Coast Guard Cutter Active Returns Home After Seizing $87 Million Worth of Cocaine

PORT ANGELES, Wash. – The Coast Guard Cutter Active returned home Oct. 12 following a 50-day counterdrug deployment to the Eastern Pacific Ocean.

The 75-member crew aboard Active conducted multiple law enforcement boardings in international waters off the coasts of Central and South America. The cutter interdicted three suspected smuggling vessels, disrupting the movement of 5,794 pounds of illicit narcotics valued at more than $87 million.

An Air Station Port Angeles aircrew and a MH-65 Dolphin helicopter embarked aboard Active for the majority of the patrol. The aircrew aided in the interdiction of suspected narcotics traffickers. Two members of the Chilean Navy also deployed aboard Active during the patrol.

Coast Guard cutters operate under the tactical control of 11th Coast Guard District in support of Joint Interagency Task Force-South while conducting counterdrug operations in the Eastern Pacific Ocean. The U.S Coast Guard partners with other nations through bilateral agreements to conduct interdictions in foreign and international waters.

Active is a 210-foot medium-endurance cutter commissioned in 1966 and homeported in Port Angeles. Active's crew routinely operate from the Straits of Juan de Fuca down to the waters off Central America. Active conducts nine of the Coast Guard's 11 statutory missions, including search and rescue, drug interdiction, fisheries enforcement and homeland security.

Coast Guard Continues Hurricane Michael Response

MOBILE, Ala. – Coast Guard crews continued response efforts along the path of Hurricane Michael, the U.S. Coast Guard Hurricane Michael Response Information Center said in an Oct. 11 release.

As of 6:30 p.m. on Oct. 11, Coast Guard crews had rescued approximately 40 people and assisted 232.

Coast Guard shallow-water response teams have been conducting search-and-rescue efforts and removing debris from the roadways to ensure emergency services are able to access the roads. The shallow-water response teams helped assist 142 nursing home patients to a bus that transferred them to a safe haven at a Pensacola hospital.

Coast Guard Port Evaluation Assessment Teams are assessing damage caused by the hurricane and have been actively engaged with port partners to ensure reopening of Pensacola and Panama City waterways.

Coast Guard pollution responders are evaluating waterfront facilities, sunken, damaged or capsized vessels and conducting overflights to ensure mitigation of hazards to the maritime environment.

Navy Innovators Reveal Revolutionary Research to Counter Emerging Threats

DAHLGREN, Va. – Navy inventors are confident that their latest research in quantum physics, artificial intelligence, and cyber security – to name a few – will ultimately impact U.S. military and homeland security efforts. The innovations and their potential military applications were introduced and explained by the researchers at a recent event, Naval Surface Warfare Center Dahlgren Division (NSWCDD) announced Oct. 12.

In all, principal investigators presented 20 research projects with the titles of their discoveries ranging from "Cyber Security for the Internet of Things" and "Electrochemical Destruction of Bulk Chemical Warfare Agents" to the "Dynamical Non-Locality Induced Effect in Quantum Interference."

Navy technical managers, engineers and scientists networked with representatives from academia, industry, transition partners, and other key stakeholders to see and hear more about these new innovations at the In-house Laboratory Independent Research (ILIR) and Independent Applied Research (IAR) End of Year Review at the University of Mary Washington Dahlgren Campus, Sept. 25.

Funded by the Office of Naval Research (ONR), the ILIR and IAR program fosters fundamental and applied research at the Navy Warfare Centers to counter emerging threats by connecting technological needs with current and emerging capabilities.

The NSWCDD principal investigators identified challenges, objectives, accomplishments and future benefits while answering questions and briefing the ILIR and IAR projects they've been working on over the past year.

“The program helps to ensure a next generation of technically competent scientists by supporting masters and doctoral dissertation research, and research in the areas that are essential to our future mission,” said Dr. Jeff Solka, NSWCDD ILIR/IAR program director. “Our ILIR and IAR process is a means to develop the next generation of Navy scientists and engineers capable of addressing key warfighter challenges to ensure the Navy maintains a leading edge in science for national defense.”

Many of the projects presented at the ILIR and IAR event have the potential to result in Cooperative Research and Development Agreements. This legal agreement provides a means for NSWCDD and a private sector partner to cooperatively conduct research and development in a given technical area and share in the technical results.

