

HII Authenticates Keel of Virginia-Class Attack Submarine Arkansas



From left, NNS President Jennifer Boykin looks on as members of the Little Rock Nine, Ernest Green, Thelma Mothershed Wair assisted by PCU Arkansas commanding officer Cmdr. Adam Kahnke, Elizabeth Eckford, Gloria Ray Karlmark and Carlotta Walls Lanier, etch their initials onto steel plates during the keel authentication ceremony for Virginia-class submarine Arkansas (SSN 800) on Nov. 19, 2022. *HII / Ashley Cowan*

NEWPORT NEWS, Va. – HII’s Newport News Shipbuilding (NNS) division hosted a keel authentication ceremony Nov. 19 for Virginia-class submarine Arkansas (SSN 800), the company said in a release.

The ship’s sponsors are the six women of the historic group known as the Little Rock Nine, the first African American students to attend all-white Central High School in Little Rock, Arkansas during desegregation. NNS honored all nine members, including the three men, during Saturday’s ceremony.

The Little Rock Nine made history in 1957 with their response to the Supreme Court ruling in *Brown v. Board of Education*, declaring racial segregation in public schools unconstitutional. Faced with shouting mobs, threats of violence and hostile state leaders who blocked their way, the teenagers were escorted into the school by federal troops at the direction of President Dwight D. Eisenhower.

"Their courageous spirit will forever inspire Arkansas and her crew. This group forever changed our nation's history and their submarine will help ensure their legacy continues," NNS President Jennifer Boykin said. "The bravery and resilience of the Little Rock Nine sparked a fire of change and demonstrated the strength of blending different perspectives and backgrounds. We harness this strength in the shipyard every day. Our diversity allows us to extend beyond our own limits, to reach new heights and build each boat even better than the one before it. Arkansas will be proof of this power."

During the ceremony, NNS welders etched a historic six sets of initials of the Little Rock Nine onto metal plates, signifying the keel of SSN 800 as being "truly and fairly laid." The metal plates will remain affixed to the submarine throughout its life.

"(Former Navy) Secretary Ray Mabus asked us to be supporters of the ship and its crew. I signed on to be a foster grandmother," said Elizabeth Eckford, a member of the Little Rock Nine, who spoke on behalf of the group during the ceremony. "President Eisenhower sent 1,000 paratroopers to Little Rock to disperse a mob, bring order and they made it possible for us to enter Central High School. From that point, I've had very high regard for specially trained forces."

Arkansas is the 27th Virginia-class fast attack submarine being built under the teaming agreement with General Dynamics Electric Boat.

“With advances in sound silencing, acoustic sensors and weapons delivery systems, Arkansas will traverse the world’s oceans and seas as an apex predator. Representing our asymmetric advantage in the undersea domain, the Arkansas will have no equal,” said Vice Adm. William Houston, commander, Naval Submarine Forces.

“It is an incredible honor for the crew to begin to establish the relationship with our namesake state of Arkansas as well as with the ship’s sponsors,” said Cmdr. Adam Kahnke, commanding officer of the pre-commissioning unit. “The story of the Little Rock Nine demonstrates the power of perseverance in the face of adversity. I find the relationship with the ship’s sponsors very appropriate due to the fact that perseverance is an essential attribute to success in the art of submarine warfare.”

NNS is one of only two shipyards capable of designing and building nuclear-powered submarines. The advanced capabilities of Virginia-class submarines increase firepower, maneuverability and stealth.

This milestone on Arkansas comes following the delivery of USS Montana (SSN 794), the launch of New Jersey (SSN 796) and continued progress on Massachusetts (SSN 798) at NNS earlier in 2022, as the shipyard continues to invest in its workforce and facilities to make steady progress on delivering these important assets to the Navy.

Interagency Delegation Visits

Unmanned & AI Task Force in Bahrain



Capt. Michael Brasseur, commander of Task Force 59, briefs Under Secretary of Defense for Policy Dr. Colin Kahl at a display of unmanned surface vessels in Manama, Bahrain, Nov. 18. *U.S. NAVY / Mass Communication Specialist 1st Class Mark Thomas Mahmood*

MANAMA, Bahrain – Senior U.S. government officials from the Department of Defense and Department of State visited U.S. 5th Fleet headquarters in Bahrain, Nov. 18, to learn about the ongoing integration of unmanned systems and artificial intelligence across the fleet, U.S. Naval Forces Central Command Public Affairs said in a release.

