Italian Navy Aircraft Carrier Arrives at Norfolk for F-35B Certification

Italian navy flagship, the aircraft carrier ITS Cavour (CVH 550), arrives at Naval Station Norfolk, Virginia, Feb 13. The Cavour's visit is part of a series of operations alongside U.S. military assets to attain the Italian navy's "ready for operations" certification to safely land and launch F-35B aircraft. U.S. Navy / Capt. Cassidy Norman

NORFOLK, Va. – The Italian navy flagship, the aircraft carrier ITS Cavour (CVH 550), arrived at Naval Station Norfolk, Virginia, Feb. 13 for a series of operations alongside U.S. military assets to attain the Italian navy's "ready for operations" certification to safely land and launch F-35B aircraft, the U.S. 2nd Fleet said in a release.

While in the Western Atlantic, Cavour will be embarked by an F-35 Joint Program Office test team to conduct sea trials, a series of tests and functional activities to create a safe

flight operating envelope for the short takeoff and vertical landing (STOVL) variant of the fifth-generation aircraft aboard the recently upgraded ship.

This carrier-based flight test and other actions with U.S. 2nd Fleet ships and aircraft improve interoperability and strengthen the relationship between two NATO Allies.

“Operating in the Western Atlantic with our NATO allies presents a mutually beneficial opportunity to enhance both of our navies’ capabilities,” said Vice Adm. Andrew Lewis, commander of U.S. 2nd Fleet. “Supporting our Italian allies in certification of their aircraft carrier increases our collective experience in safety and combat abilities. We are stronger together.”

While crossing the Atlantic from Italy, ITS Cavour was met by the Arleigh-Burke class guided-missile destroyer USS Stout (DDG 55) and conducted a three-day interoperability exercise with support from Carrier Air Wing (CVW) 7 and Patrol and Reconnaissance Wing (CPRW) 11. Specific events included integrated ship maneuvering, low-slow-flyer detect-to-engage, anti-surface warfare serials with P-8 participation, air defense/air intercept control event with F/A-18 participation, and C5I interoperability events in the Western Atlantic 10-12 Feb.

“We are deeply grateful for the warm welcome received by the U.S. Navy 2nd Fleet upon our arrival in the Western Atlantic waters,” said Capt. Giancarlo Ciappina, commanding officer of ITS Cavour. “My officers and the whole crew were impressed for the professionalism and seamanship shown during these three days of training by the crews of USS Stout, CVW-7 and CPRW-11. We consider a real privilege having the opportunity to sail and exercise alongside our closest allies and friends and we are very proud to share with the USN Community such important certification deployment, which will provide ITS Cavour and

the Italian naval aviation with the fifth-generation air combat capability of the Joint Strike Fighter."

Upon arriving in Norfolk, ITS Cavour was hosted by USS John. C. Stennis (CVN 74). Stennis is coordinating and providing all pier services required by Cavour, to include refueling, diving operations, equipment and personnel on load, security, and contingency medical functions.

"We couldn't be more excited to host our Italian ally," said Capt. Cassidy Norman, Stennis' commanding officer. "The Stennis team fully understands the importance of building trust and cooperation by supporting Cavour's certification with the newest multi-role combat aircraft, the F-35. We are happy to see our Italian naval aviation counterparts dramatically increase their operational capability, strengthening our collective capability."

The F-35 Pax River Integrated Test Force (ITF) team from Naval Air Station Patuxent River, Maryland. NAS PAX River comprises almost 200 people with the engineering and test pilot expertise and experience to conduct F-35B envelope expansion flight test, two specially instrumented developmental flight test aircraft, and support equipment.

"Italy is a critically important Cooperative Program Partner in the F-35 enterprise," said Andrew Maack, F-35 Pax River ITF chief test engineer and site director.

"We are excited to get underway with the sailors of Cavour and honored to contribute to the aircraft carrier achieving the Italian navy's strategic goal of it being ready for operations," Maack said. "We look forward to a phenomenally successful shipboard detachment."

For decades, the bond between Europe and North America has made NATO the strongest alliance in history. Conducting

training and exercises alongside allies and partners increases our collective capacity and capabilities as well as increased interoperability with the U.S. Forces.

U.S. 2nd Fleet exercises operational authority over assigned ships, aircraft, and landing forces on the East Coast and the Atlantic.

