# **Deepwater Program Achieves Impressive Milestones**

Anyone affiliated with the Deepwater Program does not underestimate the challenges faced in executing a \$24-billion, 25-year acquisition of impressive scope and complexity. Still, a review of the program milestones achieved during 2005—just three-andahalf years since contract award—demonstrates steady progress in the performance of Deepwater's progressive modernization, conversion, and recapitalization of the Coast Guard's aging inventory of cutters and aircraft.

"The past year's accomplishments represent a shared commitment by our Coast Guard-industry team," said Rear Adm. Patrick M. Stillman, program executive officer for the Integrated Deepwater System (IDS) program. "No one person is responsible for bringing Deepwater to life—it results from a great deal of hard work by all of the people assigned to IDS, their shipmates at Integrated Coast Guard Systems, and affiliated staff at Coast Guard Headquarters. I am tremendously proud of them all."

Of note, progress was marked in each of Deepwater's principal components of surface, aviation, integrated logistics, systems of systems engineering, and



Shipbuilders at Northrop Grumman Corporation's Pascagoula, Miss., facility lower the final hull section on the first National Security Cutter in late January 2006. Weighing 50 tons, the unit (one of 44 total) encloses the anchor windlass machinery room and covers the cutter's chain lockers. The shipyard's workers constructing Bertholf (WMSL 750), now approximately 49 percent complete, used innovative production techniques to keep the ship's construction on track despite damage inflicted by Hurricanes Cindy, Dennis, and Katrina. (NGSS Photo)

C4ISR (command, control, communications, computers, intelligence, surveillance, and reconnaissance).

More importantly, Deepwater is beginning to make important

contributions where it matters most—at sea and in U.S. ports, waterways, and coastal areas—where modernized legacy assets are critically needed to sustain the

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## Vice Adm. Allen Nominated as Commandant

President Bush recently announced the nomination of Vice Adm. Thad W. Allen as the next commandant of the Coast Guard. Vice Adm. Allen, currently the chief of staff at Coast Guard Headquarters, was designated in September to oversee the federal government's recovery operations following Hurricane Katrina. "Thad has my complete confidence and full support, and if confirmed, he will play a major role in shaping the future of this department," said Secretary of Homeland Security Michael Chertoff. "If confirmed, Vice Admiral Allen will follow a distinguished Commandant in Admiral Thomas H. Collins, at a scheduled change of command in May." Secretary Chertoff praised Adm. Collins for leading the Coast Guard during one of the more challenging periods in its history.



Coast Guard's operational performance and increase maritime domain awareness to protect the nation's maritime borders until the time that new or converted Deepwater assets enter service.

A tangible demonstration of a program on the move is the construction of the cutter *Bertholf*, lead ship in the new class of National Security Cutters, at the Northrop Grumman Ship Systems shipyard in Pascagoula, Miss. Despite the extraordinary damage inflicted by Hurricane Katrina at the Gulf Coast shipyard in September, *Bertholf* is now approximately 49 percent complete and is scheduled for launch in 2006 and will be delivered in spring 2007.

According to James Anton, executive vice president, Integrated Coast Guard Systems (a joint venture between Northrop Grumman and Lockheed Martin). "Bertholf is the best first in class of any ship in our experience. We are right on schedule for her launching this summer—and that is a testament to the dedication of the men and women who are building her despite the personal hardships they experienced as the result of Katrina." Designs for the Fast Response Cutter and Offshore Patrol Cutter also are moving forward years ahead of their original schedules.

Similar progress is reflected in Deepwater's aviation domain with the upgrading and reengining of HH-65 helicopters—the Coast Guard's top priority for legacy aviation assets. A total of 20 re-engined HH-65C helicopters have been delivered to the Coast Guard to date. Three performed superbly in New Orleans in September during Hurricane Katrina relief operations, where they saved the lives of more than 300 people.

### **Progressive Modernization, Conversion, Recapitalization**

More than 15 major projects are underway in the Deepwater Program early in 2006—a reflection on the significant progress registered in every domain over the past year. An abbreviated sampling includes:

### Surface Domain:

- National Security Cutter hull one was laid in March and is now nearly 40 percent complete. Production of hull two has commenced.
- Designs are well underway for the Offshore Patrol Cutter and Fast Response Cutter, 5 and 10 years ahead of schedule respectively
- Mission Effectiveness Project for medium-endurance cutters began in May 2005.

