Kongsberg Maritime to Supply Propulsion Systems for Coast Guard's OPC

A rendering of the Offshore Patrol Cutter. *Kongsberg Maritime*

Kongsberg Maritime has been selected by Austal USA to supply its Promas propulsion system to the latest ship in the United States Coast Guard's new Offshore Patrol Cutter (OPC) Heritage Class program.

This initial contract is to supply Kongsberg Maritime equipment for the fifth ship, Coast Guard Cutter Pickering, which is the first to be built by Austal USA at their yard in Mobile, Alabama.

The Coast Guard's new OPC program represents a significant investment in maritime capability and is expected to run up to 25 ships. The new vessels will replace the Coast Guard's

medium endurance cutters and meet the need for long-term offshore capability to maintain current and future mission effectiveness.

Promas combines rudder and controllable pitch propeller into one propulsion system which optimizes the hydrodynamic properties of the ship and delivers increased efficiency and thrust while using less energy. For the OPC, as well as twin Promas, Kongsberg Maritime is contracted to supply steering gear, rudders, fin stabilizers and tunnel thrusters.

Björn ten Eicken, Kongsberg Maritime, Vice President – Naval, said: “Kongsberg Maritime has a proud history of supplying mission critical technology to United States Coast Guard programs.

“We have supplied our propulsion systems for naval and governmental forces for more than 80 years, and we’re delighted to have developed an efficient and effective system specifically suited to the challenging and varied operations of these new ships. Our Promas systems typically deliver efficiency savings of around 6%, so vessels are able to extend their range, something which can be crucial on longer missions.

“We’re looking forward to working with the Coast Guard and Austal USA on delivering these highly capable ships.”

The OPC vessels will be able to provide long range patrol capability. At 360 feet long, they will have a displacement of 3,700 long tons, maximum speed of 22.2 knots, and a range of 9,050 nautical miles at 14 knots.

USCGC Harriet Lane Returns After Inaugural Operation Blue Pacific Patrol in Oceania

U.S. Coast Guard Cutter Harriet Lane (WMEC 903) crew renders honors to the Battleship Missouri Memorial as the Harriet Lane and crew return to home port in Pearl Harbor, Hawaii, April 9.
HONOLULU — U.S. Coast Guard Cutter Harriet Lane (WMEC 903) and crew returned to home port in Hawaii April 9 after a 79-day patrol in support of Coast Guard District Fourteen's Operation Blue Pacific in Oceania.

Harriet Lane and crew departed Pearl Harbor in January and traveled more than 15,000 nautical miles spanning from the Hawaiian Islands to the east coast of Australia. Patrolling in support of Operation Blue Pacific, the cutter and crew worked

alongside Pacific Island nations to forge and advance relationships with like-minded allies and partners who share a common vision for maritime governance.

Harriet Lane's efforts included enhancing maritime domain awareness, combatting illegal fishing activities across Oceania, and participating in exercises to bolster partner capacity and interoperability. Leveraging bilateral maritime law enforcement agreements with Samoa, Fiji, Vanuatu, and Papua New Guinea, Harriet Lane conducted 27 boardings alongside Pacific Island partners in their respective exclusive economic zones (EEZs).

Through bilateral maritime law enforcement agreements, the Coast Guard is able to provide a platform for partner nations to enforce domestic and international laws within territorial seas and the far reaches of their EEZs. The embarked shipriders identify boarding targets within their EEZ, take law enforcement action in accordance with their authority, and are supported by U.S. Coast Guard personnel throughout the course of the boarding activity. These operations are focused on increasing partner nations' capabilities and maritime domain awareness while safeguarding sovereign rights, supporting sound maritime governance, and combatting illicit activities on the water. Additionally, Harriet Lane law enforcement personnel conducted four fishery boardings on the high seas in concert with the Western and Central Pacific Fisheries Commission.

During Harriet Lane's patrol, the crew made port calls in American Samoa, Samoa, Fiji, Vanuatu, Australia, Papua New Guinea, and the Marshall Islands. While offshore Nauru, Harriet Lane hosted key leadership engagements and underway subject matter exchanges with local enforcement agencies. Harriet Lane's crew participated in numerous engagements with local communities throughout the region, including subject matter expert exchanges, such as search and rescue planning and small boat operations, school visits, and several tours of

Harriet Lane with U.S. Ambassadors, foreign dignitaries, heads of police and fisheries agencies, and hosted the U.S. Coast Guard Commandant, Adm. Linda Fagan, as she led a maritime roundtable aboard the cutter in Vanuatu.

