U.S. Coast Guard

Engineering, Electronics & Logistics Quarterly

Fall 2007

Security in the Sky

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All issues are available to Coast Guard personnel on *CG Central* under "Magazine and Newsletter"

Fall 2007
Vol. 11, No. 41
ISSN: 1931-4051

U. S. Coast Guard Engineering, Electronics and Logistics Quarterly

COMDTPUB P5700.2

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The *U.S. Coast Guard Engineering, Electronics and Logistics Quarterly* is published quarterly by the Assistant Commandant for Engineering and Logistics. This publication is unofficial and not authority for action. Views and opinions expressed are not necessarily those of the U.S. Department of Homeland Security or the U.S. Coast Guard. We encourage readers to submit articles and letters to the editor. Authors are encouraged to submit articles through the Program Representative. The *U.S. Coast Guard Engineering, Electronics and Logistics Quarterly* Editor and the Engineering and Logistics Directorate Management Board retain final approval authority for the publication or non-publication of all article submissions. We will make every effort to publish all submissions. We also reserve the right to edit submissions for length, accuracy and grammar. All letters to the editor must be signed along with current address and telephone number.

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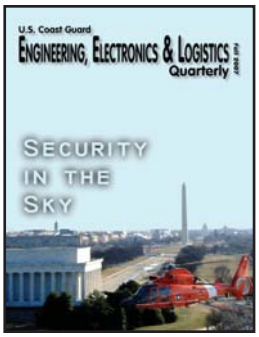
Submission deadlines are as follows:

Winter 2008 - 03 October 2007
Spring 2008 - 03 January 2008
Summer 2008 - 03 April 2008
Fall 2008 - 03 July 2008



***On the Cover*: An HH-65 flies over Washington, D.C., securing D.C. air space from incursions into the prohibited airspace by small, single engine aircraft. Read how the Aircraft Repair and Supply Center upgraded the HH-65 to meet the requirements as an Aviation Use of Force aircraft on page 26. USCG photo by PA1 John Edwards**

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***Backcover*: Coast Guard boat crews from Maritime Safety and Security Team 91106 (l) and Coast Guard Station Washington, DC (r), exchange information while enforcing a security zone near the Washington Monument. USCG photo by Joseph P. Cirone, USCGAUX.**

From the Assistant Commandant

In past editions of *Engineering, Electronics and Logistics Quarterly*, I discussed the primary characteristics of the Logistics Transformation efforts, introduced the idea of a Mission Support organization and outlined the Product Line concept. In adopting the new Coast Guard Logistics Business Model in an organization headed by a Deputy Commandant for Mission Support (DCMS), the Coast Guard is moving ahead at full throttle to develop a focused support system for our mobile, fixed and deployed forces. This support system's sole function will be to provide standardized support for, and anticipate the needs of, air stations, boat stations, cutters, Sectors, DOG units, and any other forces executing Coast Guard missions.

In addition to providing the full spectrum of personnel support needs, the Mission Support organization will deliver world class support to field assets using standardized processes and procedures that are being established by the Logistics Transformation Product Integration Office (LTPIO). A foundational principle of LTPIO processes and procedures is the establishment of single points of contact for asset sustainment. For each asset, these single points of contact manage all necessary resources and will have the primary responsibility for customer support. This will be somewhat analogous to a cutter entering a foreign port and submitting a LOGREQ to a Port Services Officer or agent to arrange for the cutter's logistics requirements. In the same way, operational units need only engage a single point of contact to meet their asset sustainment needs. This system currently exists, in many ways, in aviation engineering, wherein unit Engineering Officers contact full-service Product Lines at ARSC (Aircraft Repair and Supply Center) for logistics and technical support. We are prototyping a variant of this logistics business model for boat forces at Sector Baltimore, where we have begun Logistics Transformation efforts. The Sector Baltimore Engineering Officer has maintenance release authority, has full control over the entire Sector's spare parts inventory, and has full access to an Asset Project Office (APO) for technical and inventory support issues

beyond the Sector's organic capabilities. Once this "Sector Pilot" is fully up and running, Station Engineering Petty Officers will no longer need to call the RB-S PRO, NESU Portsmouth or the local marina for engineering support. They will contact the Sector EO for any problems they may have, and the Sector EO will rely on the technical and support back-stop provided by the APO.

The Coast Guard prides itself on being a highly innovative and adaptive organization, able to accept a wide variety of missions and execute them in the most efficient manner. However, this 'can-do' attitude often leads to practices which result in deviations from standard asset configuration -- deviations which frequently create supportability problems. Maintaining a standard configuration makes it much easier for the Coast Guard's support system to ensure operating units get what they need to execute missions, when they need it. Just as aircraft pilots, boat coxswains, and underway OODs, manage operating parameters to effect safe and successful mission execution, Coast Guard engineers must effectively manage manpower, spare parts and money to accomplish maintenance. Implementing the new CG Logistics Business Model will ensure we are employing these limited resources in the most efficient manner through effective and repeatable business processes driven by data.

I am often asked how much the Logistics Transformation effort will improve support system efficiency and effectiveness. My reply is that if I definitively knew the answer to that question, I probably wouldn't need to transform the logistics system -- answering the question requires a depth of knowledge about logistics system performance that does not exist today. We need to know much more than we do about the cost of our logistics systems and processes, and the benefits we derive from them. Smart decisions flow from data and the knowledge gained from analyzing that data. Logistics Transformation, in addition to providing more disciplined and repeatable processes, will also provide much better data that can be converted to knowledge - knowledge that can be used to make better decisions - decisions that can improve logistics system performance -- performance that will enhance mission execution. And that, after all, is what logistics is all about.

Dale G. Gabel RADM, USCG
Assistant Commandant for
Engineering and Logistics

Yard Delivers First 110' Mission Effectiveness Project (Yard)

The Yard completed the first 110' Mission Effectiveness Project (MEP) on the Coast Guard Cutter TYBEE in April. Work was completed with a three-week extension and within budget.

The Cutter arrived at the Yard in March 2006 from its homeport in Woods Hole, Massachusetts. After 12 months of undergoing a standard 110' MEP package and some additional prototype upgrades, TYBEE departed the Yard in May and returned to New England.

The MEP is designed to replace aging systems on board select ships in order to improve reliability, reduce future maintenance costs, and meet required mission hours. The project is intended to maintain effective missions of the 110' MEP cutters for an additional 15 years until their decommissioning. Replacements for the fleet will be deployed under the Deepwater program.

All the 110' MEP cutters receive hull renewal plus electronics upgrades, renewed electric cabling, and select equipment replacements. Among the 23 successful prototype installations on TYBEE were the ship service diesel generator and switchboard replacement, the FM-200 fire suppression installation, gyrocompass and autopilot installation, and the main diesel engine control replacement. Follow-on 110' MEP cutters at the Yard will receive the TYBEE prototypes.

The Yard is currently working on the 110' MEP Cutters OCRACOKE, CUTTYHUNK, and NANTUCKET, scheduled for delivery in September and October, 2007 and February, 2008, respectively.

USCGC TYBEE

And Works On a Second West Coast 110' MEP Cutter (Yard)

Work is well under way at the Yard on the Coast Guard Cutter NAUSHON, the second cutter from the west coast to receive the 110' Mission Effectiveness Project (MEP) upgrade package. The Cutter traveled 6500 miles from its homeport in Ketchikan, Alaska, through the Panama Canal, and up the east coast to reach the Yard last to

USCGC NAUSHON

begin its MEP. The Yard anticipates completing NAUSHON's MEP in February 2008 as the first cutter with a nine month performance period.

Yard Celebrates "Family Legacy," Daniel Hahn Honored for 50 Years Federal Service (Yard)

Daniel Hahn, Central Tool Room, says he feels like he's been at the Yard his whole life. Well, in fact, he has.

In 1933, Daniel Hahn was born in a brown shingle house just outside the Yard's main entrance. His father Louis Hahn, a 30 year Yard veteran, met his mother through a co-worker at the shipyard. Five uncles in the Hahn family also devoted their federal careers here.

When Hahn was three years old, he and his family attended the Yard's Christmas Party, held in the on-base movie theatre. That memorable afternoon, little Daniel won a handmade wooden rocking horse -- a cherished possession of Hahn's to this day. Not only he, but his three children, 13 grandchildren, and 2 great grandchildren have enjoyed many hours of play on the holiday party prize.

Joining Daniel Hahn, his wife Thelma, and their family (center) for the "Golden" Anniversary celebration are current employees of the Yard who represent generations of families who have worked at the shipyard. This "family legacy" photo honors the families of employees including Ron Schelhouse, Rory Downey, Bruce Youngbar, Shana Hutchinson, Matt Suit, Lavonia Witherspoon, Don Harrison, Charlie Zerbe, Leon Wilson, Keith & Rick Hare, Barry Appolin, Melvin Dash, John Wolfe, and more!

While in high school, Hahn worked the summer of 1951 at the Yard. He graduated the following year and joined the Marines. But, in 1955, he returned to the shipyard, left about eight months later for other employment and came back in 1957. He's been at the Yard ever since.

Most of Daniel Hahn's federal Yard career was as an Electrician in the Electric Shop. Since 1990, he has worked in the Central Tool Room as a Tool Room Mechanic.

The Coast Guard extended honors to Daniel Hahn on April 5, 2007, in recognition of his 50 years of dedicated federal service. Co-workers and family members joined in the celebration. Hahn received greetings from Admiral Thad Allen, Commandant of the Coast Guard; U.S. Congressman Dutch Ruppersberger of the 2nd District of Maryland, and The Honorable George Bush, President of the United States. Daniel Hahn is one of four current Coast Guard-wide civilian employees who have attained their Golden Anniversary with the federal government.

Four months from now, Hahn celebrates another lifetime milestone. He and his wife, Thelma, commemorate their 52nd wedding anniversary on August 30, 2007!

Congratulations, Daniel Hahn!

Nationwide/Maritime Differential Global Positioning System (N/DGPS) (C2CEN)

The Nationwide Differential GPS (NDGPS) expansion project to increase signal coverage throughout the U.S. has slowed while Department of Transportation shifts sponsorship and future budget issues are resolved. Thirty Seven NDGPS sites are now on air supplementing the existing Maritime DGPS sites for a total of 85 transmitting broadcast sites. Eighty seven percent of the country is receiving at least one DGPS signal and fifty five percent of the country is receiving at least two DGPS signals. Fiscal Year 2006 (FY06) expansion included a new construction site in

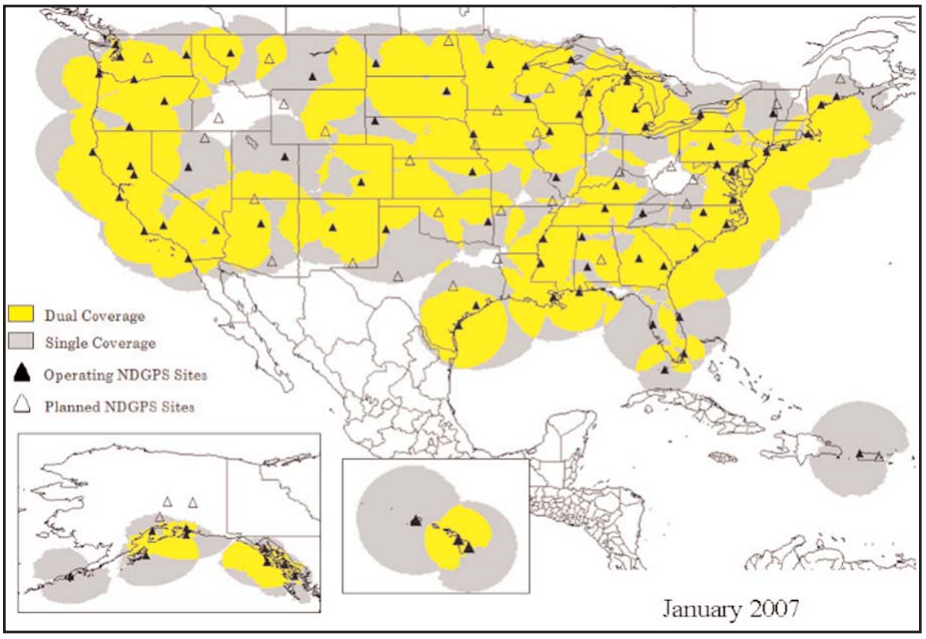


Figure 1- January 2007 predicted NDGPS coverage (Courtesy USCG NAVCEN).

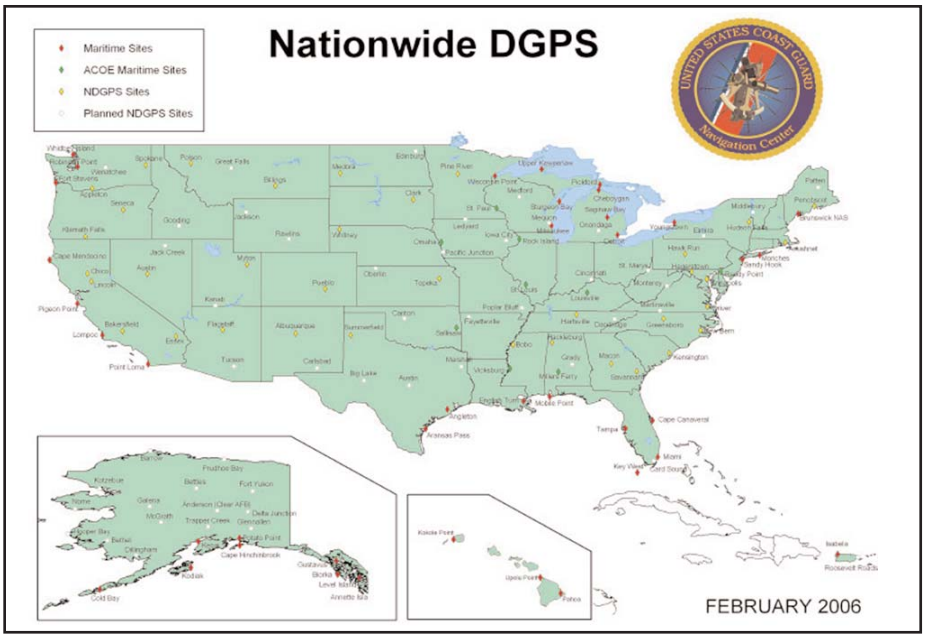


Figure 2- Planned NDGPS sites (Courtesy USCG NAVCEN).

Dandridge, TN as well as GWEN conversions in Essex, CA; and Mequon, WI, which replaced the Milwaukee maritime DGPS site. Plans to build new sites in St. Mary's, WV and Card Sound, FL are planned for FY07. After these efforts are completed, nearly 95% of the continental U.S. will be covered by at least one NDGPS signal. The present NDGPS predicted coverage map is shown in Figure 1 with single coverage areas in gray and double coverage areas in yellow. Figure 2 shows the complete map of proposed NDGPS sites (Figures on next page).

USCG C2CEN (Command and Control Engineering Center) continues to work with equipment manufacturers and field units to implement several recently issued Field/Engineering Changes (F/EC) designed to improve overall availability and reliability of the N/DGPS service. These changes include FC18, which adds a remote reset capability to the Southern Avionics SC-1000 medium frequency (MF) transmitters at all maritime DGPS sites and medium power NDGPS sites; FC20, which replaces all of the GPS receiver antennae at all DGPS sites; and EC04, which add the Remote Transmitter Control Interface (RTCI) to all high power NDGPS sites with

the RCA transmitter. Additionally, recommendations have been forwarded to the Maintenance and Logistic Commands (MLCs) on both coasts to upgrade maritime DGPS MF antennae to enhanced configurations that will improve operability in foul weather.

Several major N/DGPS system engineering/field changes are in final development, including: EC03, which replaces the Z-12 DGPS Reference Stations and 4000IM DGPS Integrity monitors with PC based platforms, installs an Ethernet based LAN and recapitalized the local site UPS; and FC19, which upgrades the Southern Avionics SC-1000 RF Driver PWB. Ongoing efforts include grounding improvements to decrease susceptibility to lighting and icing outages and upgrades to the Nationwide Control Station (NCS).

N/DGPS Point of Contact is Mr. David Wolfe at 757-686-4015.

Search And Rescue Optimal Planning System (C2CEN)

SAROPS (Search And Rescue Optimal Planning System) has been successfully deployed and has replaced C2PC (CG) and CASP as the Coast Guard's primary Search And Rescue (SAR) planning tool. Like C2PC (CG), SAROPS is a Mission Essential Application that operates within the Standard Workstation III (SWIII) environment to provide both SAR planning and maritime domain awareness capabilities using Geographic Information System (GIS) technology. SAROPS deployment is via SWIII Server 2003 Terminal Services, which allows the application to run on multiple CPU servers. Terminal Services deployment decreases bandwidth demands on the Coast Guard Data Network Plus (CGDN+) and SWIII workstation CPU cycles, while increasing the ability to deploy future releases and upgrades in a timely manner.

The SAROPS system incorporates external environmental data via an Environmental Data Server (EDS) located at Operation Systems Center (OSC) Martinsburg, which also houses the CG Enterprise Image server which is used to retrieve enterprise GIS overlay data (e.g., nautical charts). Web services are used to integrate Sensitive But Unclassified (SBU) track data from the C2CEN COP server. SAROPS also has the capability to use web services for weather radar data and satellite imagery as produced by NOAA and other public or private interests.

Point of Contact: LT Frank Lanier, 757-686-4277, Frank.K.Lanier@uscg.mil

Radio Over Internet Protocol (RoIP) VTS VHF Comms System Prototype Effort and VTS VHF Comms System Upgrade Project (C2CEN)

ROIP technology provides the ability for continuity of operation of VHF Comms in the event a Vessel Traffic Center (VTC) or command center would need to relocate to an alternate location.

The C2CEN VTS Integrated Product Team, working with Engineering Support Unit (ESU) Seattle and the VTS Puget Sound staff, recently completed prototype installation and evaluation of the RoIP technology at Sector Seattle Vessel Traffic Center using the WAVE solution provided by Twisted Pair Solutions. Despite the best efforts of all involved, the RoIP prototype failed to perform better than the Zetron system currently in use. WAVE demonstrated itself to be a promising product and solution but its anomalies reveal the current immaturity of the products within the RoIP market.

Figure 1. Integrator RD Operator Console.

Figure 2. Common Control Unit.

In the interim, C2CEN is planning to upgrade the existing Zetron Series 4000 Communications Control Systems installed at VTS Houston/Galveston, VTS New York, and VTS San Francisco. The newest version of the Zetron Series 4000 Communications Control System will be installed at the new Vessel Traffic Center at VTS Puget Sound located in the new Shore Operations at Sector Seattle. The newest version of the Series 4000 Communications Control System upgrades the CPU from Windows NT to Windows XP Operating System. The CPU interfaces the Integrator RD operator console with the Common Control Unit which essentially acts as a switchboard between the radio transceivers at the remote sites and the operator consoles in the Vessel Traffic Center. The existing Zetron Series 4000 Communications Control System at VTS Puget Sound will then be removed, upgraded, and installed at VTS Lower Mississippi River.

In future years, C2CEN will revisit the use of RoIP technology as the market evolves. Also to better position the Coast Guard VTS for possible integration of this technology, C2CEN will incorporate the use of VOIP capable routers in future VTS network recapitalization efforts.

Point of Contact: LCDR Paul Lamczyk, 757-686-4196.

Common Operational Picture (COP) Program Current Operations Update (C2CEN)

The Coast Guard has a vision to build a single integrated COP. The current COP draws data and information from many sources within the Coast Guard and applies intelligence and other agency source information to improve operational awareness. The Sensitive but Unclassified common operational picture (UCOP) is designed to support all Coast Guard missions, and is available in both the classified and unclassified versions.

The C2 Systems Vision presents an engineering concept for the UCOP. The Command and Control Engineering Center (C2CEN) engineering staff frequently reviews it for improved cost effective methods to provide to the operational forces the services and products they need. The UCOP is vital for multiple applications where a diverse group of personnel need access, but not all of whom are cleared for classified material. Although the classified COP has been the focus of effort for many years, both the unclassified and classified COPs must be improved simultaneously to ensure that Global Command and Control System (GCCS) capabilities closely resemble each other. Engineers add new and exciting features every month to the UCOP, and provide them to operational forces as soon as testing and evaluation completes.

Future Operations Update (C2CEN)

CG WebCOP is an Internet browser-based viewer of the UCOP which will soon be available to all Coast Guard users, other government agencies, DoD (Department of Defense) partners, and selected port and civil authorities. CG WebCOP capabilities will include unique features such as: vessel profiling, access to unclassified databases including Maritime Information Safety and Law Enforcement database (MISLE) and the Ships Arrival Notification Centers database (SANS). It also includes access to real-time video feeds, voice communications, and collaborative tools (chat). In the future, users familiar with typical Internet browser will require minimal training on the CG WebCOP to access legacy command and control systems. Operational communities of interest linked together by chat rooms will replace legacy training requirements and provide an environment for operators and users to share best practices.

Automatic Identification System/Blue Force Tracking (AIS/BFT) (C2CEN)

The Command and Control Engineering Center (C2CEN) has made tremendous strides in developing, improving, and fielding the overall Automatic Identification System/Blue Force Tracking (AIS/BFT) capabilities of the Coast Guard. The L3 AIS/BFT Protec transponder provides the ability to covertly transmit and receive Sensitive but Unclassified (SBU) data via an encrypted VHF Data Link (VDL). When married to the CG Electronic Charting System, version 2 (ECS v2), currently in development by C2CEN, CG ECS v2 will offer the capability of graphically display AIS contacts, BFT contacts, and Targets of Interest. Spiral developments of the CG

ECS v2 (also known as Vega) will also include the ability to covertly transmit and receive text messages.

In 2007, the L3 Protec AIS/BFT transponder were installed on all non-Deepwater cutters. With the recent approval of AIS/BFT engineering changes for 47' MLB and 25' Defender Class standard small boats, C2CEN has begun aggressively fielding the AIS/BFT transponder to the small boat community. C2CEN will coordinate the AIS/BFT transponder installations on over 700 standard boats Coast Guard wide.

C2CEN is also in the prototype phase for a new BFT capability. Iridium based BFT phones are being designed to bridge the gap for cutters that do not have underway connectivity. While the AIS VHF Data Link (VDL) transmission has line of sight limitations, and therefore is only effective over certain distances, Iridium satellite phones provide global coverage. Iridium-based BFT offers many operational advantages such as 24/7 coverage and two-way voice and data communications. Iridium phones will have the ability to provide BFT messages to the Common Operational Picture (COP) allowing Command Centers to have precise locations of all their Coast Guard assets anywhere on the globe.

SENSORS Point of Contact is LCDR Durbin (757) 686-4287.

Facilities Management Division Selected Coast Guard "Outstanding Facilities Engineering Organization" (Yard)

The Yard's Facilities Management Division recently received the Cowart Plaque as the U.S. Coast Guard's "Outstanding Facilities Engineering Organization" for 2006. The annual award is bestowed by the Society of American Military Engineers and is named in honor of the late Vice Admiral Kenneth Cowart, Chief Engineer of the Coast Guard from 1950 to 1958.

In the photo, Admiral Dale Gabel, Assistant Commandant for Engineering and Logistics (left), presents the Cowart Plaque to Commander John Slaughter, Chief, Facilities Engineering Division (right), Yard.

Throughout 2006, the Facilities Management Division showed exemplary execution of the Coast Guard's civil engineering program goals while supporting one of the most diverse portfolios as the third largest shore facility in the U.S. Coast Guard. The main area of emphasis was increased awareness of energy utilization and taking substantial efforts as a federal agency to become less dependent on foreign, non-renewable sources of energy.

Among several facilities engineering achievements that earned the Cowart Award recognition for the Yard, the Facilities Management Division established a Memorandum of Understanding with the City of Baltimore that will result in the recovery of landfill methane gas for future use as Yard electricity and steam energy. The Yard received re-certification of its ISO 14000 Certification for the sixth year in a row, and the Yard was honored with the 2006 Department of Homeland Security Environmental Achievement Award and the 2006 Coast Guard Environmental Award.

NSC 1 Fuel: BERTHOLF receives her first 25,000 gallons of fuel on the dock in Pascagoula.

Pascagoula, Miss., – The first National Security Cutter (NSC), BERTHOLF (WMSL 750), has received her first 25,000 gallons of fuel by barge.

"It was an extremely successful first fueling," said Kevin Amis, NSC program manager. "We tested all three fueling stations, proving their operability."

Essential shipboard systems including the machinery control system, fire-fighting systems, and fuel oil fill and transfer systems had to be up and running in order for the first fueling to be completed.

DEEPWATER news

SECOND DEEPWATER MPA ARRIVES IN U.S. FOR SYSTEM INTEGRATION

ELIZABETH CITY, N.C., – The second Deepwater medium-range surveillance maritime patrol aircraft, the HC-144A, arrived at Coast Guard Air Station Elizabeth City late Monday night. The team will now begin integrating the aircraft's palletized C4ISR mission system.

The first HC-144A arrived in Elizabeth City in December and is currently in the middle of its C4ISR mission system pallet integration. The third aircraft is scheduled was transferred to the Coast Guard in March.

Once completed, the fully missionized aircraft will be flown to Coast Guard Air Station Mobile, Ala., for operational test and evaluation.

The crew began its four-day transit from Spain and followed a southern flight path via the Cape Verde Islands, Port Aleza and Belem, Brazil, and St. Thomas.

ICGS in January, 2007, signed a contract with the Coast Guard to begin production of the fourth and fifth aircraft.

HH-65C 6576 is delivered.

DEEPWATER HH-65C UPGRADE PROGRAM NEARS COMPLETION

77 upgraded helicopters have been delivered.

Columbus, Miss. – The tenth Deepwater-upgraded HH-65C helicopter completed at the American Eurocopter (AEC) facility in Columbus, Miss. departed for Coast Guard Air Station Elizabeth City, NC, last spring. Tail number 6576 is the 77th helicopter to receive an upgraded engine and avionics equipment under the Deepwater program.

The second HH-65C production line was opened last year to expedite the re-engining effort of 95 alpha- and bravo-model HH-65 helicopters.

As previously announced, the U.S. Coast Guard is fully operational with HH-65 “Charlie” model helicopters in use nationwide. HH-65C helicopters support search and rescue flights, fisheries patrols, and maritime security missions. The upgrade program was completed during the summer.

NSC ELO: (left to right) Brian Frasco, Lockheed Martin NSC C4ISR program manager; LT Scott Buettner, PRMO test officer; Kevin Amis, NSC program manager; Royce Winbush, BERTHOLF general ship superintendent; and Brian Hillers, Lockheed Martin NSC C4ISR lead systems engineer (Coast Guard member leaning over keyboard not named) light off the electronics on board BERTHOLF.

FIRST DEEPWATER C4ISR EQUIPMENT POWERED UP ON BOARD NSC BERTHOLF

PASCAGOULA, Miss., -- the Deepwater C4ISR team successfully powered up the first set of cabinets and consoles on board BERTHOLF signifying Electronics Light-Off (ELO) of the first National Security Cutter.

Six operation center consoles, the large screen display and the local area network (LAN) electronics cabinets were powered up marking the beginning of the NSC test program. The full NSC C4ISR system includes 26 electronics cabinets.

"The light-off is a keystone event for the Coast Guard, Northrop Grumman and Lockheed Martin," said LT Scott Buettner, program management test officer. "Today we begin the final stretch to delivery."

WAESCHE grand block 3210 is sent to paint prior to its landing on the hull.

Unit 1310 was one of three units landed on the hull of WAESCHE in December 2006.

NATIONAL SECURITY CUTTER PRODUCTION MAKING HEADWAY

BERTHOLF and WAESCHE side by side at the shipyard.

PASCAGOULA, Miss., – The first new grand block of the second National Security Cutter, WAESCHE (WMSL 751), was sent to paint prior to its landing on the hull. This grand block production unit is a combination of units 3110 and 3210, which were constructed and erected as single units on the first NSC, BERTHOLF (WMSL 750). Incorporating process improvements from construction of BERTHOLF determined that combining these units into one grand block and installing stern tubes prior to its assembly would increase production efficiency, saving time and reducing costs. This is part of an ongoing program to identify and incorporate production improvements at the shipyard. The grand block, which was estimated to weigh 160 tons, is the first of three new grand blocks planned for WAESCHE.

In December, 2006, three units were landed on WAESCHE in two weeks, a significant milestone which brought the total units erected to eight. These three units were the first of 12 units to be landed following material impacts from hurricane Katrina.

Major Equipment Load-out is scheduled to begin later this month, during which engines, generators, switchboards, and reduction gear will be installed. Currently, WAESCHE is 20% complete, with eight of 45 units erected.

EVENT CELEBRATES DELIVERIES OF HH-65C ENGINES

AMT3 Jason Taylor, Coast Guard Air Station Houston; AET1 Tom Agness, Coast Guard Air Station Humbolt Bay; LTJG Kevin Winters, Coast Guard Air Station Humboldt Bay; and AET3 Matt Russel, Coast Guard Air Station Houston, display the event's cake in front of the HH-65C at the event in Grand Prairie, Texas.