Coast Guard Cutter Polar Star Collects High-Latitude Data of Remote Arctic Region

U.S. Coast Guard Cutter Polar Star transits the Gastineau Channel to moor up in Juneau, Alaska, on Feb. 12, 2021, as the crew nears the end of their months-long Arctic deployment. U.S. Coast Guard / Senior Chief Petty Officer Trevor Bannerman
JUNEAU, Alaska – The Seattle-based Coast Guard Cutter Polar Star (WAGB 10) arrived in Juneau, Alaska on Feb. 12, for a logistics stop as the crew nears the end of their months-long Arctic deployment conducting scientific research and protecting the nation's maritime sovereignty and security throughout the polar region, the Coast Guard 17th District said in a release.

In addition to Polar Star's strategic national security objectives, the nation's sole heavy icebreaker sailed north with scientists and researchers aboard to work in partnership with the U.S. Army Corps of Engineers Cold Regions Research and Engineering Laboratory (CRREL), the National Oceanic and Atmospheric Administration (NOAA), University of Washington, and Woods Hole Oceanographic Institute (WHOI) to gather data and lessen the void of information from the region and better understand how to operate year-round in Arctic waters.

"The Arctic is cold, dark, and difficult to navigate in the winter," said Capt. Bill Woityra, the Polar Star's commanding officer. "Deploying with researchers and scientists aboard has aided in the development, understanding and pursuit of technologies that will mitigate risks and enable future mission performance so that looking forward, the Coast Guard can safely operate continually and effectively in this remote environment."

Working aboard Polar Star, Shalane Regan, a member of the Coast Guard Research and Development Center (RDC), teamed up with Lt. Lydia Ames, a NOAA Corps officer, to assist CRREL researchers by deploying buoys onto the ice where they will, over time, collect and transmit information about ice flow to help fill in data gaps for higher-latitude oceans.

The Polar Star crew also aided in a research project concerning water flow regimes in the Arctic, specifically the Chukchi Sea, a study developed by Dr. Robert Pickart of WHOI. The data collected during Polar Star's patrol will be used to develop a more complete understanding of the hydrology of the dynamic region.

To support Dr. Pickart's research, WHOI provided 120 Expendable Conductivity-Temperature-Depth (XCTD) instruments to measure temperature and salinity. These profiles of the water column will give a better picture of what water and nutrient flow look like in the Arctic winter. Polar Star crew members deployed the probes every 12 hours when above 65 degrees north.

Additionally, Regan, a mechanical engineer and researcher with the RDC Surface Branch, worked with other scientists and researchers on board to find ways to operate most effectively in the frigid Arctic environment.

For technology, Regan brought a 3-D printer and remotely operated vehicle aboard Polar Star to evaluate how the systems would react to the Arctic climate and ship life.

"I used the 3-D printer to complete many small projects that resulted in large lifestyle improvements for the crew," said Regan. "Most importantly, the knowledge I was able to gather about larger issues the crew faces, for example, visibility issues due to frost accumulation on the bridge windows, I can take home for my team to develop solutions that will create a better-equipped, mission-ready fleet."

Another big item the RDC team is focusing on is underway connectivity, specifically in the Arctic region.

To better understand high latitude communications, The Mobile User Objective System (MUOS) was installed on Polar Star to test its abilities at high latitudes in the harsh Arctic winter conditions. Developed for the U.S. Navy by Lockheed

Martin, the MUOS is an ultra-high frequency satellite communications system that provides secure connections for mobile forces.

“Looking towards the future, all signs point toward the Coast Guard deploying more platforms to the Arctic, more often and during different seasons of the year,” said Woityra. “The Coast Guard is robustly proficient at summer-time Arctic operations, while winter presents an entirely new set of challenges. Polar Star’s winter Arctic deployment has served to better understand and prepare for the challenges of operating in such a harsh and unforgiving environment.”

MARAD Announces Comment Period for Future Use of the Historic Vessel NS Savannah

NS (Nuclear Ship) Savannah, the first commercial nuclear power cargo vessel, en route to the World's Fair in Seattle in 1962. Wikipedia / U.S. government

WASHINGTON – The Maritime Administration (MARAD) has published a Federal Register notice inviting comments on MARAD's future plans for the N.S. Savannah (NSS). The notice can be found at https://www.federalregister.gov/documents/2021/01/13/2021-00527/collecting-proposals-for-future-use-of-the-historic-vessel-ns-savannah

The N.S. Savannah was the world's first nuclear-powered merchant ship. It operated from 1962 to 1971, when it was inactivated. It currently is moored in Baltimore.

