



# Delivering the Goods

News from the U.S. Coast Guard Acquisition Directorate

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## As Coast Guard Aviation Celebrates 93rd Birthday, Acquisition and Engineering Communities Reflect on Recent Successes

By Hunter Keeter

WASHINGTON—As the 93rd anniversary of Coast Guard flight approaches on April 1, the service's aviation program office and its partners look back on a successful period of overcoming complex acquisition challenges to help ensure that the aircraft and mission equipment of the front line air stations is "always ready."

During a recent interview, Capt. Douglas R. Menders, manager of the Coast Guard's Acquisition Directorate's (CG-9) aviation program office, noted some of the program's recent successes. Among these is the achievement of 'Authority to Operate' (ATO), which recently was granted for the HC-144A Ocean Sentry medium-range surveillance aircraft and its mission system pallet.

With the ATO, the aircraft and its mission systems are able to connect to the Secure Internet Protocol Router Network, or SIPRNET. SIPRNET is a communication architecture used by the Department of Defense (DoD) and others for sharing classified information. Gaining access to that network allows the HC-144A to contribute and leverage operational data in real time with DoD and other national security agencies.

"This is the first time a Coast Guard aircraft has been able to do that," Menders noted. "The achievement is not just our own. We worked closely with Capt. Joseph M. Vojvodich's staff (in the Command, Control, Communication, Computers, Intelligence, Surveillance and Reconnaissance (C4ISR) program office), also with the Coast Guard's C4ISR Directorate (CG-6), which designed the architecture that would



The Coast Guard is modernizing its fleet of 42 HH-60J aircraft with improved avionics, all-glass cockpit displays, new sensors and other mission capability enhancements. The conversion will boost the HH-60T Jayhawks' abilities to interact with and support other new assets, such as the 45-foot Response Boat-Medium. *U.S. Coast Guard photo by Petty Officer 2nd Class Christopher Evanson*

enable us to connect the aircraft and its mission system to the SIPRNET. It was an entire Coast Guard team that attacked the challenge."

Another success story has been the aviation program's progress coordinating two complex rotary wing aircraft modernization and conversion efforts.

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"Each of our helicopter projects has upwards of four or five different funding streams for a number of different projects that have been set up over the years," Menders said. "Now we have all of those efforts (funding, requirements, oversight) coordinated under overall conversion projects, and we are moving forward to deliver both aircraft (the HH-65C Dolphin and the HH-60T Jayhawk) to the folks in the field who need them."

Meanwhile, the program has built on the successful effort to re-engine 95 of the service's H-65s. The project has now equipped 36 Dolphins for Airborne Use of Force (AUF) missions, including those of the Helicopter Interdiction Tactical Squadron at Jacksonville, Fla. When kitted out for AUF missions, the helicopters are designated MH-65C.

### HH-60J/T Jayhawk Conversion Projects

One of the highlights of the aviation program has been the HH-60 J-to-T conversion. This project takes place in four discrete segments: avionics upgrades, electro-optical sensor system (ESS), radar sensor system (RSS), and C4ISR and Component Recapitalization segment. The avionics upgrade segment is furthest along. The ESS segment, which

also has begun, installs a Forward Looking Infrared (FLIR) sensor that, when combined with a new radar, will dramatically improve the Coast Guard's H-60's abilities to detect and identify targets.

According to Lt. Cmdr. Jared E. King, H-60 deputy project manager, one of the challenges of converting an in-service aircraft is to insert technology upgrades with little or no interruption in normal operations.

The HH-60J/T project accomplishes its tasks during regular maintenance periods, when the aircraft are at the production line at the Aviation Logistics Center (ALC), Elizabeth City, N.C. There, the Jayhawks are torn down to nuts and bolts as the technicians look for corrosion and replace parts that have reached the end of their service lives.

The original HH-60J aircraft is a 30-year-old design, using technology that is at least that old, if not older, King noted. The conversion project now is removing the helicopters' old 'steam gauges' and antiquated avionics equipment, and replacing these with a modern avionics suite.