Contractor hosts employee event celebrating conversion milestone.

Grand Prairie, Texas – An event this spring was held at the Turbomeca USA plant in Grand Prairie, Texas last Wednesday celebrating the delivery of the final Arriel 2C2 CG engine. The final engine, which was delivered in late March 2007, marks the completion of Turbomeca's contract with ICGS for the HH-65 upgrade.

During the festivities, Lockheed Martin presented their Star Supplier Award to Turbomeca in recognition of all deliveries being on-time over their three-year contract.

Team Deepwater has delivered 80 of 95 upgraded HH-65C. The last HH-65B model to be upgraded stopped at the event on the way to the Coast Guard's Aircraft Repair and Supply Center in Elizabeth City, N.C. and was displayed with its HH-65C counterpart out of Air Station Houston.

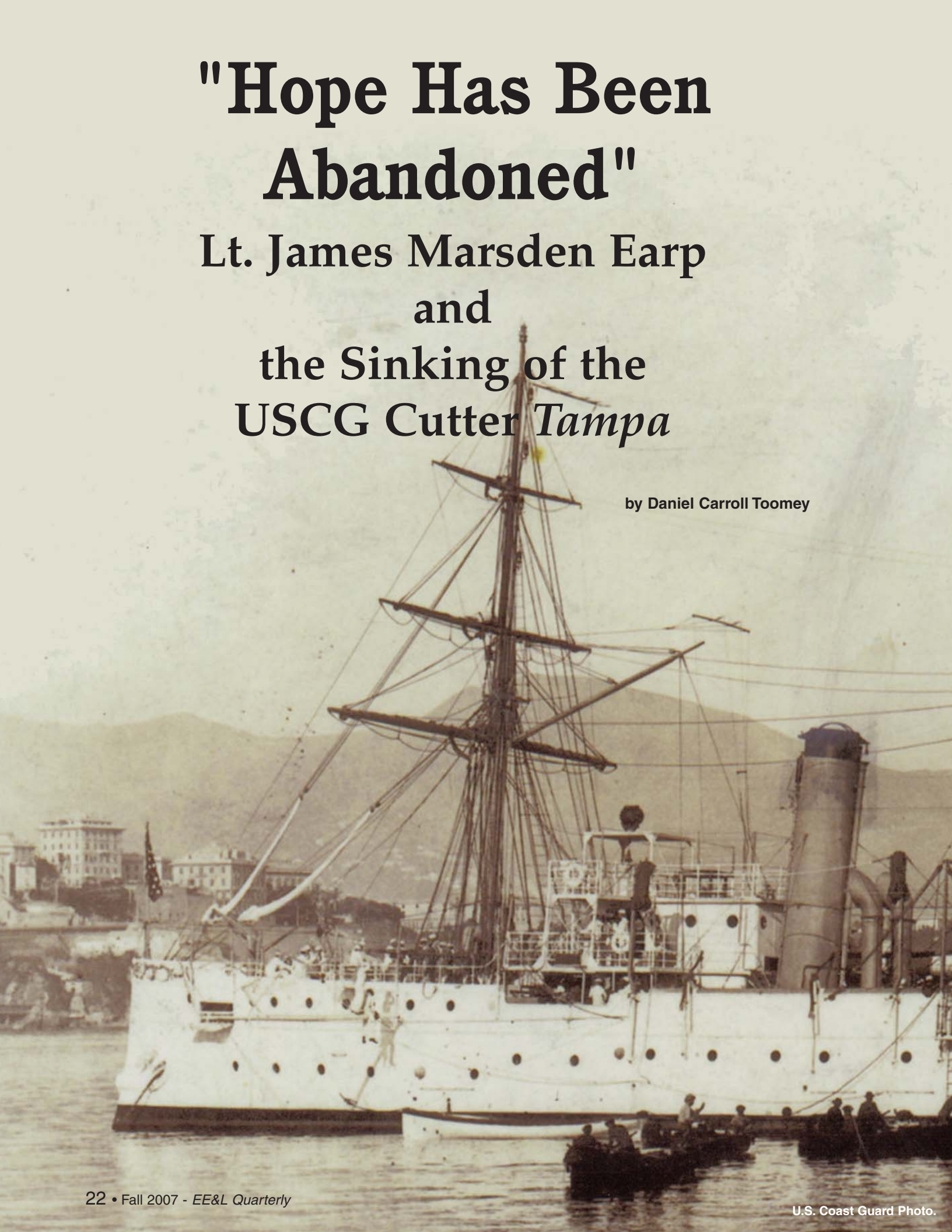
The engine upgrade has given the HH-65 greater power, better maneuverability, and higher safety standards. These upgrades have made a positive difference to the Coast Guard, allowing rescue missions to be successfully completed that would have been impossible for the aircraft that they replaced.

HH-65C helicopters support search and rescue flights, fisheries patrols, and maritime security missions, and are now operational in every U.S. Coast Guard air station nationwide. The upgrade program was completed ahead of schedule during the summer.

"Hope Has Been Abandoned"

Lt. James Marsden Earp and the Sinking of the USCG Cutter *Tampa*

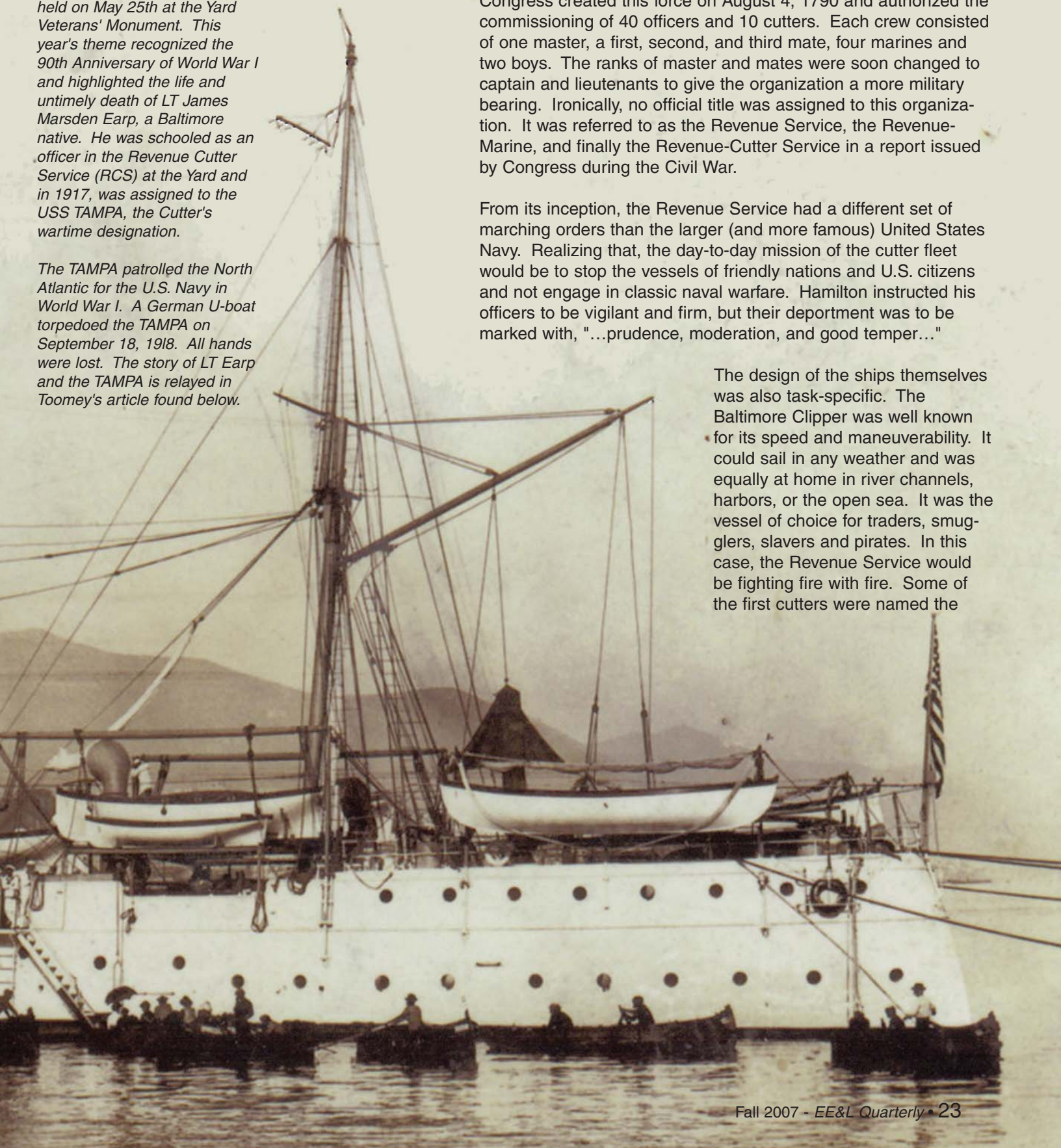
by Daniel Carroll Toomey



U.S. Coast Guard Photo.

The Baltimore Area Coast Guard Commands hosted local historian, author and publisher David Carroll Toomey at the 2007 Memorial Day Service held on May 25th at the Yard Veterans' Monument. This year's theme recognized the 90th Anniversary of World War I and highlighted the life and untimely death of LT James Marsden Earp, a Baltimore native. He was schooled as an officer in the Revenue Cutter Service (RCS) at the Yard and in 1917, was assigned to the USS TAMPA, the Cutter's wartime designation.

The TAMPA patrolled the North Atlantic for the U.S. Navy in World War I. A German U-boat torpedoed the TAMPA on September 18, 19l8. All hands were lost. The story of LT Earp and the TAMPA is relayed in Toomey's article found below.



The father of the United States Coast Guard was our first Secretary of the Treasury, Alexander Hamilton. In order to provide the Treasury Department with a means to enforce the tariff, he pushed for the creation of a special naval force. An Act of Congress created this force on August 4, 1790 and authorized the commissioning of 40 officers and 10 cutters. Each crew consisted of one master, a first, second, and third mate, four marines and two boys. The ranks of master and mates were soon changed to captain and lieutenants to give the organization a more military bearing. Ironically, no official title was assigned to this organization. It was referred to as the Revenue Service, the Revenue-Marine, and finally the Revenue-Cutter Service in a report issued by Congress during the Civil War.

From its inception, the Revenue Service had a different set of marching orders than the larger (and more famous) United States Navy. Realizing that, the day-to-day mission of the cutter fleet would be to stop the vessels of friendly nations and U.S. citizens and not engage in classic naval warfare. Hamilton instructed his officers to be vigilant and firm, but their deportment was to be marked with, "…prudence, moderation, and good temper…"

The design of the ships themselves was also task-specific. The Baltimore Clipper was well known for its speed and maneuverability. It could sail in any weather and was equally at home in river channels, harbors, or the open sea. It was the vessel of choice for traders, smugglers, slavers and pirates. In this case, the Revenue Service would be fighting fire with fire. Some of the first cutters were named the

Active, *Massachusetts*, *Scammel*, *Vigilant*, *General Green*, *South Carolina*, *Diligence*, *Pickering*, and *Argus*; all built along the lines of the Baltimore Clippers. Until the end of the age of sail, the revenue cutters would reflect this original design.

The School of Instruction at the Yard in 1908 -- the ITASCA in background; the CHASE in foreground; and the ORIOLE in-between.

During the undeclared war with France (1799-1800), the ships and men of the Revenue Service were put under the direct control of the United States Navy. When peace was restored, the cuttermen emerged as a force to be reckoned with in both times of peace and war. Their primary task as a marine police force would be interrupted five more times during the nineteenth century, beginning with the War of 1812 and ending with the Spanish-American War in 1898.

The post-Civil War years saw vast changes in the Revenue-Cutter Service. Iron ships, steam propulsion, and eventually electronic communications required a new breed of officers. Operational requirements were expanded as well as the size of the Service. By the end of the nineteenth century, it was responsible for enforcing navigation and immigration laws, quarantines, patrolling regattas, and providing medical attention for fishermen as well as cooperating with the Life-Saving Service in response to ship wrecks and other maritime disasters.

The quest for trained and competent officers was as old as the Service itself. No formal program existed until 1877 when the topsail schooner *Dobbin* was taken off active duty and officially designated the Revenue Cutter School of Instruction. It was replaced the following year by a ship specifically designed to accommodate a dozen students. The *Salmon P. Chase* was 125 feet long and 25 feet in the beam. It carried four guns in broadside. Below deck were six staterooms furnished with berths, lockers, and washstands for the students. Based at New Bedford, Massachusetts, the *Chase* was an active duty vessel with education as a secondary function.

In 1895, the *Chase* was sent to a shipyard in Baltimore where it was cut in two and lengthened by adding forty feet amidships. This allowed the class size to increase from twelve to twenty-five cadets. Oscar C. Hamlet was its new captain. The new ship and captain had no designated homeport. Hamlet preferred to move her about the southern coast. The class of 1896 boarded the *Salmon P. Chase* in Baltimore. Some of the cadets had their uniforms made at Oehm and Company in Baltimore City. This would not be the last connection between the city and the cadets.

At the turn of the twentieth century, the Revenue-Cutter Service took two decisive steps that would be paramount in its success then and in today's United States Coast Guard. These were the establishment of a shipyard specifically dedicated to the construction and repairs of its fleet, and a permanent school of instruction for its officers. The visionary in this case was an engineering officer and native Marylander named Lieutenant John C. Moore. Realizing that Congress might be cool to the idea of a separate shipyard, he convinced his commandant, Captain Charles F. Shoemaker, that the best chance would be to place both activities in the same location. Shoemaker agreed and immediately authorized an expenditure of $500 for the lease of a track of land known as Arundel Cove in Curtis Bay, just south of Baltimore City. By the end of the year, Congress fell into step by authorizing $30,000 for the purchase of land in the Curtis Bay area in 1899.

The *Colfax* was the first ship to arrive and her crew became the Yard's first work force. With Lieutenant Moore in charge, maintenance shops and a pier were constructed. The cost-saving measures Moore predicted came true and Congress appropriated more and more money for expansion. Perhaps beyond Moore's wildest dream, the work force grew from his meager crew of 20 men in the year 1900 to over 3,000 during World War II. Today, the Coast Guard Yard covers 112 acres and provides design, construction, and repairs to its ships, navigation aids, and weapons systems.

The COLFAX.

At the end of its summer cruise of 1900, the training ship *Chase* was ordered to its new homeport at Arundel Cove. Three years later, their course of instruction was expanded from two years to three. The cadets both lived and trained aboard the *Chase* until 1906 when a three-story building was constructed for their education. The Revenue Cutter School of Instruction was a reality.

Cadets marching to class in 1910.

Life for the cadets was demanding, but it had its rewards. A streetcar ride over the old Light Street Bridge took them to the many attractions in Baltimore City. The school also had a baseball team that played against a number of nearby institutions -- St John's, Maryland Agriculture School (the future University of Maryland), Gettysburg, and City College. There were also dances and social gatherings where many a cadet met his bride to be.

The continuous expansion of the shipyard and the ever-increasing size of the student body, along with the general industrialization of the area, made the Curtis Bay site less and less desirable as a center of learning. In 1910, the school was transferred to New London, Connecticut, where it would evolve into the present day United States Coast Guard Academy.

One of the 50 cadets who made the transfer from Curtis Bay to New London was James Marsden Earp. Called by his middle name, Marsden was the eldest son of Martha Marsden and Charles Cassell Earp. He was born in Baltimore on August 12, 1888 and became a cadet on May 23, 1909. Graduating in the class of 1912, he was commissioned a Third Lieutenant in the Revenue-Cutter Service on June 7, 1912 and assigned to the *Woodbury*.

In 1911, President Taft formed a commission under F.A. Cleveland to look for ways to save money. Cleveland submitted a report to Congress stating that after 120 years of outstanding service, the Revenue-Cutter Service should be absorbed by the United States Navy. Secretary of the Treasury Franklin MacVeagh counterat-

tacked by drafting a bill to combine the Revenue-Cutter Service and the U.S. Life-Saving Service into a single agency under the Treasury Department. Taft was defeated for reelection by Woodrow Wilson and Congress passed MacVeagh's bill on January 20, 1915.

James Marsden Earp.

Lieutenant Earp was now in the United States Coast Guard. During the summer of 1916, he cruised the Alaskan waters aboard the U.S.C.G. *McCulloch*. In a letter to his mother written on U.S. Revenue-Cutter stationary, he noted that the war in Europe had diverted most of the shipping from the area causing a shortage of fresh food and supplies, and above all, disrupting the mail service which he felt very keenly. Little did he know the ultimate effect the war would have on his own future. On August 21, 1917, he was reported for duty on board the USCG Cutter *Tampa*.

The *Tampa* was built at the Newport News Shipbuilding and Dry Dock Company at the cost of $250,000. When originally launched in 1912, it was christened the *Miami*. The ship was 190 feet long, 32.5 feet at the beam, and displaced 1,181 tons. It was commissioned by the Revenue-Cutter Service at Arundel Cove, Maryland, on August 19, 1912. Its first duty station was Key West, Florida. Cruising between Fernandian and Tampa, the *Miami's* crew had the choice duty of taking part in the Mardi Gras celebration at Tampa on February 4, 1913.

Following the sinking of the RMS *Titanic* in 1912, the U.S. Navy began patrolling the North Atlantic in order to warn commercial vessels of hazards during the iceberg season. This duty was assigned to the Revenue-Cutter Service the following year. The Cutters *Seneca* and *Miami* were ordered to Halifax in May of 1913. From there, they sailed through the ice fields until the end of July when the *Miami* returned to Florida in time for Mardi Gras duty at Tampa. Thus began a series of hot and cold cruises that lasted for three years.

The special attachment the city of Tampa had with the *Miami* and its crew was recognized by the newly formed Coast Guard on February 1, 1916 when it renamed the ship the USCG Cutter *Tampa*. In 1917, the Cutter *Tampa* would leave its namesake city forever. On April 6, the United States declared war with Germany. Immediately, a three-word message was transmitted to all ships and stations, "Plan 1 Acknowledge." Its meaning was momentous. As the Revenue-Cutter Service had done so many times in the previous century, the ships and men of the newly formed Coast Guard were transferred to the U.S. Navy for the duration of the war. The *Tampa* was ordered to the Boston Naval Yard where its old six-pounders were exchanged for four 3-inch guns and two machine guns. A Y-gun was also installed for launching depth charges. Now a second Lieutenant, Marsden Earp was transferred to the *Tampa* just before it was ordered overseas. It sailed out of New York as part of a small convoy, each ship with a French-manned submarine chaser in tow. Their destination was Gibraltar. All arrived safely on October 27, 1917.

The *Tampa* was based in Gibraltar as one of six ships assigned to Squadron 2 of Division Six of the Atlantic Fleet Patrol Forces. Their mission was to escort convoys between Gibraltar and Great Britain. Convoys usually ranged in size from 16 to 26 ships. The smaller convoys had six escort ships and the large ones eight. Veterans of the old Cutter Service were confronted by a danger not thought of during the previous century -- German U-boats. During the year the *Tampa* remained on duty, ship and crew compiled an outstanding record of service and

efficiency. This was in no small way attributed to its commanding officer, Captain Charles Satterlee. *Tampa* escorted 18 convoys totaling 350 vessels with the loss of only two ships. The *Tampa* was never disabled due to maintenance issues despite being at sea more than 50% of the time.

In what was possibly his last letter home, Marsden wrote to his brother Arthur on September 9, "…received another half stripe - 1st Lieut. in our service or rank of Captain in the Army." The good news had come in a cablegram. He further stated that he could not receive the additional pay until he had a chance to formally accept the promotion. He never would.

A cover from the U.S. Revenue-Cutter Service containing a letter written by LT Earp to his mother in Baltimore in 1916. He was stationed aboard the USS MCCULLOCH in Sausalito, California, and later reassigned to the ill-fated TAMPA in 1917.

On September 26, 1918, the *Tampa* entered the Irish Sea after successfully escorting convoy HG-107 from Gibraltar bound for Milford Haven, Wales. Whether ordered to Milford Haven or at the discretion of its captain, *Tampa* steamed ahead of its charges and disappeared over the horizon. At 2045 hours, the radio operator of the convoy's flagship reported the shock of an underwater explosion.

Lurking in the evening twilight was UB-91. The U-boat's commander, Kapitanleutnant Wolf-Hans Hertwig, reported firing a single torpedo from his stern tube at a "…large patrol craft of about 800 tons; 1 stack, 2 very high masts, on each side a life boat swung out." This was a fairly accurate description of the *Tampa* considering he was peering through a periscope at a moving target that was over 500 yards away and in failing daylight.

It is doubtful that the *Tampa* took any defensive action or even knew it was under attack. Wherever the torpedo struck, its effect was to completely and immediately destroy the ship. No distress signal was heard by any of the nearby ships or shore installations. The Coast Guard crew included 111 officers and men. Also on board were ten seamen from the Royal Navy, a British Army officer, four members of the U.S. Navy and five civilian dockworkers. A total of 131 lives were lost to an invisible enemy.

Search and rescue operations were carried out over the next three days. The fact that only two bodies and some minor wreckage, identified as being from the *Tampa*, were recovered indicates that the ship was lost to a single devastating explosion. The two bodies recovered were in U.S. Navy uniforms. One was identified by a new technology known then as the Finger-Print System. He was Acting Quartermaster Alexander Louis Saldarini, USCG. Both bodies were buried at sea. News of the tragedy did not reach the city of Tampa until a week later.

The sinking of the *Tampa* carried many sad distinctions. It was the largest naval loss for the Americans during World War I. Six of the eleven Coast Guard Officers, including Lieutenant Earp, were graduates of the Revenue-Cutter Service Academy, making it the largest single loss for that institution as well. Among the crew were three pairs of brothers who also perished.

In Baltimore, an official letter from the Navy Department arrived dated October 8, 1918. It read in part,

Mrs. Bertha L. Earp,
2422 Druid Hill Avenue,
Baltimore, Md.

Dear Madam:

This office is deeply grieved to announce the loss of the Coast Guard Cutter TAMPA with all hands in Bristol Channel, England, at 8:45 p.m., September 26, 1918. The dispatches show that your husband, First Lieutenant J.M. Earp, was on board the TAMPA at the time and that hope has been abandoned of finding any survivors of the catastrophe.

The letter was signed by Captain E.P. Bertholf, Captain Commandant, United States Coast Guard. Two other Marylanders went down with the *Tampa*. They were Machinist Benjamin Nash Daniels of Calvert County and Seaman John C. Kosinski of Baltimore City.

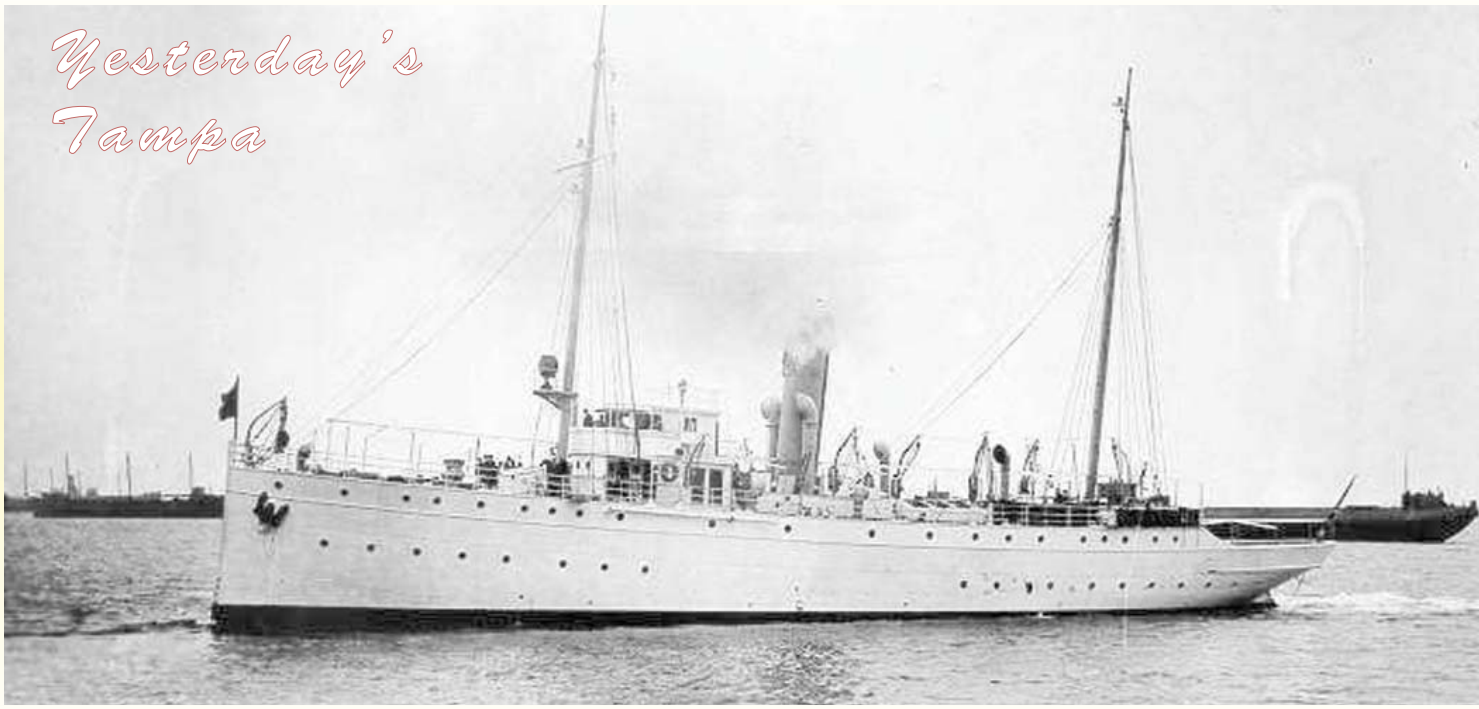
The loss of the *Tampa* had a significant effect on the history and tradition of the United States Coast Guard. Events related to the ship and crew continued to evolve until the very end of the twentieth century.

In November, two more bodies washed ashore at the town of Fresh Water End on the coast of Wales. One was identified from his liberty card as Seaman James Marconnier Fleury, USCG. Both bodies were buried at Lamphey Churchyard with full military honors. Through an extraordinary series of events, Seaman Fleury would be the only member of the *Tampa's* crew to return home.

Hamilton Cochran served on the *Algonquin*, a sister ship to the *Tampa* in Squadron 2, and was well aware of its tragic loss. During the war, he met and married a Welsh girl. Thirty years after the war, they returned to Wales on vacation and heard the story of the two bodies washing ashore, but could not find the correct churchyard before it was time to leave. After returning home, they were contacted by an American woman then living in Wales who gave them the name of the cemetery where Fleury was buried. She may also have notified the Coast Guard because Fleury's body was returned to the United States and reentered at Grace Episcopal Church in Jamaica, Long Island, New York. On May 24, 1952, nearly 34 years after the *Tampa* was sunk, a contingent from the Tampa Post of the American Legion, including Hamilton Cochran, traveled from Florida to New York to hold a memorial service over the grave of Seaman Fleury, USCG.

During the First World War, it was a cold administrative fact that when an officer was killed, his accrued pay and allowances reverted to the government rather than being paid to the next of kin. So profound was the loss of the *Tampa*, that a Joint Resolution (H.J. RES. 215) was introduced in Congress on September 24, 1919 that called for the payments of these monies up to and including September 26, 1918 -- the date of the sinking. The Resolution further addressed the fact that several officers on the *Tampa* had been offered promotions that they did not live to accept. These were conferred posthumously. Lieutenant Earp was advanced two grades -- temporary first Lieutenant from July 1, 1918 and temporary captain from September 21, 1918. Temporary denoted a wartime rank that would expire at the end of hostilities. In December of the same year, the Eagle class #22 was renamed the USCG *Earp*.

In 1924, a resident of Portheall on the coast of Wales found a brass plate bearing the inscription "U.S. Coast Guard" and "C.G. 718." The nautical relic was given to the American Vice-Consul who passed it along to the Coast Guard headquarters for possible identification. It turned out to be from one of the *Tampa's* lifeboats. At the same time it arrived, the current *Tampa* was breaking ice in the North Atlantic. Memorial cards were printed on the eighth anniversary of the ship's loss. They contained a reproduction of the lifeboat plate and the words:



"The supreme sacrifice of her crew for their country and Flag leaves a golden heritage to their families and posterity, and an added luster on the pages of history. May they never be forgotten."

Congress established the American Battle Monuments Commission in 1923. Its purpose was to erect memorial chapels in each of the American cemeteries in Europe and dedicate them to all of those who gave their lives during World War I. In these chapels, the names of each soldier, sailor, marine, and Coast Guardsman whose final resting place was unknown would be inscribed in stone and "…will stand as enduring and individual tributes of a grateful nation to its sons who still sleep in graves unmarked by name."