Under Secretary of Defense for Policy Dr. Colin Kahl visited with Assistant Secretary of State for Near Eastern Affairs Barbara A. Leaf and Dana Stroul, the deputy assistant Secretary of Defense for the Middle East, as well as other

U.S. officials.

U.S. 5th Fleet's unmanned systems and artificial intelligence task force, Task Force 59, displayed unmanned surface vessels on the pier after a tour of the Robotics Operations Center.

"The pace of technological change offers tremendous opportunities for upgrading how the U.S. military contributes to security and stability in the Middle East, and how we advance cooperation with partners," said Dr. Kahl. "Task Force 59 is doing incredible work innovating and leading coalitions that ensure freedom of navigation in some of the world's most critical waterways."

In addition, the group toured RFA Cardigan Bay (L3009), a British Royal Navy vessel stationed in Bahrain in support of the United Kingdom's regional naval headquarters. Royal Navy headquarters in the Middle East are co-located with U.S. 5th Fleet's, reflecting strong collaboration among longstanding maritime partners.

The interagency delegation also visited U.S. 5th Fleet's headquarters for discussions on regional maritime operations with Vice Adm. Brad Cooper and his staff. Cooper commands U.S. 5th Fleet as well as two major multinational maritime partnerships, which include the Combined Maritime Forces and International Maritime Security Construct.

The U.S. 5th Fleet operating area includes 21 countries, the Arabian Gulf, Gulf of Oman, Red Sea, parts of the Indian Ocean and three critical choke points at the Strait of Hormuz, Bab al-Mandeb and Suez Canal.

Five Allied Carrier Strike Groups Patrol Waters in NATO's Area of Operations



The Italian navy flagship, aircraft carrier ITS Cavour (CVH 550), arrives at Naval Station Norfolk, Virginia, March 26, 2021. *U.S. NAVY / Mass Communication Specialist 3rd Class Mitchell Banks*

MONS, Belgium – Five Allied aircraft carriers will be operating in the Atlantic Ocean and the North and Mediterranean Seas in November, as part of their regularly scheduled activities, SHAPE Public Affairs said in a Nov. 17 release.

This occurrence presents an opportunity for Allied nations to coordinate credible combat power throughout the Euro-Atlantic Area and showcases NATO cohesion and interoperability.

Participating forces comprise the Carrier Strike Groups (CSG)

formed in support of the French Navy Charles De Gaulle, the Italian Navy ITS Cavour, the United Kingdom Royal Navy Queen Elizabeth and the United States Navy's George H.W. Bush and Gerald R. Ford.

Although each nation's forces are operating in support of their own mission objectives, the advanced cooperation shows unity towards the collective defence of the Alliance. Ships and assets from various allies and partners are included in the groups, and the activity is coordinated with the Standing NATO Maritime Groups 1 and 2.

"NATO routinely demonstrates its cohesion, coordinating with multiple international maritime assets at once," said Commander, NATO Allied Maritime Command Vice Adm. Keith Blount. "This opportunity demonstrates our ironclad commitment to the stability and security of the Euro-Atlantic Area and the strength of our collective capability."

"Five carriers within our operating area presents a further opportunity to consolidate our approach to air defense, cross-domain cooperation and maritime-land integration," he said.

There is a continuous presence of Allied aircraft carriers around the NATO area of operations, and it is common for multiple CSGs to be deployed simultaneously. The multi-carrier deployment is an opportunity to test the cooperation and practice NATO's Deter and Defend concept as it leverages a deliberate rhythm of military activity across all geographic areas of the Alliance, as well as across all operational domains and functional areas.

Allied maritime forces and NATO Maritime Groups regularly patrol the waters around Europe to assure Allies of the maritime commitment to collective defense.

Navy Accepts Delivery of Ship-to-Shore Connector, Landing Craft, Air Cushion 106



The U.S. Navy accepted delivery of the next generation landing craft, Ship to Shore Connector (SSC), Landing Craft, Air Cushion (LCAC) 106 on Nov. 17. *U.S. NAVY*

WASHINGTON – The U.S. Navy accepted delivery of the next generation landing craft, Ship to Shore Connector (SSC), Landing Craft, Air Cushion (LCAC) 106 on Nov. 17, Team Ships Public Affairs said in a release.