“We have three strategic thrusts for ILIR and IAR programs,” Solka said, in reference to the programs at NSWCDD. “We provide funding for science, engineering, mathematics and statistics students to complete their graduate studies. New researchers can develop their own science and technology projects and portfolios. In addition, world-class researchers have the ability to develop revolutionary ideas.”

For example, world-class principal investigators Scott Spence and associate investigator Dr. Dan Parks developed a revolutionary idea for their quantum physics project, titled, “Dynamical Non-Locality Induced Effect in Quantum Interference.” The potential military applications of their research include anti-tamper cybersecurity, invisible security fences and highly sensitive vibrometer technologies.

“Dynamic non-locality is more robust than kinematic non-locality,” said Spence, pointing out that dynamical non-locality will provide an enabling technology for future quantum devices.

Principal investigator Dr. Joseph Hunt's work – "Synthesis and Characterization of Carbon Nanotube-Metal Organic Framework Composites" – could be used to develop new electromagnetic materials with enhanced, tunable properties with applications in electromagnetic offense and defense, and electric weapons in addition to chemical, biological and radiological protection.

"The Metal Organic Framework nanotube composites could be transitioned to a variety of operational areas in which thin layers of material with high electromagnetic lossiness is desired," said Hunt. "The other permittivity and potential electronic properties could be used in electric weapons or directed energy projects."

Hunt's project – performed to produce composites with enhanced properties by combining carbon nanotube and reticular chemistry – advance the state of the art by exploring how the material properties of Metal Organic Framework are affected by the incorporation of increasing amounts of carbon nanotubes.

"This work enables future weapon systems by providing control over the electromagnetic properties of the material as well as providing the improved conductivity necessary for sensors and other electronic systems utilized by the Navy and Department of Defense."

Principal investigator Kimberly Zeitz – an NSWCDD scientist and Ph.D. student at Virginia Tech – presented a new security technique in her project, "Cyber Security for the Internet of Things," that has the potential to protect data from sensor devices utilized for wartime communications.

Zeitz focused on limiting the time attackers may conduct reconnaissance on low-powered embedded system devices while considering the challenges such as resource and performance constraints. Low-powered, low-resource devices cannot use traditional security methods.

“This Micro Moving Target IPv6 Defense obscures communications of these devices through address rotation,” said Zeitz, regarding her research at NSWCDD, which is closely linked to ongoing research conducted within the Virginia Tech Information Technology Security Lab.

“Past and ongoing research includes a Moving Target IPv6 Defense and its applications in enhancing network security,” said Zeitz. “This security technique can be catered for use with different applications on different embedded devices. The ability to select the hashing algorithm used allows it to be adapted for a best fit and also to stay current as new has algorithms are developed.”

Dr. Elizabeth Haro’s research on data visualization support resulted in a tool that will be transitioned to the Aegis Readiness and Training Center for use in in training Sailors. Her research project – “Data Visualization Support for Creation of a Numerical Table: Effects on Training and Performance” – can result in novel visualization techniques, including 3D visualizations to optimize delivery and utilization for the human users.

An incorrectly developed ship doctrine can lead to catastrophic events. Currently, the system includes a tabular display of completed doctrine statements on the Aegis Display System and the doctrine comparison capability in 2D. There is no graphical representation to aid the warfighter in the development of doctrine.

“This technology is a visual-based doctrine system that could enable the ability for centralized Fleet level doctrine creation and tactics in real time,” said Haro, the team lead for the NSWCDD Human Systems Integration Science and Technology Team. “It can reduce Sailor workload by minimizing the required sectors that a warfighter must monitor for each ship based on the global coverage area of the fleet doctrine.”

Navy Strategic Systems Official: Hypersonics ‘Coming to a Theater Near You’

WASHINGTON – The Navy’s Strategic Systems Program (SSP) office is planning two more test flights to demonstrate conventional prompt strike (CPS) capability, a program official said, to capitalize on the first test conducted a year ago.

“Hypersonics is coming to a theater near you,” Capt. Doug Williams, the SSP’s technical director, said at the third annual Triad conference.