#### **Aviation Domain:**

- 20 HH-65C helicopters re-engined and upgraded to date.
  Three saw service in Hurricane Katrina rescue operations in September—where they saved more than 300 lives.
- HH-60J helicopter avionics upgrade underway to resolve nearterm support issues relating to obsolete hardware and software.
- Awarded contract in September to missionize six HC-130J aircraft.
- CASA Maritime Patrol Aircraft one and two more than 50 percent completed.
- Eagle Eye Vertical Takeoff-and-Landing Unmanned Aerial Vehicle (VUAV) completed its critical design review. Bell Helicopter's prototype flew for the first time in January 2006.
- Armed-helicopter operations are being conducted with eight helicopters; more than 90 at-sea interdictions of drug smugglers are credited to their use.

#### C4ISR

- Completed initial C4ISR upgrades on all 39 legacy cutters.
- Commencing phase 2 to increase intelligence-data communications to improve conduct of at-sea intercepts and interdictions.
- Classified communication equipment installations completed at Atlantic and Pacific Command Master Stations; first phase completed for District Seven's Operation Center

### **Integrated Logistics Support**:

- Logistics Information Management System (LIMS) Systems Requirements Review completed
- Manpower Requirements Analysis delivered
- Support and Test Equipment Plan delivered
- System Integrated Support Plan delivered

Each month, additional helicopters of the more reliable and capable "Charlie" models are being delivered to Coast Guard air stations. The modernization project is slated for completion in 2007.

"We reached an agreement

with American Eurocopter in Columbus, Mississippi, to expedite our work on the HH-65," Leo MacKay, president of ICGS, told reporters attending the Surface Navy Association's annual symposium in mid-January.

"The HH-65C has a greater



than 20-percent increase in single engine continuous power, a 59.6-percent increase in mean time between failures, and a 12.6-percent increase in maximum continuous power," MacKay said. "The HH-65C also can carry a third more fuel, and with a capacity for six passengers, it doubles the number carried by the Bravo model it is replacing."

In the Coast Guard's role as the nation's premier maritime life-saving organization, such performance improvements can easily spell the difference between life or death when the workhorse HH-65C helicopter is called away for a mission. "It's a beautiful bird," said Lt. Kevin d'Eustachio, an HH-65C pilot stationed at Coast Guard Air Station Atlantic City, N.J., who deployed for Katrina relief operations in New Orleans.

Arguably the most pervasive results associated with the Deepwater Program's modernization of Coast Guard legacy platforms will accrue from last year's completion of initial installations of C4ISR upgrades on all of the Coast Guard's 39 medium and high endurance cutters. Now, with an enterprise-wide network backbone, the Coast Guard's cutters have access to the Secret Internet Protocol Router Network (SIPRNET), a classified widearea network that enables more effective operational command and control.

Improvements to operational effectiveness and maritime domain awareness are already being realized as the result of the upgrades. Last year, for example, a legacy cutter received a "Statement of No Objection" (SNO) in just six minutes to board foreign-flagged vessels sus-



Bell Helicopter's TR918 Eagle Eye Unmanned Aircraft System (UAS) lifted off the ground for the first time Jan. 26 when it achieved the first flight milestone in the company's vertical-lift unmanned aircraft program. The prototype Eagle Eye vehicle lifted vertically off the ground, hovered for nine minutes, executed yaw and translation maneuvers and then landed safely on the ground. The vehicle flew a second flight within 30 minutes of the maiden flight's landing. "This is a tremendous achievement for Bell Helicopter and our Team Eagle Eye partners," said Mike Redenbaugh, chief executive officer of Bell Helicopter. Bell's military version of the Eagle Eye, the Coast Guard's variant being developed as part of the Integrated Deepwater System program, is designated the HV-911. (Photo by Ed Garza)

pected of illegal activities. Prior to receiving the Deepwater upgrades, 24 or more hours could have elapsed before the cutter received its time-critical SNO. Cutter crews report SIPRNET access has greatly increased their ability to communicate in the classified environment.

