Marines Evaluate New Unmanned Maritime Technologies at BALTOPS

U.S. Marine Sgts. Hadden Sherman and Tyler Joles, explosive ordnance disposal (EOD) technicians, assigned to 4th Platoon Littoral Explosive Ordnance Neutralization (LEON), 1st EOD Company, 7th Engineer Support Battalion, 1st Marine Logistical Group, release an unmanned service vehicle known as Amy, used for sea floor mapping and mine hunting, as part of Baltic Operations (BALTOPS) 2021. *U.S. MARINE CORPS / Cpl. Robin Lewis*

Sailors and Marines worked together with unmanned technologies, never used before to conduct expeditionary mine countermeasures operations, during the recent Baltic Operations (BALTOPS) 2021 exercise in Germany.

Tony Brescia, a systems engineer with the Naval Air Warfare Center Aircraft Division at Patuxent River, Maryland, brought new and innovative technologies to BALTOPS 2021 to let warfighters experiment with the systems during a major exercise.

Brescia has been working with Arizona-based Hydronalix on developing its unmanned systems platforms and technologies through investments from the Navy's Small Business Innovation Research (SBIR) and Small Business Technology Transfer programs. Brescia has worked with the company to successfully transition its Emergency Integrated Lifesaving Lanyard (EMILY) USV, which is used for lifesaving, and the sonar-equipped version used for underwater surveys.

That work has evolved into two new platforms – the Amy and Nix USVs and a small unmanned aerial vehicle called Adapt, capable of carrying small payloads such as water bottles, food or

medicine.

“It’s scalable. By upscaling the propeller and motor combination, it can carry a bigger payload,” Brescia said of Adapt. “It’s a short-range, one-way disposable UAS. You tell it where to go on your smart device and the autopilot will take it there.”

EMILY, Amy, Nix and Adapt

The Marines took advantage of BALTOPS to evaluate the new technologies and the characteristics of the different systems, such as weight, range, payload and power.

“End-user feedback goes long way to set priorities,” Brescia said, “and to help us be sure we’re investing in the right technologies.”

According to Master Sgt. Matt Jackson, an explosive ordnance disposal technician with the Camp Pendleton-based USMC 4th Platoon Littoral Explosive Ordnance Neutralization (LEON) team at BALTOPS, the exercise gave the Marines the chance to use unmanned systems designed for explosive ordnance disposal (EOD) to detect explosive hazards in the littorals, but they can also provide commanders with information using unmanned systems.

“There’s a lot of things these sensors collect that can be federated up to higher echelons,” he said.

Jackson said the Marines used EMILY with the side-scan sonar to detect anomalies in very shallow water. But, while EMILY may be too small for Marine Corps EOD, Jackson said the larger Amy has the size and form factor to load up with sensors and acoustic, satellite and radio frequency communications gear to link divers and unmanned systems to the greater mesh network.

“We want to be able to tie that all together, from the undersea node all the way to space and to the command and

operations control," he said.

Jackson envisions using a second Amy to tow a magnetometer in the surf zone to "search the sea bottom to give a heat map of metallic signatures, so I know where to avoid, as well as a side-scan sonar towed under the surface to get bathymetric data such as depth and water temperature. That's valuable information."

When it comes to mines, on the beach or in the water approaching the beach, the Marines are a breaching force, not a mine clearance force. "We want to avoid any mines while our small units are trying to get ashore," Jackson said.

Nix is a relatively small USV that can carry a large volume.

"It has the capability to float an amount of weight. You can autonomously send it somewhere with gear, food, batteries, medical supplies or sensors," Jackson said. "For LEON, it's a little bit on the large size, because we have to operate from small boats. But we can tow it behind a boat, and then send it off when we get near its destination."

While many navies use USVs for environmental sensing and mine hunting, few navies have general-purpose USVs that can be used for general tasks. EOD is a just one niche in the Marine Corps. According to Jackson, there could be many uses for these vehicles.