“This was a patrol of firsts for Harriet Lane and the U.S. Coast Guard” said Cmdr. Nicole Tesoniero, commanding officer of Harriet Lane. “The Coast Guard has a long and storied history in the Pacific, and Harriet Lane’s introduction to the region delivers on a pledge to our allies and partners that the United States has an enduring commitment in the Blue Pacific. Harriet Lane’s crew delivered on each and every ask made throughout this patrol, and I could not be more proud of our crew’s dedication, professionalism, and service to our great nation. This was just the first of many patrols in support of Operation Blue Pacific for Harriet Lane and I look forward to seeing our impact continue to grow.”

Harriet Lane, commissioned in 1984, is a 270-foot medium endurance cutter homeported in Pearl Harbor, Hawaii, to support Coast Guard missions in the Pacific region. The service’s medium endurance cutter fleet supports a variety of Coast Guard missions including search and rescue, law enforcement, maritime defense, and protection of the marine environment.

USCG Cutter Bertholf Returns Home Following 98-Day Indo-Pacific Deployment

A crew member assigned to the Coast Guard Cutter Bertholf (WMSL 750) greets his family at the cutter's return to home port on Coast Guard Base Alameda, California following a 98-day patrol in the Indo-Pacific region, April 8. *U.S. Coast Guard | Petty Officer 3rd Class Hunter Schnabel*

ALAMEDA, California – The U.S. Coast Guard Cutter Bertholf (WMSL 750) and crew returned home April 8 following a 21,000-mile, 98-day Indo-Pacific deployment in support of U.S. Indo-Pacific Command and U.S. Navy's 7th Fleet.

Throughout the deployment, Bertholf led international engagements in the Republic of Singapore, Malaysia and India, strengthening interoperability and maritime governance through joint at-sea exercises, professional engagements, and subject matter expert exchanges.

Bertholf departed Alameda on Jan. 2 as the Coast Guard's first of multiple national security cutter deployments to the Indo-Pacific this year.

"The opportunities to work with our allies and partners

throughout the Indo-Pacific increased our regional interoperability and greatly strengthened the bonds which we share as a seagoing service," said Captain Billy Mees, Bertholf's commanding officer. "We greatly appreciated engaging in professional interactions, enhancing maritime capabilities, and reinforcing maritime governance in the area through promoting global connections, fostering unity, and advancing efforts to maintain an open and free Indo-Pacific region."

While operating in the vicinity of Singapore, the crew of the Bertholf participated in multiple professional engagements and training exercises with members of the Republic of Singapore Navy, Singapore Police Coast Guard, and Malaysia Maritime Enforcement Agency (MMEA). Bertholf hosted U.S. Ambassador Jonathan E. Kaplan aboard for a tour and a chance for Bertholf's crew to showcase the cutter's operational capabilities.

Upon departure, Bertholf's crew conducted at-sea exercises and subject matter expert exchanges with the Republic of Singapore Navy and MMEA, including a group sail through the Strait of Malacca.

Upon Bertholf's service-first, historic arrival in Port Klang, Malaysia, the crew conducted several subject matter expert exchanges with the MMEA, Republic of Singapore Navy, Singapore Police Coast Guard, Japan Coast Guard, Korea Coast Guard, and Australian Border Force. The joint training included maritime law enforcement skills, small boat launch and recoveries, emergency rescue and carry procedures, and shipboard damage control tactics to bolster interoperability across the maritime domain of Southeast Asia. Bertholf hosted U.S. Ambassador Edgard D. Kagan and Malaysian dignitaries onboard for a U.S. Embassy reception on the cutter's flight deck.

Bertholf's final international port call was Port Blair, India, marking the first time a U.S. Coast Guard cutter has

visited the Andaman and Nicobar Islands, a union territory of India situated between the Bay of Bengal and the Andaman Sea.