"The primary benefit is that we will now be fully compatible with our fellow Coast Guard cutters," said Cdr. Michael Mohn, commanding officer of the medium-endurance cutter USCGC Vigilant, the last legacy cutter to receive the initial Deepwater C4ISR upgrade. "The installation progressed very smoothly, mostly due to the enhanced skills acquired by the contracting team in all the previous installs," said Mohn.

The Deepwater Program anticipates commencing the second increment of C4ISR upgrades in 2006 aimed at improved interop-

erability for joint operations.

Rear Adm. Stillman summed up Deepwater's accomplishments in 2005 as follows: "The past year's impressive list of Deepwater milestones is but a taste of what the future holds. Yes, we are working our way through some tough issues, but each of our domains is gaining greater traction day by day thanks to our people and the momentum generated by program funding for 2006. This leveraged transformation of our Coast Guard will become even more evident when new platforms are delivered for testing and evaluation in the not-too-distant future"

By Gordon I. Peterson



## "The Challenge of Change"

In the view of Rear Adm. Patrick M. Stillman, program executive officer for the Deepwater Program, those affiliated with the Coast Guard's progressive modernization, conversion, and recapitalization are joined in a marriage of common interests encompassing performance, affordability, and accountability.

"We face the challenge of change," he told a recent meeting of the Washington, D.C. chapter of the American Society of Military Comptrollers. "As a chief financial officer, comptroller, acquisition official, or operator we must resolve the fundamental paradox of balancing cost and capability in the execution of our program."

And, contrary to many acquisition programs of the past, initial capital costs must not be the sole focus. To the contrary, total program costing must include lifecycle costs for assets that, in some cases, may remain in service for

40 or more years. "We in the Coast Guard have a challenge to control the cost of capability and requirements creep," he said. "Requirements drive costs, and if they change or are unstable, I'm doomed to fail." In this sense, change management—tied to the Coast Guard's mission requirements during the Global War on Terror and its traditional responsibilities for marine safety and maritime security—is the largest cost driver in building ships.

"From my perspective as a PEO" Stillman later elaborated, "a chief financial officer—or comptroller—occupies a special place in managing this change. I require good business intelligence and hard-nosed recommendations focused on cost, performance, and schedule. They are the key enablers for making value-added business decisions—what I call leveraged information."

Acquisition planning, program execution, and financial

management are woven together in this paradigm in Stillman's outlook, with transaction cycles and total-ownership-cost accountability providing "the glue that binds." Innovative methods are needed to manage operations and deliver financial management information and services—leading to improved decision-making and better accountability. "The chief financial officer, chief information officer, sponsor, operator, and program executive officer must be fully integrated and appreciative of the challenge of a performancebased acquisition," he said.

If changes to requirements in the design of a ship occur frequently, it becomes a formidable task to achieve meaningful cost controls. "We must measure those costs, as well as their total lifecycle cost estimates reliably, diligently, and with auditable data," Stillman observed. "We must realize that you are what you measure as it relates to results and outcomes. This must enter our stream of consciousness as a performance-based approach."

Key to this management philosophy for Deepwater's complex system-of-systems acquisition construct is diligent adherence to the principles of systems engineering and integration.

Deepwater's system-ofsystems paradigm reflects the reality that interdependent and interconnected platforms and subsystems are able to produce greater and more effective results by operating *together* than can be obtainable individually. Absent a system-of-systems acquisition strategy, Stillman maintains, higher force levels would be needed to satisfy Coast Guard's post-9/11 operational require-



The Deepwater Program's "system-of-systems" force structure of helicopters, aircraft, unmanned aerial vehicles, patrol boats, cutters, and C4ISR systems will be key contributors to the Coast Guard's ability to execute a strategy for maritime homeland security that calls for layered defenses extending hundreds of miles to sea. Methodic systems engineering and integration ensures assets and shore stations are linked for full interoperability. Improved system-wide performance results from the near-real-time exchange of information and a Common Operating Picture. (U.S. Coast Guard/ Rich Doyle)



ments.

"Some people have a hard time grasping the concept of a 'system of systems," Stillman said, "but it is really something we all know quite well: the human body. For our body to function effectively, its various systems—cardiovascular, respiratory, digestive, central nervous, and others—all must be fully integrated and performing well if we are to enjoy God's gift of life."