"By demonstrating these systems for the Marine Corps, there may be other Marines out there who will say, 'Amy can work for us, too.' It could be for signals, recording, jamming or whatever. The same goes for Nix. Marines will find things to put in and move around in something like Nix."

Brescia described Nix as a "mini-connector" to haul 80 to 100 pounds of critical repair parts, food, water or ammo. "It's large enough to have a hybrid power supply, not just batteries, so it can stay out there for a long period of

time.”

U.S. Marine Sgts. Sherman and Joles of 4th Platoon Littoral Explosive Ordnance Neutralization (LEON) retrieve the Amy USV during BALTOPS 2021. It’s one of several new technologies tested as part of the exercise. *U.S. MARINE CORPS / Cpl. Robin Lewis*

Cheap Sensors Needed

Marines have been brought into a distributed maritime environment where they will be operating under a composite warfare command, with their own connectors and working as a stand-in force within a weapons engagement zone. That means below the threshold of conflict, the Marine Corps will be a persistent sensor for the Navy to deter or curb maligned behavior.

“We need to understand the underwater domain, and we need tools to sense things in it,” Jackson said. “We want to support our Marines organically to survey those waters in the littorals, and also feed the Navy with intelligence to paint a better picture for the overall fleet. It’s a capacity problem. To really conduct Distributed Maritime Operations, we need more sensors.”

That means the need to have effective and affordable systems that can be acquired and deployed in large numbers, which fits systems such as EMILY, Amy, Nix and Adapt.

Hydronalix CEO Tony Mulligan said the company’s unmanned systems are easy to use. Sailors or Marines only require a few minutes of training to be able to send off an Adapt drone using a smart phone app from a ship offshore, for example, to an exact spot on the beach or a person in need.

“There’s no pilot. There’s no ground station. There’s not even a radio. If a Corpsman needs to send plasma or morphine to a unit ashore three miles away, he loads the drone, clicks on

where he wants it to land and it flies right to that location. If an area has been devastated by an earthquake or a storm, and there are not safe places for helicopters to land, these drones could be used to deliver water or food to isolated or damaged areas," Mulligan said.

"You can be helping people before the helicopters get there, or for those victims in smaller numbers that might not be the top priority for the relief teams."

While they are reusable, and could be recovered, reloaded and sent off again, Mulligan said they are cheap enough so that it doesn't matter if they don't come back.

Coast Guard Works to Reopen Ports, Waterways Following Hurricane Ida

U.S. Coast Guard Air Station New Orleans, shown here preparing for Hurricane Ida in New Orleans, Louisiana, Aug. 28, 2021. *U.S. COAST GUARD / Petty Officer 2nd Ryan Dickinson*

NEW ORLEANS – The Coast Guard is continuously working to reopen the ports and waterways throughout Southeast Louisiana following Hurricane Ida, the Coast Guard 8th District said in a Sept. 2 release.

Capt. Will Watson, Coast Guard captain-of-the-port for the Port of New Orleans, is working in close coordination with federal, state, parish, city and maritime stakeholders to safely reopen maritime traffic along the Mississippi River and the Gulf Intracoastal Waterway. Some key areas along the river

remain closed as recovery operations continue.

“We continue to work closely with the State of Louisiana and our maritime industry partners to reconstitute our ports,” said Watson. “This is a massive recovery effort and we are doing our part to ensure that the commerce that sustains our Nation can continue to flow freely and safely over our critical waterways.”

Coast Guard crews conducted post-storm port assessments to reopen the Mississippi River and Gulf Intracoastal Water after Hurricane Ida passed through the area. The assessments were conducted to ensure maritime commerce is safe to resume.

Coast Guard crews continue to work with port partners on the identification and mitigation of grounded and submerged vessels along banks of the Lower Mississippi River.

Northrop Grumman Ramps Up Production of Marine Corps’ G/ATOR Radar

The AN/TPS-80 Ground/Air Task Oriented Radar (G/ATOR) Active Electronically Scanned Array multi-mission radar system. *U.S. MARINE CORPS*

BALTIMORE – Northrop Grumman Corp has delivered its 15th AN/TPS-80 Ground/Air Task Oriented Radar (G/ATOR) Active Electronically Scanned Array multi-mission radar system to the U.S. Marine Corps, completing the low-rate initial production phase of the program, the company said in a Sept. 2 release.