During the four-day engagement, Bertholf's crew participated in sporting events and reciprocal tours, and Bertholf's officers attended a formal reception at the India Coast Guard's regional headquarters. Bertholf and India Coast Guard participated in the joint exercise 'Sea Defender,' with two days of at-sea exercises that included responses to shipboard drone and small boat attacks, shipboard damage control evolutions, pollution responses, counter drug interdiction and non-compliant vessel pursuit tactics, security boardings, flight operations, and an overnight group sail with the India Coast Guard across the Indian Exclusive Economic Zone to the Strait of Malacca.

Commissioned in 2008, Bertholf is one of four Coast Guard legend-class national security cutters homeported in Alameda. National security cutters are 418 feet long, 54 feet wide, and have a 4,600 long-ton displacement. They have a top speed of more than 28 knots, a range of 12,000 nautical miles, endurance of up to 90 days, and can hold a crew of up to 170.

Budget, Recruitment Challenges Drive Coast Guard Creativity, Officials Say

Coast Guard Commandant Admiral Linda Fagan speaks at the fifth annual Coast Guard breakfast. *Brett Davis*

Challenges with budgets, recruitment and retention levels are giving the U.S. Coast Guard the opportunity to be creative in addressing them and to update its policies and procedures, service officials said at the fifth annual Coast Guard Breakfast at Sea-Air-Space 2024.

Coast Guard Commandant Admiral Linda Fagan said the service has about half the maintenance budget it needs to maintain its legacy ships and equipment and is competing with the other services for shipbuilding and other industrial base services.

On the personnel side, persistent shortfalls in recruiting and retention the service is down about 10% for enlisted personnel, Fagan said have forced the Coast Guard to innovate and rethink the types of workers it recruits and how it enables their career.

“That crisis has really given us the opportunity to think,” Fagan said. “It strikes me the system that we’re operating,

and much like the other services, the boot camps and schools, they're optimized for 18 year olds fresh out of high school with little to no life experience, yet that's not the recruiting pool that we're experiencing or drawing into the service," Fagan said.

The service is moving to a vastly different recruitment method, bringing in people aged as much as "42 years young" with much more life experience, enabling much greater flexibility for service members with families and making it easier for guard members to leave the service and re-enter.

That's what enabled Rear Admiral Jo-Ann Burdian, the assistant commandant for response policy, to even be on stage on Wednesday at Sea-Air-Space, she said. She left active service as a lieutenant commander because she had three kids under the age of two at home.

"And when they were ready for me to come back, I still felt that calling back. I still felt like I had work to do for our Coast Guard and the nation, and the ability to come back and still go to graduate school, still compete for special assignments and be sitting here today" is a testament to the Coast Guard, she said.

Rear Admiral Russell Dash, commander of the Personnel Service Center, noted "we don't always do press releases when we change policy, but we were the first one that went to 42 years old to be able to join the Coast Guard," preceding the Navy's similar move.

Chief of Naval Operations Admiral Lisa Franchetti said on Monday at Sea-Air-Space that a parent and child could enter Navy service at the same time, one at 42 and one at 18, but Dash said the Coast Guard has actually had that happen.

He said the service's previous philosophies needed to change to make such things happen.

“There’s the acknowledgement that our standard of every single member of the Coast Guard needs to be worldwide deployable at every moment of their career, and the moment that you’re not worldwide deployable, we start a shot clock and say, you’ve got to fix yourself and get to this point, or we’re going to separate you. That’s wonderful when we had lines out the door, a waiting list to join the Coast Guard. But in the competition for talent, we’ve got to accept that’s not a standard that is maintainable for us. So, that has given us the opportunity to drive innovation.”

Rear Admiral Amy Grable makes a point about maintenance issues. *Brett Davis*

Maintenance

The service’s changes aren’t limited to personnel. To deal with that maintenance shortfall, the Coast Guard has gotten creative there as well.

“We do have shortfalls across all of our portfolios, including aviation, surface and shore,” said Rear Admiral Amy Grable,

assistant commandant for Engineering and Logistics.

“We’re deferring 50% of our maintenance on many of our major cutters. And what that means to our crews is, what we used to call cannibalizing parts from one cutter to put on another cutter. It’s now so routine that we have a name for it, we call it a controlled parts exchange,” she said.

Atlantic Commander: Industry-Government Partnership Essential to Coast Guard Innovation

U.S. Coast Guard response boat crews enforce a safety zone,

April 2, 2024, after the collapse of the Francis Scott Key Bridge in Baltimore, Maryland.