Similarly, for the Integrated Deepwater System, all of its elements—platform elements (cutters, aircraft, boats), their subsystems, and both integrated logistics and C4ISR systems—combine to provide capabilities needed to produce system-wide operational results at an affordable total ownership cost. The value added by the system as a whole is created by the integration of its elements—how they are interconnected and structured to work together.

"We must resist the tendency to think in watertight compartments," Stillman said. "This highlights the requirement for a systems integrator in the Deepwater enterprise. In short, systems integration brings us full circle to the challenge of managing change and striking the right balance be-

#### **Acquisition Management: Striking the Right Balance**

Key program-management considerations necessary to balance properly the cost, schedule, and performance of an acquisition include:

- Well-defined, performance-based requirements that are not changed frequently;
- Stable procurement funding;
- Control cost growth and focus on total life-cycle costs over the asset's service life;
- Accurate pricing that accounts for program risks;
- Full accounting of trade-offs associated with performance requirements and affordability;
- Sound adherence to traditional principles for systems engineering and integration;
- Program management focused on concrete, measurable results tied to objectives;
- Promoting positive industry performance through profit and incentives; and
- Human capital investment programs for what is one of the most valuable dimensions of any enterprise—its people.

tween cost and performance," he noted. "We need to satisfy the operator's requirements, but what is 'good enough'—will an 80 percent solution be sufficient 99.8 percent of the time?" he asked.

"Performance measurement must be based on timely and accurate business intelligence," Stillman said. For this reason, Deepwater's systems application of the "Balanced Scorecard" and Earned Value Management System provides a solid foundation to measure cost, schedule, and technical achievement throughout contract and work order execution while

remaining focused on program objectives.

"There are no magic answers or silver bullets in striking the right balance between performance and cost," Stillman maintains. "It is hard work. We must all be diligent in appreciating the dimensions of this challenge—in managing change—and in leveraging the competence of the private sector to help us succeed."

By Gordon I. Peterson

## Sea-Service Leaders Call for Closer Navy-Coast Guard Cooperation

During their presentations at the Surface Navy Association's annual symposium in mid-January, two senior officers of the Navy and Coast Guard praised today's level of collaboration between the sea services, but stressed that even closer cooperation would be the norm in the future.

"The Navy and the Coast

Guard have worked together throughout my career," said Vice Adm. Terry M. Cross, vice commandant of the Coast Guard. "Important examples include Operation Market Time [during the Vietnam War], the first Iraq War, and counter-narcotics operations. That said, none of those operations approaches the level of cooperation we see between the

Coast Guard and Navy today."

The chief of naval operations (CNO), Adm. Michael G. Mullen, stressed a similar theme during his keynote address on Jan. 10. "Next to the Marine Corps," he said, "I view our relationship with the United States Coast Guard as the single-most critical relationship we can possibly have when it comes to securing the maritime



domain."

Following the terrorist attacks of 9/11, each service recognized the urgency of reexamining this partnership, resulting in a July 2002 update to the National Fleet Policy signed by Adm. Thomas H. Collins, the commandant of the Coast Guard, and Adm. Vern Clark, Mullen's predecessor. The Navy and Coast Guard are again poised to reaffirm the policy based on a strong joint commitment to safeguarding U.S. maritime security.

"The CNO's guidance [to the Navy for 2006] underscores the need for a close and evolving Coast Guard–Navy relationship," said Vice Adm. Cross. "Consistent with that thinking, the CNO and the Commandant recently committed to an updated National Fleet Policy statement that provides for collaborative planning, acquisition, mainte-

nance, and deployment of our respective fleets—all in the nation's interest to build complementary, non-redundant and interoperable fleets."

"Our two services have had a good track record in recent years working together, particularly on intercept operations and drug smuggling," said Mullen. "We've gone a long way to improving maritime domain awareness with the establishment of Maritime Intelligence Fusion Centers in Norfolk and Alameda. But we *must* do more—the stakes are too high."

Likely areas for closer collaboration in the future are said to include the use of each service's multimission assets, personnel resources, and shore commandand-control nodes to enhance the security of ports, coastal approaches, and waterways extending to the entire maritime domain.