The team recently fielded the first full-rate production

system to the Marine Corps and will continue deliveries through 2024. Providing enhanced mission capabilities, software upgrades and logistics support are expected to continue through G/ATOR's 30-year lifetime.

U.S. Coast Guard Concludes Training with Philippine Maritime Agencies

Crewmembers of the U.S. Coast Guard Cutter Munro salute a Philippine Coast Guard vessel transiting alongside the Munro in the West Philippine Sea, Aug. 31, 2021. Coast Guard members aboard the Munro and the Philippine Coast Guard participated in bilateral operations and exercises that included small boat operations and multi-vessel maneuvering. *U.S. COAST GUARD / Petty Officer 3rd Class Aidan Cooney*

ALAMEDA, Calif. – The U.S. Coast Guard Cutter Munro (WMSL 755) arrived in Subic Bay, Philippines, Aug. 31 following operations and exercises in the West Philippine Sea with the Philippine Coast Guard and the Philippine Bureau of Fisheries and Aquatic Resources, the Coast Guard Pacific Area said in a Sept. 1 release.

Munro's crew participated in bilateral operations, professional exchanges, search-and-rescue and communications exercises, small boat operations, multi-vessel maneuvering and maritime domain awareness drills while at sea.

"As the maritime security challenges in the Indo-Pacific region become increasingly complex, partnering with our Philippine Coast Guard and fisheries counterparts is vital to

our shared interest in a free and open maritime environment," said Munro's commanding officer, Capt. Blake Novak. "We thoroughly enjoyed our Philippine hosts' professionalism and hospitality, and we look forward to future bilateral operations to further our longstanding relationship."

The search-and-rescue exercise simulated the agencies' bilateral response to a vessel in distress. During the exercise, the Munro, PCG, and BFAR practiced searching for the distressed vessel, shipboard firefighting techniques, and recovering and treating persons in the water. As part of the exercise, members of the PCG joined USCG members aboard Munro as they launched the cutter's small unmanned aircraft system to aid in the search-and-rescue response. The day's exercises and operations provided opportunities for each involved agency to learn from each other.

"The success of the joint maritime exercise between the PCG and USCG will not only strengthen international partnerships for immediate response to calamities and disasters but will also ensure that our personnel could effectively perform their mandated functions in countering terrorism and other acts of lawlessness in our country's waters," said Adm. George V. Ursabia Jr., PCG commandant.

The USCG has a long history of cooperation with the PCG. In 2019, the Coast Guard Cutter Bertholf conducted engagements with the PCG as part of its Western Pacific deployment, focusing on search and rescue, maritime security, and law enforcement capabilities.

Munro, a 418-foot national security cutter, departed its homeport of Alameda, California, in July for a months-long deployment to the Western Pacific. Operating under the tactical control of U.S. 7th Fleet, the cutter and crew are engaging in professional exchanges and capacity-building exercises with partner nations and are patrolling and conducting operations as directed. National security cutters

like Munro feature advanced command and control capabilities, aviation support facilities, stern cutter boat launch, and increased endurance for long-range patrols, enabling the crews to disrupt threats to national security further offshore.

“The Coast Guard shares deep and abiding interests with our allies and partners, who, like us, have long endorsed a rules-based international order,” said Vice Adm. Michael F. McAllister, commander, U.S. Coast Guard Pacific Area. “Partnering with the Philippines to enhance maritime governance, including important missions such as search and rescue and enforcement of fisheries laws and treaties, is essential to the security, stability and prosperity of all nations.”

As both a federal law enforcement agency and an armed force, the USCG is uniquely positioned to conduct defense operations in support of combatant commanders on all seven continents. The service routinely provides forces in joint military operations worldwide, including the deployment of cutters, boats, aircraft, and deployable specialized forces.