By Erika Fitzpatrick, Contributor

Future innovation within the U.S. Coast Guard comes from listening to and partnering with the defense industry, Vice Admiral Kevin E. Lunday, U.S. Coast Guard Commander of the Atlantic Area and Defense Force East, said April 8 at Sea-Air-Space 2024.

“Most of the innovation, most of the great ideas – the kernel, the incubator for those – is within the defense industrial base,” he said. The Navy League’s symposium, which he called the premiere industry-government event, is a “special opportunity to have a conversation and a dialogue.”

In addition to supporting U.S. Combatant Commands, Lunday directs Coast Guard forces and operations involving navigable waterways east of the Rocky Mountains to the East Coast, throughout the Atlantic Ocean, and in parts of the Arctic Ocean to the Arabian Gulf.

As such, his command is involved in a range of often high-profile events and issues.

For instance, when Baltimore’s Francis Scott Key bridge collapsed on March 26 within minutes of being rammed by a massive, malfunctioning container ship, Lunday directed forces there within hours for active search and rescue and follow-on recovery efforts. In cooperation with federal, state, and local partners, the USCG set up and now helps lead the Key Bridge Response Unified Command.

“While that may seem like a very unusual operation in some respects – a bridge collapse after a ship hitting it – that kind of emergency response that the Coast Guard is involved in leading is very common for what we do across the Atlantic area, across the service, every day,” he said.

Other Atlantic-area USCG operations include:

- Helping prevent and prepare for maritime mass migration incidents and fighting transnational crime in the eastern Caribbean through participation in the Joint Task Force-East.

- Controlling, reducing, and preventing deaths from irregular maritime migration, particularly in stemming the flow of migrants from the economically and politically stressed countries of Haiti and Cuba, through Homeland Security Task Force-Southeast.

- Looking into the circumstances involved in the June 2023 implosion of the Titan submersible, an ongoing review conducted by the Coast Guard Marine Board of Investigation.

Lunday credited USCG's successful involvement in these and other endeavors to long-term investments in incident command response and in technological systems that shed light on maritime migration patterns and provide other mission-critical information.

Need to Think Differently

Lunday said USCG is intently focused on readiness – how to carefully balance the readiness of the force with the demand for execution.

However, he said, new solutions are needed, and the Coast Guard looks to private industry to provide many of them.

Our leadership challenges us is to "think differently about how we conduct operations," Lunday said, "because the increased demands for services and readiness challenges are

forcing us to think differently.”

For instance, the Coast Guard needs effective technologies with government and mission application. These include artificial intelligence and data tools to better analyze, understand, model, and predict patterns of human behavior.

Because industry is thinking about where we need to be going, Lunday said, we should “open our mind and our ears and listen to what they’re saying about how we move forward.”

CMF’s Combined Task Force 150 Seizes Nearly 400 Kilograms in Illegal Narcotics in the Arabian Sea

Bags of illegal narcotics seized from a vessel are stacked on the deck of the U.S. Coast Guard Sentinel-class fast response cutter USCGC Glen Harris (WPC 1144) in the Arabian Sea, April 4. (Photo by U.S. Coast Guard)

By U.S. Naval Forces Central Command Public Affairs | April 08, 2024

MANAMA, Bahrain – A U.S. Coast Guard cutter, working in direct support of Combined Task Force (CTF) 150 of Combined Maritime Forces, seized nearly 400 kilograms of illegal drugs from a dhow in the Arabian Sea, April 4.

Crewmembers from the Sentinel-class fast response cutter USCGC Glen Harris (WPC 1144) discovered and seized 15 kilograms of heroin and 375 kilograms of methamphetamine aboard the dhow. After weighing and documenting the haul, the crew properly disposed of the narcotics.

“This is the second major interdiction of the USCGC Glen Harris and the CTF-150 team with a combined total of 1,160 kg of drugs seized to date, denying income to criminal and

terrorist organizations from the profits of illicit narcotics," said Capt. (N) Colin Matthews, commander of CTF-150. "This exceptional multinational cooperation between our two teams is an example of the impacts we can make when we work together."

On March 5, Glen Harris, working in support of CTF 150, seized 770 kilograms of methamphetamines from a dhow in the Arabian Sea.