The Wall of World War I Missing at the American Cemetery in Brookwood, Surrey, England, contains the names of the seamen from the *Tampa* and the *Seneca*. The *Seneca* had lost 11 men in a valiant attempt to keep a British ship a float after it had been torpedoed. Ironically, *Seneca* was the sister ship to the then *Miami* when first sent out on iceberg patrols in 1913.

On May 23, 1928, the Coast Guard World War I Memorial was dedicated at Arlington National Cemetery. Known as the *Tampa* Monument, it is a 12-foot high marble pyramid and contains a list of all the men lost on the *Tampa* and the *Seneca*. Thus the two ships are linked together for eternity. The high ground upon which it sits has been unofficially named "Coast Guard Hill". Every year on Veteran's Day, a wreath is laid at the monument.

The latest, if not final chapter in the history of the USCG Cutter *Tampa*, occurred on April 22, 1999, when now retired Admiral James M. Loy, acting on the suggestion of Master Chief James C. Brunch of Floral City, Florida, authorized the posthumous award of the Purple Heart Medal to those who were lost in the sinking of the *Tampa*. That same year, a special presentation of the medals by the Commandant of the Coast Guard to three of the relatives of the crew was incorporated into the Veterans Day ceremony at the *Tampa* Monument. A framed Purple Heart Medal was also presented to Commander James Howe, then Commanding Officer of the current Coast Guard Cutter *Tampa* (WMEC 902) for permanent display.

On November 18, 2003, the Purple Heart Certificate and Medal for Second Lieutenant James M. Earp were sent to his nephew, Charles Albert Earp in Baltimore, Maryland. As Charlie explained to the Medals and Awards Section in Washington, DC, "…I am an only child, at 86 the sole survivor of the line." He was very proud of Uncle Marsden.

Ever since World War I, the Coast Guard has kept a *Tampa* in active service. The fourth ship to carry this proud name is a 270-foot Famous Class cutter. It carries a crew of 11 officers and 90 enlisted men. While its equipment is state of the art, its mission is timeless -- Search and Rescue, Maritime Law Enforcement, and Military Readiness.

Training Future Engineers

by LCDR James Kammel
CG-48

Mission support throughout the Coast Guard is changing. Whether through the efforts of the Mission Support Planning and Implementation Team or the Standard Boat pilot program being run by Logistics Transformation Program Integration Office (LTPIO), the world of work and management practices used in supporting our assets are changing. As part of that change many offices are taking the opportunity to refresh or in some cases develop their student engineering programs. These programs are the corner stone of developing our future senior engineers. Without a strong foundation to build our engineer officers we will be unable to accommodate these changes. It is this reason that our more senior engineers must take a personal interest in developing our juniors.

Our training programs are changing to meet the needs of the future of mission support. With more focus being put on the processes of providing logistics and maintenance support, our training programs are being rewritten to ensure our officers earn those competencies needed to provide that support. The naval community has taken this opportunity to completely rewrite the Engineer Officer in Training program, soon to be called the Student Engineer Manual. Through a comprehensive analysis, we have identified and refined the competencies needed by our shipboard and shore side naval engineers; the new program is designed to help our junior engineers earn each of these competencies. Each section of the revised Student Engineer Manual will be directly related to a specific competency. At the same time CG-4 (Engineering and Logistics Directorate) partnered with Training Center (TRACEN) Yorktown to draft a student engineering handbook, providing our junior engineers with a wealth of information to help them better learn how to provide engineering and logistics support.

The newly revised Student Engineering Manual is currently in concurrent clearance with the intent of having it promulgated this year and ready for use by the new batch of student engineers next summer. In addition to the handbook, TRACEN Yorktown has helped develop an "end of course test" for section 1 of the Student Engineering Manual. This, coupled with a designation from CG-4 as a naval engineer, will further formalize the program.

The naval community is not the only community to make changes in the way we train our junior engineers. The civil engineering community is also developing a student engineering program focused on the tasks and competencies their community needs to support our shore infrastructure. While still in draft, their program will mirror the other successful programs already in use. Having a formalized program should help the civil engineers ensure their community is prepared to provide superior mission execution by supporting our shore infrastructure.

The aviation engineering community has a very comprehensive program directly linked to earning the aviation engineer competencies. This program ensures that senior engineers take ownership in developing their juniors. By clearly linking the competencies needed to earn a designation as a aviation engineer, their program provides a clear path for career development that is linked to ensuring operational commanders has ready, capable assets to perform missions.

The key to each of these programs being successful will be having a thorough program that involves senior engineers in the development of junior engineers. It is imperative as we change our organization and the processes used to support all assets that senior engineers take full ownership in developing the future of their community. Leading our junior engineer officers must involve much more than giving them their PQS. Routine interaction, mentoring, and reviewing the material, as well as discussions of the changes our organization is undergoing, are all key aspects of developing our future engineers. This will enable them to take positions of more responsibility and leadership both within their programs as well as within other specialties. My challenge to all of the experienced engineers out there, whether officer or enlisted, is to take a hands-on role in preparing your juniors for their future roles within their communities.

Although the engineering and logistics processes and practices are changing, one thing is certain … our future success depends on the ability of junior engineers to provide the same high levels of support to our operational commanders as our senior engineers are doing now and have done in the past. These new programs will provide a formalized process to train our engineers, but that does not relieve our senior engineers of the responsibility to get personally involved in the professional development of future Coast Guard engineers. Take the time to help them understand the technical, managerial, and leadership responsibilities needed to improve our engineering and logistics processes while we continue to provide superior operational performance through our combined engineering and logistics excellence.

The Office of Workforce Management (CG-481) continues to play a key role in identifying the competencies needed by our diverse engineering, logistics, and C4IT workforces. By working with program managers, we can take a holistic approach to managing our workforce through their entire careers. Whether through managing specialties, ratings, or competencies, CG-481 has been and will continue to be directly involved in ensuring our engineers and logisticians are "semper paratus."

Where's the "P" or "Prevention" in Deepwater?

by LCDR Dennis Branson,
Prevention Lead to the Deepwater Program Sponsor's Office
Edited by CPO Sarah Foster-Snell

Illustrations by Rich Doyle

Editor's Note: This article was submitted near the end of 2006, please keep in-mind when reading, some things may have changed since this article was first penned.

Prevention or "P" in the future of a Deepwater-compliant Coast Guard

A few years ago, the Coast Guard reorganized to the Sector construct for field operations, and just this winter implemented a "vertical alignment" at the program level for Headquarters, Areas, and Districts staffs. Throughout this process, many roles were reshaped, created, or defined differently. This article is not designed to be a commentary on that organizational change, but more how to realize the way that future capabilities of the Integrated Deepwater System (IDS) may be realized in the Marine Environmental Protection (MEP) mission area.

Prevention or "P" is still emerging within the framework of current Coast Guard common operations picture, but hopefully this article can generate a better understanding of how the MEP mission area is woven into the fabric of the Deepwater strategy.

SDICP - Surveillance, Detection, Identification, Classification, and Prosecution

From a review of operational tactics past and present, across all missions and maritime services, a "Global Mission Execution" was derived. We call this continuum SDICP, which stands for Surveillance, Detection, Identification, Classification, and Prosecution.

The process starts with "surveilling" vast areas of the seas to detect objects of concern. Upon "detection" we need to "identify" the object (i.e., vessel, debris, etc.) and if the object is of interest we then invest resources to "classify" it as a Target Of Interest (TOI). Objects classified as TOIs mandate some form of "prosecution" which can be saving a life on the high seas, sending an armed boarding party onto a TOI for law enforcement action, or in the matter at hand -- determining an illegal oil spill source.

For starters, lack of full interoperability hampers our methods and processes for conducting effective SDICP in today's operational environment. Currently, maritime patrol aircraft from the Coast Guard, Navy, and other federal agencies are unable to link their sensor data to our surface assets and their controlling command centers. Although our helicopter fleet is currently being phased in to be Deepwater-compliant, they also don't have the ability to share data with the same cutter they just took off from.

Deepwater's organic interoperability incorporates SDICP methodology in its operational construct as key to optimal execute mission effectiveness. This is simply based on traditional Coast Guard patrolling methodology with an increased command, control, computers, intelligence, and reconnaissance (C4ISR) capability centered on the unclassified concept of operations.

Projecting a Deepwater-compliant Marine Environmental Protection Mission Area

Therefore, applying SDCIP to the MEP mission area is the next step and the question becomes,

"Is there an oil mission in Deepwater?"

Well yes there is!

In fact, the National Security Strategy and other strategic documents have long recognized the value of the MEP mission. Additionally, the Modeling and Simulation Master Plan (MSMP) provides the metrics for operational efficiency, as well as sets the mission demands and "force lay down" for Deepwater assets.

While research was conducted to support the concept of "Prevention in Deepwater" for the MEP mission, perhaps the most influential reference is the recommendation of the 1999 Interagency Task Force on U.S. Coast Guard Roles and Missions which states:

> *"…the Coast Guard should develop methods of surveilling the U.S. EEZ to detect violations of U.S. marine pollution laws. The Coast Guard's surveillance requirements and capabilities should be coordinated with those of the National Oceanic and Atmospheric Administration (NOAA). Those remaining Coast Guard requirements should be considered in the design development of the Integrated Deepwater System."*

Consider this: Coast Guard enforces more than twenty statutes, Executive Orders (EO), and regulations related to the protection of the marine environment. For example, the 1995 Presidential Decision Directive 36 (PDD-36) provides clear Administration policy on protecting the ocean environment and the need for "stewardship of marine resources." In addition to addressing international maritime legal regime issues and the protection of living marine resources, it calls for reducing marine and coastal pollution.

Defining the Problem, Mystery Spills …

Although datum from Environment Canada estimates that 300,000 birds a year are killed off the eastern Canadian coastline due to contact with "mystery" spills, hard facts on U.S. illegal dumping is elusive. A small spill at the wrong time during breeding season can have a significant impact on a species, while larger spills may go entirely unnoticed. Currently, a Headquarters-led working group is working with the 11th District Prevention staff to better determine the extent of the problem on southern California's coastal areas.

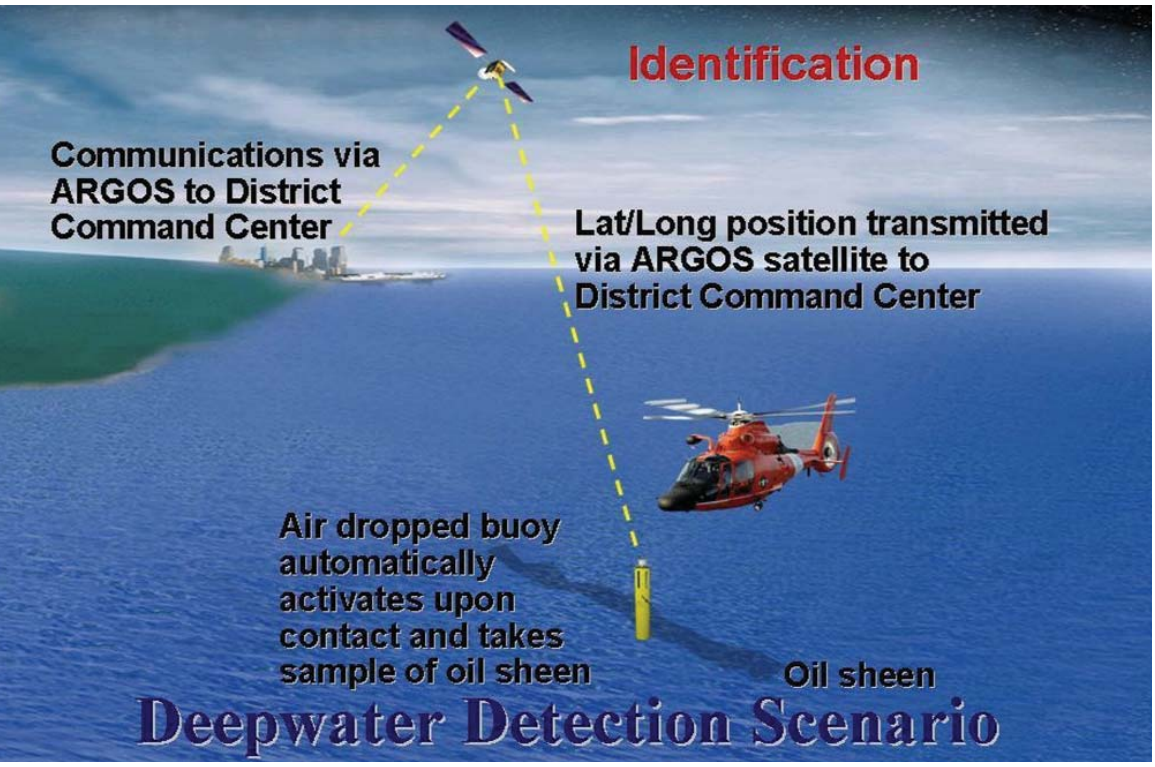
In addition, pollution from vessels, including known and negligent spills of oil and other hazardous substances pose a serious threat to the marine environment. The Roles and Missions report also states that: "the Coast Guard should explore avenues to improve its ability to detect violations of marine environmental protection laws, specifically in the offshore (50-200 nautical miles out) region."

Given the emergence of global impacts of environmental hazards, there is no doubt that Deepwater capabilities will raise the standard for the Coast Guard's Marine Environmental Protection mission.

Future Capabilities -- Bringing It All Together Under Deepwater Requirements

In 2003, the Coast Guard's Office of the Deepwater Sponsors' Representative began an effort to mine the expertise of a myriad of operational leaders in completing the Performance Gap Analysis (PGA) studies and report.

This effort produced and expanded the System Performance Specification (SPS) which provides for the basis of MEP capabilities in developing Deepwater-compliant standards.



One section of the SPS specifically requires the Deepwater system have the capability of "determining oil and hazardous materials and prohibited discharges in the air or water column to be detected and its size and composition identified." Furthermore, Deepwater's Command and Control (C2) system is also required to assist in the "detection, identification and classification (e.g., severity) of substances foreign to the environment."

The performance gap analysis also identified the following Deepwater capabilities that would provide added value to the Marine Environmental Protection missions.

- ❑ Geospatial Imagery (GEOINT) is an enabling component to address in the SDICP operational methodology. Essentially, the use of satellite imagery to discern the complicity of the tank vessel in a dumping case is a new tool that would increase ability to detect violations and to build sound prosecution cases for environmental crimes. Increased Coast Guard awareness of activity in the Exclusive Economic Zone (EEZ) will have synergistic benefits in virtually all Coast Guard mission areas: safety, maritime security, and mobility.

- ❑ Interoperability: One of the intrinsic benefits of Deepwater's "system of systems" concept is its emphasis on joint collaboration with interagency partners from state, local, and the federal government, such as the Department of Homeland Security and in the case of the MEP mission -- with NOAA.

Since NOAA is responsible for monitoring the deepwater region and continues to be forward-leaning with regard to sensors and detectors to determine changes and anomalies in the offshore marine environment, the Interagency Task Force recommended that the Coast Guard collaborate with NOAA and other federal stakeholders to ascertain the degree current or planned environmental monitoring equipment is suitable for surveillance, detection, and ultimately, identification for adequately enforcing national marine environmental protection laws and regulations. This surveillance coordination effort is sure to benefit other Coast Guard operational missions as well, such as maritime domain awareness.

New MEP Deterrence Tools: The POPEIE Buoy

In order to meet the needs of Deepwater's PGA requirements, the sponsor's office assisted in evaluating and assessing the application of emerging and existing technologies.

Over the past year, a great deal of work has been done to incorporate an oil sampling and identification buoy known as the Probe for Oil in the Environment, a.k.a., "POPEIE" (pronounced “Popeye"). This buoy is constructed from the Self Locating Marker Buoy (SLDMB) construction and communication packages and allows for the capture of a defensible oil spill sample. Designed by the Coast Guard Research and Development Center and the 11 District staff, POPEIE is a unique tool that passed Research and Development (R&D) evaluation and certified for air deployment from C-130s since 2004.

Currently, the 11 District staff is working with Coast Guard Sectors San Diego and San Francisco to prepare the buoy for operational evaluation and certification for rotary deployment.

MEP and Its Relevance to Coast Guard Leadership

Contrary to what many believe, the marine environmental protection mission is far from gone in the Coast Guard. It’s alive and well with the Coast Guard Academy recently establishing a Chair in Environmental Studies demonstrating not only its academic significance, but also of its increasing relevance to Coast Guard leadership.

Right now, many Headquarters and Area programs are beginning work to complete the Coast Guard "CONOPS (Concept of Operations) 2025" which describes plans and procedures to guide the Coast Guard execution of roles and missions (strategic, operational, and tactical) when operating in and with the Deepwater area of operations. To achieve that end, MEP will have to be thought out differently than ever before.

Illustrating the Marine Environmental Protection mission as Deepwater-compliant, the following fictional scenario will increase understanding of SDICP to depict the way Deepwater can promote conceptual development of future assets and systems.

It is provided to demonstrate the potential for a new capability within Deepwater with the intent to explain how an Air-Deployable Oil Sampling buoy (ADOSB) could provide increased detection, as well as serve as a deterrence factor for future Marine Environmental Protection missions in Deepwater.

AIR-DEPLOYABLE OIL SAMPLING BUOY

"A Scenario of Detection to Prosecution"

[Note: Brackets indicate trigger points along the Deepwater operational methodology (CONOPS-concept of operations) known as "SDCIP" for Surveillance, Detection, Identification, Classification, and Prosecution.]

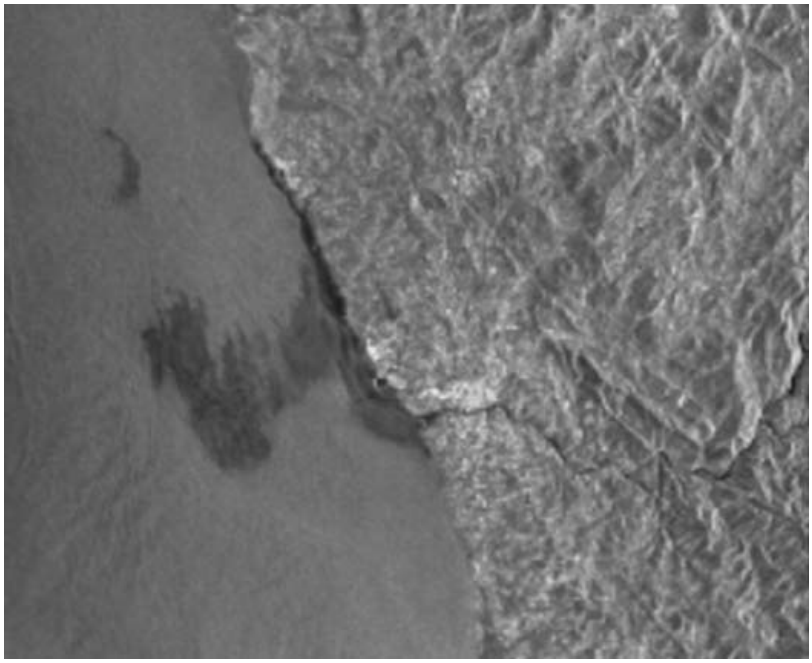
"SITREP ONE"

On May 8, 2008, a Sacramento-based, MPA (Maritime Patrol Aircraft) flies a routine night multi-mission Maritime Domain Awareness (MDA) patrol approximately 75 miles off the California coast between Los Angeles and San Diego. Equipped with the POPEIE buoy, the new oil detection/sampling buoy is placed aboard due to increased large "mystery spills" occurring along the California coast. **[*Deepwater CONOP=Surveillance*]**

At approximately 6 a.m., the aircraft, patrolling at 5000 feet, detects an oil sheen on the APS-143C Radar. The sensor operator plots the ¼ mile wide, 10-14 mile long spill using the Synthetic Aperture Radar (SAR) mode

southwest of Sacramento. Using a sensor, the Maritime Patrol Aircraft (MPA) confirms the sheen by thermal signature, records the image, and provides radar and sensor imagery to the Command Center for analysis. The sheen is directly adjacent to the charted shipping lane for transiting vessels between Los Angeles/Long Beach and San Diego.

Although the MPA reports that no target vessels are plotted on the radar within the immediate vicinity of detection, the Command Center indicates a risk to nearby bird estuaries (protected shoreline habitats) and recreational beaches along the California coastline based on current modeling for the area. The aircraft confirms the impact risk after deploying a Data Marker Buoy (DMB) that indicates set and drift of the sheen, which is also shown by the sensor and radar imagery of the spill. It maps the area and plots commercial traffic via the Automated Identification System (AIS) and vessel radars via Electronic Surveillance Measures (ESM) within the coverage range for captain of the port (COPT) analysis and investigation to determine a source vessel.
[*Deepwater CONOP=Detection*]



Since the sighting occurred during a routine patrol, communications was established via tactical control (TACON); therefore, the cognizant COTP zone is determined to be Sector San Diego. Incident command is handled in coordination between the Eleventh District Command Center and Sector Command Center-Joint (SCC-J) San Diego, a combined Coast Guard-Navy Command Center.

At, or about this time, the Pacific Area (PACAREA) Operations Center, determines, via a Blue Force Tracking (BFT) capability within the USCG Common Operational Picture (COP), that there are no Coast Guard operational assets within adequate response time. Efforts are made to employ other resources (NOAA, USN, etc.) through the COTP and Regional Response Team (RRT) coordination, yet no resources are found to conduct a timely response.

Once receiving this information, the decision is made to use the air-deployable oil collection device aboard the MPA. The COTP requests the device be deployed for evidence collection, as well as to help determine the type of product spilled.
[*Deepwater CONOP=Classification*]

The MPA crew works off a recently completed job aid for the buoy (developed by the 11th District in conjunction with Sector San Diego) with details and procedures for physical deployment and retrieval. The serial number and deployment location is noted by the crew and the device's cardboard encasement is removed. Being there are no fins, or other attached parts, the crew deploys the device successfully into the largest concentrated section [of the spill] from an altitude of 100 feet. The buoy automatically activates upon contact with water allowing the crew to video/photo document the deployment via the new Deepwater video capability. Latitude/Longitude position (tracking) of the buoy sampler is transmitted via an "ARGOS"[1] satellite, and a flashing strobe that was automatically activated upon deployment. Due to weather conditions, and lack of asset availability to respond, the buoy's capability of broadcasting a position continuously up to two weeks becomes critical at this moment.

[1] *The Argos DCS is another data collection relay system that adds the benefits of providing global coverage and platform location. The Argos program is administered under a joint agreement between the National Oceanic and Atmospheric Administration (NOAA) and the French space agency, Centre National d'Etudes Spatiales (**CNES**). The **system** consists of in-situ data collection platforms equipped with sensors and transmitters and the Argos instrument aboard the **NOAA** Polar-orbiting Operational Environmental Satellites (POES). The global environmental data sets are collected at telemetry ground station.*

A recently re-engined Deepwater HH-65C helicopter is vectored to retrieve the buoy and uses a DF-430 direction finder and an UHF Line of Sight (LOS) homing signal. Due to the device's design (closed, locked, tamper-proof sampling chamber) the buoy maintains the chain of custody and the crew backs up the case with time-stamped video and digital photos on scene. When the aircraft returns to base, the collection chamber/with samples is shipped to the Coast Guard Marine Safety Lab in Groton, Conn., for analysis, identification and evidence collection.

"On the Beach"
Using the 96-hour Notice of Arrival reports and AIS capability, the SCC-J Arrivals Desk sorts all arriving/transiting vessels information from the last 72 hours. Coordination with the Coast Guard's Intelligence Coordination Center (ICC) is initiated and the list is narrowed to five vessels.

One of the vessels, a Panamanian-flagged, 600-foot, crude carrying coastwise tank ship, the *Pandora* has just arrived at a terminal south of San Diego. Of the five vessels identified, it has a poor Port State Control record due to multiple safety and marine pollution (MARPOL) violations for more than three years. All five vessels are boarded by Sector Response department personnel, Port State Inspectors, and Field Intelligence Support Team (FIST) members. Visual examination of each of the subject vessel's International Maritime Organization (IMO)/MARPOL-required systems is conducted, along with crew interviews.

"Back in the Lab …"
Sample media is sent from all five suspect vessels to the Marine Safety Lab for Oil Spill Identification System (OIS), an analytical methodology that makes it possible to match oil to the correct chemical source. All subject samples are found to be forensically-supportable, of adequate sample size, and properly maintained within the chain of custody by the lab. Following completion of the OIS, the lab determines the exact composition of the sample to be intermediate bunker fuel and is a perfect match with sample source B -- the *Pandora*.
[*Deepwater CONOP=Identification*]

SITREP FINAL
Approximately five days after the incident, the California Assistant U.S. Attorney orders a subpoena of the *Pandora's* oil record books and other engineering logs. Due to lessons learned from the merchant vessel *Command* incident (1998 vessel dumping case that resulted in a $10 million dollar fine from a foreign-owned company) the decision is made to operationally prosecute the *Pandora* before she leaves the U.S. EEZ. Working in unison with Sectors LA/LB and San Diego, PACAREA is able to chop the newly-commissioned National Security Cutter BERTHOLF (WMSL-750), on return from patrol from the Bering Sea, to the last-known AIS position of the *Pandora*.
[*Deepwater CONOP=Prosecution*]

Flag-state control is requested and successfully granted by Panama and the owner/operator. The vessel is escorted back to San Francisco by BERTHOLF while the case is built. Witness statements corroborate the fact that substandard material conditions had existed for years in *Pandora's* ballast tanks, allowing seepage from adjacent fuel oil and bunker tanks.

"POSTLOG"
The Verdict - Upon investigation of the incident, it became apparent that both the owner/operator of the *Pandora*, and the crew were negligent for not complying with International Safety Management (ISM) code and MARPOL standards. Witness interviews of the crew, validated by Sector Investigators and Coast Guard Investigative Service agents, also corroborate intentional bypassing of the Oily Water Separator (OWS), falsifying engineering records, and "jury rigging" piping.

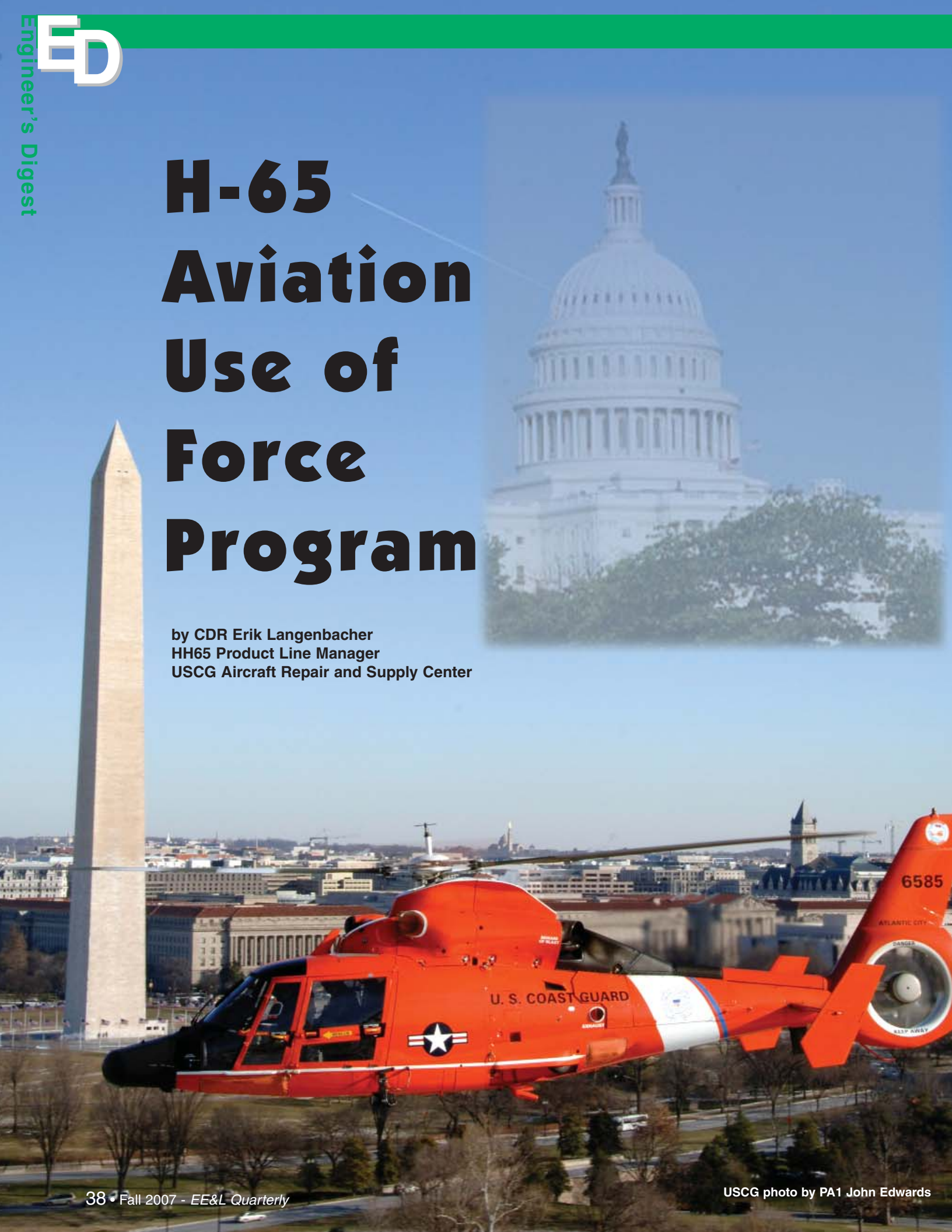
A note from LCDR Dennis Branson
Prevention Lead to the Deepwater Program:

For the past two years, my work as the Prevention Liaison (i.e., "legacy Marine Safety") representative in the Office of the Deepwater Sponsors' Representative has been challenging -- not only in understanding the many complexities of the acquisition program that is Deepwater, but in bringing out the concepts of how Prevention (legacy Marine Safety) missions will be incorporated in the Integrated Deepwater System (IDS).