Future USS Lyndon B. Johnson Conducts Builder’s Trials

The future USS Lyndon B. Johnson (DDG 1002), the third and final ship of the Zumwalt class of guided-missile destroyers, recently conducted builder’s trials. *U.S. NAVY*

WASHINGTON – The future USS Lyndon B. Johnson (DDG 1002) recently conducted builder’s trials, the Team Ships Public Affairs office said in a Sept. 1 release.

Builder’s trials consist of a series of in-port and at-sea demonstrations that allow the shipbuilder, General Dynamics Bath Iron Works and the U.S. Navy to assess the ship’s systems.

“Trials provide an opportunity for the Navy and industry team to test the capability and readiness of the ship,” said Capt. Matthew Schroeder, DDG 1000 program manager, Program Executive Ships. “DDG 1002 is a warship that is going to equip our fleet with next-generation capability and capacity for the high-end fight.”

After completing builder’s trials and fully proving out the hull, mechanical, and electrical systems, the ship will complete combat systems installation and activation.

The future USS Lyndon B. Johnson is the third and final ship in the Zumwalt-class of guided missile destroyers and will provide multi-mission offensive and defensive capabilities to the fleet.

Marine F-35Bs to Operate from Japanese Aircraft Carrier, Commandant Says

The USS Ronald Reagan (CVN 76) sails alongside the Japan Maritime Self Defense Force helicopter destroyer JS Izumo (DDH 183) while conducting operations in the South China Sea in 2019. *U.S. NAVY / Mass Communication Specialist 2nd Class Kaila Peters*

ARLINGTON, Va. — The Marine Corps will embark F-35B strike

fighters on a Japanese aircraft carrier this fall, the service's commandant said, a next step to match a current F-35B deployment on board a U.K. Royal Navy aircraft carrier.

"We're actually going to fly U.S. Marine Corps F-35s off of a Japanese ship," said Gen. David H. Berger, commandant of the Marine Corps, speaking Sept. 1 during a webinar conducted by the U.S. Naval Institute and the Center for Strategic and International Studies and sponsored By Huntington Ingalls Industries.

The Japanese Maritime Self-Defense Force operates the JS Izumo, commissioned a helicopter carrier in 2015 but under conversion to operate F-35Bs, of which Japan has ordered 40 from Lockheed Martin. A sister ship, JS Kaga, was commissioned in 2017 and also is planned for conversion to operate F-35Bs.

The U.S. Marine Corps operates two F-35B squadrons at Marine Corps Air Station Iwakuni, Japan: Marine Fighter Attack Squadron 121 (VMFA-121) and VMFA-242.

Berger pointed to the current deployment of F-35Bs of Marine Fighter Attack Squadron 211 (VMFA-211) together with Royal Air Force F-35Bs on board HMS Queen Elizabeth, which is operating in the Pacific region, as an example of how the United States and its allies are working together to solve operational details.

For one example he discussed, the British and Americans each have their own Special Compartmented Intelligence Facility, or SCIF, on the Queen Elizabeth to avoid complications of handling classified information.

Berger sees cooperation with such allies as the United Kingdom, Japan, and Australia as key to sharing information to countering the influence of China in the region. Enabling the F-35's of each country to share data over networks is an important part of that cooperation.

Navy MH-60S Helicopter Crashes Off San Diego

An MH-60S Sea Hawk helicopter, assigned to the “Chargers” of Helicopter Sea Combat squadron (HSC) 14, prepares to land aboard the aircraft carrier USS Abraham Lincoln (CVN 72) on Aug. 9. *U.S. NAVY / Mass Communication Specialist Seaman Lake Fultz*

SAN DIEGO – A U.S. Navy MH-60S Seahawk helicopter crashed into the Pacific Ocean while conducting flight operations approximately 60 nautical miles off the coast of San Diego, the U.S. 3rd Fleet public affairs said in a release.

Six personnel were on the helicopter when it crashed. One was rescued and transported ashore. He was said to be in stable condition. Search efforts continue by ships Navy and Coast Guard aircraft for the five additional aircrew members.