"The new system, called a Common Avionics Architecture System (CAAS) cockpit, gives aircrews better capabilities," he said. "They have

better situational awareness and improved communication. Also, of the top 20 pieces of equipment on the in-service aircraft that typically would break and cause the mission to be cancelled or readiness to be reduced, we are replacing 12 of them. That will give the aircraft better reliability."

The CAAS cockpit is similar to the design used by the U.S. Army in its Blackhawks, as well as the 'all-glass' cockpits of some other DoD helicopters. Leveraging the development work already accomplished by other H-60-series users gives the Coast Guard economies of scale on its own investment, as well as better supportability because the logistics and supply chains already are well-established.

So far, the Coast Guard has completed two conversions (of a planned 42). The prototype aircraft, tail No.6027, is at the Aviation Training Center, Mobile, Ala., where the Coast Guard is developing a school for pilots of the converted HH-60T. While the upgraded aircraft looks superficially similar to the HH-60J, the Coast Guard estimates that there is an 80 percent pilot-to-machine interface change.

"As far as the pilot is concerned, this

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The prototype HH-60T aircraft, tail No.6027, is at Aviation Training Center Mobile, Ala., where the Coast Guard is developing a comprehensive training program for pilots of the converted helicopters. *U.S. Coast Guard photo*

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is a new aircraft,” King said. “The training program is a three-week course that includes classroom work and simulator flights, to familiarize pilots with the new cockpit and mission systems, as well as training flights in the helicopter itself.”

The Coast Guard will use a second converted aircraft, tail No.6017, for validation and verification testing of upgrades, including the avionics suite and the ESS. The testing process is a team effort, with the U.S. Navy providing valuable support to the Coast Guard. For example, the Naval Air Systems Command, Patuxent River, Md., has helped conduct developmental test and evaluation. Also, the Navy’s Commander, Operational Test and Evaluation Force (COMOPTEVFOR) will help conduct operational test and evaluation, scheduled for the first week in September.

The HH-60J/T conversion project has teamed with other Coast Guard partners as well, including the MH-65C project, (with which the T-model Jayhawk will share important features, including the ESS).

Also, the Coast Guard’s Research & Development (R&D) Center has played a significant role, developing the interface and modes of operation for the ESS. For example, with the aircraft set up in search and rescue mode, performing a standard parallel search, single unit, the R&D Center found that the ESS works best when constantly looking in the direction the aircraft moves across the search area.

The Coast Guard plans to acquire a new radar system for its helicopter fleet, based on an operational requirements document recently updated by the sponsor’s office. The Coast Guard may award a contract for the radar in late 2010, followed by a couple of years of aircraft integration.

Segment four, the HH-60J C4ISR and



An important feature of the HC-130J missionization project is that new equipment (including sensors, communications systems, data processors and operator workstations) is installed on the aircraft’s flight deck; this leaves the cargo bay free for other purposes. At St. Croix, U.S. Virgin Islands, an HC-130J helps transport equipment for a Coast Guard unit during training exercises. *U.S. Coast Guard photo by Cmdr. David Haynes*

Component Recapitalization project, is planned to begin in fiscal year 2013. The segment will enable the helicopters to connect with DoD’s SIPRNET, as well as install other enhancements.

### **HC-130J Hercules Missionization Project**

The Coast Guard also is upgrading some of its fleet of HC-130H Hercules long-range surveillance aircraft, and ‘missionizing’ six newer HC-130Js. In 2008, the aviation program office resumed missionizing the Js, with the fourth aircraft soon to be delivered and the fifth awaiting induction to the conversion facility at Lockheed Martin’s Greenville, S.C., plant.

“The equipment we are adding to the ‘slick’ HC-130J will improve situational awareness and coordination because the flight crew and the mission system operators

are together on the flight deck. And we have improved training, because the operators are training all the time while the aircraft is flying,” said Richard M. Seitz, HC-130J project manager.

The HC-130J’s mission system shares some advanced technologies with the mission system pallet developed for the HC-144A Ocean Sentry. For example, both aircraft will use the same electro-optical infrared (EO/IR) sensor, as well as state-of-the-market radio systems and multi-function displays. The EO/IR sensors, and their installation architectures also are common with those of the U.S. Air Force’s HC-130Js configured for combat search and rescue.