Glen Harris is forward deployed to Bahrain. The fast response cutter is part of a contingent of U.S. Coast Guard ships forward-deployed to the region under Patrol Forces Southwest Asia (PATFORSWA). PATFORSWA deploys Coast Guard personnel and ships alongside U.S. and regional naval forces throughout the Middle East.

CTF 150 is one of five task forces under Combined Maritime Forces, the world's largest international naval partnership. CTF 150's mission is to deter and disrupt the ability of non-state actors to move weapons, drugs and other illicit substances in the Indian Ocean, the Arabian Sea and the Gulf of Oman.

Combined Maritime Forces is a 42-nation naval partnership upholding the international rules-based order by promoting security and stability across 3.2 million square miles of water encompassing some of the world's most important shipping lanes.

U.S. Coast Guard heavy

icebreaker returns to the U.S. following completion of Antarctic mission

U.S. Coast Guard 13th District, April 4, 2024

SAN FRANCISCO – The Coast Guard Cutter Polar Star (WAGB 10) and crew returned to the United States Sunday, following a 138-day deployment to Antarctica to support Operation Deep Freeze 2024.

This deployment marks the Polar Star's 27th journey to Antarctica in support of Operation Deep Freeze, an annual joint military service mission to resupply the United States Antarctic stations, in support of the National Science Foundation (NSF) – the lead agency for the United States Antarctic Program (USAP). This year also marks the 64th iteration of the annual operation.

The Polar Star crew departed Seattle bound for Antarctica on Nov. 15, 2023, traveling more than 27,500 miles through the North Pacific, South Pacific, Indian, and Southern Oceans, as well as the Bering Sea and Gulf of Alaska, which included stops on four continents.

While en route to Antarctica, the Polar Star made three logistical stops in Pearl Harbor, Hawaii, Sydney, and Hobart, Australia. In Hobart, the cutter and crew hosted the U.S. Ambassador for Australia, Caroline Kennedy, Australian members of parliament, Australian and Tasmanian government representatives, and local industry partners.

After arriving in Antarctica, the cutter broke a 38-mile channel through fast ice up to 12 feet thick, creating a navigable route for cargo vessels to reach McMurdo Station. The Polar Star and crew executed three close-quarters ice escorts for cargo vessels through difficult ice conditions to guarantee the delivery of nine million gallons of fuel and 80 million pounds of cargo to advance scientific endeavors in the most remote region of the world. The cutter departed the Antarctic region on Feb. 14 after 51 days of operations in support of Operation Deep Freeze 2024.

On the return journey, the Polar Star evaded a severe bomb cyclone in the Southern Ocean and had stops in Auckland, New Zealand, Yokosuka, Japan, and Dutch Harbor, Alaska. The Polar Star's stop in Yokosuka consisted of a media visit and formal reception hosted aboard the cutter, where the crew conducted professional exchanges with senior maritime representatives from the United States, Japan, Australia, and New Zealand, underscoring the importance of collaboration within the Indo-Pacific to promote security and stability across the region.

"The successful completion of this mission stands as a testament to the relentless commitment and selflessness

exhibited by our crew," said Capt. Keith Ropella, Polar Star's commanding officer. "Despite adverse weather, difficult ice, and formidable mechanical challenges, the crew of Polar Star not only achieved their mission but did so with remarkable expertise and teamwork, proof of their devotion to duty and dedication to their shipmates."

Operation Deep Freeze is the annual logistical support mission the Department of Defense provides to the NSF, which the USAP manages. This includes strategic and tactical inter-theater airlift and airdrop coordination, aeromedical evacuation support, search and rescue response, sealift, seaport access, bulk fuel supply, port cargo handling, and transportation requirements supporting the NSF. This unique mission demonstrates U.S. commitment to the Antarctic Treaty and scientific research programs. The Polar Star and crew contribute to this yearly effort by breaking the solid ice channel to clear the way for supply vessels.

The Polar Star is now in Vallejo, California, for phase four of its five-year Service Life Extension Project (SLEP). SLEP was awarded to Mare Island Dry Dock, LLC to recapitalize targeted systems, including the propulsion, communication, and machinery control systems, and conduct significant maintenance to extend the cutter's service life. The Coast Guard will mitigate the risk of lost operational days due to unplanned maintenance or system failures by replacing obsolete, unsupportable, or maintenance-intensive equipment. Each phase is coordinated so that operational commitments, like Operation Deep Freeze missions in Antarctica, will still be met.