Although it is obvious that the emphasis of the IDS is to operate vessels, aircraft, and other traditional "operational" assets, I have found that there is an M in Deepwater … or I mean -- a "P" for the emerging Prevention field.

H-65 Aviation Use of Force Program

by CDR Erik Langenbacher
HH65 Product Line Manager
USCG Aircraft Repair and Supply Center



USCG photo by PA1 John Edwards

H-65 Aviation Use of Force (AUF) began as a result of the country's increased readiness posture resulting from the September 11 attacks. The H-65 was also confronted with technology gaps resulting from the Rescue 21 program requirements and new equipment required to track 406 MHz EPIRBs. The H-65 AUF program has its roots in several legacy missions in addition to these new requirements. These missions include the Helicopter Interdiction Squadron (HITRON), the National Capitol Region (NCR) mission, and Operation Bahamas and Turks (OPBAT).

HITRON is a highly successful counter-drug operation that currently utilizes the MH-68 Stingray through an Integrated Coast Guard System (ICGS) lease program using the Augusta-Bell 109. The communications systems used by HITRON include High Frequency Automatic Link Equipment (HF-ALE) and Military Satellite Communications (MIL SATCOM).

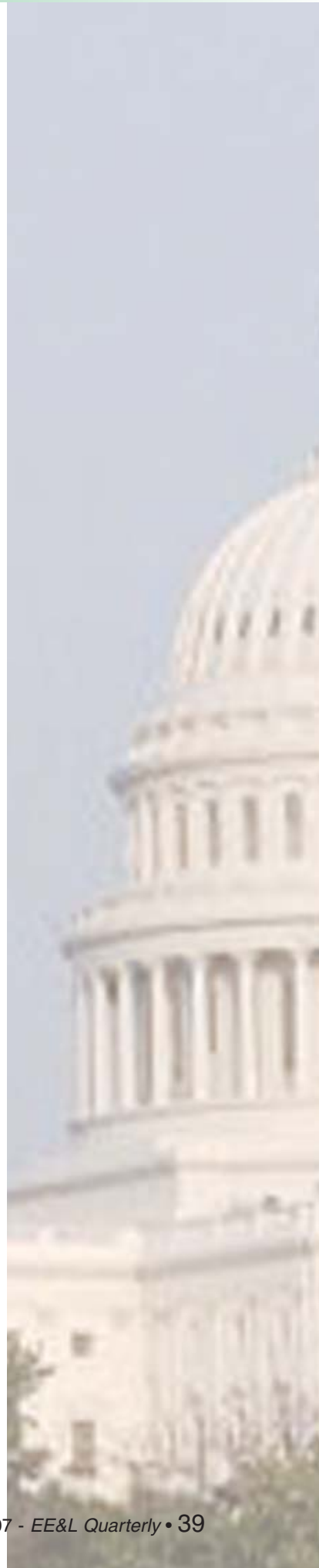
NCR was assigned to the Coast Guard due to several incursions into the prohibited airspace around Washington D.C. by small, single engine aircraft. The Coast Guard's NCR mission is to patrol and interdict these aircraft as incursions occur. During the fall of 2005, several ideas were discussed as to what existing aviation platform will take over the NCR mission. Initially, the H-60 was the choice. Initial plans called for OPBAT aircraft to support NCR and have the H-65 backfill the OPBAT mission. OPBAT has very distinct communications requirements that involve HF ALE and the VP 116, which allows HF ALE secure communications with Customs. Eventually, the H-65 was selected for this mission and the H-60 retained OPBAT.

The legacy H-65 fleet has none of the above technologies. As the decision was being made on how to best support the new NCR mission, it was very clear that regardless of what aircraft would support these missions, the H-65 fleet needed an upgrade. To cover all the bases, a plan was created early in the summer of 2005 with personnel from the Aircraft Repair and Supply Center (ARSC) H-65 Product Line. With the outline in place, the real work began identifying technologies that supported the known mission requirements within the H-65C current avionics architecture.

Requirements

Each mission profile was closely studied with representatives from each field specialty. Among the known requirements, the concept of multi-band radios that facilitate direct communication links between local police, fire, and other search and rescue entities was a desired design goal. Along with several communication requirements mentioned above, several safety of flight devices to include a Heads Up Display (HUD), night vision goggle compatible formation flight position lights, and an Electro-Optical Infrared (EO/IR) sensor were also design goals to support these missions. In summary, it was decided to integrate the following new systems into the existing H-65C architecture:

ARC 210 MIL SATCOM radio
ARC 220 HF ALE radio
(2) Wolfsburg RT 5000 multi-band radios
DF 430 (Ch 70 and 406 Mhz EPIRB direction finding capability)
NVG compatible HUD
EO/IR
Multi channel digital data recorder
NVG compatible formation flying lights
NVG compatible search lights



Design

After conceptual design, a statement of work was prepared to integrate these systems into the Rockwell Collins Computer Data Unit (CDU) 900. After Rockwell Collins reviewed the interface control documents provided with each system, a preliminary design review was conducted to work toward the final design. Here the basic framework was finalized to actually start physical and software design. After the preliminary design was complete, the project entered the critical design phase capped off with the critical design review. In this meeting, the design was technically set and known bugs were worked out.

Design for the system progressed despite several technological and logistical issues. The H-65 Product Line Team worked diligently with radio and antenna manufacturers to optimize radiation fields to minimize interference with other systems. This involved a complete redesign of the HF antenna and a careful placement of SATCOM and multi-band radio antennae as well. Also, because the new multi-band radio had never been integrated into an aircraft flight management system, the interface control documents had to be developed and tested extensively before installation. Weight and balance design challenges were overcome involving strategic placement of the new components to minimize weight and volumetric increases. Through a lot of work by the H-65 avionics integrator, Rockwell Collins, the radio manufacturer, Wolfsburg, and the ARSC design and contract staff, a functional communications suite was delivered to facilitate on-time electromagnetic interference testing at the United States Naval Air Station Patuxent River, Maryland.

Production and Logistical Planning

Several of the above components have a procurement lead time of over a year. Therefore, prior to fielding these new assets, sparing, and production assemblies needed to be procured well in advance. The H-65 Product Line worked with the Deepwater staff to secure approximately $5 million of long lead time components to facilitate field sparing and production. Because of this pre-planning, HITRON is scheduling a deployment with an AUF MH-65C this fall.

Training is another critical element of logistics. Because of the completely new communications suite, each system is undergoing extensive operational test and evaluation concurrent with development of training doctrine at Aviation Training Center (ATC) Mobile. Maintenance training is also a work in progress and the H-65 Product Line Technical Services and Projects staff is developing the Wiring Diagram, Illustrated Parts Breakdown, and Component Maintenance Manuals to facilitate field level maintenance.

Assembly

Prior to installation, an aircraft had to be made ready to accept these new systems. This involved tearing out

legacy systems and design engineering and fabrication of new wire harnesses, mounting brackets, displays and the manufacture of parts needed for assembly. Each design, manufacture, and installation action was carefully monitored and recorded in accordance with ARSC's ISO 9001 certification to develop the documentation essential to reproduce future models. This record has been essential for the current production run of 48 AUF configured aircraft as well as the development of training documentation.

Testing

The AUF system successfully completed its developmental testing and currently is undergoing operational evaluation. To get to this point, several levels of system testing were completed during this project. During design, the system was run through a robust program on the "Hot Bench" or a complete H-65 avionics suite at the Rockwell Collins facility in Cedar Rapids, Iowa. Here, the Hot Bench is "flown" or modeled to fly, and system interoperability checks are completed. Once Rockwell Collins was satisfied with its testing, the Coast Guard ran the final software acceptance. This phase was quite critical as once it was accepted, the design was installed on an actual aircraft. A few bugs were quickly worked out and assembly back at ARSC began on 6 November 2006.

During assembly, each system was tested extensively for electrical continuity and interoperability. The goal was to achieve the same level of fidelity displayed on the Hot Bench. Because these systems were new to ARSC technicians, a steep learning curve had to be mastered. Within 2.5 weeks of successful Hot Bench testing, systems checks on the AUF prototype were completed in the hangar, and the aircraft was subjected to ARSC developed Safety of Flight (SOF) test criteria. With only minor discrepancies noted, the aircraft was released for further ground/flight testing and delivered to NAS Patuxent River. Again, every assembly action was carefully annotated in painstaking detail to facilitate efficient future production.

NAS Patuxent River has a special hangar to evaluate every aircraft system's interoperability and measure interference. The aircraft's systems are checked against every possible radio transmission, either individually or simultaneously. Here nuances are discovered that only actual testing can reveal. Serious discrepancies can exist that must either be corrected or mitigated by standard operating procedures. The value of this type of testing is paramount to flight safety. Fortunately, the AUF communication suite in the H-65 revealed only minor issues, easily accommodated in the H-65 Flight Manual. It is now in its next phase of testing at the Aviation Training Center (ATC) in Mobile, Alabama. Here, the ATC instructor pilots and crewmembers will evaluate the new systems and create training and operational procedures to ensure standardization throughout the fleet.

Summary

Overall, this program has been a great success. Soon the H-65 AUF helicopter will replace the $14.7 million annual contract that supports the current HITRON lease supporting the small fleet of Augusta-Bell 109s. The AUF system greatly improves H-65 operational effectiveness from the aspects of flight safety, communications and sensors. The heads up display allows the pilot to observe critical system parameters while looking outside. The communications suite provides reliable long range communications as well as the ability to communicate with other agencies. The EO/IR will provide HITRON crews a safe and effective tool to evaluate threats visually from great distances as well as providing a highly effective tool for Search and Rescue (SAR). The DF 430 provides an integrated system to monitor and direction find on standard distress frequencies as well as the new Rescue 21 required VHF-FM channel 70 and 406 MHz EPIRBs. In summary, this team has successfully integrated the communications suite of the H-65 for the next 20 years.

P-100 Portable Dewatering Pump

by MK2 Anthony Scott
Naval Engineering Support Unit (NESU) Portsmouth

Naval Engineering Support Unit (NESU) Portsmouth is the manager of the Maintenance and Logistics Command Atlantic's P-100 Portable Damage Control Pump Reconditioning Program. This program was implemented to provide the operational cutter fleet with an "A" condition pump at a significantly lower cost than that of a new pump procured from the Federal Stock System. Since the full implementation of the P-100 into the Coast Guard in 2004, the program has been utilized 57 times to respond to pump casualties that would have significantly impacted cutters' operational missions. Over the last three years, NESU Portsmouth has observed a steady increase in the cost to recondition these pumps from $2000.00 in 2005 to $3900.00 in 2007. In addition to the increase in replacement parts from the Original Equipment Manufacture (OEM), other cost increases can be linked to the failure of expensive pump housing components due to improper maintenance after operation.

The pump housing of the P-100 is constructed of aluminum, containing two brass seals, a bronze impeller, and a stainless steel shaft key that holds the impeller in place. Each time the pump unit is used to pump seawater or brackish water, the pump must be flushed with fresh water to prevent salt crystals and oxidation from binding the pump shaft and other pump components that fit together with minimal clearances. NESU Portsmouth's data shows that the pump end of the P-100 seizes 98% of the time due to improper flushing techniques and not ensuring the pump housing is properly cleaned from debris and fully drained of all water before stowing. Failing to properly flush the pump and fully drain the residual water will result in the pump casing and impeller corroding beyond repair.

In response to this consistent theme of pump failures, NESU Portsmouth worked with the Original Equipment Manufacturer (OEM) to identify an inexpensive flushing adapter, which was approved and promulgated by the Engineering Logistics Center in a message -- DTG 011232Z MAR 07. The flushing adapter is a 3-inch female NH thread by ¾-inch female GHT thread, which connects directly on to the suction end of the pump. A simple garden hose provides the water to flush the pump and connects directly to the end of the installed flushing adapter. The first step to properly flush the pump is to ensure that the primer line valve is open and the exhaust primer lever is shifted to the prime position to prevent water from back flowing into the head of the pump. Next, open the pump petcock valve and allow the pump to stand upright for three minutes to drain completely; then run fresh water through the pump using the garden hose connection on the flushing assembly for three to five minutes continuously. If the air temperature is above 32 degrees after flushing, spray silicone lubricating compound into the suction and discharge ports to coat the impeller and pump volute. If the air temperature is below 32 degrees, open the primer line valve and shift the exhaust primer lever to the prime position, restart the pump unit without connecting the suction and discharge hoses and immediately stop the pump after five seconds to evacuate any remaining water from the priming line. Finally, close all drains and valves and replace the thread protector caps on the suction and discharge fittings of the pump.

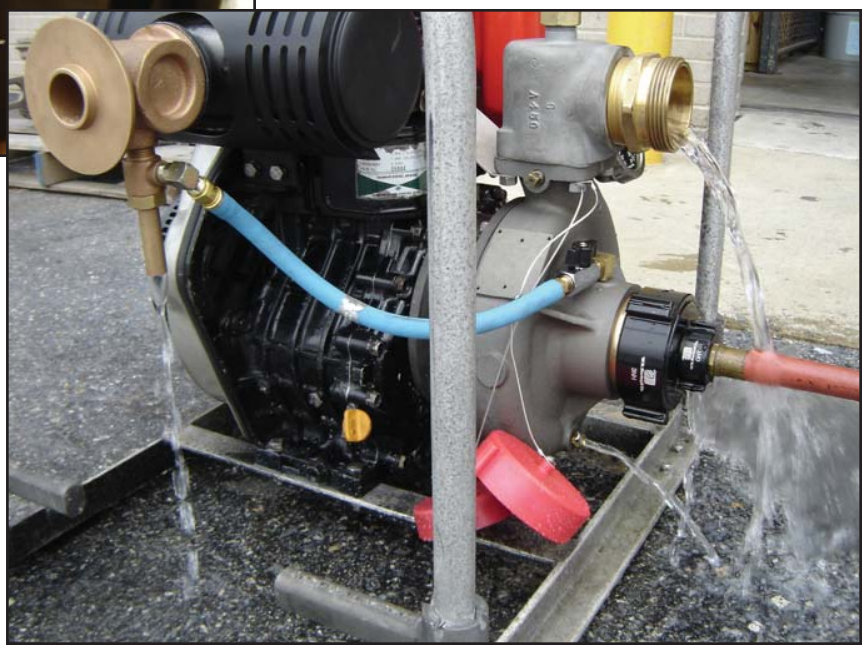
The Engineering Logistics Center will add the adapter to the cutter's Authorized Equipment List (AEL) and maintenance cards in the near future. The flushing adapter may be purchased directly from W.S. Darley and Co. at a cost of $63.20. The flushing adapter part number is BE250 and the point of contact at Darley is Mr. Robert Tomasik at (708) 273-6914.

Taking the time to ensure proper flushing techniques are followed will significantly prolong the life of the pump, which will save the Coast Guard money, man hours, and most importantly, ensure the crew on the cutter has a reliable pump.

Severely deteriorated P-100 pump housing with an unrepairable impeller. Notice the salt line inside the pump housing indicating the level of salt water remaining inside the pump after operation.

New flushing adapter for the P-100.

P-100 being flushed using the new adapter.



One COP,

USCG photo by PA3 Donnie Brzuska

The Common Operational Picture, or more simply COP, has existed through military operations for decades. Until about five years ago, the Coast Guard's involvement in this collaborative environment was limited to a few larger cutters that participated in Navy Fleet Exercises and individuals assigned to Joint Operations Commands. In more recent years, COP has exploded across the operations landscape through the fielding of several systems. Using the Global Command & Control System (GCCS), Command & Control Personal Computer (C2PC), HAWKEYE, Vessel Traffic System (VTS) and others, the COP has become a constant and vital component at every command level and in virtually all operations. Still, there are shortcomings that need to be met and users that need to be better served. To this end, new applications, improved architecture, and expanded functionality are in development and will bring enhancements to the COP.

Global Command & Control System - Joint (GCCS-J)

GCCS-J is the grandfather of COP systems. This is the backbone of how data is collected, transported, shared, and manipulated. Without GCCS-J, the COP would not exist. The Coast Guard is not the "owner" of GCCS. It is a Department of Defense (DOD) product that the Coast Guard (CG) customizes for its particular uses. Because the focus of GCCS is the DOD mission, there are some minor gaps in equating CG requirements to the DOD functionality included in GCCS. Some of these gaps revolve around symbology and availability of data attribute fields for imported data sets. As all GCCS user communities have found, the most readily apparent limitations in GCCS's current version are track load constraints and ability to share overlays created outside of GCCS (i.e., from C2PC).

GCCS-J will be going through dramatic changes over the next couple of years starting with incremental improvement 4.0.2. Fielded CG wide in early Calendar Year 2007 (CY07), this release addresses track load, overlay, and geo-filtering limitations. Version 4.1 is expected to be released late in CY07. It will further improve GCCS-J and initiate the spiral migration of the current Common Operational Environment (COE), the core software build of GCCS, to the next generation version called Net Enabled Command and Control (NECC). Throughout this spiral migration, GCCS-J will see frequent and rapidly deployed improvements, moving to a Systems Oriented Architecture (SOA) that can more easily draw and share resources and applications across networks. This is accomplished through use of common development environments that are interoperable with minor configurations.

The world of GCCS is fast paced and constantly changing as developers at all agencies are realizing the poten-

Multiple Faces

by LT Robert Baronas
C2CEN

tial of this new development environment. The CG is engaged at multiple levels, from engineering to policy, to ensure our requirements are met and emerging innovations are assessed and incorporated as needed.

Command & Control Personal Computer (C2PC)

C2PC is one of the most visible, familiar, and oldest COP tools currently in the field. Originally deployed throughout the Search and Rescue (SAR) community for search planning and response, the CG took the core C2PC application (a U.S. Marine Corp (USMC) application) and modified it for distribution to CG SWIII (Standard Workstation III) users. This modification involved stripping out DOD mission specific functionality and customizing installation to meet CG SWIII security requirements. The result is the C2PC-CG variant everyone's familiar with. Over the years, C2PC-CG has seen many functional improvements and continues to be a highly useful tool.

As the CG COP initiative emerged, C2PC emerged as a track viewer for users. This was made possible due to C2PC's USMC implementation as a portable C2 system that could easily interact with GCCS and display track data. Starting four years ago, C2CEN fielded C2PC Gateways throughout the CG to leverage this functionality and provide GCCS track data to the desktop user. The Gateways are tied to the GCCS-J backbone and allow the C2PC-CG desktop user to extract, view, and manipulate COP track data. The distributed architecture of both the GCCS-J and C2PC servers allows for load balancing and failover recovery in case of outages. This capacity was further expanded to the Secret Internet Protocol Router Network (SIPRNET) domain with native C2PC and C2PC Gateways implemented CG wide.

Traditionally used in the CG for shore based Command Centers, C2PC has recently been instrumental in getting COP data to the shipboard community. Recent policy from CGHQ's Office of Command and Control Capabilities (CG-37RCC) has allowed cutters to leverage improved underway connectivity to obtain C2PC user accounts and access COP data while underway. This additional user environment dramatically enhances MDA for the cutter but also extends the range of the COP data source to the Area Of Responsibility (AOR) around these participating units.

Some limitations still exist in C2PC's implementation. For example, data attributes available in GCCS based systems are not always 100% exportable to C2PC based systems and symbology for the two systems is not identical, nor does it fully meet all CG mission requirements. C2PC, like GCCS, is due for several changes over the next couple of years. C2PC version 6.1 is the most

recent version available to developers. It is being evaluated against both CG SWIII and CG SIPRNET standard images to ensure compatibility. One key feature improvement provided in this version is enhanced COP Reachback functionality giving users the ability to view additional source data attributes of COP tracks with a click of the mouse.

In the future, C2PC will change its core software to reflect an SOA design using the Commercial Joint Mapping Took Kit (C/JMTK) package that's being adopted by numerous agencies and commercial vendors. This will greatly increase the interoperability of C2PC with other initiatives currently in development.

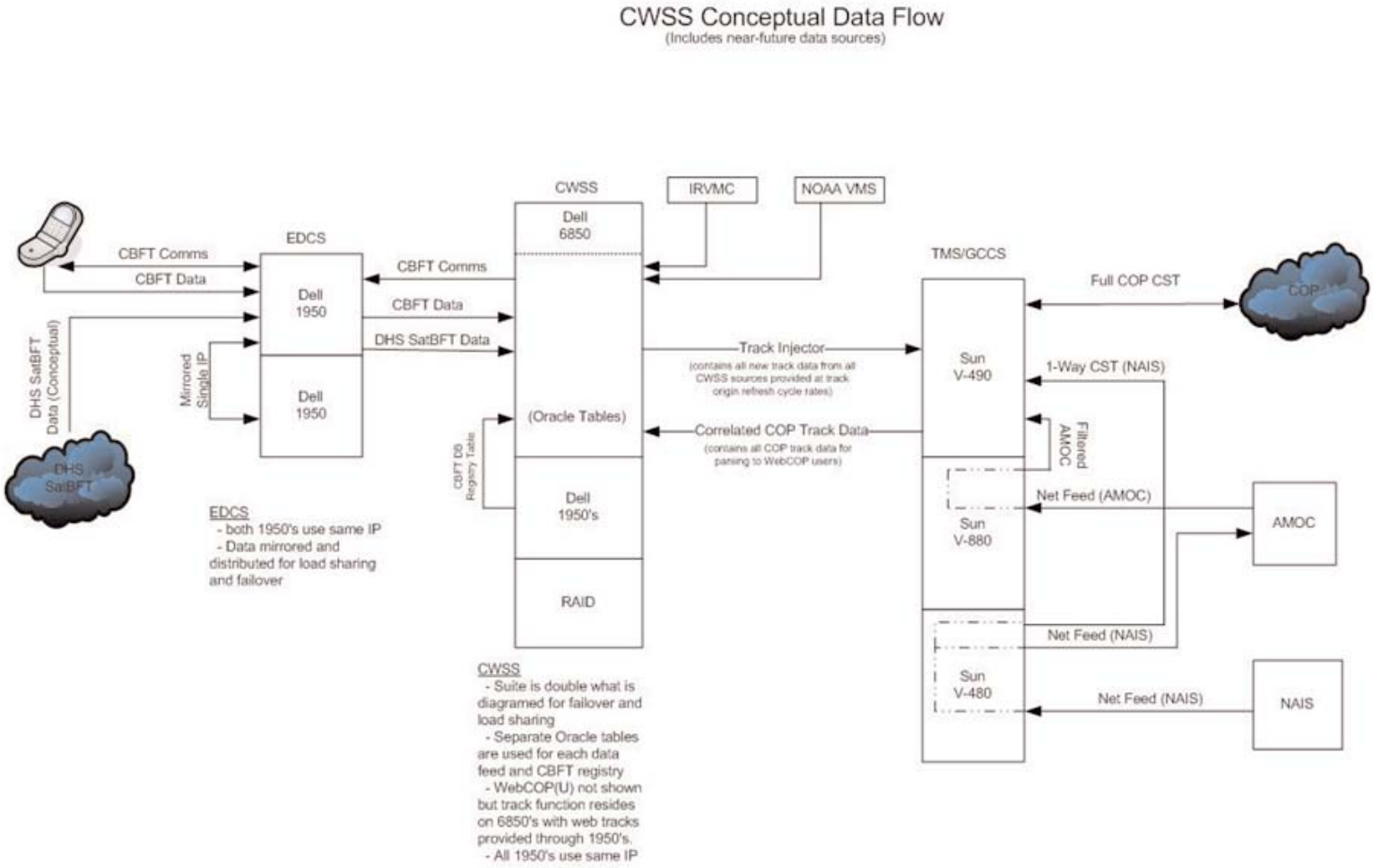
COP Web Services System (CWSS)

CWSS is a recently renamed initiative that rolls several development efforts into a more effective package. CWSS is primarily made up of the Web-Enabled COP (WebCOP) hardware infrastructure but includes data and hardware solutions for Cell Phone Blue Force Tracking (Cell BFT), Vessel Monitoring System (VMS), Inland Rivers Vessel Movement Center (IRVMC), and others. This solution will bring exciting changes to existing and new COP users in data availability, reliability, and distribution. The following notional diagram helps to illustrate the relationship of the efforts (Note: not intended to be an all-inclusive list of data sources or paths).

The CWSS system will allow for more rapid development of solutions to collect data from disparate sources and distribute it to units via the COP, including the WebCOP. The architecture and software builds allow for encryption solutions to protect the data, and for scalable and redundant hardware suites to ensure reliability. Implementing CWSS in this way also increases the likelihood of success in incorporating other data sources by establishing a versatile infrastructure and encryption baseline that simplifies development effort and reduces cost. Fielding of CWSS is anticipated during 2007.

Web-Enabled COP (WebCOP)

WebCOP is intended to bring a light-weight COP viewer to the user. This will be done through use of the C/JMTK



suite of development tools and the incorporation of Geographic Information Services (GIS) already provided by CG Operations Systems Command (OSC). Working against this backdrop, an overlay of track data drawn from the COP will be infused onto the display. This functionality will be available to users through a simple Internet Explorer (IE) window. The first iteration, WebCOP(U) (U for Unclassified), will be available solely to authorized CGDN+ users. An INTERNET version, WebCOP(I), is in the early stages of development and a future SIPRNET version, WebCOP(S), is envisioned and under consideration.

Development of WebCOP(U) has been ongoing for nearly a year. Several BETA cycles have been completed and the participating user community has provided outstanding feedback. This input has resulted in numerous performance improvements rolled into subsequent BETA versions. Despite delays due to operational prioritization and unavoidable hardware anomalies, it's anticipated that the first release of WebCOP(U) will arrive in the summer of 07, bringing COP to an ever increasing audience and continuing the expansion of available MDA tools.

Cell Phone Blue Force Tracking (Cell BFT or CBFT)

Cell BFT is the latest addition to the COP arsenal of data inputs. This solution allows a commercially available cell phone to automatically report its position to the COP. This provides operational commanders the capability to easily locate and recognize specific BFT units, improving force disposition awareness, and enhancing overall mission effectiveness.

Leveraging existing enterprise development applications and environments such as JAVA, ORACLE, and Microsoft IIS, developers have created a solution that ensures data security using AES encryption, provides reliability by employing scalable and redundant server architecture, and facilitates ease of operation by requiring only minimal user configuration. Partnering with developers from cellular service providers and cell phone manufacturers has moved what was a simple concept into a very complex world of accreditation, encryption, and code accessibility and ownership.

As one of the most demanded solutions from field units, BFT implementations are of the highest priority in the development arena. Due to inherent cross domain and data protection security requirements, these processes are not the quickest to reach implementation. An effective fielding plan requires phased implementation with base functionality being released initially and later spiral improvements incorporated as approval is gained. Initial Cell BFT implementation is anticipated during 2007.

World of Contributors

COP is not a stand alone product. As shown in this document, many different systems are required to create, gather, transport, and display "COP Data." C2CEN has many product lines that are key contributors to the world of COP, either as consumers or contributors of COP data. Joint Harbor Operations Center (JHOC), Vessel Tracking System (VTS), HAWKEYE, Search and Rescue Optimal Planning System (SAROPS), and Port and Waterways Safety System (PAWSS) are only a few. In addition, other program-level systems also are key contributors including National Automated Information System (NAIS) and Rescue-21. The list of contributors quickly expands beyond our CG borders with the inclusion of a direct DOD COP data feed, Department of Homeland Security (DHS) BFT sources, Customs & Border Patrol Air Mobility Operations Center (AMOC) data, and more.

It's easy to see how with COP, what was once considered a science project made up of recapitalized and obsolete hardware, has grown into one of the most widely distributed and vital systems in our service today. The multiple faces of COP continue to grow in numbers.