Under the authority of the National Historic Preservation Act (NHPA), MARAD is engaged in formal consultations with federal, state, and organizational stakeholders, and expects to enter

into a Programmatic Agreement with those stakeholders in the next few months. The agreement includes a stipulation that details how MARAD will consider future uses for the vessel after its nuclear power plant is fully decommissioned.

Comments can be submitted electronically online through the Federal eRulemaking Portal at www.regulations.gov under docket number MARAD-2020-0133. Alternatively, comments may be mailed to the following address: U.S. Department of Transportation, Docket Management Facility, West Building, Ground Floor, Room W12-140, 1200 New Jersey Avenue, SE, Washington, DC 20590. In person submissions are being accepted in accordance with social distancing protocols in place.

All submissions to the docket will be posted without change to www.regulations.gov and will include any personal information you provide.

CAE and Pinnacle Solutions Prepare to Deliver LCS Simulators to U.S. Navy

Two Littoral Combat Ship Bridge Part-Task Trainers representing the General Dynamics Independence variant will be delivered to the Navy's Surface Warfare Schools Command in Newport, Rhode Island. CAE

TAMPA, Fla.—The joint venture CAE USA and Pinnacle Solutions, Xebec, will be delivering the first three Littoral Combat Ship (LCS) Bridge Part-Task Trainers (BPTTs) to the U.S. Navy, CAE said in a Feb. 9 release.

The new LCS BPTTs recently completed factory acceptance testing at CAE's facility in Tampa, Florida and will now be packed and shipped to the Navy's Surface Warfare Schools Command (SWSC) in Newport, Rhode Island. The SWSC is the Navy's center of excellence for surface warfare where training for officers and Sailors who will serve on the Navy's surface combatants is delivered.

"The Navy is focused on navigation and seamanship training and these littoral combat ship simulators will greatly assist in this endeavor," said Michael Beard, program manager, U.S. Navy LCS Training Systems for CAE. "The more training our officers and Sailors receive ashore, the better prepared they will be at sea in real life situations."

CAE is featured a video demonstration of the LCS bridge simulators in the Innovation Hub as part of the CAE OneWorld virtual conference and tradeshow. CAE OneWorld 2021 will be available online for the next month.

Included in the initial delivery to the SWSC in Newport will be two LCS BPTTs for the LCS 2 Independence variant manufactured by General Dynamics and Austal USA, and one LCS BPTT for the LCS 1 Freedom variant manufactured by Lockheed Martin. The three LCS BPTTs will undergo site acceptance testing once installed in Newport and are expected to be ready for training by the end of April. Xebec is under contract to deliver four additional LCS BPTTs which will be delivered to the LCS training facilities located in San Diego, California and Mayport, Florida.

“The fidelity and flexibility of the littoral combat ship simulators we have developed will allow the Navy to deliver most of the personnel qualification standards training in a simulation-based environment,” said Ray Duquette, president and general manager, CAE USA. “This means when sailors get to their assigned ship they will be better prepared for the navigation and operational assignments required.”

The LCS BPTTs are being developed by Xebec, a joint venture of CAE USA and Pinnacle Solutions established under the U.S. Small Business Administration’s Mentor-Protégé program.

“We were pleased to establish the Xebec joint venture with CAE and the collaboration has resulted in a very successful littoral combat ship simulator program for the Navy,” said Mike Durant, Pinnacle’s president and CEO. “We look forward to continuing deliveries of the LCS simulators to the Navy and to future pursuits with CAE through the Xebec joint venture.”

Xerox and Naval Postgraduate School Collaborate on 3-D Printing Research

At the cutting-edge of additive manufacturing technology, this new Xerox ElemX 3-D Liquid Metal Printer is now operational in NPS' Large Experiment Annex on campus. Naval Postgraduate School

NORWALK, Conn. & MONTEREY, Calif. – Xerox and the Naval Postgraduate School (NPS) have formed a strategic collaboration focused on advancing additive manufacturing research, specifically 3-D printing, which has the potential to dramatically transform the way the military supplies its forward-deployed forces, Xerox and NPS said in a joint release.

As part of a Collaborative Research and Development Agreement

(CRADA), NPS was the first to receive an installation of the Xerox ElemX Liquid Metal Printer on the university campus in December. The Xerox system will provide NPS faculty and students with hands-on exploration of new ways the technology can deliver on-demand 3-D printing of metal parts and equipment.