The Seattle-based Polar Star is the United States' only asset capable of providing access to both Polar Regions. The cutter is a 399-foot heavy polar icebreaker commissioned in 1976. It weighs 13,500 tons, is 84 feet wide, and has a 34-foot draft. The six diesel and three gas turbine engines produce up to 75,000 horsepower.

Coast Guard Offloads More Than $24 Million in Illegal Narcotics Interdicted in Eastern Caribbean

Crew members from USCGC Margaret Norvell (WPC 1105) board a drug smuggling vessel carrying 30 bales of illegal narcotics approximately 190 miles south of Puerto Rico March 24, 2024. The bales weighed more than 1,850 pounds and have an estimated street value of approximately $24.3 million. (U.S. Coast Guard photo courtesy of the USCGC Margaret Norvell crew)

U.S. Coast Guard 7th District, April 5, 2024

MIAMI — The crew of Coast Guard Cutter Margaret Norvell

offloaded more than 1,850 pounds of cocaine with an assessed street value of approximately $24.3 million in Miami, Friday.

The crew interdicted a low-profile go-fast vessel carrying 30 bales of the illicit narcotics and detained five suspected smugglers approximately 190 miles south of Puerto Rico.

The suspected smugglers will face prosecution in federal courts by the Department of Justice.

“I am incredibly proud of our crew,” said Lt. Cmdr. Colin Weaver, Commanding Officer of cutter Margaret Norvell. “I am also grateful for the exceptional coordination and teamwork extending beyond our unit that contributed to this interdiction. Countering drug trafficking organizations that operate throughout the Caribbean depends upon the international and interagency partnerships that JIATF-S and Joint Task Force-East bring to the fight.”

The Margaret Norvell crew deployed with two boarding officers from Coast Guard Tactical Law Enforcement Team-South (TACLET-S) based in Opa Locka, Florida. TACLET-S is part of the Coast Guard’s deployable specialized forces program, with advanced training in high-risk interdiction operations in the maritime environment, including non-compliant vessel pursuit missions. Law enforcement detachments from TACLET-S deploy aboard Coast Guard, U.S. Navy and foreign allied ships to augment their capabilities and authorities to perform counter drug missions under U.S. law.

“Drug busts like this one by Margaret Norvell’s crew save lives by reducing the flow of harmful narcotics to the United States and disrupting the illicit maritime activity of transnational criminal organizations,” said Capt. John B. McWhite, chief of enforcement for Coast Guard District Seven. “The efforts to counter illicit smuggling in the Caribbean are truly a collaboration between the Coast Guard and our federal

partners and regional allies. The Coast Guard will continue to do our part to deny drug trafficking networks access to maritime smuggling routes in support of the National Drug Control Strategy."

Detecting and interdicting illegal drug traffickers on the high seas involves significant interagency and international coordination. The Joint Interagency Task Force South in Key West, Florida conducts the detection and monitoring of aerial and maritime transit of illegal drugs. Once interdiction becomes imminent, the law enforcement phase of the operation begins, and control of the operation shifts to the U.S. Coast Guard throughout the interdiction and apprehension. Interdictions in the Caribbean Sea are performed by members of the U.S. Coast Guard under the authority and control of the Coast Guard's Seventh District, headquartered in Miami.

The cutter Margaret Norvell is one of 20 Sentinel-class fast response cutters homeported in the Seventh District. The FRCs are multi-mission patrol boats tasked with vital homeland security missions including drug and migrant interdiction; ports, waterways and coastal security; fisheries enforcement; search and rescue; and national defense. FRCs are named after Coast Guard enlisted heroes in service history, and the cutter's namesake, Margaret Norvell, served for 41 years with the U.S. Lighthouse Service in Louisiana from 1891 to 1932.

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New Geo-Tracking Buoys Make a Splash During Live Test Events

A MOTT buoy being prepared for a drop from an MH-60T helicopter. Photo credit: S&T.

U.S. Department of Homeland Security, April 4, 2024

New rugged buoy technologies equipped with Automatic Identification Systems aim to help the U.S. Coast Guard mark and track objects in the water.