LCAC 106's delivery follows the completion of Acceptance

Trials with the Navy's Board of Inspection and Survey to test the readiness and capability of the craft and to validate requirements.

"We are excited to deliver this next generation craft to the Navy and Marine Corps team," said Capt. Jason Grabelle, program manager, Amphibious Assault and Connectors Programs, Program Executive Office (PEO) Ships. "LCACs are providing our Navy and partners with the speed and agility essential to our missions."

LCACs are built with similar configurations, dimensions and clearances to the legacy LCAC, ensuring the compatibility of this next-generation air cushion vehicle with existing well deck-equipped amphibious ships.

The LCAC program is in serial production, with an additional 11 craft currently being built at Textron Systems.

USS Zumwalt Returns from First Western Pacific Deployment



The Zumwalt-class guided-missile destroyer USS Zumwalt (DDG 1000) sails through the Pacific Ocean. *U.S. NAVY / Mass Communication Specialist 3rd Class Christopher Sybert*

ARLINGTON, Va. – The guided-missile destroyer USS Zumwalt (DDG 1000), lead ship of its three-ship class, completed a short deployment to the Western Pacific Ocean on Nov. 11, marking the first operational employment the class as part of the fleet integration process.

The Zumwalt, which departed Naval Station San Diego on Aug. 1, operated in the U.S. 3rd Fleet and U.S. 7th Fleet areas of responsibility. The deployment involved a wide variety of training, testing and evaluation of operational concepts, fleet integration, crew size and ship systems, said Capt. Shea Thompson, commodore of Surface Development Squadron One, and Capt. Amy McInnis, commanding officer of USS Zumwalt, in a Nov. 16 media roundtable.

The deployment, which concentrated on fleet integration, was termed “very successful” by Thompson who called it an

important milestone for the DDG 1000 class and for the Navy” and that it marked “significant strides in learning how to employ, integrate and sustain Zumwalt as she operated forward” and a “significant step forward for the future of this class.”

During the deployment, the Zumwalt operated and trained in joint simulated fires training with a Japanese destroyer and a U.S. Air Force B-1B bomber; mine countermeasures proof of concept work with a forward-deployed explosive ordnance detachment; operations with fleet maritime operations centers, and the staff of the 7th Fleet’s Task Force 71; and operations with U.S. Army aviation. The ship also conducted expeditionary maintenance in Pearl Harbor – a location outside of home port – with contractor maintenance support, which Thompson said was by design for the Zumwalt class.

McInnis, who joined the crew as executive officer in January 2020 and fleeted up to command of the ship in November 2021, said that during a year of work-ups with the crew of 171 the ship practiced integrated and advanced scenarios, as well as radar, acoustic, thermal and magnetic signature testing.

She said the ship did not carry a helicopter detachment during the deployment but did carry two rigid-hull inflatable boats for mine countermeasures exercises.

Thompson said the Zumwalt exercised all of its mission areas typical for a DDG. He also said the ship took advantage of the deployment for testing and assessment of signature management, about which he was not at liberty to detail because of classification.

“We expect to capitalize on those lessons learned as we continue to employ the ship forward and integrate that platform into fleet operations and exercises,” Thompson said.

Thompson said that in his assessment, Zumwalt achieved Initial Operational Capability “today.”

The commodore said the Zumwalt had no direct interaction with Chinese navy ships during the deployment.

The Zumwalt will be modified during 2024-2025 with Conventional Prompt Strike hypersonic missile launchers for its primary strike mission, he said.

Rite-Solutions Receives Three Navy Contracts Worth \$68 Million

Middletown, R.I. – Rite-Solutions was recently awarded three contracts by the Naval Undersea Warfare Center Division Newport (NUWC DIVNPT), Naval Information Warfare Systems Command (NAVWAR) and Naval Surface Warfare Center Dahlgren Division (NSWCDD), the company said in a release.

Over the next three to five years, the three contracts total \$68 million.

Supporting NUWC DIVNPT's Code 25 Combat Systems Department, Rite-Solutions will provide hardware and software engineering, systems engineering, system integration and testing, fleet support and administrative services supporting the AN/BYG-1 submarine combat control system modernization. The contract is worth \$25 million.

"We are thrilled to continue supporting the Code 25 Combat Systems Department in what has been a long and productive partnership for more than two decades," said Rite-Solutions Sr. Vice President Laura Deady.