“The military supply chain is among the most complex in the world, and NPS understands first-hand the challenges manufacturers must address,” said Xerox Chief Technology Officer Naresh Shanker. “This collaboration will aid NPS in pushing adoption of 3-D printing throughout the U.S. Navy, and will provide Xerox valuable information to help deliver supply chain flexibility and resiliency to future customers.”

With access to the latest additive manufacturing equipment, NPS faculty and students will use the ElemX printer to conduct thesis research to develop new capabilities for the Navy and Marine Corps.

“As the Department of the Navy’s applied research university, NPS combines student operational experience with education and research to deliver innovative capabilities and develop innovative leaders with the knowhow to use them,” said NPS President Ann Rondeau, a retired vice admiral. “This collaborative research effort with Xerox and the use of their 3-D printing innovations is a great example of how NPS uniquely prepares our military students to examine novel approaches to create, make, prototype and manufacture capability wherever they are.”

“From the age of sail to the nuclear era, Sailors have been fixing things at sea so they can complete the mission,” Rondeau continued. “This partnership is about the strategic ability of the Navy to have Sailors on ships with the capability through creativity and technology to advance their operations at sea. Through collaboration, NPS and Xerox are helping build a Navy for the 21st Century.”

The Xerox ElemX printer uses cost-effective aluminum wire to fabricate end-use parts that can withstand the rigors of operational demands. This ability to produce reliable replacement parts on-demand reduces the dependency on complex global supply chains for deployed forces and also addresses the hidden costs of traditional manufacturing.

“The NPS Alumni Association and Foundation supported bringing the ElemX liquid metal printer to NPS because it will enable soldiers, sailors, airmen, and marines to solve their problems where they are, when problems occur,” noted retired U.S. Marine Corps Col. Todd Lyons, vice president of the NPS Alumni Association and Foundation. “By providing the right digital tools and the liquid metal printer, all of a sudden we’ve helped transform not just the supply chain, but how the Department of Defense (DoD) thinks operationally about supplying war.”

“This is one way to bend the cost curve so that the DoD is not spending a thousand dollars for every dollar that a peer competitor spends,” he added.

“Global supply chains leave industries like aerospace, automotive, heavy equipment, and oil and gas vulnerable to external risks,” said Tali Rosman, vice president and general manager, 3D Printing, Xerox. “Our goal is to integrate localized 3D printing into their operations, and the real-time feedback from NPS gives us actionable data to continuously improve the ElemX.”

Northrop Grumman to Develop

Advanced Air-to-Air Missile Engagement Concept

An artist’s conception of the LongShot advanced weapons concept. Northrop Grumman

REDONDO BEACH, Calif. – Northrop Grumman Corp. has been awarded a contract by the U.S. Defense Advanced Research Project Agency (DARPA) Tactical Technology Office to develop an advanced technology weapon concept designed to significantly increase engagement range and weapon effectiveness of U.S. forces against adversary air threats, the company said in a Feb. 10 release.

“Our collaboration with DARPA is the critical first step in the development of innovative operational concepts and solutions that will enhance our warfighter’s combat capability against a rapidly growing threat,” said Jaime Engdahl, program director, kinetic weapons and emerging capabilities, Northrop Grumman. “The LongShot program enables us to combine our digital engineering skillset with our extensive knowledge in advanced technology weapons, autonomous systems and strike platforms to increase weapon range and effectiveness.”

Spurred by rapid technological advancements and an ever more dangerous and disruptive battlefield, DARPA’s LongShot program will explore new lethal engagement concepts by leveraging multi-modal propulsion, weapon systems that can be operationally deployed from existing fighters or bombers.

DARPA’s advanced aerospace systems activities are focused on utilizing high pay-off opportunities to provide revolutionary new system capabilities, as opposed to incremental or evolutionary advancements, in order to achieve undeterrable air presence at dramatically reduced costs.

The LongShot program enables Northrop Grumman to combine its expertise in weapon system design, survivability, autonomy, advanced mission systems and rapid prototyping to deliver advanced solutions that help to maintain a competitive military advantage in highly contested environments.

U.S. Marine Corps Awards BAE Systems $184 million for Additional ACVs

Amphibious Combat Vehicles undergoing sea tests in Italy. BAE Systems

STAFFORD, Virginia – BAE Systems has received a $184 million contract option from the U.S. Marine Corps for 36 additional Amphibious Combat Vehicles (ACVs) under full-rate production, the company said in a Feb. 11 release. The order demonstrates the Marine Corps' confidence in a program that is on track to deliver this critical capability to the Marines.