Adm. Mullen also said he was committed, as is Adm. Collins, to coordinating, to the maximum extent permitted by law, each service's research and development efforts, acquisitions, information systems integration, force planning, as well as intelligence, logistics, training, exercises, and deployments.

"We agree that a coordinated Navy-Coast Guard partnership increases national capabilities, provides for greater coverage of our maritime borders, and gives us a greater capacity to respond to emerging threats," said Vice Adm. Cross.

Rear Adm. Patrick M. Stillman, program executive officer for the Deepwater Program, also asserted the important of close Navy-Coast Guard collaboration during his participation on a symposium panel that addressed the issue of affordability as it relates to balancing performance and cost in executing a major acquisition program.

"The construct of the National Fleet is instructive for both the Navy and the Coast Guard," he said. "It should be viewed collectively, not independently, to ensure we leverage and maximize commonality as much as possible—so we may return to the tax payer and the warfighter the highest return on our investments."

By Gordon I. Peterson



Vice Adm. Thad W. Allen, chief of staff of the U.S. Coast Guard, addressed the crew of the amphibious assault ship USS Iwo Jima (LHD 7) during an all-hands meeting in the ship's hangar bay in mid-September in New Orleans. Vice Adm. Allen was designated the principle federal official to direct the response to Hurricane Katrina. The Navy, Coast Guard, and other federal, state, and local agencies saved the lives of tens of thousands of people following the devastating hurricane. *U.S. Navy photo by PHAN Amanda Williams* 



## A Helping Hand for the Holidays

A generous outpouring of charitable donations by the men and women of the Deepwater Program—the Integrated Deepwater System and Integrated Coast Guard Systems (ICGS)—benefited a large number of service organizations and lessfortunate individuals and families during the recent holiday season.

"Our sense of stewardship is manifested in many ways extending well beyond our responsibilities executing a multibillion-dollar program," said Deepwater Program Executive Officer Rear Adm. Patrick M. Stillman. "The generosity displayed by our Deepwater team certainly lifted my spirits during the holiday season—it is a commendable reflection on the caring ways of our people."

In raising \$14,723 for the 2005 Combined Federal Campaign (CFC), Deepwater exceeded its goal by 134 percent. "This set a benchmark for all to follow," said Stillman. Key Deepwater staff who orchestrated Deepwater's CFC campaign were Cdr. Tim Cook, overall coordinator, and two keyworkers—Storekeeper First Class Ray Mallett at Coast Guard Headquarters and Yeoman First Class Javier Viera at the Single Integrated Program Office (SIPO).

For the third year in a row, Integrated Deepwater System and Integrated Coast Guard Systems sponsored a holiday toy drive for homeless children participating in Project Northstar's tutoring program. Donations of \$770 in cash and six large boxes of toys, educational games, and clothing contributed directly to the success of Northstar's annual party for more



Is it real? A child participating in Project Northstar's voluntary tutoring program seeks to answer an age-old question about Santa during a holiday party in December. The Deepwater Program's charitable donations contributed directly to the success of Northstar's party for homeless children residing in Washington, D.C. (*Photo by Gordon I. Peterson*)

than 200 homeless children residing in Washington, D.C., who participate in its voluntary tutoring program. As Northstar's party coordinator, Laura T. Simonson, said of Deepwater's support, "Your efforts are truly appreciated! We cannot thank you enough."

Said Pamela Neumann, ICGS toy drive coordinator at the SIPO in Rosslyn, Va., of her coworkers' contributions, "Your kindness and generosity are a shining example of what this season of giving is all about."

December also saw Evelyn Jones and James Fitz-Gerald organize an adopt-a-family donation drive at Deepwater Program offices. Jones, assigned to Deepwater's human resources staff, coordinated a similar program for several years during a previous assignment with the National Marine Fisheries Service. Deepwater donations benefited a mother and daughter who reside in our local community.

"The support from Deepwater was outstanding," said Jones. "We provided clothing, shoes, electronic devices, assorted food items, and a gift certificate to a local grocery store." Jones and Fitz-Gerald delivered the donations to the family's home several days before Christmas.

"The success of the program was due solely to the participation and heartfelt support provided by the Deepwater family," Jones said.

By Gordon I. Peterson