Recent years have seen an uptick in the use of geo-tracking technology, which has become so widespread and affordable that we are able to attach small trackers to car keys or luggage to find them with our smartphones. The Science and Technology Directorate (S&T) is working with the U.S. Coast Guard (USCG) to develop buoys with improved geo-tracking technology for mission specific field use.

Instead of looking for car keys, USCG crews can use this

technology to find and mark critical locations or objects in the water using buoys deployed from air or surface vessels. These could include stranded boats, contraband, or hazardous waste that are required to be reidentified after initial search and rescue or interdiction efforts are complete. The two new buoy systems, created by S&T industry partners, are moving into the final round of testing this year after successfully completing functional tests in 2023.

Building a Better Buoy

The USCG handles thousands of cases each year, each potentially involving the deployment of numerous supporting assets necessary to complete those missions. After the initial response efforts, ocean currents and associated weather conditions can carry away watercraft or other manmade materials from the original incident site. This presents a challenge for USCG crews since those materials left behind can become navigation hazards in busy shipping lanes or involve illegal goods. During a drug interdiction, for example, suspects will often throw contraband overboard while fleeing. Determining where these illegal materials are located is an essential part of gathering evidence and protecting the nation's coasts; therefore, finding them quickly is key.

"The availability of accurate, real-time geo-position data is critical in verifying the drift and motion of items of interest and assisting in the planning of a search and rescue or other response mission," said Edwin Thiedeman of the USCG Office of C4 & Sensors Capabilities.

"S&T is working closely with the vendors, USCG subject matter experts, and operators to deliver more capable buoys to support multiple USCG missions. These new improved buoys will provide the USCG with much improved accuracy and reliability to execute their important maritime missions," stated Ron McNeal, S&T Silicon Valley Innovation Program (SVIP) transition director.

While the USCG currently has geo-tracking buoys, the existing systems do not have a secondary locator that is visible at sea level day and night in case of geo-tracking failure. The existing systems are not reusable or rechargeable, so they have to be replaced frequently, representing a significant cost and a potential loss in data. S&T's SVIP put out a call to industry through the Maritime Object Tracking Technology (MOTT) solicitation for rugged geo-tracking buoys that could be quickly deployed from both air and surface vessels traveling at high speeds. The buoys needed to transmit Automatic Identification System (AIS) and Global Positioning System (GPS) data, which large ships use to share and receive location data while traversing the world's waterways. Having AIS/GPS capabilities built into the buoy helps ensure USCG crews would be able to quickly pick up signals using their existing communications equipment.

"The ability to link small innovative businesses directly with the government to provide new technologies to fit government needs has a wide range of benefits for all parties. With all of this in mind, MOTT's goal was to find a start-up company with a new or existing buoy system that could be tailored to the USCG's needs, resulting in more efficient technology transition and acquisition processes," said CDR Rebecca Fosha, deputy of the USCG Research, Development, Test & Evaluation and Innovation Program.

Following the solicitation's initial launch in March 2020, SVIP awarded funds to two companies: Kenautics, Inc. and Morcom International, Inc. Each business had an existing system they could adapt to the USCG's requirements: the Kenautics Global Positioning System AIS Navigation and Tracking Buoy and the Morcom Tracking Unit for Navigational Aid. Both companies reached Phase 3 of the SVIP funding lifecycle in 2023, which required functional tests in a real-world setting.

"Startups typically don't have the human or financial capital

to champion large R&D projects," said Melissa Oh, SVIP managing director. "Using the SVIP phased approach, we are quickly able to assess if a technology will have the ability to respond to the given need and transition the technology to the operators on a timeline that allows smaller businesses to be competitive."

Go For Test Launch

In August and November 2023, staff from SVIP and the USCG Research, Development, Test & Evaluation and Innovation Program traveled to USCG Base Elizabeth City, North Carolina, to conduct separate test runs for each of the new MOTT buoys. The tests focused on how the buoys operated when dropped from different altitudes and velocities, which involved deploying the systems from an MH-60T helicopter and an HC-130J fixed wing aircraft traveling at various speeds and altitudes. Evaluators were interested in how the rugged designs held up upon impact, given that one version of the buoy has a parachute and the other does not.