This contract award will cover production, fielding, and support costs for the ACV personnel carrier (ACV-P) variant. BAE Systems was awarded the first full-rate production contract option in December for the first 36 vehicles. This option on that contract increases the total number of vehicles under full-rate production to 72, for a total value of $366 million.

"The exercising of this option validates years of teamwork in partnership with the Marines to provide the most adaptable amphibious vehicle possible to meet their expeditionary needs," said John Swift, director of amphibious programs at BAE Systems. "The ACV was designed to meet the Marines' needs of today while allowing for growth to meet future mission role

requirements.”

The ACV is a highly mobile, survivable, and adaptable platform for conducting rapid ship-to-shore operations and brings enhanced combat power to the battlefield. BAE Systems is under contract to deliver two variants to the Marine Corps under the ACV Family of Vehicles program: the ACV-P and the ACV command variant (ACV-C). A 30mm cannon (ACV-30) is currently under contract for design and development and a recovery variant (ACV-R) is also planned.

The Marine Corps selected BAE Systems along with teammate Iveco Defence Vehicles for the ACV program in 2018 to replace its legacy fleet of Assault Amphibious Vehicles (AAVs), also built by BAE Systems. BAE Systems was also recently awarded an indefinite delivery indefinite quantity contract worth up to $77 million for the ACV program that includes the provision of spare and replacement parts, testing equipment, and other services.

ACV production and support is taking place at BAE Systems locations in Stafford, Virginia; San Jose, California; Sterling Heights, Michigan; Aiken, South Carolina; and York, Pennsylvania.

Kongsberg Drone to be Deployed on Canadian Coast Guard Vessels

An artist’s conception of a Martin UAV V-BAT operating from a Canadian Coast Guard vessel. Kongsberg Geospatial

OTTAWA, Canada – Kongsberg Geospatial has been selected by Defence Research and Development Canada (DRDC) to conduct trials of a new long-endurance unmanned aircraft surveillance system for the Canadian Coast Guard, the company said in a Feb. 9 release. The Martin UAV V-BAT aircraft was selected to provide the unique ability to combine takeoff and landing from the small confines aboard ship with the long endurance of a fixed-wing aircraft while carrying multiple sensors.

The aircraft will communicate with the Kongsberg Geospatial sensor data management system, called MIDAS, which allows a range of sensor data, including full-motion video from unmanned systems to be processed and exploited in near real-time by analysts on board Canadian Coast Guard ships. MIDAS provides the capability to compare historical and live data from the mission area, and to examine sensor data with a variety of tools, including motion and object detection, in near-real time. This near real-time analytical capability can greatly enhance the effectiveness of UAVs for a variety of mission types.

The V-BAT provided by Martin UAV is a fixed-wing vertical take-off and landing aircraft specifically designed to operate

from very small spaces on ships, land, and nearly any environment. The V-BAT is a long-endurance aircraft capable of carrying multiple sensors, including land and maritime wide area surveillance.

Kongsberg Geospatial's MIDAS is derived from technologies created for the NATO Alliance Ground Surveillance project which required the storage and retrieval of vast amounts of intelligence data for intelligence analysts. The system directly addresses the problem that the vast majority of UAVs have no standards-compliant capability to process, exploit, and distribute their sensor data where it is being used. MIDAS provides a fully standards-compliant system that allows intelligence analysts to view, process, and analyze sensor data in near real-time, from where the drone is being operated. MIDAS has packaged these capabilities into a tactical and portable form factor to enables those surveillance capabilities to be deployed as a portable system on board a ship, or in a temporary command post.

CINTIQS Military Technology Consulting will be providing consulting services for the planning and conduct of the flight trials and sensor employment to validate systems performance.

The combination of the Martin UAV V-BAT and the Kongsberg MIDAS sensor data management system will allow Coast Guard vessels to significantly expand their surveillance range for search and rescue missions, and for the surveillance of the movement of icebergs, without requiring the use of manned aircraft.

"UAVs are a useful tool, but they are only truly effective if they can collect sensor data that results in actionable intelligence," said Ranald McGillis, president of Kongsberg Geospatial. "Our MIDAS system allows users to fully exploit raw sensor data and derive useful intelligence at the tactical edge where the UAV is being used. In a search and rescue context, that could mean using infrared sensors, or near real-

time motion detection to locate a subject when visibility or weather conditions are poor.”