The helicopter crashed at 4:30 p.m. PST, Aug. 31, while embarked aboard USS Abraham Lincoln (CVN 72). The carrier was conducting carrier qualifications for aircraft at the time.

The MH-60S was “operating on deck before crashing into the sea,” the Navy said. “Five additional Sailors aboard Abraham Lincoln suffered injuries in the incident and are in stable condition. Two of the five Abraham Lincoln Sailors were transported ashore for treatment, while three of the five Abraham Lincoln Sailors had minimal injuries and remain aboard the ship.”

The MH-60S was assigned to Helicopter Sea Combat Squadron (HSC) 8, based at Naval Air Station North Island, California.

The crash marked the second loss of an MH-60S this year. On

July 16 an MH-60S assigned to NAS Fallon, Nevada, crashed on a rescue mission near Mount Hogue, California. No injuries occurred in that mishap.

An investigation into the cause of the incident is underway.

Israeli and U.S. Warships Conduct Milestone Maritime Patrol

Ships from the Israeli navy and U.S. Naval Forces Central Command (NAVCENT) conducted a combined maritime security patrol in the Red Sea, Aug. 30-31. *U.S. NAVY*

MANAMA, Bahrain – Ships from the Israeli navy and U.S. Naval Forces Central Command (NAVCENT) conducted a combined maritime security patrol in the Red Sea, Aug. 30-31, U.S. Naval Forces Central Command said in an Aug. 31 release.

Four Israeli and U.S. Navy ships sailed together in the Gulf of Aqaba as the U.S. Department of Defense shifted Israel from U.S. European Command to U.S. Central Command's area of responsibility.

"Our navies are ushering in a new era of expanded cooperation and capacity building," said Vice Adm. Brad Cooper, commander of NAVCENT, U.S. 5th Fleet and Combined Maritime Forces. "We are partnering in new ways, which is essential for preserving security in today's dynamic maritime environment."

Guided-missile cruiser USS Monterey (CG 61) sailed alongside

an Israeli navy corvette and two patrol boats as a U.S. Navy P-8A Poseidon maritime patrol aircraft flew overhead. The units conducted air defense, high value unit defense, small boat operations and tactical maneuver training.

“Combined patrols like these help maintain regional maritime security and stability,” said Capt. Robert Francis, commodore for NAVCENT’s Task Force 55 which controls U.S. Navy surface assets in the Middle East. “The collaboration has been tremendous. We share a common understanding with our international counterparts that there is strength in unity.”

In January, the United States announced moving Israel from U.S. European Command to U.S. Central Command’s area of responsibility effective Sept. 1. The change offers new opportunities for cooperation among regional navies in the Middle East.

The U.S. 5th Fleet area of operations encompasses nearly 2.5 million square miles of water area and includes the Arabian Gulf, Gulf of Oman, Red Sea, parts of the Indian Ocean and three critical choke points at the Strait of Hormuz, the Suez Canal and the Strait of Bab-al-Mandeb. With Israel’s addition, the region is now comprised of 21 countries.

Coast Guard Conducts Search and Rescue Operations following Hurricane Ida

The Coast Guard received a report that a man had been struck

in the head during the storm by a window in Leeville, Louisiana, August 30, 2021. An Air Station New Orleans MH-65 Dolphin helicopter aircrew landed on a highway and embarked the patient and took him to West Jefferson Hospital in stable condition. *U.S. COAST GUARD*

NEW ORLEANS – The Coast Guard has conducted a total of six search and rescues in Louisiana in the wake of Hurricane Ida, saving a total of 13 people and two animals, and assisting six people, as of Sept. 1.

Flight crews from Coast Guard Air Station New Orleans, Coast Guard Aviation Training Center Mobile and Coast Guard Air Station Cape Cod have conducted these efforts. Their total flight time for the following cases are 27 hours and 42 minutes.

The following search and rescue efforts were conducted by Air Station New Orleans:

Aug. 30 – Leeville – The Coast Guard received a report that a man had been struck in the head during the storm by a window. An MH-65 Dolphin helicopter aircrew landed on a highway and embarked the patient and took him to West Jefferson Hospital in stable condition.