The Coast Guard’s mission system upgrade includes a fuselage-mounted multi-mode radar, capable of scanning an area 360 degrees

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beneath the aircraft.

"Contacts show up very clearly," said Lt. Anthony Ennamorato, HC-130J systems manager on detached duty at Greenville, S.C., for the Coast Guard's Office of Aeronautical Engineering. "We can look at the radar screen and get an idea of which way a contact is moving, its size and velocity. We can tell whether or not the contact is an airplane or a boat. And we can auto-track the contact even as the HC-130J passes by. The radar won't have to re-acquire the target unless it passes close to the aircraft's underside."

Ennamorato's assignment as Contracting Officer's Technical Representative (COTR) to the HC-130J missionization project is an example of the close cooperation that exists between the Acquisition Directorate (CG-9) and the Directorate of Engineering and Logistics (CG-4).

On the Ocean Sentry, the mission equipment is packaged onto a pallet that can be moved on or off the aircraft, depending on its mission configuration. Aboard the missionized HC-130J, the technologies are installed throughout the aircraft, leaving the entire cargo bay open for other mission uses.

On the Hercules, mission equipment is 'federated,' rather than integrated into the aircraft's flight management system. In other words, the Hercules mission system is a distributed suite of electronics comprised of self-contained units linked together through a computer called a Video and Mission Processor.

The federated approach to missionizing the HC-130J is one way the Coast Guard has made conscious business decisions to control cost and deliver sustainable capability in its acquisition programs.

"If we tried to fully integrate the

new mission systems, we would have to go in and change the ... software for the HC-130J's flight management system," Seitz said. "That would have resulted in a unique configuration, [which would be] expensive and difficult to support."

Early discussions with the pilots and mission systems operators selected to fly the HC-130Js reinforced that Coast Guard crews work best as a closely coordinated team, together on the flight deck of the aircraft, rather than separated by a pallet installation in the cargo bay. This way, information from the sensors or communication equipment can quickly be assimilated and acted upon.

### Culture of Accountability

While technology upgrades are designed to give new and in-service aircraft better capabilities, the efforts require close coordination among several communities



The Coast Guard has six HC-130J Hercules long range surveillance aircraft, which are equipped with state-of-the-art glass cockpit displays, pilot and co-pilot head-up displays and other modern avionics. *U.S. Coast Guard photo by Petty Officer 2nd Class Andrew Kendrick*

within the Coast Guard, including operations, requirements, resources, acquisition, and engineering and logistics, among others.

For Capt. Menders and his project managers, success begins with forging close relationships, with pilots and aircrew, with the sponsor's office, and with the technical authorities. These relationships help to ensure that the products the acquisition community delivers meet mission needs and reliability standards to ensure fleet readiness.

The Acquisition Directorate has made key business policy and process improvements, including developing organic workforce competencies in program management, contracting and business and financial management. Also, the Coast Guard is aligning its acquisition policies and processes with those of the Department of Homeland Security, and is working closely with third-party partners in key areas such as engineering design and cost estimation.

In the long run, policy and process improvements alone aren't enough. Other improvement in areas (such as program manager training and certification, contracting and business and financial management) also are ongoing. The Coast Guard is working holistically to develop a business culture that embraces sound, repeatable and transparent best practices, as encouraged by the Congress and oversight agencies.

"It isn't just about buying things," Menders said. "We need good, solid requirements that are locked down. Then we need to be able to justify the funding to keep things moving. And we need to sustain the products and have a good hand-off from acquisition to the field. Also, we have to be held accountable to our policies and processes. As long as that happens and we have repeatable, consistent ways of doing business, things are going to work out." ■

## Coast Guard, New York Harbor Port Partner Agencies Discuss New Concept for Interagency Operations Centers

By Richard V. Kanehl

While the multi-agency response to USAir Flight 1549's crash into the Hudson River showed that various public agencies can work effectively with each other, Coast Guard officials believe that even better coordination and efficient use of limited resources can be achieved by co-locating port partners in shared Interagency Operations Centers (IOC).