For further information regarding these initiatives, please contact the following:

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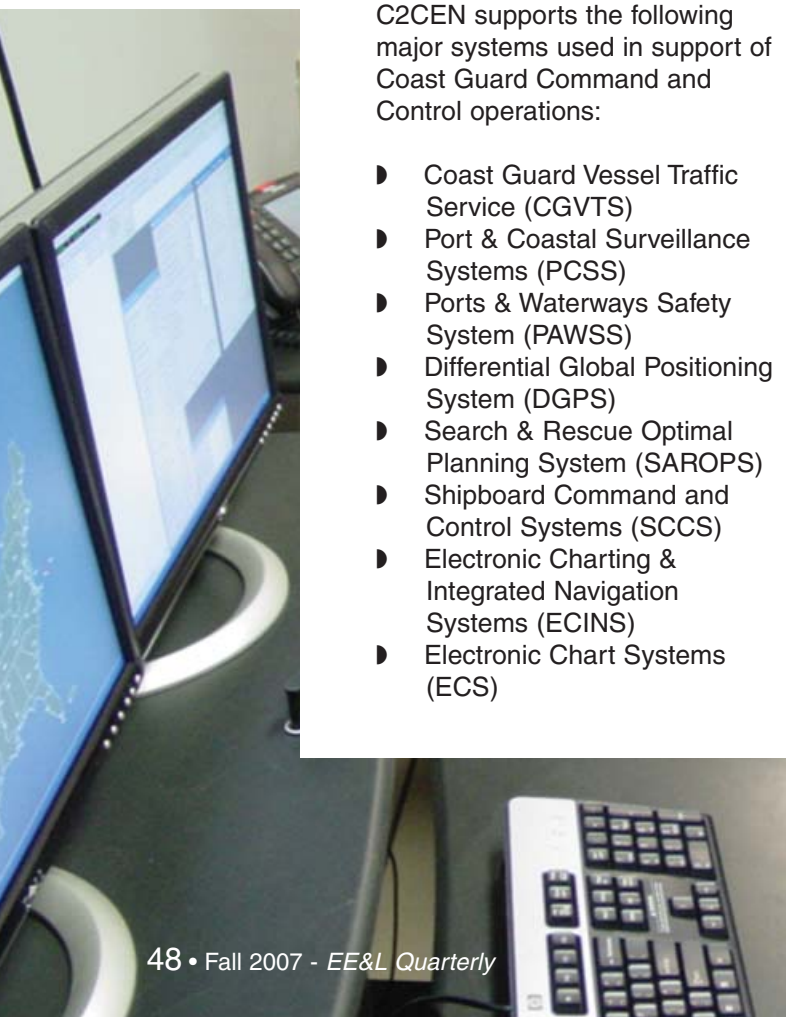
Testing the Limits

Spotlight: C2CEN's Testing Branch

by OSC Larry Beatty and ELC2 Rusty Doggett
C2CEN

The Coast Guard Command and Control Engineering Center (C2CEN) is known for excellence in engineering development, lifecycle support, and training on current and future command, control, and navigation systems. What many people don't know is the extensive testing that is conducted during the development and acceptance phases just prior to releasing C2 products into the field. Generically speaking: Testing is the exposure of a system to known inputs to see whether it produces the expected results.



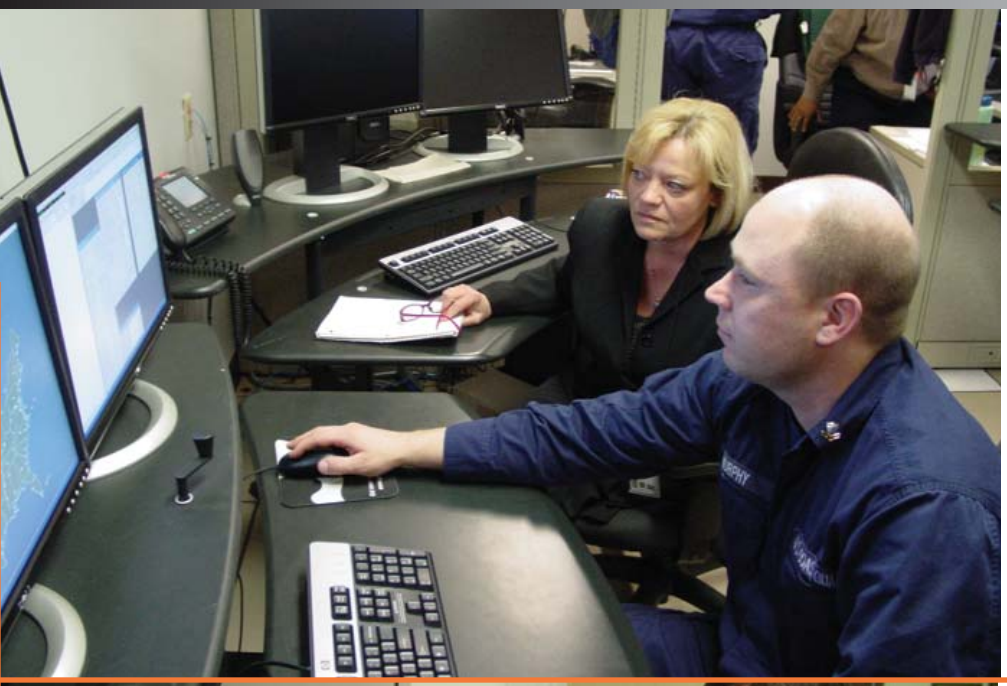
C2CEN supports the following major systems used in support of Coast Guard Command and Control operations:

- Coast Guard Vessel Traffic Service (CGVTS)
- Port & Coastal Surveillance Systems (PCSS)
- Ports & Waterways Safety System (PAWSS)
- Differential Global Positioning System (DGPS)
- Search & Rescue Optimal Planning System (SAROPS)
- Shipboard Command and Control Systems (SCCS)
- Electronic Charting & Integrated Navigation Systems (ECINS)
- Electronic Chart Systems (ECS)
- Nationwide Automated Identification System (NAIS)
- Navigation Sensors (NAVSENS)
- Command Centers which includes the Coast Guard Common Operational Picture (CG COP)

Each integrated system goes through several test evolutions during development. A final comprehensive test is conducted prior to the system's release to the field. Tests conducted during system development are referred to as engineering test evolutions and are conducted by the project's system and software engineers. The responsibility for conducting formal independent testing, the culmination of all test evolutions, resides with C2CEN's Testing Branch.

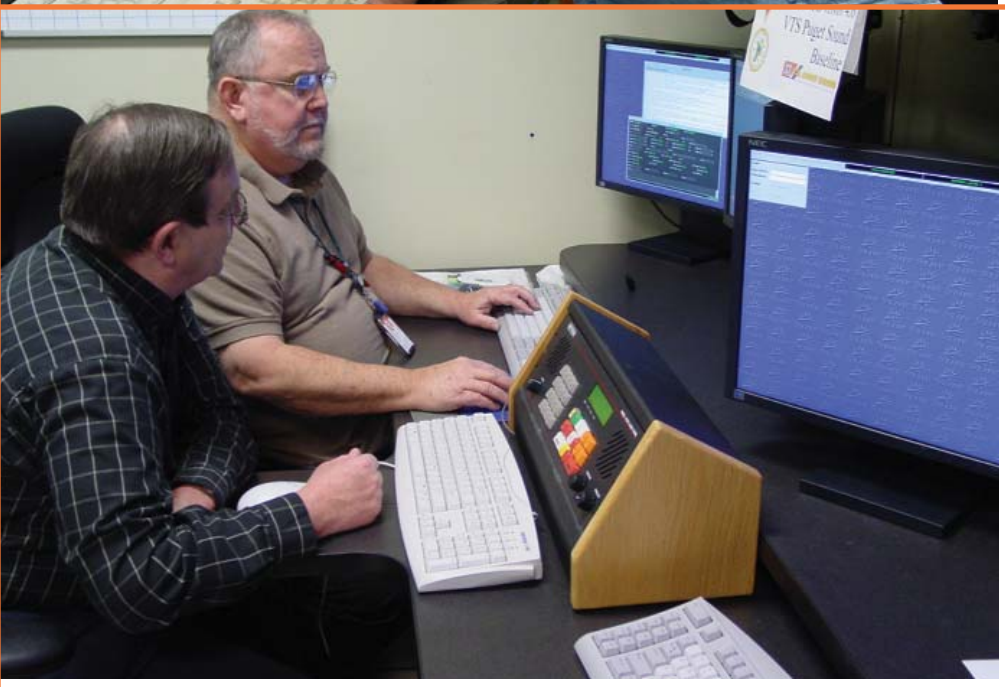
Integrating operationally experienced military personnel and civilian employees with contracted specialists, C2CEN's Testing Branch is led by a Lieutenant who is supported by four military members, two civilian (GS) employees, and six contract personnel. Testing is sometimes better known as Quality Assurance (QA). The role of these technical specialists is to provide C2CEN management with an independent, unbiased assessment of each system or software product prior to its release to the field. This assessment is referred to as Acceptance Testing.

In preparation for Acceptance Testing, Testing Branch personnel develop detailed test and evaluation procedures to ensure each system not only meets functionality and performance requirements set by program managers but the operator's needs as well. These procedures are then painstakingly executed by the test team. The test results obtained by the test team are captured in a formal Acceptance Test Report which is then presented to the system's Local Configuration Control Board (LCCB). Based on the outcome of Acceptance Testing, the LCCB may choose to field the product or revert to a known point in that particular system's evolutionary



Test Director Cindy Reyes observes ET2 Kelly Murphy operating the NDGPS test console.

Ms. Cathy Squires shows Test Director ELC2 Rusty Doggett the latest software enhancements to CGVTS.



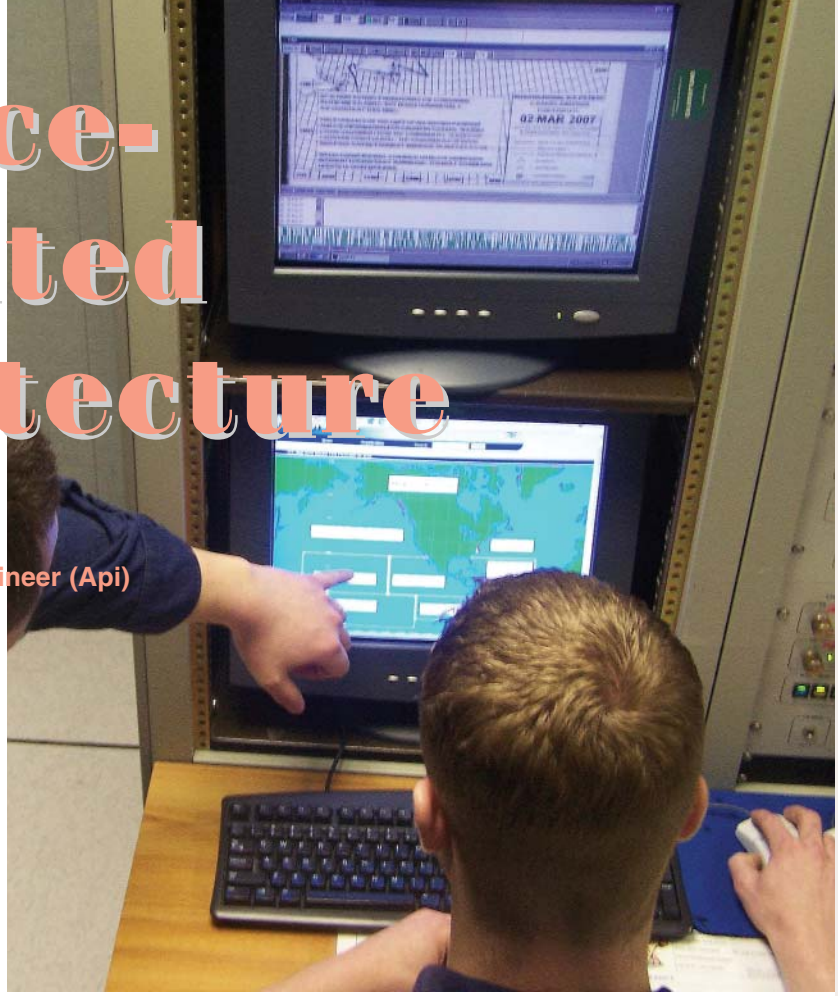
Testers Chuck Zawodniak and Bud Allely conduct system tests on CGVTS.

development. Details revealing each step in C2CEN's development model are found in C2CEN's System Lifecycle Management Plan.

A robust QA program that is "independent" of engineering development is a hallmark of a good product and service delivery organization. To highlight its efforts this past year, C2CEN's Testing Branch generated 42 Test Reports and assisted with 52 engineering test evolutions, validating over 50,000 System Requirements along with performing over 5,000 test procedures. In addition, the team validated 753 System Trouble Report (STR) corrections and 215 System Improvement Requests (SIR) implementations to the myriad of C2 products.

The value demonstrated by C2CEN's rigorous testing program can be assessed by members at all levels in the Coast Guard ranging from the field operator to the program manager. By identifying system defects within the engineering and acceptance testing phases, C2 systems are fielded with fewer defects enabling those "standing the watch" to confidently fulfill their duties. Lowering overall lifecycle and development costs make formalized testing an even more valuable activity. The Testing Branch helps ensure C2CEN successfully meets high customer expectations and exemplifies its motto: "We do C2 Best"!

Service-Oriented Architecture



by LCDR Frank W. Klucznik
Systems and Software Engineer (Api)

Something to Think About

INTRODUCTION

One of the more popular buzzwords used in technology and business circles today is "SOA," which stands for Service-Oriented Architecture. The term first became popular sometime in the mid-1990s, and now 10 years later everyone is using it, even though many don't understand its true meaning. In fact, the popular online encyclopedia Wikipedia acknowledges there "is no widely-agreed upon definition of service-oriented architecture."[6] Consequently, this article attempts to explain SOA by presenting three relevant definitions, and discussing how a web-based SOA application might benefit the Coast Guard in the future.

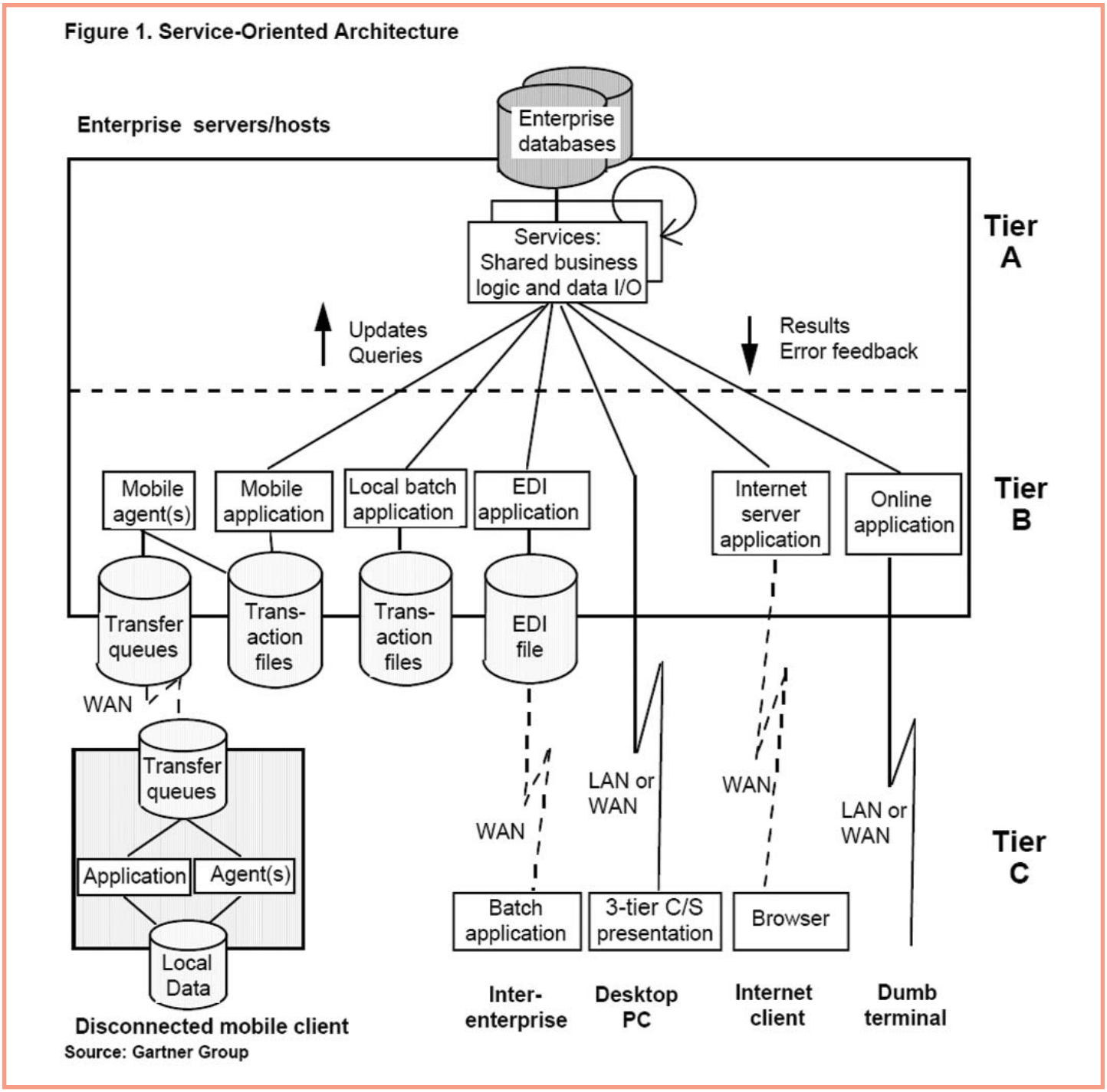
GARTNER RESEARCH

Gartner Research is a leading provider of research and analysis on the global information technology industry. The company employs more than 1,200 professional research analysts and consultants who advise over 45,000 clients world wide.[1] Gartner's workforce publishes tens of thousands of pages of original research and answers more than 215,000 questions every year.[1]

In April 1996, Gartner was one of the first to attempt explaining SOA to their business clients by defining it as "a style of multitier computing that helps organizations share logic and data among multiple applications and usage modes."[4] The new architecture was based on the idea many aspects of data processing were inherently tied to the data rather than with the way data is processed.[4] Consequently, this trait allowed software developers to organize process functions into modules designed to maximize the sharing and reuse of application code and data.[4] This idea of SOA presented by Gartner analysts was derived from the foundations of what became Object Oriented Programming.[5] Ironically, Gartner analysts were concerned, and cautioned their clients in a second paper this new approach was not necessarily appropriate in all applications.[5]

INTERNATIONAL BUSINESS MACHINES CORP (IBM)

IBM understood the concepts of SOA, and leveraged them to develop several suites of software designed to help customers develop, protect, and manage SOA services.[2] This software



includes IBM's Tivoli collection, SOA Management suite, and WebSphere Service Registry and Repository.[2] When combined together, these products support five "entry points" comprised of: People, Processes, Information, Connectivity, and Reuse.[2] IBM believes focusing on these entry points helps create products to provide support for both business and IT needs.

Over time, IBM refined the definition of SOA to refer to an Information Technology (IT) architectural style supporting the transformation of business into a set of linked services, or repeatable business tasks that can be accessed when needed over a network.[2] In this instance, the term "network" refers to a LAN, WAN, MAN, or the Internet. Regardless of network size or distance between computing resources, SOA services function as if they were all installed on the local machine, similar to the experience of working in a centralized computing environment.[2] The principle benefits of SOA in IBM's view include, aligning IT with the business and providing maximal reuse of IT assets.[2] As a suite, IBM's products help ensure their client's investments in expensive IT projects produce lasting value to their business. Figure 2 (see next page) provides a graphical overview of IBM's entry points and several scenarios their products were designed to support.

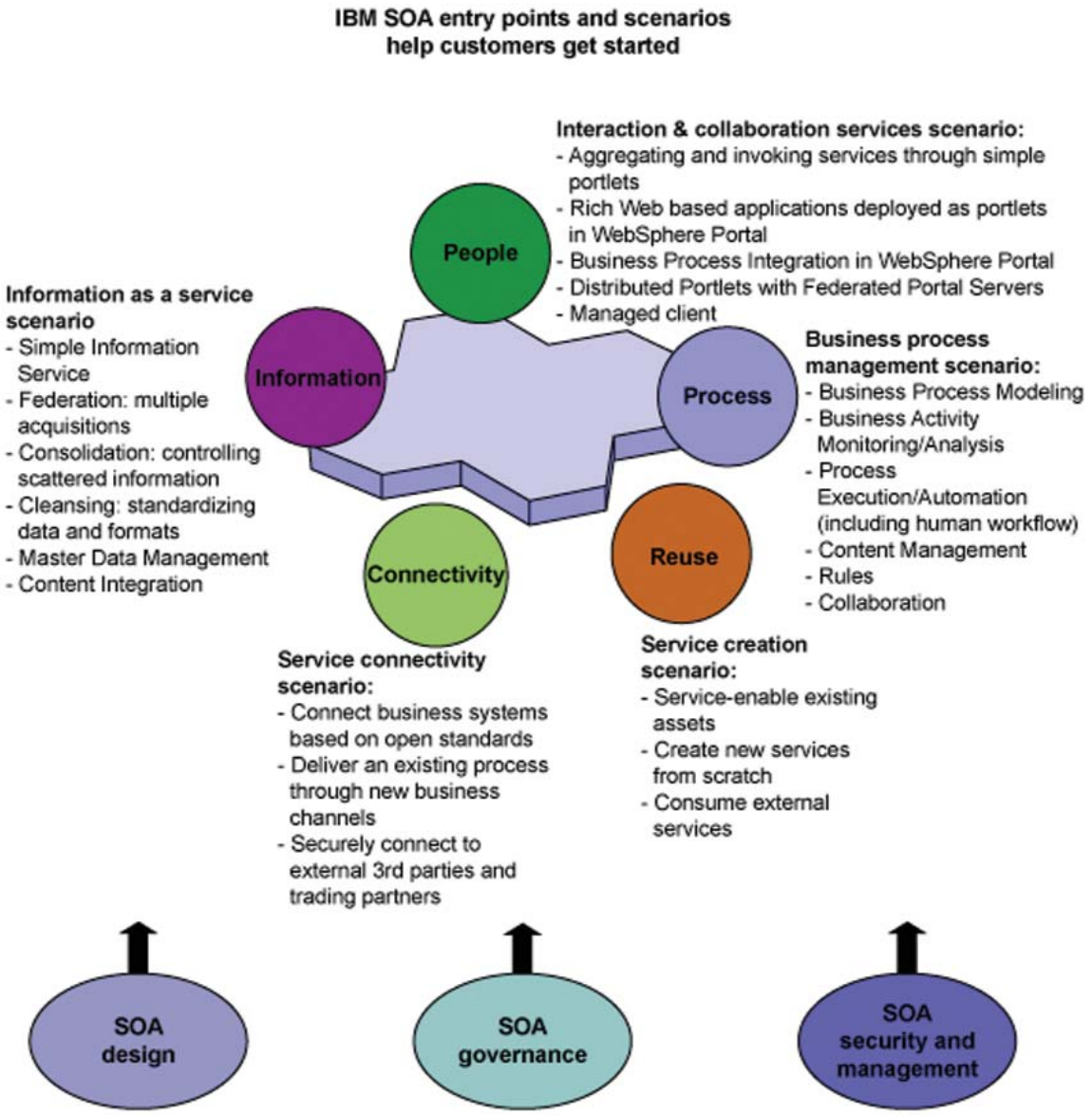


Figure 2 SOA Entry Points and Scenarios

MICROSOFT

Microsoft adopted a more overarching approach to SOA and sees it as an approach to designing and developing IT systems that integrate capabilities, services, and data among diverse systems.[3] In other words, SOA facilitates access to business logic and information across disparate and diverse business systems.[3] As a result, SOA creates new aggregated capability by connecting business elements in new ways.[3] Microsoft explicitly states SOA is not a product that one can purchase, rather it is a design philosophy influencing how the solution should be built (e.g., SOA is a means to an end).[3]

The benefits of SOA described by Microsoft include greater business agility from existing IT investments, and connectivity between previously disparate systems that automate previous

manual information transfer processes.[3] Additionally, Microsoft claims SOA solutions promote stronger connections with customers and suppliers, enhanced business decision making, and increase employee productivity.[3]

SOA AND THE COAST GUARD

As an Information Technology Manager on the Atlantic Area staff, I hear first hand about end-user frustrations over having to manage and track multiple user-name and passwords to do their job, duplicity of entering the same data into multiple IT systems, stove-piped applications that don't share information across programs, and the systems we currently have do not always collect the date needed to manage our programs effectively. Meanwhile, existing System Managers are working overtime to address an endless list of new user requirements, the politics of enterprise system development, the constraints of budgetary limits, and are challenged with developing systems in a constantly changing environment. After studying SOA for some time now, I believe a web-based SOA has the potential to mitigate many of these problems in a timely, responsive, and cost effective manner.

It is important to note that although architecture is not tied to a specific technology, SOA is most often implemented through one of a variety of web services such as Remote Procedure Calls (RPC), Representational State Transfer (REST), and Common Object Request Broker Architecture (COBRA) among others.[7] Web services lend themselves to SOA, because they are specifically designed to support interoperable Machine to Machine interaction over a network, and in many cases only require a web-browser such as Internet Explorer to leverage the power of SOA.[7] This is especially appealing when working in an environment with fixed software architecture such as the Coast Guard SW III image. Furthermore, when evaluating how the Coast Guard could benefit from SOA, it was necessary to use concepts from each of the three definitions presented in this article.

A web-based SOA possesses the potential to create a standard interface bridging across Coast Guard IT systems, to provide the missing functional requirements, and reduce the overall effort required to collect, process, and analyze data throughout the organization. By leveraging the power of Active Directory features through a common web interface, users could use a single security sign on and eliminate the need to manage multiple usernames and passwords. CG Central already makes use of this technology and proves its applicability. Web application development was proven to cost less and requires less time compared to creating discrete desktop and server based applications. As a result, web-apps are ideally suited for adding new functionality as a bridging strategy, which will provide time for System Managers to incorporate the required functionality into enterprise systems. The ONSS web-based scorecard provides a recent example of how web-services were used to meet current program needs, while improving data collection processes, and buying time for system architects to develop a strategy for integrating the process into the enterprise architecture.

The potential benefits of developing a web-based SOA are tremendous because it allows for the concurrent development of existing enterprise systems (i.e., AOPS, MISLE, ALMIS, etc.), while filling the widening gaps in user requirements previously mentioned. As a result, SOA does not compete with existing systems; instead it provides complementary IT support in a responsive and cost effective manner. For example consider the Headquarters initiative to develop a Standard Operational Planning Process (SOPP). Initiating a web-based SOA during the prototype phase of SOPP development would provide the support necessary to facilitate process development, and permit the IT system to evolve over time as the process matures. A web-based SOA would

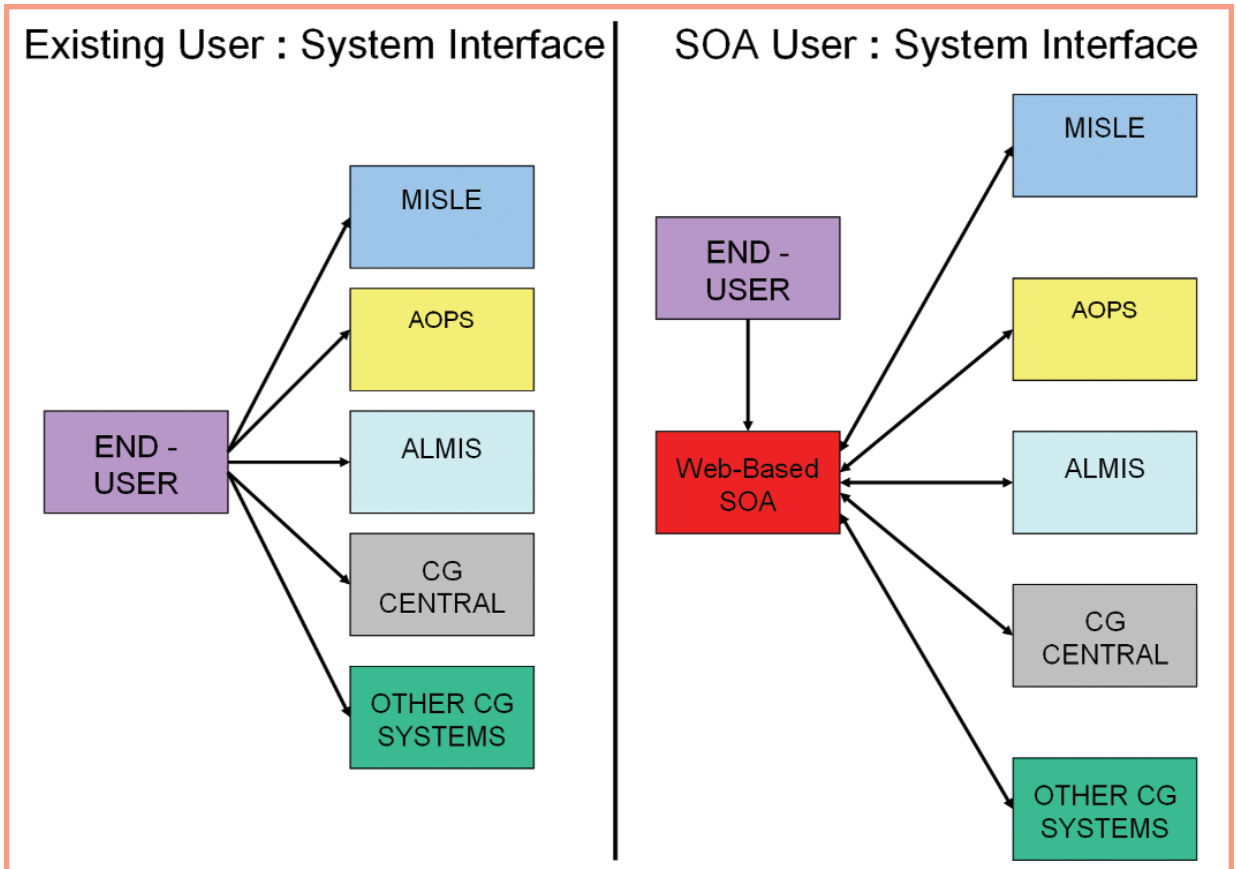


Figure 3

also allow the organization to leverage the power of technology to improve information management, automate manual data collection processes, and create a centralized repository at the beginning of SOPP implementation, rather than develop and implement the process, and then search for an IT application to support it. In the latter scenario, end-users are forced to manage data with spreadsheets and text documents until an IT solution can be identified, purchased, and implemented. And frequently, all of the data managed in spreadsheets is later discounted from any analysis because no authoritative source was established at the beginning of the data collection process.