Bollinger Shipyards Delivers 43rd Fast Response Cutter

U.S. Coast Guard Cutter Frederick Hatch, the 43rd Fast Response Cutter delivered by Bollinger Shipyards LLC under the current program. Bollinger Shipyards.

LOCKPORT, La.—Bollinger Shipyards LLC has delivered the USCGC Frederick Hatch to the U.S. Coast Guard in Key West, Florida, the company said in a Feb. 10 release. This is the 166th vessel Bollinger has delivered to the U.S. Coast Guard over a

35-year period and the 43rd Fast Response Cutter (FRC) delivered under the current program.

The Frederick Hatch is the final of three FRCs to be home-ported in Apra Harbor, Guam, increasing the presence for the U.S. Coast Guard in the Indo-Pacific Theater. Additionally, in 2020, Bollinger delivered two of six FRCs that will be home-ported in Manama, Bahrain, which are replacing the Island-class patrol boats supporting the Patrol Forces Southwest Asia, the U. S. Coast Guard's largest unit outside of the United States.

"Bollinger is proud to continue enhancing and supporting the Coast Guard's operational presence and mission in the Indo-Pacific region with the delivery of the Frederick Hatch," said Ben Bordelon, Bollinger president and CEO. "Building ships for the U.S. Coast Guard provides critical assets to bolster our national security interests, both domestically and abroad. We are proud and humbled to be partners in the FRC program."

The homeporting of three FRCs in Guam is part of the U.S. Coast Guard's "doubling down on Oceania," allowing more frequent and longer patrols in an area where the U.S. Coast Guard has increased its presence over the past two years and is aligned with the U.S. position on maritime security in the Indo-Pacific. In the early days of the new administration, President Joe Biden has assured U.S. allies in the region that the United States is committed to "maintaining a secure and prosperous Indo-Pacific region."

U.S. Coast Guard Commandant Adm. Karl Schultz has previously stressed the strategic importance of the service's presence in the region, saying, "We're on a trajectory where the geostrategic importance of the Oceania region has not been higher here in decades, and it's a place that the Coast Guard's looking to be part of the whole-of-government solution set."

The majority of the Frederick Hatch build occurred despite the COVID-19 global pandemic and six named storms impacting the Gulf region, all of which affected Louisiana and two of which made landfall in the state as hurricanes, including Hurricane Laura, a Category 4 storm and the strongest to hit the state since the Great Storm of 1856. Despite these challenges, Bollinger undertook precautions to ensure the health and safety of employees and maintained its record of on-time deliveries to the Coast Guard.

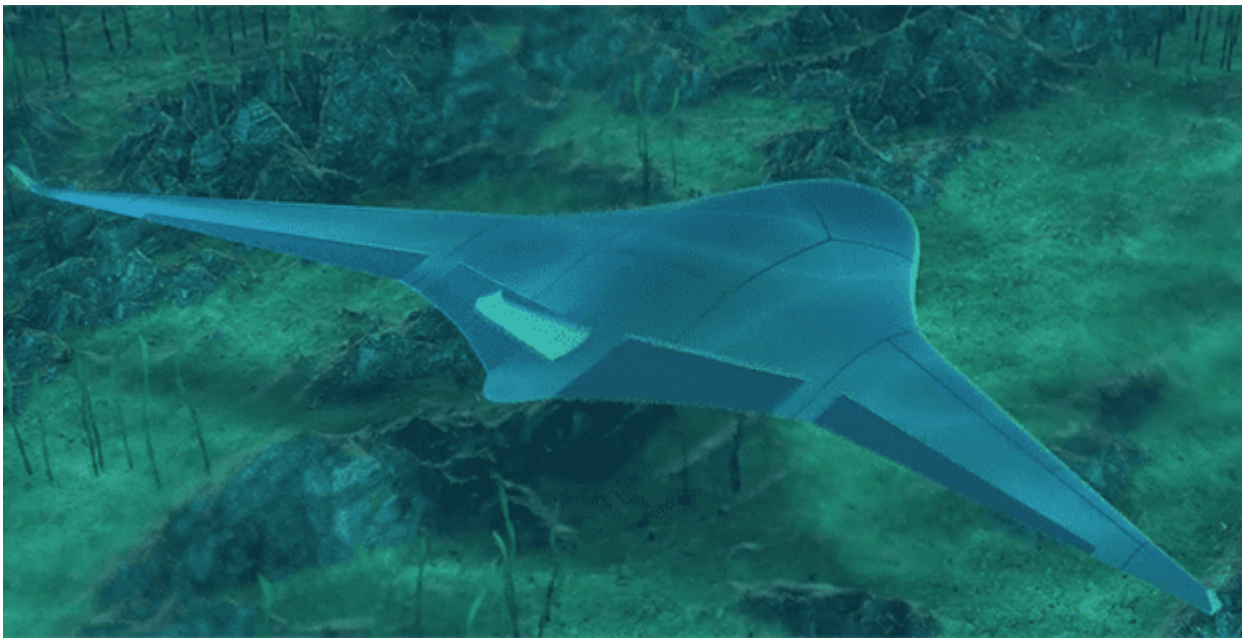
Bordelon continued, “Delivering vessels on schedule and on budget to the Coast Guard in these unprecedented times given the COVID-19 challenges that we are all facing shows the resiliency and dedication of our incredibly capable workforce. The FRC hot production line continues to produce and provide stability in the industrial base for the U.S. government and our Bollinger workforce, assuring economic benefit for the Lafourche Parish Louisiana region, our vendor partners in the 40-plus states that support the FRC program, and our country.“