Separately, NAVWAR awarded the company a \$13 million follow-on

contract under the Navy's RAPDS Multi-Award ID/IQ for PEO MLB/PMW 250. Rite-Solutions will continue sustaining and maintaining the DoD IT Portfolio Repository (DITPR)-DoN and DoN Application and Database Management System (DADMS) IT Portfolio Management system. DITPR/DADMS is used by the DoD to maintain an inventory of all of its hardware, software, and their interfaces.

NSWCDD awarded the third contract to Rite-Solutions, worth \$30 million. The Rite-Solutions proposal included up to 60 full-time employees, annually. The company will be hiring up to 30 people in the Virginia and DC area.

"The Dahlgren center provides the world's best surface ship command and control systems and we're very pleased to apply our experience in undersea warfare," said Laurie Carter, Rite-Solutions' senior vice president of Business Development and Strategy.

Rite-Solutions will provide engineering and combat systems integration expertise to the NSWCDD Integrated Combat Systems Department to plan and execute combat systems operations activities in support of current and future Combat System Command and Control functions.

"These contracts, on the heels of a \$77 million contract awarded by NSWCDD earlier this year, are a testament to the expertise and dedication of Rite-Solutions' employees and the value we provide our customers," said Rite-Solutions President and CEO Dennis McLaughlin.

FRC Southeast Begins Activation as Second Source of Repair for the F135 Engine



An F-35C Lightning II, assigned to the “Black Knights” of Marine Fighter Attack Squadron (VMFA) 314, launches from the flight deck of the Nimitz-class aircraft carrier USS Abraham Lincoln (CVN 72). *U.S. NAVY / Mass Communication Specialist 3rd Class Javier Reyes*

JACKSONVILLE, Fla. – Fleet Readiness Center Southeast (FRCSE) recently began activation as a Department of Defense second depot source of repair (DSOR) for the F135 engine, the propulsion system that powers the F-35 Lightning II Joint Strike Fighter. The first DSOR for the F135 was designated in 2012 with activation complete in 2014 at the Oklahoma City Air Logistics Complex, Tinker Air Force Base, Oklahoma.

“It’s great to be a part of the FRCSE Team as we prepare to

activate the F135 engine product line,” said FRCSE’s Commanding Officer, Capt. Grady Duffey. “The new scope of work won’t just expand our support of the Joint Strike Fighter, but will help meet the sustainment demands of our military. I am confident that FRCSE will be ready to answer the call and commence repair of F135 engine modules in the near future, and at an even greater rate later as we expand infrastructure.”

FRCSE officially activating as second DSOR doesn’t come without certain challenges. Before the command sees its first Power Module (PM), one of the five major modules that make up the F135 power plant, artisans will need to go through a three-phase Pratt & Whitney (P&W) training and maintenance qualification and certification process, which is set to begin in January 2023.

The first two training phases focus on classroom and practical skills. The engine’s PMs and associated mini-modules (MMs) will be used to accomplish the hands-on portion of the training with artisans and P&W trainers working side-by-side.

Once the practical hands-on phase is complete, qualification and certification will be the final step in the process. FRCSE is expected to induct its first PM by April 1, 2023, with a second arriving about two weeks later.

After certification is achieved, F135 engine line artisans will work only on the PM and its four MMs – the high-pressure compressor, high-pressure turbine, low-pressure turbine and diffuser combustor – in designated areas called cells. The current plan is to have nine PM cells and 22 mini-module cells.

While FRCSE’s Crinkley Engine Facility complex currently performs work on four other engines (F404, F414, TF34 and J85), expansion is a must to support the full anticipated F135 workload.

“In preparation of this engine workload, we had to make

multiple facility improvements along with purchasing new industrial plant equipment and machinery unique to the F135," said Rick Eveson, FRCSE's F135 production line director. "New high-capacity bridge cranes, a new entrance, floor paint and Andon lighting have all been procured to support the F135 engine maintenance process, which will also benefit our other engine programs. In addition, we've developed a custom shelving unit to more efficiently store parts, tooling and gear."

FRCSE won't just accommodate this new workload through the optimization of shops and processes in its current state, but also through the renovation of its existing engine test cell and construction of an entirely new engine facility by way of military construction (MILCON). A MILCON will be utilized in order to renovate FRCSE's engine test cell as well as a whole new engine facility to streamline workflow. The new building is expected to break ground in 2026 with completion in 2028, and it will significantly increase the plant's capacity for F135 work.