Figure 3 provides a very simple diagram showing how a web-based SOA could simplify user interaction with Coast Guard IT systems, while creating data sharing connectivity between each system as needed. The connectivity between systems is completely invisible to the user, and developing the SOA as a new tier allows existing System Managers to continue developing and evolving their individual projects concurrently. Meanwhile, end-users are required to manage only one user-name and password for the Coast Guard Data Network (CGDN), enter data one time, and retrieve the exact information they need from multiple authoritative sources to maintain management oversight of their respective programs.

A web-based SOA is not something built in a month, or a year, or even two years. It is best developed and implemented over time using agile development methodologies to ensure customers are fully engaged in the development process and the application meets current organizational needs. As the SOA is deployed, requirements would be documented and forwarded to the Enterprise Architects (EA) for review and incorporation into the enterprise architecture. Functions may remain within the web-based application or merged into other enterprise systems as EAs decide. Regardless, of were the functionality lies (e.g., web-based SOA or enterprise architecture) the web-based SOA is continuously evolving and maturing in response to new business needs and provides maximum use of our limited IT assets.

SUMMARY

My research indicates WIkipedia hit the SOA nail square on the head with the statement; "There is no widely-agreed upon definition of service-oriented architecture." Gartner Research was one of the first to define SOA in the mid-1990s using the fundamental concepts of Object Oriented Programming. IBM adopted a more focused approach to SOA and considered it an architectural style supporting the transformation of business into a set of linked services, or repeatable business tasks accessible when needed over a network. This definition supports the development of IBM's suite of SOA support tools. Microsoft developed a higher overarching approach and viewed SOA as a way to design and develop IT systems to integrate capabilities, services, and data among diverse systems. That is to say, SOA is a design philosophy influencing how the solution should be built. Regardless of the differences in definitions, there is agreement between Gartner, IBM, and Microsoft as to the benefits of SOA, which include improved alignment between IT and business processes, and achieving maximum use of IT assets and investments.

The Coast Guard could benefit from a web-based SOA designed to create a standard user interface, establish a bridge across all Coast Guard IT systems, provide the missing functional requirements, and reduce the overall effort required to collect, process, and analyze data throughout the organization. A web-based SOA would save multiple FTEs of time annually by simplifying user interaction with Coast Guard IT systems, and create data sharing connectivity between each system as needed. The connectivity between systems is completely invisible to the user, and developing the SOA as a new layer between the user and existing system(s) would allow enterprise system managers to continue developing and evolving their individual projects concurrently. Meanwhile, end-users manage a single user-name and password, enter data one time, and retrieve the exact information they need to maintain management oversight of their respective programs.

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7 Wikipedia. "Web Service." http://en.wikipedia.org/wiki/Web_Services. April 2, 2007.

EDITOR's NOTE:

This article represents the views and research of the author, and not necessarily those of the Chief Information Officer of the Coast Guard. As described in the article, Service Oriented Architecture (SOA) must be defined for each enterprise based on the business needs, organizational and legal requirements, resources and foundational technologies that make up that enterprise.

The article might suggest to the reader that the term "Service" in SOA means web services; this is a common and significant misunderstanding. While web services, and web based applications, often play a significant part in various aspects of an SOA implementation, web-enabling back-end applications does not equate to SOA.

Based upon early work at the Coast Guard's Operations Systems Center, and in partnership with the Logistics Transformation Office, OSC has vetted and validated the approach the CG will take to move forward with SOA for our enterprise. The definition and approach for SOA in the Coast Guard, as approved by the CIO, is a loosely coupled, asynchronous message based, doctrine and event driven service oriented architecture.

Additional information may be obtained by contacting the OSC Special Projects Officer, Steve Munson, or by reading the White Paper entitled Authoritative Parts Service (APS): Supporting USCG Logistics Transformation with SOA, dated February 6, 2007, by OSC. The paper may be found on CG Central; under UNITS, search for CG OPS SYSTEMS CENTER, then look under Policies and Procedures > Enterprise Architecture.

LTPIO Talks With the Chief of Aviation Engineering

CAPT Joseph Baker has been the Chief of Aviation Engineering since 2006.

Question

LTPIO: As you know, we interviewed your predecessor, Captain Mark Butt, about aviation's transformation during the ADM Kime era. What was your role/position during that period, and what are your personal recollections from that time?

Answer

Baker: I was really just beginning my OJT as an Aeronautical Engineer during the ADM Kime era. As an apprentice, not yet officially in my student engineer syllabus at CGAS Miami, I was assigned as the Aviation Materiel Officer (AMO). My folks were dovetailed with the Supply Department, which had a LCDR Comptroller and a staff of SK's. Since I managed the Aviation Engineering budget, and was brand new to the game, I relied heavily on my Chief, who was a metal bender (AM) by trade. Like any good CPO, he had become a logistics expert.

Today, the aviation side of supply runs pretty smoothly … we have centralized management of high dollar

value, aviation-specific components at the Aircraft Repair and Supply Center (ARSC). ARSC has service-wide support responsibilities for this equipment, and they do a great job of it. Parts are visible in the system, and can be shipped from the ARSC warehouse, direct-shipped from repair vendors, or "parts pooled" from other units.

This is a far cry from the earlier days when parts were hidden in the nooks and crannies at the units because no system existed to track them. I remember that sometime during this era the name of the oversight inspections conducted by the Aeronautical Engineering management changed from "Quality Assist Visits" to "Logistics Compliance Inspections." There was still some parts hoarding going on, and the inspectors got pretty aggressive in their efforts to find hidden stashes. Locked bins could be opened with bolt cutters, and you'd better not have anything in the overhead above the ceiling tiles. If they found deliberate attempts to keep parts from entry into the system, where all could benefit, there was hell to pay. People got relieved over stuff like that. While there was some push-back early on from those who didn't trust the new way of doing business, it didn't take long before we all saw the benefit. Total asset visibility is the way to go. It improved support for everyone, allowing the experts to manage and budget with the best data, and to be properly accountable for materiel and money.

Question

LTPIO: With the Commandant's decision to adopt the centralized, Aviation Logistics model for the entire Coast Guard and as the new CG-41, what insights do you bring from aviation's own process to the other communities about the transition?

Answer

Baker: First, I want to say that the term "Aviation Business Model" is overused. It makes sense to reference a best practice, and maybe that's the only way to clearly communicate where we're headed. This model wasn't developed -- didn't evolve -- because the people who brought it to us were inherently smarter, or better managers, or cared more, than others. Aviation is an expensive business. Aircraft parts cost more than boat parts. Aviation was the biggest, juiciest, low-hanging fruit when audit time came around. When program managers and Commanding Officers were held accountable for things like performance on DOT-IG audits, we needed to develop business practices to facilitate that accountability -- and that's what was done. Our leadership looked to industry for commercial best practices, and similar bench mark operations that were then used and adapted to help us do Coast Guard "business." This evolution was not without a great deal of pain. It required sweeping organizational change -- and a lot of people see change as uncertainty, and uncertainty as bad.

When I arrived at the Aircraft Repair and Supply Center, a decision had been made that we would go to a "Product Line" organization -- but what that would be was not clearly defined. Product Line Managers (PLM) had recently been assigned. The PLM's had neighboring cubicles, with one admin assistant assigned to the group. They had no other staff. We had to figure out what a PLM needed to truly take control of his platform, and manage the critical phases of engineering and logistics. At that time, ARSC had an Engineering Division (to which I was assigned), a Supply Division, a Repair Division, and a Contracting Office. At the end of ARSC's "Redesign," the applicable pieces of those functions had been put under the control of the Product Line Managers. One person now was truly accountable, and staffed, to manage the business of supporting a platform from technical support, depot-level maintenance, logistics sustainment, and contracting. From my perspective now as the Chief of the Office of Aeronautical Engineering, it's a brilliant arrangement. There is no finger-pointing when something is not going well. The synergy we now have simply did not exist when the organization was structured along functional specialty lines. That asset focus, with a single accountable business manager possessing authority over all the functional specialties needed to do asset business facilitates the success that we've had with this business model. Again, the basic concept was not developed in an aviation "vacuum," nor was it executed without much angst on the part of the workforce, and in many cases, some of the leadership. What we know is that it works, and provides accountability.

Question

LTPIO: In this first year there has been considerable effort required of the aviation program, particularly ARSC, to impart aviation support knowledge to other communities. What can you say about the impact of this effort, and what are your thoughts about the prospects for this effort increasing or decreasing in the coming years?

Answer

Baker: Much like other commands, ARSC does not have the capacity to provide unlimited support when these taskers come in. Logistics Transformation is huge, and it will affect us all -- we have to do this right -- but when you start pulling people away from their day jobs, they have to work overtime to get all the work done. It's a difficult task getting the people with the right skills and knowledge for subject matter experts, and not adversely impacting the command that you're asking to provide that support.

If more LTPIO support is needed out of the aviation program, we'll find a way to provide. It might mean we look at contracting it out if we can find the right people to do the work.

Question

LTPIO: Was there resistance within your program to pursuing the change at the time, even though it was mandated? How were people convinced that this change was ultimately good for them, and for the Coast Guard?

Answer

Baker: Absolutely. Like I said, many people view change as bad, in and of itself. This becomes a leadership challenge. I think communicating the direction clearly is critical. The Commandant has done this in CIAO #4. We are going there -- period. It's a big deal for some people just to move to a new desk, or workspace. What the command at ARSC did with Redesign, was make sure that all the spaces were upgraded and re-furbished. That gave a physical affirmation that what they were going to was better than what they had. They also involved people at the deck-plate level in the design teams, so those folks went back to their normal jobs and helped sell the changes. It took good communication on the part of the command. It did take a sales job -- but the leadership knew it was the right thing to do -- so it was an easy pitch.

One of the PLM's was adamantly opposed to some of the changes that were taking place during the detailed design phase. I can say we were fortunate that he had the courage to speak up, because he was passionate about the organization, and saw some of the changes as applicable to a commercial template, but not directly adaptable to our processes. He wasn't trying to protect himself, or push a personal agenda. He felt strongly that certain aspects of the new paradigm needed to be tweaked, and got kicked out of some meetings, and jeopardized his career because of it. In the end, his ideas were adopted, and the result was a better organization. I think if we've got the best people on the planning groups, we'll succeed. That means ensuring we've got those passionate experts on the teams, and that senior leaders listen. At the end of the day, they have to make the decisions about what's best for the organization.

Question

LTPIO: What do you view is the greatest attribute of the aviation model?

Answer

Baker: Centralized management -- this does a myriad of good things for the organization. The managers see the big picture. They take ownership of their processes -- they plan and control -- they are responsible and accountable. This is why we have the data we need for our logistics processes in the air domain. ALMIS, the logistics management IT system we have in place, has evolved over time to adapt to our needs. We need a flexible, adaptable IT system that can translate this to the entire Coast Guard. This new IT system will be the tool with which we will manage logistics across domains. It will facilitate central management, and provide visibility for leadership into how well our managers are doing.

Question

LTPIO: The LTPIO has stated that the aviation support model is not the ultimate end state, but only a waypoint. This transformation will affect aviation as well, albeit in different ways. Coast Guard aviation has always been a somewhat closed loop, insulated environment, but now you'll be part … even the nucleus, of a larger logistics system. What are your wishes and concerns in evolving to an eventual end state?

Answer

Baker: My greatest wish is for an IT system that will provide us the functionality we need to meet our missions -- support, accountability, measurement. I would like to see something with

open architecture that we could tailor over time to make the inevitable upgrades without being beholden to some sole source proprietor. Competition is good, and as soon as you adopt some tool that you don't control, you will either be overcharged for every upgrade, or you will need to find a new tool. I don't want to see the Coast Guard locked into a sole source arrangement that won't allow us total access to the information we need, or that will drive us to redo this whole thing at a later date. This is going to be hard enough the first time around without having to do it all over again.

Question

LTPIO: There's a perception in the Coast Guard that all aviation material is centrally managed and supplied, but your low dollar Type 3 and 5 material is not … it's procured locally. In fact, this was an area that your community had problems with during the last CFO audit. What are your thoughts about Type 3 and 5 management in the future?

Answer

Baker: We still need to fix management of the low dollar value unit-level stuff. My Chief walked me through the warehouse pulling drawers to show me how much of this we had. There were literally tons of it, and we had no idea how long it had been there, and how often the different items were used, if ever. If a part was changed for a particular maintenance action, the old parts were still there, and we had no way to know we wouldn't need them anymore. Those types of parts just accumulate over time and take up warehouse space. And then there's the unit of issue problem -- you may only need a particular bolt once in a blue moon, but if you need ten this year and the unit of issue is 100 each, you might find yourself receiving 1,000 bolts instead of ten. That sort of thing happens all the time. A logistics expert doesn't make that kind of mistake, but well-intentioned people getting OJT'd out-of-rate make it all too often -- then you need a couple of drawers to hold one hundred year's worth of bolts! Multiply that sort of mistakes hundreds of times. We can't afford to do business that way. We need to professionally manage our entire system, to include the low dollar value parts.

Question

LTPIO: What final advice would you offer to the other programs as they strive to implement a centralized model based on Coast Guard Aviation?

Answer

Baker: The change is coming, and it is long overdue. Get on board now, and you can help make this right. We've got to have our best people advocate what needs to be done, and lead from the front. The support we provide our operators is critical. These changes will help us provide the best support.

One final note on ADM Kime: I had flown him on an HH-65 a couple of years earlier when he was D11, and I was a LTJG at CGAS Los Angeles, during the *American Trader* oil spill off Huntington Beach. He later visited Miami while I was AMO, and during his walk-through of the supply spaces with D7 (ADM Kramek) and my CO, he recognized me, stopped to talk to me briefly, and remembered my first name. That was pretty impressive. My Captain asked me later how it was that the Commandant knew me by name. Luckily, ADM Kime didn't ask me any questions about how we accounted for all the parts in those drawers!

LTPIO Interviews the Chief of Naval Engineering, CAPT Brian Merrill

Q ***LTPIO:*** For many years the Naval Engineering Program has contended that "ships don't fall out of the sky," and therefore should not be supported in the same fashion as aircraft. Do you think there is validity in that statement, or are perceptions changing about what it means to "adopt the Aviation Model"? Coming from your previous posting, have you seen these perceptions evolve? What has gone the farthest towards changing mindsets?

A ***Merrill:*** Clearly ships do not fall out of the sky but we can still benefit from the centralized processes that the aviation community has pioneered. Perceptions are certainly changing in the Naval Engineering community. The LTPIO staff has done a great job delineating the aviation processes and we are now applying the aviation model through the Sector Baltimore and Sector San Francisco pilot projects. As more Naval Engineers become involved in the pilot project and maintenance procedure card efforts, our understanding of aviation processes grow. Senior leadership has also been quite clear in their direction and support for a single Coast Guard logistics process and has clearly identified the aviation model for our template. This consistent direction has gone a long way towards changing mindsets and facilitating our logistic transition.

Q ***LTPIO:*** From your perspective, what are the key components of the Aviation Logistics Program, and the benefits to their adoption within the Naval Engineering Program? What has been your professional interaction with the aviation model?

A ***Merrill:*** I think the key component of aviation logistics is the high level of configuration management they are able to exercise through centralized funding, centralized planning, and centralized product lines. With the high level of configuration management, the aviation engineers are able to provide their fleet maintainers with highly detailed maintenance procedure cards that apply across their entire product line. The configuration management also facilitates inventory control and parts support to the fleet. The incredible work that fleet naval engineers complete at our Stations, Sectors, and on cutters has always amazed me and I

am very proud of their accomplishments. Tighter configuration management and improved maintenance procedures will not only make our fleet engineers' job easier but also improve the readiness of our cutters and boats.

While I am a relative newcomer to the aviation processes I have been very involved with learning the aviation processes and practices since arriving in CG-45 (Office of Naval Engineering). I have made a couple of multi-day trips to ARSC (Aircraft Repair and Supply Center) to study their methods and my role on the LTPIO policy working group has offered additional insight into how we can apply aviation logistics to Naval Engineering.

Q

LTPIO: Are there any recent events that come to mind that caused you to think "that wouldn't have happened if we followed Aviation support practices"? Can you tell us about one or two?

A

Merrill: We are all familiar with one area that will be greatly simplified as we shift to the aviation model -- funding responsibilities. You would be hard pressed to find a Naval Engineer or surface operator that has not wasted valuable time and effort debating the intricacies of the funding splits between AFC-45 and AFC-30. The AFC-45/AFC-30 dilemma not only wastes time, but also strains relations and complicates fund tracking and procurement activity. The aviators have this licked. All non-organic level maintenance is simply funded from a centrally controlled AFC-41 fund located at ARSC. The aviation model will not only streamline our funding activity but will also serve to better prioritize our depot level maintenance.

Q

LTPIO: Culture is a big part of any change initiative. In your view, what are the unique cultural hurdles for surface operators and support personnel in adopting aviation logistics principles?

A

Merrill: Perhaps the toughest hurdle to clear is the comfort we (both Naval Engineers and surface operators) have developed over the years by having the Naval Engineering support organizations under an operational chain of command. Prior to 1987, Naval Engineering support was provided by the District "ENE" staff working directly under each District commander. With the creation of the MLCs (Maintenance and Logistics Commands) in 1987, the Naval Engineering support structure consolidated but still fell under an operational commander, namely the Area commanders. The aviators have proven that a centralized maintenance approach, with the Aviation Engineering support structure under a Headquarters element, is very effective and efficient. Although ARSC is a proven and time tested model, I still think we will have to diligently apply our efforts to continue to foster the high level of trust the Naval Engineers have built with the operators through our legacy model as we transition to the aviation model.

Q

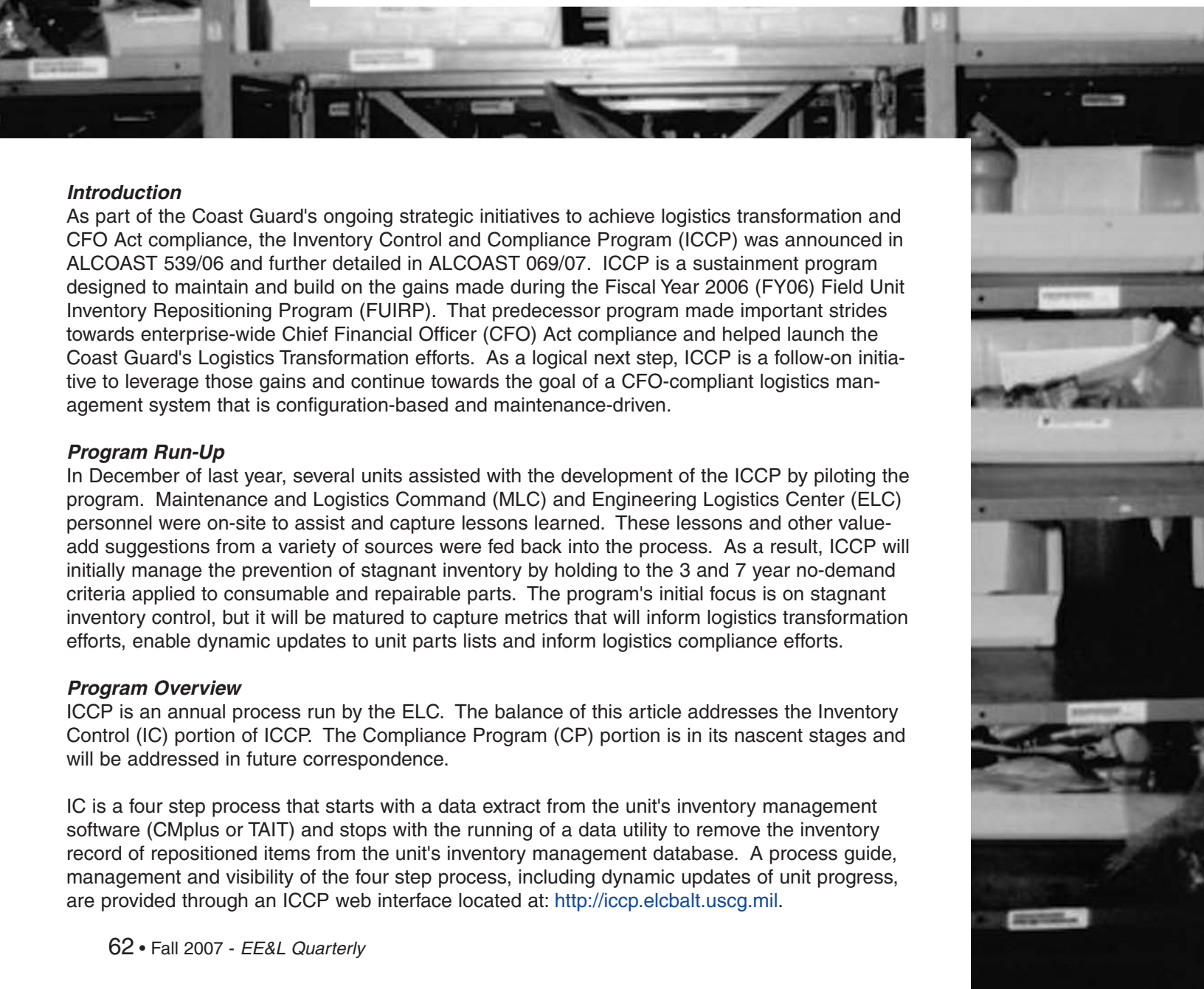
LTPIO: The Naval Engineering Program has been charged with transforming the way it does business, bringing it into alignment with our highly centralized Aviation Logistics Program. In your opinion, what are the particular challenges that your program will face in making this transition? As the new CG-45, what are your plans to tackle these particular challenges?

A

Merrill: The aviation community has perfected the product line concept around four asset types with centralized planning and execution of extensive periodic overhauls conducted adjacent to the product line work spaces. By its nature, the Coast Guard's surface fleet is much more diverse than the air assets and do not lend themselves to centralized execution of maintenance. We need to plan our product lines around different platform types, each with varying configuration baselines, and execute the maintenance in a decentralized fashion via commercial contractors, the Coast Guard Yard and Industrial Support Activities. The ELC (Engineering and Logistics Command) and MLCs have developed great processes for ensuring depot maintenance and casualty repair is executed in a fairly systematic and efficient way. The challenge will be to merge the ELC and MLC processes into the more efficient aviation model while improving local delivery of services to the fleet. My plan to tackle this particular challenge is to leverage the vast experience and intellectual capital of the great active duty and civilian engineers at ELC and the MLCs. We need to put our heads together to carefully map out our roles and responsibilities as they exist today into an ARSC-like structure for Naval Engineering. As RADM Gabel (Assistant Commandant for Engineering and Logistics) and Mr. Orner (Deputy Assistant Commandant for Engineering and Logistics) rollout the planning efforts for Commandant Intent Action Order #4, we need to ensure that we carefully address all fleet needs in the new support structure.

The U. S. Coast Guard Inventory Control and Compliance Program (ICCP) An Overview

by LT A. J. Motter
LCDR M. C. Ekstrom
Engineering Logistics Center



Introduction

As part of the Coast Guard's ongoing strategic initiatives to achieve logistics transformation and CFO Act compliance, the Inventory Control and Compliance Program (ICCP) was announced in ALCOAST 539/06 and further detailed in ALCOAST 069/07. ICCP is a sustainment program designed to maintain and build on the gains made during the Fiscal Year 2006 (FY06) Field Unit Inventory Repositioning Program (FUIRP). That predecessor program made important strides towards enterprise-wide Chief Financial Officer (CFO) Act compliance and helped launch the Coast Guard's Logistics Transformation efforts. As a logical next step, ICCP is a follow-on initiative to leverage those gains and continue towards the goal of a CFO-compliant logistics management system that is configuration-based and maintenance-driven.

Program Run-Up

In December of last year, several units assisted with the development of the ICCP by piloting the program. Maintenance and Logistics Command (MLC) and Engineering Logistics Center (ELC) personnel were on-site to assist and capture lessons learned. These lessons and other value-add suggestions from a variety of sources were fed back into the process. As a result, ICCP will initially manage the prevention of stagnant inventory by holding to the 3 and 7 year no-demand criteria applied to consumable and repairable parts. The program's initial focus is on stagnant inventory control, but it will be matured to capture metrics that will inform logistics transformation efforts, enable dynamic updates to unit parts lists and inform logistics compliance efforts.

Program Overview

ICCP is an annual process run by the ELC. The balance of this article addresses the Inventory Control (IC) portion of ICCP. The Compliance Program (CP) portion is in its nascent stages and will be addressed in future correspondence.

IC is a four step process that starts with a data extract from the unit's inventory management software (CMplus or TAIT) and stops with the running of a data utility to remove the inventory record of repositioned items from the unit's inventory management database. A process guide, management and visibility of the four step process, including dynamic updates of unit progress, are provided through an ICCP web interface located at: http://iccp.elcbalt.uscg.mil.

Screen-shot from ELC's ICCP website.

Each quarter, the MLC (vad)s will work with approximately one-fourth of all units holding inventory to schedule their participation. While the process allows for a 92 day timetable, in view of the greatly reduced number of line items to be repositioned as compared to FUIRP, those units whose workload allows are encouraged to complete the process sooner. Units encountering circumstances that drive them beyond their agreed timeline are to contact their MLC to establish a new timeline.

Program Steps

The four steps and their maximum timeframe for completion are:

1. Days 1-7: Transmit CMplus/TAIT Data

Working from the ICCP website, units transmit their inventory data to the ELC for analysis. ELC analysts will generate the list of items that are candidates for repositioning and post them on a spreadsheet back to the website. Analysis may be completed as quickly as the next working day, but, in times of heavy activity may take as long as two weeks.

2. Days 22-27: Download Unit Data

Working from the ICCP website, units download their spreadsheet, print DD-1348s and commence review of items for retention under the 2% rule based on known maintenance needs or

recent (within the last year) CASREP history. Retaining more than 2% of the items that have been identified for repositioning will require MLC approval.

3. Days 28-87: Send Pick, Pack and Ship (PP&S) Tracking Information

Units pick, pack and ship all items being repositioned. As a tenant of centralized logistics management that supports logistics transformation and CFO compliance efforts, units should submit only those items that were identified by the IC process; no additional items should be submitted.