Each FRC is named for an enlisted Coast Guard hero who distinguished himself or herself in the line of duty. Surfman Frederick Hatch was a two-time winner of the Gold Lifesaving Medal. Hatch was awarded his first medal in 1884 for his actions as a surfman at the Cleveland Life-Saving Station for rescuing the crew of the schooner Sophia Minch. He was awarded his second gold medal in 1890, for his selfless act of courage as he rescued those on board the schooner Wahnapitae, which grounded near the Cleveland Breakwater lighthouse where he served as keeper. His career exemplified the Coast Guard’s core values of “honor, respect and devotion to duty” and serves as an inspiration to other enlisted men and women.

The FRC is an operational “game changer,” according to senior Coast Guard officials. FRCs are consistently being deployed in support of the full range of missions within the United States Coast Guard and other branches of our armed services. This is

due to its exceptional performance, expanded operational reach and capabilities, and ability to transform and adapt to the mission. FRCs have conducted operations as far as the Marshall Islands – a 4,400 nautical mile trip from their homeport. Measuring in at 154-feet, FRCs have a flank speed of 28 knots, state of the art C4ISR suite (command, control, communications, computers, intelligence, surveillance, and reconnaissance), and stern launch and recovery ramp for a 26-foot, over-the-horizon interceptor cutter boat.

DARPA Selects Performers to Advance Unmanned Underwater Vehicle Project



An artist's conception of DARPA's Manta Ray project. DARPA
ARLINGTON, Va.—The Defense Advanced Research Projects Agency (DARPA) has executed contract options to continue the Manta Ray project that began in 2020, the agency said in a Feb. 5 release.

The Manta Ray effort seeks to demonstrate innovative technologies allowing payload-capable unmanned underwater vehicles (UUVs) to operate on long-duration, long-range missions in ocean environments. The three prime contractors will be Northrop Grumman Systems Corp., Martin Defense Group LLC (formerly Navatek, LLC), and Metron Inc.

The Manta Ray project seeks to develop UUVs that operate for extended durations without the need for on-site human logistics support or maintenance. It also aims to address critical challenges spanning energy management, UUV reliability, biofouling, corrosion control, navigation, underwater obstacle avoidance, and many other areas that could benefit Navy operations.

“Manta Ray performers have each taken unique approaches to solving the wide range of challenges related to UUV endurance,” said Cmdr. Kyle Woerner, the program manager for Manta Ray. “To me, this is a clear sign we are tackling a complex problem without a clear ‘one size fits all’ solution.”

The Manta Ray program concluded its first major milestone with the completion of preliminary design reviews in early 2021. Later this year, selected performers will advance their designs toward a critical design review that will confirm design maturity before vehicle fabrication and testing in an anticipated Phase 2.

“The goals of this new class of undersea vehicle and its critical component technologies are to inform, as well as transition into, future Navy UUV efforts,” added Woerner.

Two of the selected performers, Northrop Grumman Systems Corp. and Martin Defense Group LLC, will continue development of fully integrated demonstration vehicles. A third performer, Metron Inc., will advance progress on a novel energy harvesting subsystem.