,

This letter is the Coast Guard and Department of Homeland Security response to the draft June 2004 audit of the Coast Guard entitled "Deepwater Program Acquisition Schedule Update Needed." The Coast Guard and the Department concur generally with the findings and recommendation of the report.

Over the last six months, the Coast Guard has engaged with your staff to help address the questions of the Committee on Appropriations, Subcommittee on Homeland Security, concerning the Integrated Deepwater System. We welcome your observations and recommendations as an independent review of the program, and I appreciate the opportunity to respond to the draft report. The Coast Guard has already provided your staff with detailed observations, and I wish to review additional key points in the draft report at this time.

As I noted above, the Coast Guard and the Department concur generally with the findings and recommendation of the draft audit. However, there are two specific areas of discussion with which we do not concur. First, the draft audit report fails to accurately portray the existing acquisition schedule tools currently in use. Second, the draft audit report fails to highlight the fact that delays in the delivery schedule have been caused by a lack of funding and the subsequent need to sustain legacy assets rather than a lack of acquisition schedule updates.

The Coast Guard currently uses a multi-tiered Integrated Master Schedule (IMS) to oversee the Deepwater acquisition. The top-level plan in the IMS that tracks the full period of performance of the acquisition contract is Implementation Plan. Development of this plan is complex and costly, and, as noted in the report, the Coast Guard previously planned to do, at a minimum, one full update of this Implementation Plan every contract term. Following the draft audit report's guidance, the Coast Guard will now revise the Implementation Plan by the end of 2004.

The IMS supplements the Implementation Plan with additional levels of detail and adds definition and structure to it. The Coast Guard acknowledges that the IMS has not been completely updated in its entirety (all periods of the three tiers) on a monthly basis. But significant improvements have been made. The near-term periods of all three tiers are now updated on a monthly basis. Necessary horizontal linkages across Delivery Task Orders (DTOs) and across the air, surface, logistics, and C4ISR domains have been validated. Tiers 1 and 2 levels are now being reviewed on a monthly basis by the schedulers and planners in each of the major program areas with the first complete review planned for the end of May 2004.

Even before the GAO input, the Tier 3 IMS (the lowest, most detailed level of the IMS and considered to be the most important tool) has been consistently updated monthly over the last

year. These monthly updates reflect the status of active DTOs fed into the Earned Value Management System's (EVMS) monthly Cost Performance Reports (CPRs).

Monthly CPRs give program management more than adequate insight into the cost, schedule, and technical performance variances associated with ongoing work. CPRs are the singularly most important tool for program management since the information for the various DTOs captured at those levels provides the essential data to manage the contract.

For these and other reasons, I do not concur with the statement that "the data within the IMS was not reliable enough for use in our report." There was sufficient data within the IMS, it simply wasn't in the form of an acquisition schedule. The GAO audit team's analysis was based on a comparison of the proposed June 2002 Implementation Plan with the Tier 3 IMS data, the statements of work for the active CLINs, and the monthly QUAD status reports. The audit team, like Deepwater program management, was able to use IMS to determine the status of assets, unfortunately the lack of an updated acquisition schedule, similar to what the team had used in auditing DoD's major defense acquisition programs, lead to conclusions such as, "(w)hile the Coast Guard could not provide us with an updated integrated schedule, we developed the current acquisition status of a number of key Deepwater assets from documents provided by the Coast Guard." The Coast Guard provided relevant IMS data, it was just at a lower tier than anticipated.

Overall, there is full agreement with the report's determination that the \$168 million appropriated in fiscal year 2004 for the Deepwater program above the President's request of \$500 million does not fully return the program to its original 2002 Implementation Plan Schedule nor to its planned funding levels. As noted in the report, this delay in asset delivery is due to lack of funding and other legacy sustainment problems such as responding to the extensive deterioration of 110' hulls and the need for immediate re-engining of HH-65s.

The draft report should highlight the impact of funding shortfalls on delays in asset delivery. For example, the graph on page 23 should explain that the reason for asset delivery delays was a lack of funds in the first two years of contract execution. Any program that receives approximately \$125 million less than the \$918 million planned, which is a 13.6 percent decrease for the first two years, will have delays.

This view is supported by the April 17, 2004, GAO testimony before the Senate Subcommittee on Oceans Fisheries, and Coast Guard, Committee on Commerce, Science, and Transportation. "In a 2001 report," GAO reported, "we expressed concern that the Coast Guard risked slippages and cost escalation if project funding fell short of planned funding levels. Now, very early in the program our concerns are being realized. Program funding in the first 2 years was less than the agency planned by about \$125 million. This resulted in delays in the scheduled delivery of key Deepwater assets, such as the maritime patrol aircraft."

Even with the Congressional increase of \$168 million in the third year of the program, cumulative funding was still approximately \$40 million less than planned. When a program is underfunded, schedule delays are unavoidable. This is not a unique risk to Deepwater, but a universal risk to any major program in that all major programs plan their Master Schedule based on a projected funding level. If the funding received is less than the funding planned, schedule slippage will result.

Additionally, if a substantial amount of the shortfall is made up in the third year and then an assessment is made right at the start of the third year, there will still be delays. These slippages

have no relationship to updating the schedule. These delays would exist whether or not the schedule was updated. The updated schedule would have still shown the same delays that the GAO report displayed on page 23.

Given the above information, the Coast Guard does not concur with the audit report's conclusion that the absence of an updated integrated schedule is a symptom of the management concerns GAO reported in March 2004. Contrary to the implications of the draft report's language, the Coast Guard is effectively tracking cost, schedule, and performance, and identifying potential risks by maintaining existing management and tracking tools such as the Earned Value Management System (EVMS) and the Monthly Quad Charts. Just as defense acquisitions report quarterly to DoD management, the Coast Guard reports this information quarterly to DHS.

As we continue to work together, our agencies will achieve greater mutual understanding of this dynamic and challenging acquisition program. To further that understanding, I also would like to clarify one aspect of the Coast Guard's Deepwater missions and the program's history. While it is accurate to state that the Coast Guard's Deepwater missions generally occur beyond 50 miles from shore, it is important to recognize that these missions, so critical to America's homeland security, start at America's ports, waterways, and coasts and extend seaward to wherever the Coast Guard is required to take appropriate action. Deepwater's more capable, sustainable, interoperable, and flexible platforms and systems will contribute significantly to the Coast Guard's ability to address and defeat maritime security threats closer to our shores and in our ports. These missions are characterized as requiring powerful C4ISR capabilities, extended on-scene presence, any mission using Coast Guard aviation assets, or significant prosecution power.

The Coast Guard has incorporated recommendations made by previous reviews of the Deepwater Program by GAO and the Department of Homeland Security. I thank you for your detailed analysis and observations and appreciate the opportunity to share our lessons learned, successes, and growing pains in an open environment as we continue to embrace the tenets of a successful learning organization. I look forward to continued positive dialog with you and your staff as we work to improve the management of the Deepwater program during the coming years. You have our commitment to engage in continuous improvement.



ROBERT S. HOROWITZ
Deputy Assistant Commandant
For Planning, Resources, and Procurement

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