Aug. 30 – Port Sulphur – The Coast Guard received a report at 11 p.m. a shrimp boat caught fire and one of the crew members managed to swim to shore. An MH-65 Dolphin helicopter aircrew landed on the highway in nighttime conditions, navigating down power lines and debris. The crew member was transferred to West Jefferson Hospital in Marrero.

Aug. 31 – Grand Isle – An MH-65 Dolphin helicopter aircrew responded to a report of two men needing medical assistance, one having difficulties from a preexisting condition and the other with a leg injury. The aircrew lowered the rescue swimmer to assess the patients while the pilots landed the helicopter on the beach to conserve fuel and provide a stable loading platform. The patients were transferred to University

Medical Center in New Orleans.

The following search and rescue efforts were conducted by Aviation Training Center Mobile:

Aug. 30 – Houston, Texas – While deployed in Houston, an MH-60 Jayhawk helicopter aircrew assisted in hospital transfers of four patients.

Aug. 30 – La Place – An MH-65 Dolphin helicopter aircrew medevaced a middle-aged woman suffering from seizures and transferred her to West Jefferson Hospital. A secondary MH-65 Dolphin helicopter also transported two of her family members to Air Station New Orleans where a vehicle was waiting to drive them to the hospital.

The following search and rescue was conducted by Air Station Cape Cod:

Aug. 30 – Grand Isle – An MH-60 Jayhawk helicopter aircrew conducted a beach landing to check for signs of distress and found eight people and two felines in a severely damaged motel. They requested to depart the island to safety. The aircrew transported everyone to the parking lot of the Houma Civic Center.

GE Renews Service Agreement with Royal Canadian Navy for GE LM2500 Gas Turbines

Gas Turbine Systems Technician (Mechanical) 2nd Class Edward Vazquez performs maintenance on an LM2500 gas turbine module

aboard the guided-missile cruiser USS Vella Gulf (CG 72) on April 20, 2020. *U.S. NAVY / Mass Communication Specialist 3rd Class Andrew Waters*

EVENDALE, Ohio – GE Marine has renewed a long-term, customized service agreement (CSA) with the Royal Canadian Navy (RCN), the company said in a Sept. 1 announcement. The CSA covers an operating fleet of 24 GE LM2500 aeroderivative marine gas turbines plus spare engines used to power Halifax-class frigates.

According to Kris Shepherd, vice president, general Manager, GE Marine, Evendale, Ohio, "GE has been providing the RCN with 20 years of customized service for their LM2500 engines, yielding significant performance and operational advantages in terms of improved reliability and the high availability of the gas turbines to power their surface combatants."

"GE builds on its relationship of trust and reliability with the RCN, dating back to the early 1990s. The CSA provides the Navy with high availability of the RCN's LM2500 fleet over the initial five years of contract support, as well as helping to promote supplier and skills development in Canada. The five-year contract comes with renewal and sustainment options until the eventual decommissioning of the Halifax-class frigates," Shepherd added.

Other benefits of this CSA include formal and on-the-job training with GE and Navy personnel working side by side to maintain the LM2500 fleet, and assistance with procurement, inspection, technical support and materials inventory management.

Backed by GE's extensive network of global field service technicians, the RCN has access to GE services located throughout the globe, providing immediate onsite technical support 24 hours a day, seven days a week. Similar to the original contract, the scope of the renewed contract includes:

- Repair, overhaul and engineering support
- Parts warehousing and inventory management (including spare engines, supply of spare parts and replenishment of inventory)
- Field service representative support (home port and deployed)
- Support of naval engineering school training curriculum for on-engine and equipment maintenance
- Operational level maintenance
- Configuration management
- Supply and distribution of technical manuals

Customized agreements provide direct access to GE’s global inventory of parts and spare engines, and the ability to tap into GE’s worldwide service and support expertise such as training, maintenance, repair and overhaul services – all on an as-needed basis. With a CSA, navies can realize the full potential for their critical propulsion gas turbines while balancing performance and risk, along with predictable costs and less administrative oversight.