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## Deepwater Team Delivers First Re-Engineed HH-65 Helicopter To The U.S. Coast Guard



*The U.S. Coast Guard currently flies 96 HH-65 Dolphin helicopters in its fleet. The twin-engine helicopters are particularly well-suited for border patrol, monitoring illegal immigration and drug interdiction.*

ICGS delivered the first HH-65 (USCG S/N 6510) fleet helicopter to receive a new power system under the Integrated Deepwater program to the U.S. Coast Guard's Aircraft and Supply Center (AR&SC) in Elizabeth City, NC, on October 7.

This delivery is the first end-product of a modernization effort to re-engine the entire fleet of the U.S. Coast Guard's 96 HH-65 "Dolphin" helicopters with the Turbomeca Arriel 2C2 engine to provide the U.S. Coast Guard with a new level of capability to support homeland security. In January 2004, the U.S. Coast Guard requested ICGS take immediate and definitive action to re-engine the HH-65 fleet to ensure unrestricted safe and reliable operations and to meet increasing mission demands prompted by post-9/11 events. This feat was achieved with the delivery of this first article just 150 days from the start of work.

"The work done to go from contract to delivery on this critical aircraft demonstrates exceptional teamwork among ICGS, the U.S. Coast Guard and our first-rate suppliers," said Dale Bennett, president of ICGS. "We are working together to provide the U.S. Coast Guard with an urgent, eagerly awaited upgrade to their fleet capability. I want to acknowledge the hard work and exceptional dedication of the many engineers, mechanics, technicians, and inspectors who have been working this re-engine effort around the clock."

The ICGS team completed the first re-engine endeavor with

conversion kits that facilitate the incorporation of optimized heat shields, a reconfigured control panel in the cockpit featuring a digital fuel control system, and specialized avionics software to assist shipboard operations. The modified aircraft, with its stronger, more efficient engines now has distinctly enhanced performance capability.

"Working closely with our industry partners, the Coast Guard and the Deepwater Program are proud to have reached this critical milestone," said Rear Adm. Patrick M. Stillman, the Program Executive Officer of the Deepwater Program. "We are committed to ensuring the safety of our pilots and their air crew as they perform their vital missions and continue to protect and serve the American public."

The aircraft is currently serving as a flying classroom platform in which Coast Guard HH-65 pilots will participate in a two-week ground and flight training course on the upgraded helicopter system. Maintenance mechanics responsible for the operation and repair of the new system will also be trained at the Coast Guard's Aviation Training Center (ATC) in Mobile, AL.

The second re-engineed HH-65 will be deployed as the first operational aircraft and is nearing final stages of work. It is expected to be delivered in January 2005. In addition, continuous ongoing effort is planned on four other HH-65 helicopters with the goal of completing the re-engine of all helicopters over the next 2 years.

# Offshore Patrol Cutter Contract Accelerates Coast Guard Cutter Effort

Ushering in another key milestone for the Integrated Deepwater System program, the U.S. Coast Guard and Integrated Coast Guard Systems (ICGS) have announced that work will commence immediately on the new Offshore Patrol Cutter (OPC) program, a new type of highly capable, cutting-edge, medium-endurance cutter.

This action accelerates the effort to launch the OPC by a full three years compared to the Deepwater program's originally proposed schedule. This first OPC contract assigned to ICGS establishes the critical first-step engineering efforts that will occur over the next twelve months.

Northrop Grumman Ship Systems is leading the design effort and Lockheed Martin will also receive work from this contract.

The final mission requirements and preliminary design of the OPC will begin scoping as a result of this contract, with additional funding available for follow-on contracts. Because of this accelerated contract, it is now expected that the first cutters could enter the Coast Guard fleet several years ahead of the original schedule, which was 2012.

The notional design of the OPC anticipates a 341-foot vessel with capabilities and equipment similar to the Coast Guard's new National Security Cutter, a 421-foot world-class cutter that is soon to commence construction.



## Logistics Team Takes a Field Trip

Recently several representatives of the Deepwater Program observed, up close and personal, the crew and operations of one of the oldest ships in the Coast Guard's high endurance fleet. During a 3-day transit cruise from Alameda to San Diego, California, on board the USCGC BOUTWELL, a 378' high endurance cutter, a cross-organizational Deepwater team representing the logistics domain conducted field studies to gain a better understanding of underway operations and current as well as future human factor considerations.

On July 28, Tom Crais, Surface Asset RM&A Lead, Northrop Grumman Ship Systems (NGSS); Andrea Kent, Human Factors Engineering (HFE) & Safety Lead, NGSS; Bill Berneski, RMA, USCG/ELC 06; Chris Butikofer, Maritime Security Cutter, Large (WMSL) Manpower Analyst, Lockheed Martin Corporation – Maritime Systems and Sensors; and Lydia Dumas, Contracting Officer, Integrated Logistics Systems Domain, USCG arrived on Coast Guard Island in Alameda, CA, to meet the officers and crew of the USCGC BOUTWELL.

The group was welcomed aboard by the Executive Officer (XO), Commander Eugene Cunningham, and the Commanding Officer (CO), Captain Bardo.

As the cutter was preparing for sea, the Deepwater team assembled on deck to watch the crew perform their pre-sailing duties. Once underway, the Boutwell crew calibrated the compass, conducted abandon ship exercises, performed small boat operations, and completed two man-overboard exercises.