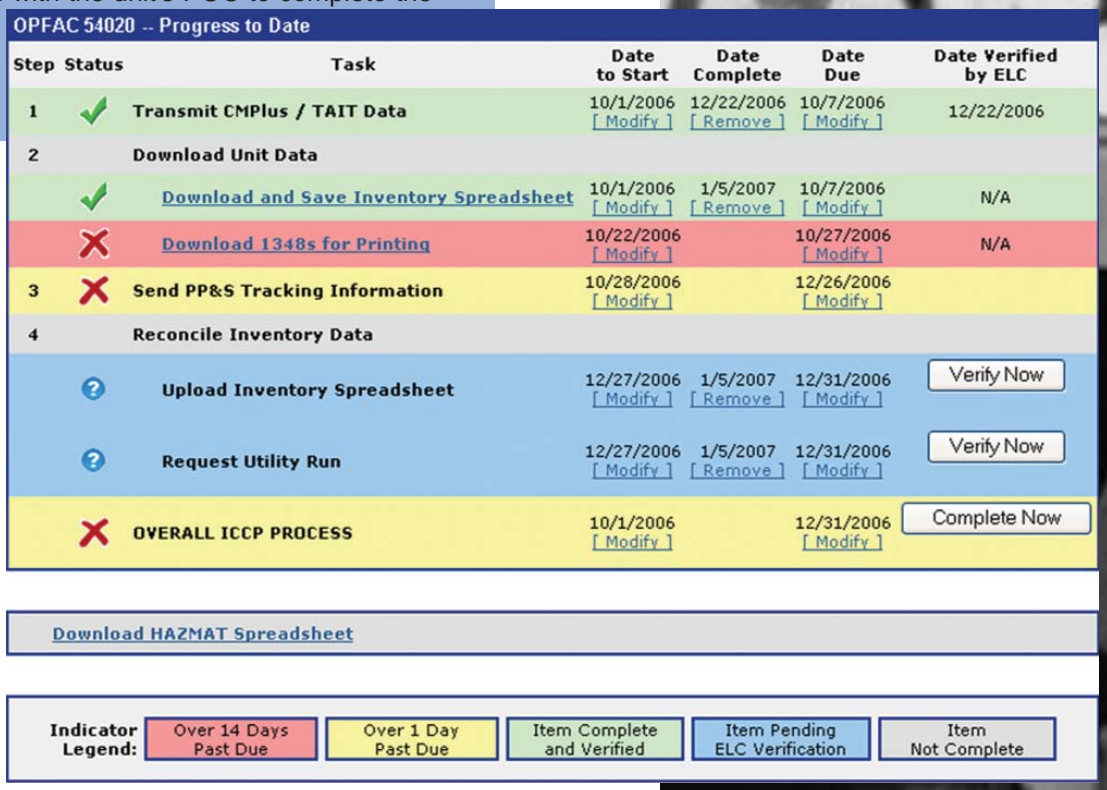
When materials are shipped, units enter shipment tracking data into the ICCP website. An accounting string to fund packing material and cover shipping costs is posted to the ICCP website and included in the process guide. Please note that as logistics transformation progresses, shipping information on the DD-1348 may direct the items to a Defense Reutilization and Marketing Office (DRMO) or to an Other Government Agency (OGA) stock point rather than the ELC.

In addition, units update their repositioning candidate spreadsheet by indicating which items were kept under the 2% rule or not found.

4. Days 88-92: Reconcile Inventory Data

Units transmit the updated spreadsheet to the ICCP website and submit a request to have the ELC run the inventory record clean-up utility. ELC works with the unit's POC to complete the utility.

IC process complete.

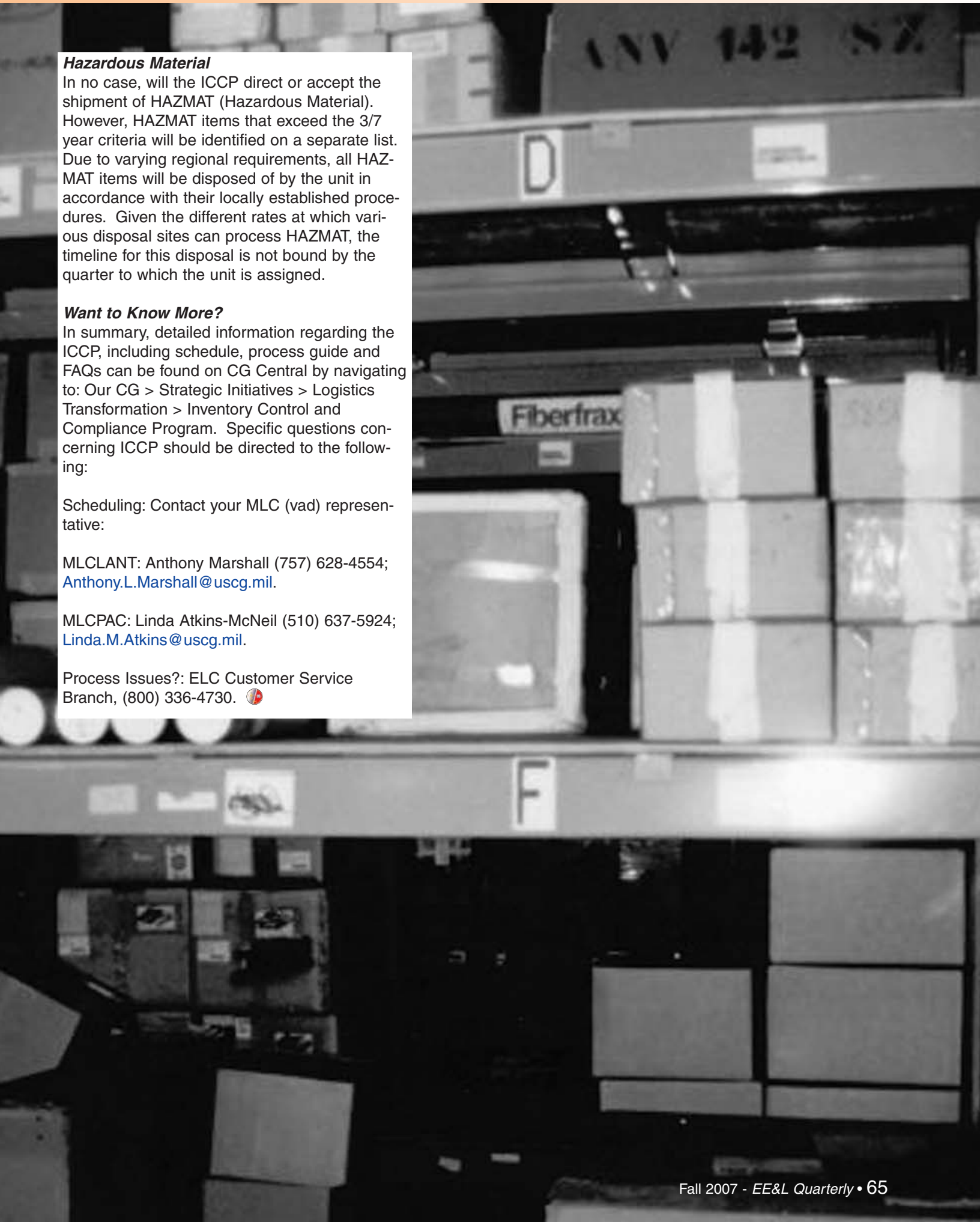


OPFAC 54020 -- Progress to Date

Step	Status	Task	Date to Start	Date Complete	Date Due	Date Verified by ELC
1	✓	Transmit CMPlus / TAIT Data	10/1/2006 [Modify]	12/22/2006 [Remove]	10/7/2006 [Modify]	12/22/2006
2		Download Unit Data				
	✓	Download and Save Inventory Spreadsheet	10/1/2006 [Modify]	1/5/2007 [Remove]	10/7/2006 [Modify]	N/A
	✗	Download 1348s for Printing	10/22/2006 [Modify]		10/27/2006 [Modify]	N/A
3	✗	Send PP&S Tracking Information	10/28/2006 [Modify]		12/26/2006 [Modify]	
4		Reconcile Inventory Data				
	?	Upload Inventory Spreadsheet	12/27/2006 [Modify]	1/5/2007 [Remove]	12/31/2006 [Modify]	Verify Now
	?	Request Utility Run	12/27/2006 [Modify]	1/5/2007 [Remove]	12/31/2006 [Modify]	Verify Now
	✗	OVERALL ICCP PROCESS	10/1/2006 [Modify]		12/31/2006 [Modify]	Complete Now

Download HAZMAT Spreadsheet

Indicator Legend:	Over 14 Days Past Due	Over 1 Day Past Due	Item Complete and Verified	Item Pending ELC Verification	Item Not Complete



Hazardous Material

In no case, will the ICCP direct or accept the shipment of HAZMAT (Hazardous Material). However, HAZMAT items that exceed the 3/7 year criteria will be identified on a separate list. Due to varying regional requirements, all HAZMAT items will be disposed of by the unit in accordance with their locally established procedures. Given the different rates at which various disposal sites can process HAZMAT, the timeline for this disposal is not bound by the quarter to which the unit is assigned.

Want to Know More?

In summary, detailed information regarding the ICCP, including schedule, process guide and FAQs can be found on CG Central by navigating to: Our CG > Strategic Initiatives > Logistics Transformation > Inventory Control and Compliance Program. Specific questions concerning ICCP should be directed to the following:

Scheduling: Contact your MLC (vad) representative:

MLCLANT: Anthony Marshall (757) 628-4554; Anthony.L.Marshall@uscg.mil.

MLCPAC: Linda Atkins-McNeil (510) 637-5924; Linda.M.Atkins@uscg.mil.

Process Issues?: ELC Customer Service Branch, (800) 336-4730.

The Logistics Transformation Sector Standard Boat Pilot Under Way, Making Way

by Brooks Minnick,
Logistics Transformation Program Integration Office

"We are underway, making way and this is an 'all hands' evolution. As we navigate our course into the future, we need everyone onboard."

- Admiral Thad Allen, Commandant's Intent SITREP #3

Logistics Transformation - Underway, Making Way

The Sector Standard Boat Pilot, which is the first implementation of the aviation logistics model outside of the aviation program, *pulled away from the pier* on the 23rd of July at Sector Baltimore (SECBALT). Originally conceived as the RB-S Pilot, feedback from the Engineering and Logistics Directorate (CG-4) Rating Force Master Chiefs compelled the Logistics Transformation Program Integration Office (LTPIO) to expand the pilot to include all standard boats, which for Sector Baltimore includes the 25' Defender B Class (RB-S), the new 26' Trailerable Aids to Navigation Boat (TANB), the 41' Utility Boat (UTB) and the 49' Stern-Loading Buoyboat (BUSL). The Sector Baltimore Pilot will continue until October when Sector San Francisco will join the effort, which will add the 47' Motor Life Boat (MLB) and 55' Aids to Navigation Boat (ANB) to the boat mix.

It Didn't Happen Overnight

While the pilot commenced on 23 July, preparations have been underway for over a year. This included the establishment of an Asset Project Office (APO) which is co-located with the Engineering Logistics Center (ELC) and operates under the supervision of Mr. Larry Wilkerson of the ELC Equipment Management Division. The APO consists of separate product lines for each standard boat class, and shared services divisions to handle vital engineering and logistics activities for each product line. One of the primary activities of the APO was to develop improved Maintenance Procedure Cards (MPC) for each boat class. Consistent with aviation practices, these MPCs were developed using Reliability Centered Maintenance (RCM) principles and include detailed procedural, safety, supply, and tool information, as well as integrated schematics, graphics, and images wherever

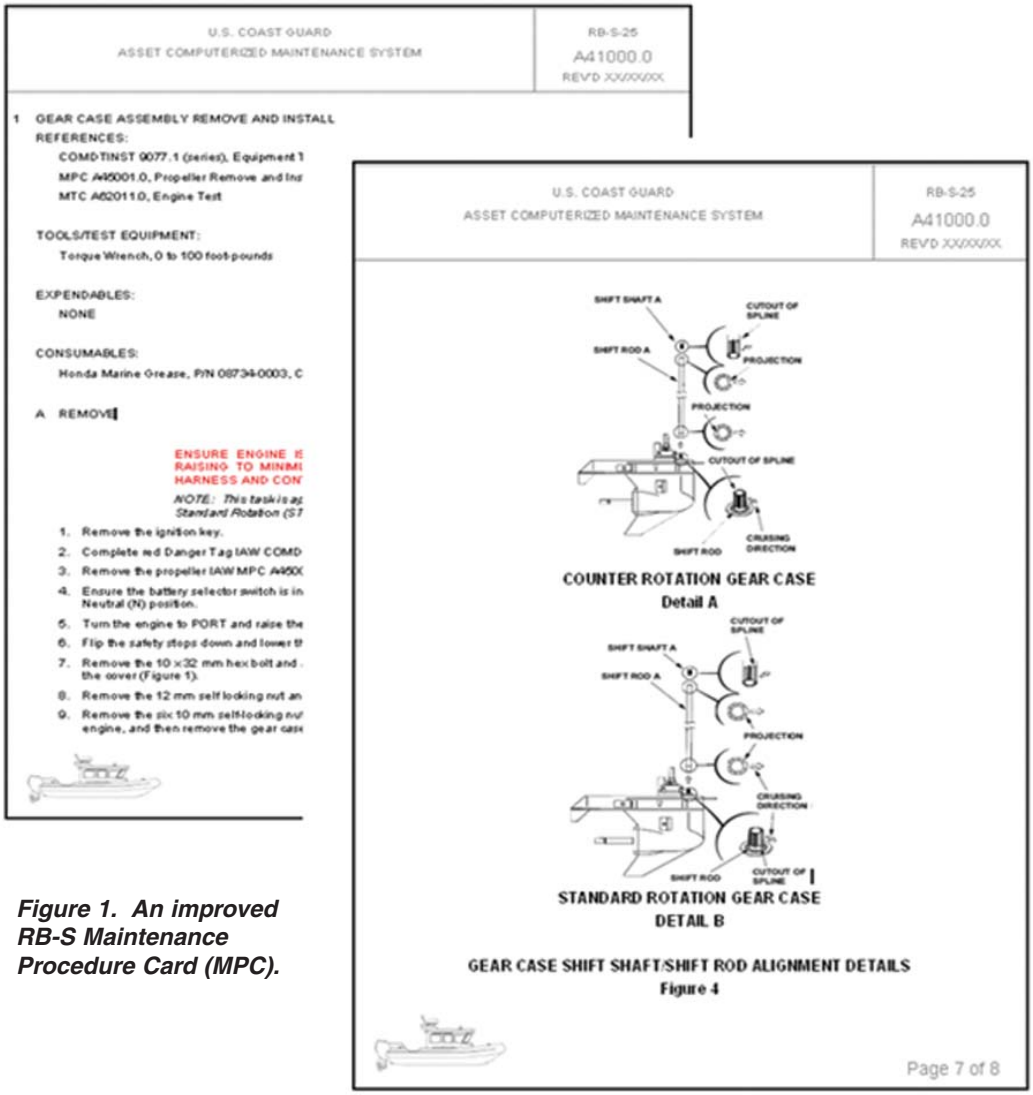


Figure 1. An improved RB-S Maintenance Procedure Card (MPC).

called for. An example of MPC graphics for an RB-S Honda lower unit is included as Figure 1.

Pilot Dry Run

One aspect of the preparations undertaken to assess our readiness for the Sector Baltimore Pilot was two table top exercises (TTX). The purpose of these exercises was to provide increased familiarity with the new business processes and data systems, and to also gauge our level of preparedness for pushing this new model out to a Sector. The first TTX (TTX1) was an organized walk through of common maintenance, supply, and operations scenarios but using aviation, and not naval, procedures. No IT systems were employed for TTX1. The exercise included a variety of "players" drawn from the ranks of the SECBALT staff and their subunits. Each player was paired with a "coach" who was a business area expert from the aviation community. For instance, Station Curtis Bay EPO MK1 Neal Huber was matched up with Maintenance Control Officer, AMTC Frank Vetter, from Air Station Detroit. For each scenario they discussed differences in how the Station did things today, and how they'd have to do in the future. Several months later TTX2 was held at Operations Systems Center (OSC) Martinsburg. This time our players and coaches walked through a "day in life of Sector Baltimore" script and exercised certain business practices using only aviation procedures, and even viewed and entered data in the aviation logistics data system, ALMIS. This TTX proved that boat data could be managed within ALMIS, and gave the SECBALT players increased confidence in what they were being asked to do.

Monica Shah of the LPTIO leads "Players and Coaches" through Sector boat support business scenarios at OSC Martinsburg using the aviation logistics system, ALMIS, picture on screen.

SECTOR BALTIMORE / STATION CURTIS BAY PRE-SITE SURVEY

Supporting Pictures

The following pictures were taken during the pre-site survey visit as a way to further document the current state of Sector Baltimore.

Supporting Pictures of Sector Offices (EO Office & Maintenance Control)

Maintenance Control Workstations

Maintenance Control Technical Publications Area

"Vessel Status Board" in EO's office

Roof leak in Maintenance Control

Honda Engine diagnostic Tough Book

9

DRAFT

Figure 2. Excerpts from the Sector Baltimore Site Survey show areas of the Sector Engineering Office that may need improvements in order to support the pilot.

Centralized Management, Centralized Funding

One key aspect of the aviation support model that required careful planning and preparation was in the area of financial management. In aviation virtually all support funding is centrally managed by the Aircraft Repair and Supply Center in Elizabeth City. Conversely, in the boat community funds are distributed to commands at a variety of levels through the budget model as "Standard Support Level", or SSL, or in the case of "45 funds", managed between the Maintenance and Logistics Command (MLC) and Naval Engineering Support Unit (NESU) for depot level support. A Financial Management Work Group analyzed the current funding models and earmarked the amount of funding that needed to be centralized for the remainder of Fiscal Year 2007 (FY07) and all of FY08 by standard boat class. This central account will be administered solely by the Standard Boat APO within ALMIS.

The Site Survey - (Re)-Assessing Support Readiness

Another key activity of the APO was to conduct site surveys at each Sector Baltimore unit, as well as Sector Engineering. The purpose of the site surveys was to evaluate Sector Baltimore's ability to conduct the maintenance and supply support activities it was being tasked to undertake in accordance with aviation practices. For instance, segregation and control of inventory is particularly critical and required new storage configurations. In addition the Maintenance Control, Field Terminal Operator (maintenance data entry) and Asset Material Manager (supply) duties all required new office spaces and requisite IT support. An excerpt of the site survey report showing office space needs in Sector Engineering is included as Figure 2.

Tool and equipment needs were also documented and acted upon through the site survey. For instance, though Sector Baltimore had always been expected to assist in the removal, installation, and shipment of RB-S outboards, they were never provided adequate lifting equipment to conduct this activity safely in the remote dockside locations that Station boats often found themselves. As a result, the APO is considering various support options and has elected to evaluate a specially configured mobile maintenance truck, which aviators would term "ground support equipment", or GSE, like the one shown in Figure 3.

Policy and Reporting Changes

Another element of this new model that required attention was in the area of policy and reporting. In some cases Sector Baltimore and its subordinate commands had to be relieved of current policy and reporting requirements. For instance, there was no longer a need to keep a paper Boat Record because ALMIS is used to document the entire history of an asset and becomes an official electronic record. In other areas existing practices had to

Figure 3. A mobile maintenance truck, like "The Dominator" pictured here, may be evaluated as part of the Sector's support capability.

be curtailed in order to effectively evaluate our efforts. For instance, it's not uncommon for a District Boat Manager to swap boats between Sectors, but because of the asset induction requirements of the aviation model and ALMIS, this would require extensive coordination. With the concurrence of the Office of Boat Forces and District 5 (D5), the swapping of boats will be limited to those already within Sector Baltimore unless extreme circumstances (e.g., loss of a hull) dictated otherwise. All of these policy changes were documented in policy waivers or memorandum and provided to Sector Baltimore.

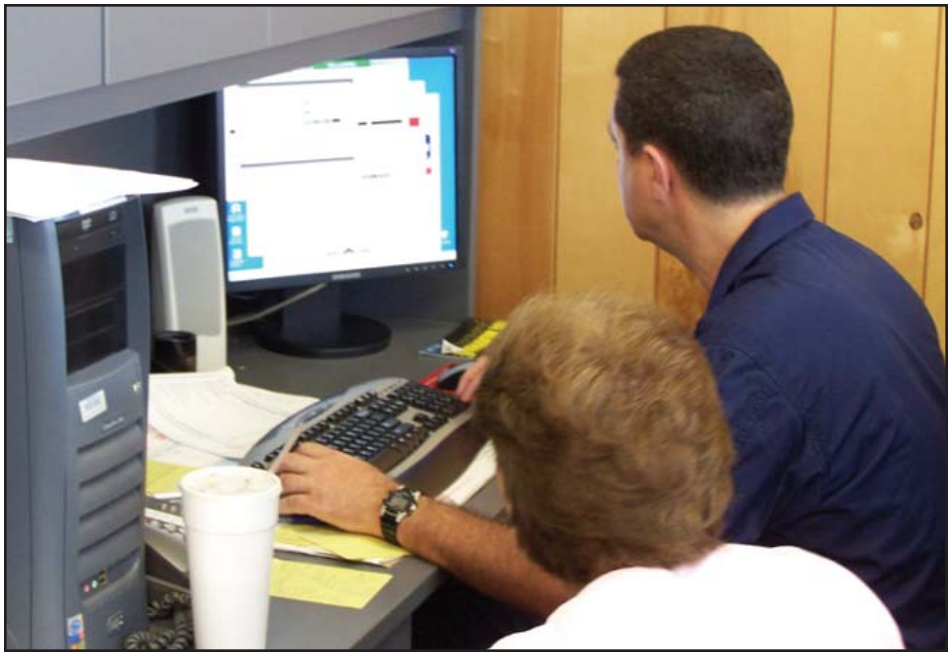
Electronics Support

Another area that required some adjustment was electronics support. Of course current practice dictates that all C4I support needs within Sector Baltimore are met by Electronics Systems Support Unit (ESU) Portsmouth and the Electronics Support Detachments (ESD) at Baltimore and Chincoteague. This includes any C4I equipment on the boats. These commands manage their own work lists (i.e., maintenance due list) for routine boat maintenance separate from the Sector's work lists, in addition to providing casualty support. While the work lists are separate, they do coordinate this activity with the Sector, Stations, and Aids to Navigation Teams (ANTs) to accomplish it. Conversely, within an Air Station all support for the airframe's avionics (i.e., electronics) is provided by an Aviation Shop located within the Engineering Department. The entire airframe maintenance program is managed by Engineering, and includes all of the avionics maintenance. Air Stations do receive ESU/ESD support, but only for non-airframe electronics and IT. To accommodate this change in approach for the Sector Pilot, ESU Portsmouth agreed to dedicate a group of technicians to learning the aviation practices, to adhere to Sector Baltimore Engineering guidance, to segregate electronics spare parts and supplies for management within ALMIS, and to work from a consolidated maintenance due list for each Sector standard boat that included electronics maintenance items on it. With the exception of their direct supervision, the ESD is serving as a "virtual" electronics shop under Sector Baltimore Engineering.

Inventory Management

Within Aviation Logistics most material is centrally managed and supplied by the Aircraft Repair and Supply Center (ARSC) in Elizabeth City. In addition the materiel provided is derived from an actual maintenance requirement, typically a part or supply item called out on an MPC. This same approach was used to generate a new "allowance list" for Sector Baltimore and its units, and also required the segregation, reconfiguration, and restocking of unit storerooms. In addition all the material had to be loaded into the Aviation Management

CDR Bob McCarty and Shiela Tunis of the ARSC Aviation Logistics Division enter Sector Baltimore stock items into ALMIS.



A newly stocked and barcoded Vidmar drawer in the Sector Engineering storeroom.

Information System (AMMIS) (supply) module of Aviation Logistics Management Information Systems (ALMIS). All of this work was accomplished in the months and weeks prior to the actual pilot kickoff at the Sector. Once up and operating, the Sector Baltimore Asset Material Manager will serve as the supply authority for all Sector Baltimore units, and will be the interface to the centrally managed supply operation at the APO.

Tool Control

One important element of aviation maintenance is tool control. The primary driver for this program is flight safety; misplaced tools have been known to damage expensive equipment and even bring aircraft down. Of course there have been documented cases of severe equipment damage due to lost tools in surface equipment as well, but aside from the obvious safety concerns, proactive tool control is just good business. Exercising good tool control first requires that you have a firm grasp of what tools you have and where they are stored. In order to accomplish this within the aviation maintenance community, the use of highly organized tool boxes with extensive use of "shadowing" is commonplace. A "shadowed" toolbox is simply one that applies colored tool shadows or cutouts to make it immediately apparent that a tool is not

Supporting Pictures of Carpentry Shop

New shadowed Snap-On toolbox

New Snap-On tool locker

"On-the-road" toolbox

Some examples of newly improved tool stowage in place at Sector Baltimore.

where it's supposed to be. This makes the process of inventorying tools each day, or after certain maintenance tasks, much more efficient. The next photo shows shadowed toolboxes being put into service at Sector Baltimore.

Quality Assurance

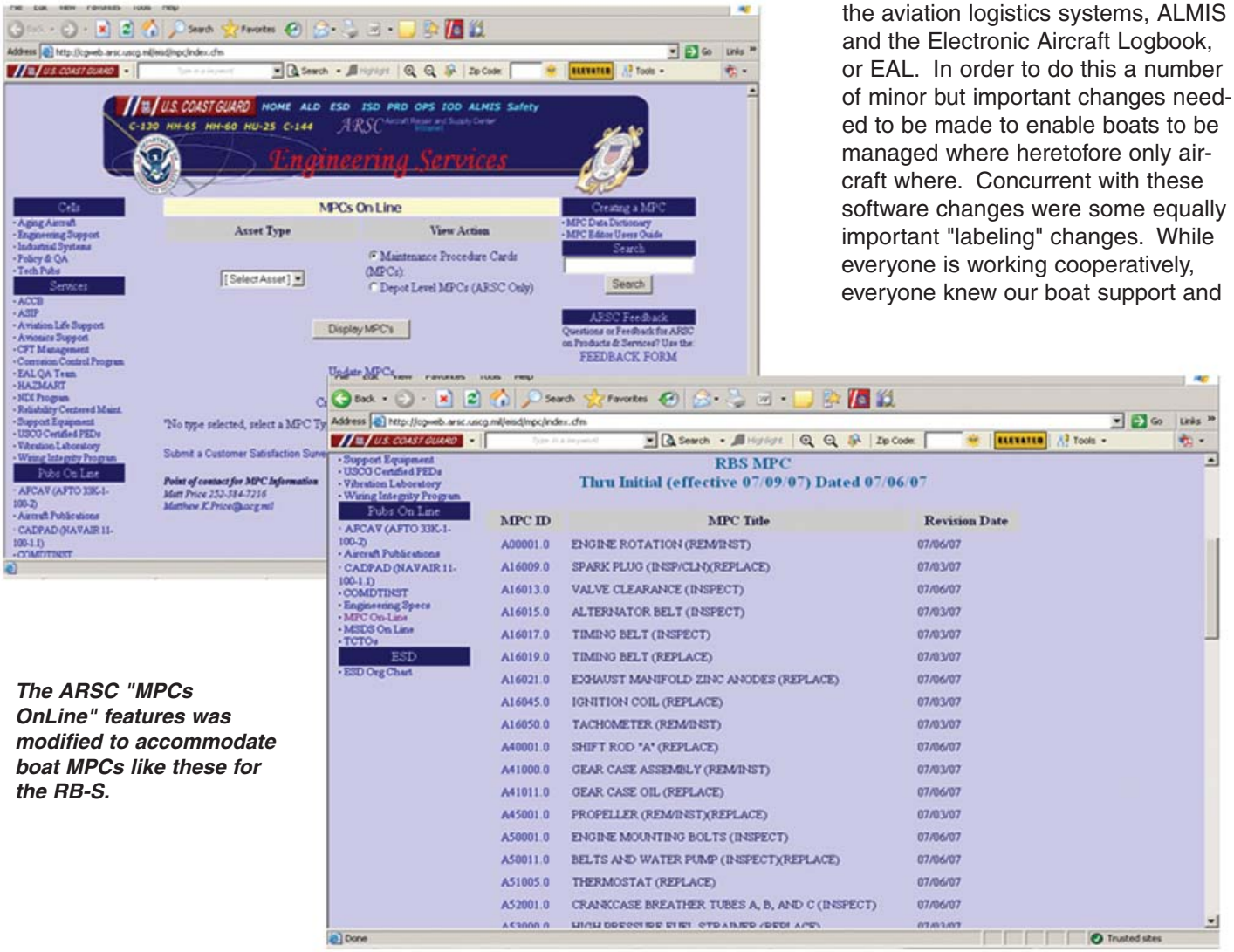
Another important aspect of aviation maintenance is the Quality Assurance (QA) program. Key, experienced individuals within the Engineering Department are formally designated as QA inspectors and assigned to the Quality Assurance Branch. Others can also be assigned the role as a collateral duty. At certain key steps many MPCs call for a QA inspection and sign off before the technician can advance to the next step. While this QA program requires additional effort, it saves problems and downtime by avoiding problems more junior technicians might create. Implementing this type of program within Sector Baltimore is part of the pilot, but has proved challenging because of the limited number of personnel in the engineering departments of many Stations and ANTs.

Maintenance Release

Within aviation, only personnel with Maintenance Release authority can certify an aircraft ready for operations and place any operating constraints on an asset that might still have a maintenance issue that does not ground it. A maintenance release signifies that a responsible individual has determined the correct maintenance or inspection has been completed for the discrepancy or other requirement. A signed release also signifies that adequate ground checks and maintenance documentation have been correctly performed. All of these review and releases are captured "for the record", and cannot be overridden by someone without that authority. This presents a change from present practice within the Boat Forces community, where the BOAT manual states that a CO must set or waive any restrictions placed on a damaged or maintenance restricted boat. For the pilot, Sector Baltimore will apply aviation principles by designating key individuals within Sector Engineering as having Maintenance Release Authority.