“As part of a program of record within the Office of the Secretary of Defense, we [SSP] have been working a hypersonic glide technology demonstration,” Williams said. “We called it Flight Experiment No. 1. FE-1 flew about a year ago, Oct. 31. We took an old A3 [Polaris] rocket motor built in the late ’80s, made it a stack, and launched it off of Hawaii, flew it a couple thousand miles. It landed at Kwaj [Kwajalein Atoll].

“It was brilliant. The whole time we had telemetry pumping down. We saw everything in a virtual model, real time, and it was one of those things that makes your hair on the back of your neck stand up. And you stand up as you see the body do what the body did and the body land exactly where it was supposed to land. It was awesome,” he said.

Williams said that hypersonics is the No. 1 priority of Michael D. Griffin, undersecretary of defense for research and engineering.

“We’re leaning forward,” Williams said. “We have two more

experiments to fly. We are working with the Office of the Secretary of Defense and with ASNRD&A [assistant secretary of the Navy for research, development and acquisition] staff to understand conventional prompt strike. For the Navy it is going to be indeed a program."

Williams noted that even with the potential of conventional prompt strike, the primary mission of SSP is to provide a nuclear deterrence capability with the Strategic Weapon System. He cautioned that "if we don't do that right, no one is going to care about CPS. We are on a path to ensure that we firewall this conventional capability. That, no doubt, will be a heavy lift. We cannot have CPS drain Trident [the Navy's submarine-launched ballistic missile program]."

SPY-6 Radar Tracks Ballistic Missile Through Intercept and Multiple, Simultaneous Targets

TEWKSBURY, Mass. – Raytheon Co.'s AN/SPY-6(V) radar continues to demonstrate its integrated air and missile defense capability through exceptional performance against multiple targets, the company said in an Oct. 10 release.

The radar detected, acquired and tracked multiple targets from the U.S. Navy's Pacific Missile Range Facility, Kauai, Hawaii. Capitalizing on two unrelated exercises conducted nearby in mid-September, SPY-6(V) not only tracked multiple threats simultaneously, but also a ballistic missile through intercept, for the first time.

Raytheon’s SPY-6 continues successful testing at the U.S. Navy’s Pacific Missile Range Facility.

“AN/SPY-6(V) continues to impress through consistent performance against complex, surrogate threats,” said U.S. Navy Captain Seiko Okano, major program manager for Above Water Sensors, Program Executive Office, Integrated Warfare Systems. “With production now underway, we’re progressing – with confidence – toward delivery of this exceptional, game-changing radar, which will transform our naval capabilities for decades to come.”

The SPY-6(V) program has met all milestones, ahead of or on schedule, since its inception in January 2014. The radar has amassed a track record of performance, demonstrating its multimission capabilities against an array of single and multiple simultaneous targets throughout the Navy’s extensive testing program and against various targets of opportunity. Now in production at Raytheon’s advanced Radar Development Facility, AN/SPY-6(V) remains on schedule for delivery to the first DDG 51 Flight III, the future USS Jack H. Lucas, in 2019.

AN/SPY-6(V) provides greater range, increased accuracy, greater resistance to environmental and man-made electronic clutter, higher reliability and sustainability than currently deployed radars. The radar’s demonstrated sensitivity provides greater coverage for early and accurate detection which optimizes the effectiveness of the Navy’s most advanced weapons, including all variants of Standard Missile-3 and Standard Missile-6.

Coast Guard Conducting Search and Rescue After Hurricane Michael

MOBILE, Ala. – The Coast Guard is conducting search-and-rescue operations throughout areas affected by Hurricane Michael, the U.S. Coast Guard Hurricane Michael Response Center in Mobile, Alabama, said in an Oct. 11 release.

As of 9 a.m. on Oct. 11, Coast Guard crews have rescued approximately 17 people and assisted six. Currently, the Coast Guard has nine aircraft and three shallow-water response teams conducting rescues.

Nine people were rescued by Coast Guard aircrews after they became trapped in a bathroom when a roof collapsed in Panama City, Florida, on the afternoon of Oct. 10.

“We have multiple aviation and ground assets focused on saving lives,” said Cmdr. Jason Franz, Sector Mobile incident commander for Hurricane Michael. “We’re working closely with Customs and Border Protection aircrews to help with our search and rescue operations.