The Deepwater team made significant observations and gained valuable recommendations regarding Human Factors Engineering, Safety, Habitability, Manning and C4ISR systems operations from members of the Boutwell's crew. Crew members illustrated how being on an understaffed operation affected their efficiency, and they also pointed out several cutter design issues that decreased productivity or comfort on the ship.

Lydia Dumas used the transit cruise as an opportunity to familiarize the crew with the Deepwater Program, observe the operation and crew's satisfaction with the C4ISR Deepwater upgrades, gather assessments on the existing logistics systems, and receive recommendations on desired Deepwater improvements.

On the final evening, a CG helicopter from the Los Angeles area flew out to the cutter to conduct nighttime training operations. The Deepwater group witnessed over 20 Helicopter Operations (HO) and watched the helo crew and the cutter crew performing in synchronous exercises as lights on board both the cutter and the helo were doused, providing the opportunity to train wearing night vision goggles.

On the last day, as the cruise came to an end, the DW group watched as members of the cutter's crew assembled and began the process of preparing the cutter and its equipment for sailing through the San Diego harbor en-route to its berthing location. Captain Bardo then thanked the DW group for their patience in working with the crew as they performed their duties, and for allowing the open exchange of observations and ideas.

The DW group commends the men and women of the crew of the BOUTWELL on their professionalism and skills. Trips like this provide valuable exchange between the program and the operators, and can positively influence the systems being provided to the U.S. Coast Guard under the Integrated Deepwater System Program.

*The Deepwater team visit was organized by Bill Laderach, ILS Domain Surface Architect, Northrop Grumman Ship Systems (NGSS) who is resident at the Deepwater Systems Integration Program Office (SIPO). Mr Laderach provided assistance in coordinating and scheduling the visit through Coast Guard Headquarters, Washington, DC.*



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# Deepwater Accomplishments

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## SURFACE DOMAIN

- The first four 123' patrol boats were delivered (Matagorda, Metompkin, Padre, Attu). 4 more vessels are being upgraded. Cutters 9-12 are under long lead material contract.
- The Maritime Security Cutter, Large (WMSL) (formerly NSC) Production Readiness Review has been completed, and the contract for lead-ship production was awarded on June 22, 2004. The first ship has begun manufacture in Pascagoula, MS.
- Maritime Security Cutter, Medium (WMSM) (formerly OPC) Preliminary and Contract Design was awarded on June 10, 2004.
- The Maritime Patrol Coastal (WPC) (formerly FRC) preliminary design DTO was awarded on July 1, 2004.

## AVIATION DOMAIN

- Bell Helicopter Textron's "Eagle Eye" Vertical Unmanned Aerial Vehicle (VUAV) passed a design review earlier 2004. The next design review is planned for the fall of 2004.
- The HH-65 re-engining effort is underway. The first ICGS re-engined HH-65 helicopter has been delivered and the second will be delivered to the Coast Guard fleet in Jan. 2005.
- A contract was awarded for the Maritime Patrol Aircraft in February 2004 to EADS CASA for the first two aircraft with options for six additional aircraft. The first aircraft is under construction.

## COMMAND, CONTROL, COMMUNICATIONS, COMPUTERS, INTELLIGENCE, SURVEILLANCE, AND RECONNAISSANCE (C4ISR) DOMAIN

- The shore side Atlantic and Pacific area Communications Area Master Stations (CAMSLANT and CAMSPAC) upgrades have been completed.
- Twelve 270-foot cutter legacy upgrades have been completed over the past five months – on schedule. The first phase of the upgrades, access to Secret Internet Protocol Network (SIPRNET) and classified networks, has been completed on many shore and surface assets.
- Nine of the Twelve 378-foot cutter upgrades have been completed. The program to upgrade to the 210-foot cutters is underway, and the first has been delivered to the U.S. Coast Guard.

## LOGISTICS DOMAIN

- Integrated Product Data Environment (IPDE) has been established program-wide for Program performance and metrics.
- ICGS logistics site reps have been named and assigned to ELC (Maryland), MLCA (Virginia), Group Miami (Florida), Group Key West (Florida) and OSC (West Virginia)

# Maritime Patrol Coastal – What's Next?

In July 2004, the Coast Guard awarded a task order contract to begin the preliminary design phase of its new patrol boat, the Maritime Patrol Coastal (WPC), which is a huge step forward in the development of this cutter class.

Concept studies on the new cutter include the use of a composite hull design and/or other use of composites on the ship, which could yield potential benefits such as reduced maintenance costs and reduced total ownership cost.

Under the original Deepwater implementation plan, the WPC was not expected to enter service until 2018, but continued deterioration of the 110-foot Island Class patrol boats led to the advancement of the schedule. The advanced schedule will take advantage of synergies with the Coast Guard's Maritime Security Cutter, Medium (WMSM), which was also recently advanced through a preliminary design contract.

Updated requirements for the cutter, including those for homeland security missions, may impact its size and create other issues that need resolution. These will be studied, as well.

Under the recent contract award, the Deepwater team will be looking at new homeland security requirements and interoperability with U.S. Navy ships. These include increased speed, survivability, more robust chemical, biological and radiological protection, use of electronic countermeasures, possibly improved gun systems, and potential stealth characteristics, all of which are subject to tradeoff studies.

As to speed, the Coast Guard is aiming for a vessel that could go above 30 knots. It is expected that contract design will be complete, leading to detailed design, in mid-2005.



Artist rendering and not final design

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For more information, or to submit articles, photographs, etc., please contact the **Editor: Margaret Mitchell-Jones, [margaret.mitchelljones@dwicgs.com](mailto:margaret.mitchelljones@dwicgs.com)**