The "A" is for ASSET

A key enabler of the Sector Standard Boat Pilot was to have Sector personnel work within the aviation logistics systems, ALMIS and the Electronic Aircraft Logbook, or EAL. In order to do this a number of minor but important changes needed to be made to enable boats to be managed where heretofore only aircraft where. Concurrent with these software changes were some equally important "labeling" changes. While everyone is working cooperatively, everyone knew our boat support and



The ARSC "MPCs OnLine" features was modified to accommodate boat MPCs like these for the RB-S.

operations personnel didn't want to look at screens with "aircraft" labels all over them. With the concurrence and cooperation of the Office of Aeronautical Engineering (CG-41) and the ARSC, the "A" in ALMIS and EAL were relabeled from Aircraft to the more generic "Asset" (e.g., Electronic Asset Logbook). In addition, the ARSC web site, which is used to access maintenance procedure cards, was similarly updated to accommodate boat MPCs.

Final Preparations for Getting Underway

The LTPIO worked aggressively during the final months and weeks leading up to the July 23rd pilot kickoff. A number of critical activities needed to be completed and the office used it's project management system, ePMO, and an embedded "Ready for Sea" checklist, to track the status and ensure all signals were go. The following is an image of the dashboard taken a week prior to launch:

The LTPIO "Ready for Sea" dashboard.

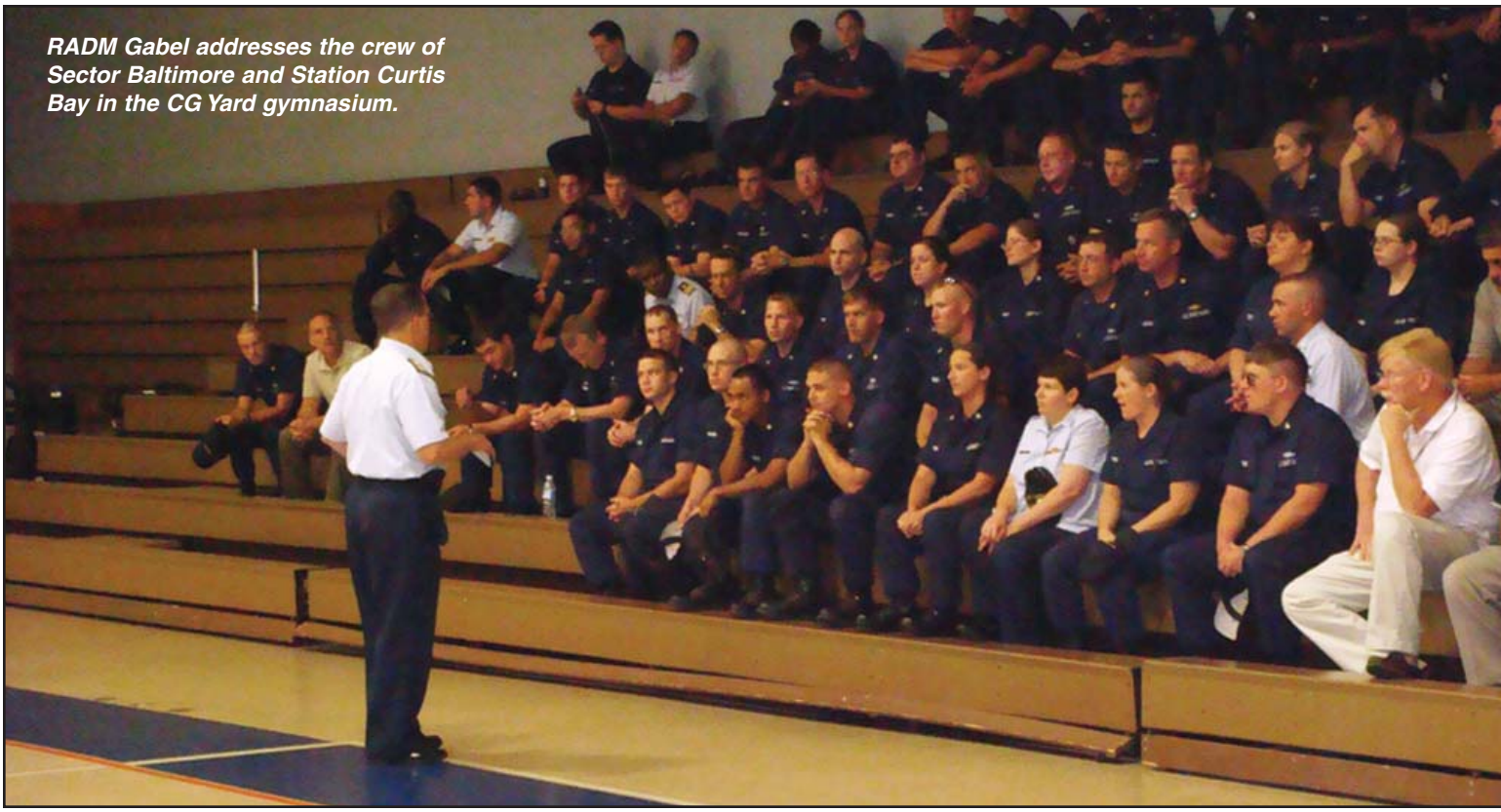
Final Checklist: Ready for Sea

Sort Options: By Risk, Category, Due Date, or POC

1 Weeks Until Launch

Risk Legend

Risk	Category	Task	Due Date	POC	Current Status	Risk Mitigation Plan
G	Finance	Finalize Centralized Accounts & Transfer Money	07/04/2007	Kenneth Burgess	The AFC 30 funds pull back from MLCA & D5 has been completed. The MLCA finance division has sent the funds via FTA (attached, with spreadsheet). The funds are residing at CGHQ pending the creation of the accounts in AMMIS, at which point the funds will be transferred to the pilot APO account. Final numbers pulled were: $30,073 from MLCA (SBM & Elex SBM); $37,884 from D5/Sec Baltimore (OBM); TOTAL: $67,957 AFC 30.	LTPIO will provide funds to APO as necessary
G	Finance	Create New Centralized Accounts in the system for Sector Baltimore	07/11/2007	Carl Messalle	On 17 July, FINCEN "enabled" the ARSC AFC 30 & 45 accounts that were set up for the LTPIO Small Boat APO use. "Enable" means to recognize them in FPD/CAS to allow transfer of the funds from FPD/CAS to those accounts. FPD/CAS is down for scheduled maintenance until 0800 23 July, at which time the funds will be transferred and available for APO use.	NA: This task requires 72 hr notice.
Y	Finance	APO Obtains Credit Card	08/15/2007	James Stargell	James completed required training & this should be complete by July 23.	Use LTPIO Cr Card as backup.
Y	LTPIO	Interim Prime Unit Formally Assigned for Sector Implementation	08/07/2007	Shelley Diedrich	Per CDR Cash, contract 1 FTE during August. Shelley will look into hiring additional contractors to support Sector.	No Plan. Impact: Sector will adjust with current staff.
G	LTPIO	Swapping Boats Decision for Sector Baltimore	06/29/2007	Brooks Minnick	MOA sent to Captain Scott Robert for signature.	No Plan. Impact: Risk a open loop pilot and deal with the consequences as they arrise.
G	LTPIO	Determine ESD Resources for Sector Baltimore	07/02/2007	Jim Cash	CDR Kritz signed MOA 6 July 2007.	Mr. Balderelli (ESD) understands the model. The risk is not being able to complete electronic maintenance in a timely fashion or having a ET that hasn't been trained on the model complete maintenance.
Y	Maintenance	Information derived from MPC: MSRL / LSE / GSE / ACL	07/02/2007	Barry Harner	4 MPCs have been developed for LSE. Test Equipment: No change in process, aviation has no mpc's. GSE: No action for unauthorized GSE & authorized GSE has 6 items being tracked. ACL: see HAZMAT Activity.	No plan. Impact: Maintenance records will not be updated and field will have to use current information.
G	Maintenance	Sector Baltimore MPC's Published to the website	07/10/2007	Eric Linton	As of July 17, 311 MPC cards (91% of the total for RBS, 41' and 49' assets) have been delivered to ARSC.	No plan. Impact: Delay Pilot.
G	Maintenance	Asset Configuration Verification for Sector Baltimore Assets	08/17/2007	Joseph Lichamer	Configuration data for all 25' RB-S, 41' UTB, and 49' BUSL in Sector Baltimore has been collected to initialize components in ACMS. A quick on-site review of each boat during the stand-up of each station in the pilot project will be done to ensure data is up to date.	No Plan. Impact: Delay Pilot
Y	Policy	Policy Working Group Drafts Interim Policy as necessary	07/04/2007	Michele Mattea	All content issues resolved. Michele Mattea sent an updated draft to CAPT Robert, CDR Cash 16 July.	No Plan. Impact: Delay Pilot.
G	Sector Tasks	Engineering Instructions	06/12/2007	Sean Foley	CWO is on track to complete this by 15JULY. He cannot implement daily tool control but he will do Monday morning and Friday afternoon	NA: Drafts are complete and this is not a huge lift for CWO Foley to complete.



RADM Gabel addresses the crew of Sector Baltimore and Station Curtis Bay in the CG Yard gymnasium.

Cast Off All Lines

On 23 July the Sector Standard Boat Pilot got underway at Sector Baltimore. RADM Dale Gabel, Assistant Commandant for Engineering and Logistics addressed a Sector Baltimore all hands muster to formally kick the pilot off. Training commenced the first morning and continued through the afternoon. An aggressive training schedule will deliver training at each Sector Baltimore unit, with every crew member receiving approximately 20 hours of training during a two-week period. The entire deployment lasted till the end of August. As the deployment progresses, LTPIO contract staff are capturing lessons learned and developing an implementation "playbook" that will be used as a guide at Sector San Francisco and subsequent Sectors beyond the pilot phase.

Rusty Sinclair, a member of the EAL QA training team from ARSC, delivers EAL training to the Sector Engineering staff.

Coast Guard 2006 Environmental Award Winners Announced

A total of twelve Coast Guard Environmental Awards were given to units, teams, and individuals for their environmental stewardship efforts over the last year. Superior environmental performance was cited in categories ranging from natural resources protection, to prevention and remedy of environmental damage, source reduction, sustainable design, environmental management systems, and overall environmental excellence. The awardees have brought great credit to the Coast Guard while demonstrating the breadth and depth of environmental capabilities the Coast Guard possesses. We encourage other units to contact the winners to learn how you can make a difference in protecting the environment while achieving your mission. Individuals can be contacted at their global address. Please contact Ken Malmberg for Point of Contacts at the units listed. Below is a brief description of their efforts.

Individual	
LT Jeffrey S. Pearson (CG-3RPL-4): Natural Resources Protection and Management 	LT Pearson's marine conservation expertise was demonstrated in the Marine Protected Species program through his strengthened partnerships with the Coast Guard Auxiliary and Sea Partners to protect coral reefs and reduce whale collisions. He also took personal responsibility for saving several at-risk marine mammals, and leveraged partnerships with the Marine Protected Area Federal Advisory Committee, the U.S. Coral Reef Task Force, and the Right Whale Regional Implementation Team for development of the Right Whale Ship Strike reduction plan.
Mr. Thomas A. Tansey (G-AND): NEPAL and Historic and Cultural Resources Management	Mr. Tansey's expertise was demonstrated by his thorough anticipation of delays that might occur in planning for tower sites, resulting in adherence to construction schedules for critical Rescue 21 projects. His planning abilities were supplemented by his knowledge of unique needs for migratory bird protection, endangered species, critical habitat protection, and areas of historic and cultural value in the Hudson River Valley.

Teams	
Facilities Design and Construction Center Pacific (FDCC-PAC): Building 4 Design and Construction Team Sustainable Design	The team incorporated green design elements into a high-performance green building to qualify for LEED Silver certification. From initial proposal to occupancy, considerations were made for water efficiency, energy use, and recycled content products throughout the project. Even its location was picked in an urban area that had already been developed and close to bus and train lines.

Teams cont'd	
Environmental Standards Division (G-3PSO-4): Natural Resources Protection and Management	This team took a comprehensive approach to aquatic nuisance species and dry cargo residue sweepings to set the standard for protection of water quality. They developed programmatic assessments of ballast water discharges, and set a policy of best management practices for vessels to declare "No Ballast Onboard," helping move the industry further toward meeting proposed discharge standards.

Large Units	
Air Station (AirSta) Barbers Point: Special Recognition - Source Reduction	The unit's focus on the HazMin Centers by use of HSMS software ensured tracking of all Hazmat issuance, reclaiming, reuse, and disposal. Using this tracking system to systematically eliminate use of these materials has greatly reduced both the size of the waste stream and disposal costs.
Air Station (AirSta) Cape Cod: Environmental Management Systems	The unit's broad accomplishments in EMS are led by their cross-functional teams which ensure integration of environmental awareness into the daily operation of the unit. Their EMS also provides crucial metrics for energy and emission reductions, solid waste reductions and recycling, and procurement of post-consumer recycled materials throughout the unit.
Facilities Design and Construction Center Atlantic (FDC-CLANT): Special Recognition-Natural Resources Protection and Management	The unit minimized potentially disruptive effects on environmentally protected sea-grass by transplanting it during construction of a new mooring facility at Sector St. Pete. The transplant operation promoted cooperation with the State and with the Corps of Engineers, and improved habitat for several marine species, while having a positive effect on water quality.
Sector/Air Station (AirSta)_ Corpus Christi: Overall Environmental Excellence	The Sector standardized its best practices among all outlying units, exemplified by their booklet "Sector Waste Disposal Procedures," summarizing stewardship policies and procedures for all their tenants. Their Harbor Facility successfully eliminated the Hazmat pharmacy by improved accountability from the tenants. The unit's most recent Environmental Compliance Evaluation (ECE) recommended their small boat stations cancel their hazwaste registration numbers since hazwaste has been eliminated as a problem! The Sector also enjoys exemplary external community relations through an active outreach and education program.
Coast Guard Yard: Pollution Prevention	The Yard continues to maintain its ISO-14001 certification. Pollution prevention has come to the fore through focusing on energy management via a landfill gas project for renewable energy, reduced air emissions from reduced boiler plant operations, and remediation of surrounding soils from removal of a non-compliant underground storage tank.

Coast Guard Green

Small Units	
Aids to Navigation Team (ANT) Saugerties: Special Recognition - Community Outreach 	ANT Saugerties demonstrated excellence by responding to establishment of a nature trail and Lighthouse Conservancy adjacent to the ANT property. They comingle and dispose of solid waste from these new neighbors, and patrol the areas, generating much good will from the community.
Civil Engineering Unit (CEU) Miami: Environmental Management Systems	The unit initiated a funding request to test the EnviroManager tracking system at 13 Coast Guard locations, leading to self-certification at two Sectors. Their best practices modules provide tracking for fuel farms, asbestos, and environmental documentation at these locations, and their system outreach has extended to Maintenance and Logistics Command Pacific (MLCPAC) and Atlantic (LANT) Area, improving standardization of EMS implementation.
SSD Paris Landing, TN: Special Recognition - Recycling and Pollution Prevention 	This unit has directly assisted the CGC CHIPPEWA and CGC CIMARRON with guidance on waste disposal and hazardous materials disposal, allowing for more environmentally friendly operation and maintenance for these busy vessels. Their efforts at reusing buoys resulted in ensuring continued service from approximately 405 class 4 buoys last year. They also recycled all batteries that were unsalvageable, as well as oil and coolants.

RADM Dale Gabel, Assistant Commandant for Engineering and Logistics (CG-4), announced and congratulated the winners in an ALCOAST wrote, “I applaud all the nominations submitted and appreciate your contributions to the success of the environmental protection program, and furthering the goals of the Commandant’s Environmental Stewardship Commitment. I encourage all units to contact these winning units, teams and individuals to learn how you can model your environmental and natural resources protection efforts after them.” Congratulations to all the winners of this years awards.

DHS Environmental Achievement Award Winners in the U.S. Coast Guard

The DHS Environmental Achievement Award was developed in 2004, and addresses waste/pollution prevention, recycling, green purchasing, sustainable design/green buildings, environmental management systems, minimizing petroleum use in transportation, electronic recycling, natural resource protection and management, the national environmental policy act (NEPA), and historic and cultural resource management. Eight awards were won in 2007 by Coast Guard individuals and units. The names and categories of the winners are:

Large Unit

ISC Miami-Waste/Pollution Prevention
AirSta Cape Cod-Environmental Management Systems
ISC Kodiak-Recycling

Small Unit

CEU Miami-Environmental Management Systems
Support Detachment Paris TN-Recycling

Individual

BM1 Aaron Udland, Station Juneau-Minimizing Petroleum Use in Transportation

Sustainable Design/Green Buildings

Facility Design and Construction Center Pacific-New Construction
USCG Yard-Existing Building

We congratulate these winners, many of whom also won the USCG Environmental Award, for their originality and perseverance in reducing our environmental footprint and for being true stewards of the environment. Please contact Ken Malmberg of the Office of Environmental Management (CG-443) for copies of their winning nominations.

LCDR Dennis C. Evans, 2007 Coast Guard Engineer of the Year

LCDR Dennis C. Evans, USCG Air Station Borinquen's Public Works Officer, Puerto Rico, is the Coast Guard Engineer of the Year for 2007. He was selected from a group of outstanding nominees throughout the Coast Guard, both civilian and military. LCDR Evans received a bonus by selection as a top ten finalist for Federal Engineer of the Year for 2007, the National Society of Professional Engineers (NSPE) .

LCDR Evans was chosen as Coast Guard EOY for his leadership and ability to get the job done recorded in the following entry in his nomination package:

"Possessing an outstanding ability to get things done, he finds creative ways to maximize the Coast Guard's facilities maintenance dollar. An excellent example is partnering with Air Force National Guard Squadrons to complete base maintenance projects. For the price of logistics support only (on base meals and lodging), has secured approximately 14,000 manhours of supplemental labor. In the las two years, he has used the additional work force to renovate bathrooms at the pool and community center, upgrade the hangar berthing areas for ready air crews, install a new park (with playground, gazebo and watch tower) in the housing area prepare family housing units for new occupants, enlarge the youth center, renovate the Education Services Office, construct a new generator building, and many, many, other small ventures. These projects are typically family and community focused, representing work that may not otherwise be possible through traditional methods given austere budget climates. Over the last two years, approximately $100K or investment for materials and logistics support has been leveraged into completed work in place with a value of ~$450K, a return-on-investment of over 4-to-1. To share the success, took the additional step of publicizing to all Coast Guard Public Works Officers, resulting in other Coast Guard units following the lead with this program."

"The candidate's accomplishments in environmental stewardship are unsurpassed, having been personally recognized by the DHS environmental program director and CG Commandant in 2005. To date in 2006, has shepherded unit to Coast Guard and EPA environmental quality awards. Innovative environmental initiatives include use of solar alternatives wherever possible including water heaters, traffic signs and shop utility vehicle, coupled with aggressive recycling efforts to include non-virgin aircraft fuel, as well as a housing area curb side program. As of late 2005, has achieved 220% facility increase in recycling (as measured by weight) as compared to 2002. Concurrently, hazardous waste generation has fallen by 78%. Programs have been advertised CG-wide as examples of "best practices."

LCDR Evans was recognized for his contribution to the Coast Guard during an award ceremony hosted by the NSPE on 22nd of February 2007 at the national Press Club, Washington, DC. Coast Guard Vice Commandant, Vice Admiral (VADM) Vivien S. Crea and Rear Admiral Dale G. Gabel, Assistant Commandant for Engineering and Logistics (CG-4), congratulated LCDR Evans for a job well done during an early morning visit to Headquarters on the 22nd. RADM Gabel later accompanied Evans and his family to the FEYA luncheon where RADM Gabel presented him with the Coast Guard Engineer of the Year award.

Other nominees for this year's award were LCDR Andy Clyburn, David Adylett, LT Christopher Treib, David Robinson, CDR James Sebastian, CDR Jonathon Milkey, LT Sean Brady, Thomas Remmers, LT Dean Milne, Paul Rodriquez, LT John Chang, and LT James Forgy.

This annual luncheon honors and recognizes federal government engineers and agency winners for their achievements in engineering and their contributions to the American public. We congratulate LCDR Evans and all who were nominated for the "2007 Coat Guard Engineer of the Year."

USCG ISSO of the Year

"Mr. Vince Walser, an Information System Security Officer (ISSO) at ESU Kodiak, AK was awarded the USCG ISSO of the Year award during the annual DHS Security Conference in August 2006. The award acknowledges the roles ISSOs contribute to the protection of DHS systems and assets. The Deputy COMDT for C4&IT, CAPT Chaz Johnson presented the award during the DHS conference. Congratulations to Ms. Del Tomani, OSC; Mr. Frank Finely, PSC; and Mr. Burt Matsushima, ESU Honolulu who were also nominated for the award. BZ!"

2006 Coast Guard Civilian of the Year

Admiral Thad Allen (left), Commandant of the U.S. Coast Guard, presents the 2006 Coast Guard Civilian of the Year Award to Ramona Vazquez (right) of the Coast Guard Yard.

For Ramona Vazquez, Administrative Assistant Yard Fiscal Department, it was business as usual on Friday, March 16th [2007] until her phone rang and the Commandant of the Coast Guard was on the line! Admiral Allen was calling Ramona to congratulate her on being named the "2006 Coast Guard Civilian of the Year." The award was initiated eight years ago to recognize superior job performance and significant contributions to the community among the Service's civilian employee corps.

Throughout the past year, Ramona worked diligently on creating a new solution that would minimize financial risks associated with accounting practices with the Department of Homeland Security's (DHS) new express mail carrier, DHL. Because of extremely large data files, the carrier's billing reports posed numerous problems for the DHS accounts reconciliation staffs. Ramona developed a first-of-its-kind process for extracting data and created an easy-to-read spreadsheet. Her solution helped minimize financial risk to the Coast Guard's management of over 1.5 million dollars in DHL accounts.

Ramona currently serves as President of the Baltimore Area Coast Guard Spouses' Association. Under Ramona's leadership, the Association celebrates two years of operation this spring for "Nate's Open Door," the Baltimore Area Coast Guard Command baby pantry named after late DC3 Nathan Bruckenthal, USCG. Petty Officer Bruckenthal was killed in action in the Persian Gulf in 2004.

"Nate's Open Door" opened its doors in 2005 acquiring baby pantry items such as diapers, infant clothing, crib sheets, etc. and making them available, free of charge, to members of the Baltimore area Coast Guard community. Nearly 100 families have been served through the baby pantry ministry to date.

Ramona also initiated a campaign for her Association to collect free telephone calling cards for distribution to the Coast Guard crews of cutters in the Yard for repair. She later expanded the project to provide telephone calling cards to members of the armed forces recovering at nearby Walter Reed Army Medical Center from injuries sustained in the Iraq War.

Ramona's dedication to the Coast Guard comes straight from the heart for she has been the Coast Guard wife of MKC Edward Vazquez, USCG, for the past 20 years. A native of Tucson, Arizona, Ramona met Ed at Coast Guard Air Station Miami, and they were married in 1987. They have been stationed in five different states including Maryland throughout Ed's career. Today, they are the proud parents of three sons: Edward, a member of the Maryland Air National Guard; Michael, a 10th grade honor student at Arundel High School, and Christopher, an 8th grade honor student at Mac Arthur Middle School.

Ramona devotes her free time to her local Civil Air Patrol, works for the Greater Odenton Improvement Association, and is currently contributing to the development of the Hispanic Committee Relations Board for Anne Arundel County government.

The motto of the Coast Guard Spouses Association is "unconditional love and support." Ramona Vazquez is a role model for this motto and exemplifies the "best of the best" in the Coast Guard civilian community.

THE COMMANDANT OF THE UNITED STATES COAST GUARD
WASHINGTON, D.C. 20593-0001

THE COMMANDANT'S ENVIRONMENTAL STEWARDSHIP COMMITMENT

The United States Coast Guard is recognized as America's Maritime Guardian. We have long been charged with enforcing the laws and regulations that protect our country's marine environment, responding to vessel pollution, and restoring waterways following a disaster. As Environmental Stewards, we make a commitment to the American public and to future generations, not only to protect the environment, but also to demonstrate these values in our organization.

To maintain the public's trust, the Coast Guard will incorporate environmental best practices in all we do. We will

Develop an organizational capability to disseminate best practices, reduce environmental liabilities, and help all units achieve and maintain environmental compliance;

Undertake the *Federal Electronics Challenge* for recycling computers and other electronics;

Increase the use of biofuels in our vehicle fleet by 15% over each of the next four years;

Utilize sustainable design principles so that 25% of new construction projects will meet Leadership in Energy and Environmental Design (LEED) standards by the end of my watch;

Fully implement Environmental Management Systems (EMS) at major Coast Guard industrial units by the end of my watch.

I challenge all Coast Guard units to improve the environment, and to reduce our environmental footprint. Do your part, wherever you are within the organization, to make environmental stewardship a Coast Guard core competency.

Semper Paratus,

T.W. ALLEN
Admiral, U.S. Coast Guard

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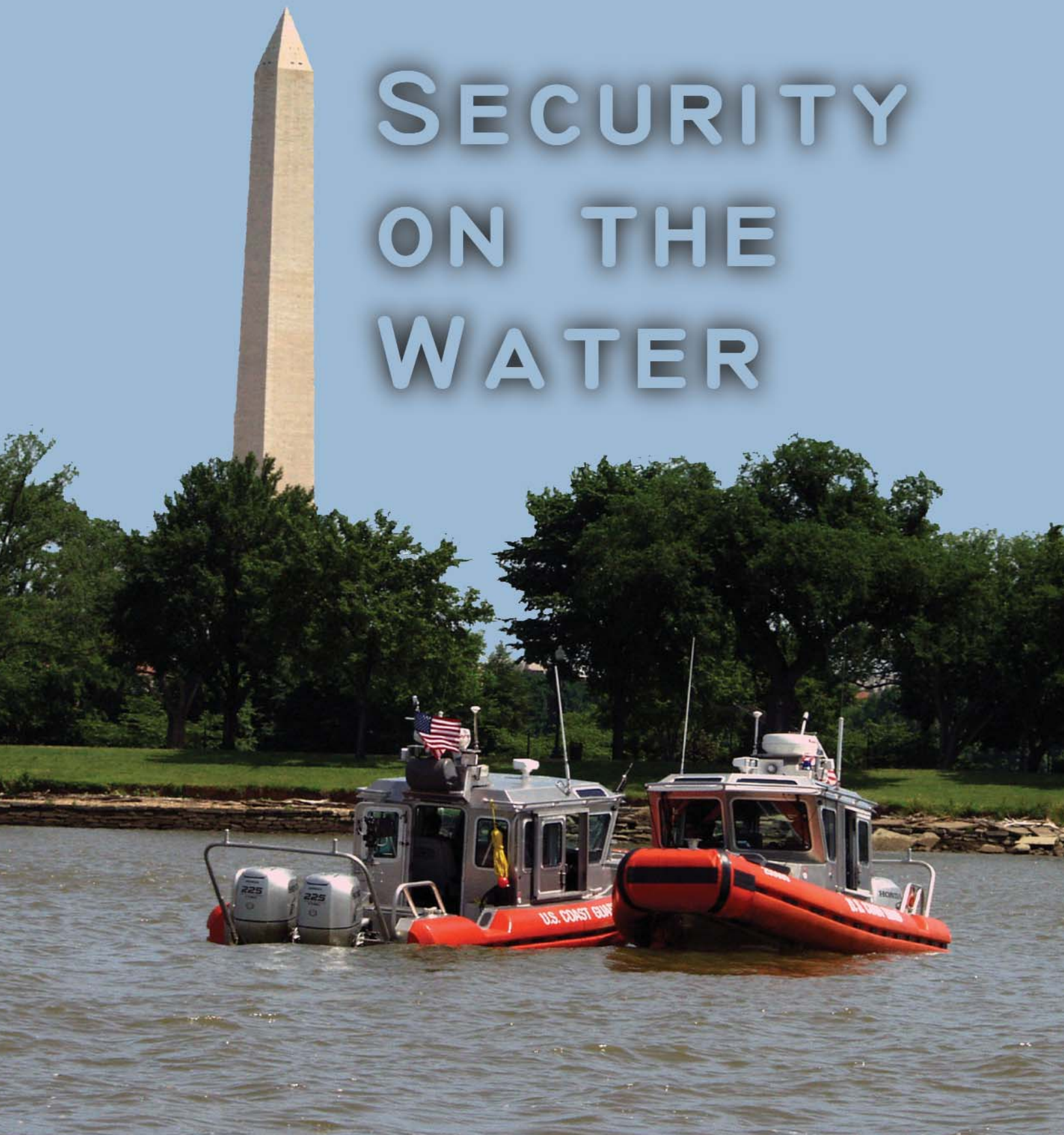
Security on the Water