Creating better coordination was one of the objectives of a Feb. 26 meeting at Coast Guard Sector New York, where many of the federal, state, local agencies that responded to the ditching of Flight 1549 gathered to discuss how they could make the IOC project a reality. The meeting was significant in that it represented an innovative approach by the Coast Guard to gain multi-agency support and buy-in for a project that has operational benefits for federal, state, local entities.

Coast Guard Sector New York's Commanding Officer, Capt. Robert R. O'Brien Jr., opened the event by asking attendees about their willingness to staff a Coast Guard-built IOC for coordinated responses to security, safety and law enforcement events.

"Your inputs into the IOC requirements are key to maximizing its utility for both users and emergency responders out on the New York Harbor," said O'Brien. Overall, Coast Guard officials believe participants expressed a great deal of interest in the IOC project.

The meeting brought together representatives from 34 agencies, including Customs & Border Protection, Port Authority of N.Y. & N.J., New York City Police Department, Immigration & Customs Enforcement, New Jersey Office of Homeland Security & Preparedness, Federal Emergency



At sector command centers around the nation, the Interagency Operations Center (IOC)/Command 21 project will set up information management tools to help the Coast Guard and a number of partner agencies collect, interpret, organize, share and apply knowledge. IOC-equipped command centers, such as this one at Seattle, Wash., and elsewhere, will help watch standers make informed decisions. *U.S Coast Guard photo*

Management Agency, Transportation Security Administration, New York City Office of Emergency Management, Fire Department of New York, and others.

More recently, the first working group met to formally address operating parameters. Participants discussed details such as command and control concerns, integrated vessel traffic services and information sharing requirements as envisioned by each of the port partners.

To help ports like New York meet their goals for enhanced safety

and security, the Coast Guard has developed an acquisition project called IOC/Command 21, which will transform Sector Command Centers into Interagency Operations Centers by improving facilities, information management, and sensor capabilities in an action oriented, proactive security environment.

At Sector New York and elsewhere, the IOC project will help align various maritime security programs and initiatives. The heart of the IOC system is software, known as "WatchKeeper,"

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which will ensure that crucial data from many sensors and other information sources is collected and readily available to emergency responders. Using WatchKeeper, participants in the IOC will share a common operating picture that will help them better visualize the situation and activity throughout the port environment.

Cmdr. Ken Marien, IOC/Command 21 project manager with the Coast Guard's Acquisition Directorate, explained that his goal is to develop a product that will meet the provisions of the Security and Accountability for Every (SAFE) Port Act of 2006. Marien said the project will provide the facilities and tools necessary to transform existing

Coast Guard Sector Command Centers into IOCs, dedicated to a nationwide effort to improve maritime safety and security planning and operations. ■

For more information, check out: [www.uscg.mil/acquisition/ioc/](http://www.uscg.mil/acquisition/ioc/)

Dear Master Chief Ayer,

I heard the Coast Guard is planning to build two new icebreakers, how long before we see them?

We currently have no plans or funding to build new icebreakers (WAGBs), but that does not mean we will not be building them in the future.

Knowing the importance of our role in the arctic, the Coast Guard worked closely with the Bush administration to develop a revised Arctic Region Policy which the President signed in January of this year. This presidential directive makes it clear that the Coast Guard will continue and possibly expand its role in the region. What we don't know is whether this role will include new icebreakers, and so far, we have not received tasking or funding for new WAGBs.

What the Coast Guard has received is some additional funding (\$30 million) to begin the process of bringing CGC *Polar Star* back into operational condition. Since 2006, *Polar Star* has been tied up in "In Commission Special" status with a reduced crew. While the funds provided will not be enough to complete the process, it's a good start. Total cost to reactivate *Polar Star* could be as much as \$70 million.

There are many possible options for how we will conduct future arctic operations, and new icebreakers are only one. If we started today, it would take up to 10 years and upwards of a billion dollars to put the first one in operation.

If and when the Acquisition Directorate receives tasking for new icebreakers, we will let you know.

*[To submit a question for an upcoming Acquisition Directorate newsletter, please email Master Chief Brett F. Ayer directly at: [Brett.F.Ayer@uscg.mil](mailto:Brett.F.Ayer@uscg.mil) or [acquisitionwebsite@uscg.mil](mailto:acquisitionwebsite@uscg.mil).]*