“Our pollution and damage assessment teams have begun evaluating major areas of pollution and damage to our waterways, and we’ve partnered with the Army Corps of Engineers and other port partners to begin the process of re-establishing our ports to ensure we have commerce flowing as soon as possible,” he said.

NAVSEA Approves First Additive Manufactured Metal Component for Shipboard Use

WASHINGTON – Naval Sea Systems Command (NAVSEA) has approved the first metal part created by additive manufacturing (AM) for shipboard installation, the command said in an Oct. 11 release.

A prototype drain strainer orifice (DSO) assembly will be installed on USS Harry S. Truman (CVN 75) in fiscal 2019 for a one-year test and evaluation trial. The DSO assembly is a steam system component that permits drainage/removal of water from a steam line while in use.

Huntington Ingalls Industries Newport News Shipbuilding builds Navy aircraft carriers and proposed installing the prototype on an aircraft carrier for test and evaluation.

"This install marks a significant advancement in the Navy's ability to make parts on demand and combine NAVSEA's strategic goal of on-time delivery of ships and submarines while maintaining a culture of affordability," said Rear Adm. Lorin Selby, NAVSEA chief engineer and deputy commander for Ship Design, Integration, and Naval Engineering. "By targeting CVN 75, this allows us to get test results faster, so – if successful – we can identify additional uses of additive manufacturing for the fleet."

The test articles passed functional and environmental testing, which included material, welding, shock, vibration, hydrostatic, and operational steam, and will continue to be evaluated while installed within a low temperature and low-pressure saturated steam system. After the test and evaluation period, the prototype assembly will be removed for analysis and inspection.

While the Navy has been using additive manufacturing technology for several years, the use of it for metal parts for naval systems is a newer concept and this prototype assembly design, production, and first article testing used traditional mechanical testing to identify requirements and acceptance criteria. Final requirements are still under review.

“Specifications will establish a path for NAVSEA and industry to follow when designing, manufacturing and installing AM components shipboard and will streamline the approval process,” said Dr. Justin Rettaliata, technical warrant holder for Additive Manufacturing. “NAVSEA has several efforts underway to develop specifications and standards for more commonly used additive manufacturing processes.”

Coast Guard Releases ‘Maritime Commerce Strategic Outlook’

ARLINGTON, Va. — The Coast Guard has released a 10-year vision for enabling maritime commerce, which “emphasizes the critical need for a ready, relevant, responsive Coast Guard,” the service said in an Oct. 11 message.

The Coast Guard “Maritime Commerce Strategic Outlook” will guide the service’s efforts in securing the strategically critical maritime environment while enabling its impact on the nation’s economic prosperity.

A message to the service signed by Vice Adm. Daniel B. Abel, deputy commandant for Operations, noted that “America is a

maritime nation. It is a nation shaped by seafarers who recognized the tremendous economic potential derived from unrestricted access to the oceans, internal waterways, deep-water ports, and protected straits and bays. Our American prosperity remains inextricably linked to the fate of the maritime environment.

“Our waterways, a wealth of natural resources and marine transportation networks, remain critical to our prosperity, our security and our identity as a nation. Americans have come to expect goods to be shipped safely and efficiently, and the Coast Guard has a vision for how our nation’s waterways can meet the increased demand.”

In the “Maritime Commerce Strategic Outlook”, the Coast Guard outlined three lines of effort (LOEs) that are critical to the success of the strategy.

■ LOE 1, “Facilitating Lawful Trade and Travel on Secure Waterways. The ease of moving people and cargo on America’s waterways is a competitive advantage and wellspring for economic prosperity and national security. The Coast Guard will manage risks to critical infrastructure, ensure efficient delivery of Coast Guard services, support vessel and facility standards, and promote resiliency and unity of effort among Marine Transportation System stakeholders.”

■ LOE 2, “Modernizing Aids to Navigation and Mariner Information Systems. Through technological advancements such as artificial intelligence, mobile and cloud-based computing, and data analytics, the Coast Guard will keep the service in step with emerging trends in the maritime industry. The Coast Guard must modernize information technology networks and applications that enable the Coast Guard to assess, monitor, and manage risk. The service will optimize maritime planning in order to address competing uses and growing demands for commerce, energy, food, resources, and recreation in U.S. waters. The service must also balance traditional navigation

systems while building next generation waterway management systems, modernizing inland and coastal aids-to-navigation cutters, and applying emerging technologies. Regulatory frameworks, applications, and standards will be adapted to accurately incorporate the implementation of emerging technologies that will transform maritime operations, such as autonomous systems."