It was also important to see whether the buoys successfully continued to function when they impacted the water, while at the same time determining whether the buoy went too deep under the surface of the water. Going too deep underwater could risk the system striking the bottom, where it might potentially get stuck or malfunction once it resurfaced. Participants conducted 10 drops over the course of four days, which provided valuable feedback on improvements that Kenautics and Morcom International can incorporate into the next version of their prototypes.

"It was important to test the buoys in a realistic, operational environment—in this case Base Elizabeth City—to evaluate the structure, functions, and software integrity. Observation from USCG personnel and the companies provided valuable feedback to modify the buoys' performance to better fit USCG missions," noted Jason Pharr from the

Tactical/Navigation Program Office in the Engineering Support Branch of the USCG Aviation Logistics Center.

In addition to testing the buoys' ability to withstand water impact, S&T and USCG staff also evaluated their battery life and cybersecurity. Rechargeable batteries are one of the design components that will help make the new buoys more cost effective than current models, so it was important to see how long they could operate in an open ocean environment.

Test sessions were conducted over several flights lasting approximately two hours for each sortie, which gave a realistic scenario of how long it might take USCG crews to return to an incident site once conditions were safe. During operational deployment, the buoys utilized strobe lights, radio beacons and transmitted AIS information approximately every 10 minutes so crews could pick up the signals on both visual and radio frequency scanners. Separate from the drop tests but related to the buoys' communications capabilities, S&T also conducted Red Team testing with a third party to determine whether there were any cybersecurity issues for either system. The goal was to see whether the buoy signals could be vulnerable to detection or hacking by civilian systems, since this could represent a potential risk.

The Next Wave

Last year's Phase 3 test sessions provided critical insight into how the MOTT buoys could be improved moving forward. The next rounds of operational evaluations are scheduled to take place later in 2024. The MOTT buoy is one of S&T's joint projects between S&T and the USCG through SVIP, which also includes a Language Translation device that operates offline in a zero-connectivity environment. These systems could potentially join a growing list of solutions that empower our nation's homeland security operations while promoting more efficient technology transition-to-market.

US Coast Guard Cutter Escanaba returns home after supporting Operation Vigilant Sentry

The crew of U.S. Coast Guard Cutter Escanaba (WMEC 907) conducts small boat personnel transfers with the U.S. Coast Guard Cutter Isaac Mayo (WPC 1112), in the South Florida Straits, Feb. 26, 2024. Escanaba's crew contributed to the interdiction and repatriation of over 100 migrants from Haiti and Cuba while patrolling the Coast Guard Seventh District's area of responsibility. (U.S. Coast Guard photo by Seaman Laura Holguin-Rojas)

U.S. Coast Guard Atlantic Area, April 1, 2024

PORTSMOUTH, Va. – The crew of U.S. Coast Guard Cutter Escanaba (WMEC 907) returned to their homeport in Portsmouth, Monday, following a 52-day patrol in the Florida Straits and Windward Passage.

Escanaba's crew contributed to the interdiction and repatriation of over 100 migrants from Haiti and Cuba while patrolling in the Coast Guard Seventh District's area of responsibility. Escanaba deployed in support of the Homeland Security Task Force – Southeast initiative Operation Vigilant Sentry (OVS), which aims to disrupt and prevent unlawful migrant flow and human trafficking.

OVS is the 2004 Department of Homeland Security plan that provides structure for deploying joint air and surface assets and personnel to respond to irregular maritime migration in the Caribbean corridor of the United States. Its primary objectives are to protect the safety of life at sea while deterring and dissuading irregular, unlawful maritime migration alongside our federal, state, and local partners.

While on patrol, Escanaba served as the Commander Task Unit for operations between the Florida Keys, Cuba, and Haiti, coordinating the employment of numerous surface and air assets to aid in deterring illegal maritime migration ventures bound for the United States.

"This is Escanaba's first patrol this year," said Cmdr. Jared Silverman, commanding officer of Escanaba. "The crew responded exceptionally to this extremely challenging mission; they handled each and every migrant with respect and care, and truly embodied the Coast Guard's humanitarian mission."

Escanaba is a 270-foot, Famous-class medium-endurance cutter. Escanaba's primary missions are counter-narcotics operations, migrant interdiction, living marine resources protection, and

search and rescue in support of U.S. Coast Guard operations throughout the Western Hemisphere.

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