■ LOE 3, "Transforming Workforce Capacity and Partnerships. The Coast Guard needs to develop an adaptive force that is proficient operating in a highly complex environment amid rapid acceleration of technology. The service needs to strengthen the workforce with the digital competencies to respond to changes in commercial markets and the maritime industry. The Coast Guard will leverage robust auditing capabilities of third-party organizations to improve vessel plans, surveys, and certain required certificates to ensure the highest standards of compliance oversight. It is imperative to transform the workforce and roles of other enabling organizations to have the capability, experience, and expertise to address the broad spectrum of threats to our national interests."

MARAD Issues RFP for Vessel Construction Manager to Deliver New Training Vessel

WASHINGTON – The Maritime Administration (MARAD) released a request for proposal (RFP) to solicit for a Vessel Construction Manager (VCM) to deliver a new class of training ship, referred to as the National Security Multi-Mission

Vessel (NSMV), MARAD said in an Oct. 11 release.

The VCM selected by MARAD will contract with a qualified shipyard to ensure that commercial best practices are utilized in delivering the NSMV on time and on budget.

“A new multi-mission vessel built by an American shipyard will not only create new jobs but help train the next generation of American mariners and contribute to disaster relief,” said U.S. Secretary of Transportation Elaine L. Chao.

The 2017 National Defense Authorization Act directed MARAD to “provide for an entity other than the Maritime Administration to contract for the construction of the NSMV.” This procurement process leverages existing marketplace expertise, targeting companies experienced in the production of innovative U.S.-built ships.

“The U.S. shipbuilding and repair industry is vital to the economic strength and security of our nation,” said Maritime Administrator Mark H. Buzby, “and this project will demonstrate that American shipbuilding remains the global standard of excellence.”

The NSMV will help to sustain world-class, U.S. maritime training operations at the state maritime academies by equipping young American mariners with a modern and adaptable training platform. The NSMV will feature numerous instructional spaces, eight classrooms, a full training bridge, labs, and an auditorium. It will have space for up to 600 cadets to train in a first-rate maritime academic environment at sea.

In addition to serving as an educational platform, the NSMV will also be available to support federal government efforts in response to national and international disasters, such as hurricanes and earthquakes. In this role, the NSMV will be equipped to support major federal relief and response efforts, providing hospital facilities, a helicopter landing pad, and

berthing for up to 1,000 first responders and recovery workers. The NSMV's roll-on/roll-off ramp and a crane to facilitate container storage capabilities will also enable it to provide critical supplies to damaged port facilities.

The economic benefit of this coastwise-endorsed training vessel extends beyond academics – and the replacement of the nation's aging "training ship" fleet – to the thousands of men and women in the shipbuilding and repair industry. These skilled workers at U.S. shipyards and repair facilities add billions to the economy annually, reflecting the best of American maritime engineering and ingenuity. The first NSMV is expected to be delivered to MARAD in 2022.

Navy Elevates TACAMO Weapons Tactics Detachment to Full Command

ARLINGTON, Va.– The Navy has upgraded the TACAMO strategic communications community's weapons tactics detachment to a full command.

According to an internal Navy directive, the Detachment Weapons Tactics Unit of commander, Strategic Communications Wing One, at Tinker Air Force Base, Oklahoma, was disestablished on Oct. 1. In its place, on the same day, TACAMO Weapons School was established with a commanding officer instead of an officer in charge.

TACAMO, an acronym for "Take Charge and Move Out," is a system of survivable communications designed to maintain communications between the national command authority with the

elements of the U.S. strategic deterrent triad: Air Force bombers and intercontinental ballistic missile bases and Navy ballistic-missile submarines.

The Navy’s two operational TACAMO squadrons, Fleet Air Reconnaissance Squadrons Three and Four, also based at Tinker, fly 15 Boeing E-6B Mercury aircraft in support of U.S. Strategic Command.