Furthermore, the engine test cell modification project will make significant changes to the existing structure, as the facility must be upgraded to accommodate the F135 engine's 50,000 pounds of thrust and over 18-foot size. The building's anticipated completion date is 2027.

"We expect engine production to ramp up through 2034 to the max production requirement – roughly 600 MMs and 120 PMs annually, correlating to about 600,000 man-hours," Eveson continued.

From repair of the F135's PM and its MMs to establishing depot capability for the F-35 airframe and associated systems, the command is certainly on its way to becoming the go-to facility in support of fifth and future generations of aircraft.

"The entire FRC Southeast team is excited to begin work on the

F135 and showcase our world-class facility,” said Duffey. “We are unequivocally committed to this program’s success and to activating the U.S. Navy’s first F135 engine product line.”

U.S. Naval Forces Intercept Explosive Material Bound for Yemen



Guided-missile destroyer USS The Sullivans (DDG 68) and patrol coastal ship USS Hurricane (PC 3) sail in the background as Sailors inventory a large quantity of urea fertilizer and ammonium perchlorate discovered on board a fishing vessel intercepted by U.S. naval forces while transiting international waters in the Gulf of Oman, Nov. 9. *U.S. NAVY / Sonar Technician (Surface) 1st Class Kevin Frus*

MANAMA, Bahrain – On Nov. 8, U.S. 5th Fleet intercepted a fishing vessel in the Gulf of Oman smuggling lethal aid,

including a large quantity of explosive material, from Iran to Yemen, U.S. Naval Forces Central Command Public Affairs said in a Nov. 15 release.

U.S. Coast Guard Cutter John Scheuerman (WPC 1146) and guided-missile destroyer USS The Sullivans (DDG 68) interdicted the vessel as it transited international waters. Patrol coastal ship USS Hurricane (PC 3) and Navy explosive ordnance disposal technicians from U.S. 5th Fleet's Task Force 56 also assisted during a weeklong effort to fully search the vessel and verify the type of material found.

U.S. forces discovered more than 70 tons of ammonium perchlorate, a powerful oxidizer commonly used to make rocket and missile fuel as well as explosives. This is U.S. 5th Fleet's first ever interdiction of ammonium perchlorate.

"This was a massive amount of explosive material, enough to fuel more than a dozen medium-range ballistic missiles depending on the size," said Vice Adm. Brad Cooper, commander of U.S. Naval Forces Central Command, U.S. 5th Fleet and Combined Maritime Forces. "The unlawful transfer of lethal aid from Iran does not go unnoticed. It is irresponsible, dangerous and leads to violence and instability across the Middle East."

The search also found more than 100 tons of urea fertilizer. Urea is a chemical compound with agricultural applications that is also known for use as an explosive precursor.

The vessel and its four Yemeni crewmembers were intercepted while transiting from Iran along a route historically used to traffic weapons to the Houthis in Yemen. The direct or indirect supply, sale or transfer of weapons to the Houthis violates U.N. Security Council Resolution 2216 and international law.

U.S. forces sank the vessel Nov. 13 in the Gulf of Oman after determining it was a hazard to navigation for commercial

shipping. The four crewmembers were transferred to Yemen for repatriation Nov. 15 when The Sullivans completed an at-sea exchange in the Gulf of Aden with the Yemen Coast Guard.

“Alongside our partner forces, CENTCOM is committed to security and stability of the region and to deterring the illegal and destabilizing flow of lethal material into the region over land, in the air and the sea,” said Gen. Michael “Erik” Kurilla, U.S. Central Command commander.

U.S. 5th Fleet previously seized 40 tons of urea fertilizer Jan. 18 when guided-missile destroyer USS Cole (DDG 67) and patrol coastal ship USS Chinook (PC 9) interdicted another fishing vessel in the Gulf of Oman that had attempted to smuggle illicit weapons off the coast of Somalia months earlier.

The U.S. 5th Fleet operating area includes 21 countries, the Arabian Gulf, Gulf of Oman, Red Sea, parts of the Indian Ocean and three critical choke points at the Strait of Hormuz, Bab al-Mandeb and Suez Canal.

USS Gerald R. Ford Joins Allies for Exercise Silent Wolverine



The USS Gerald R. Ford (CVN 78) steams in the Atlantic Ocean in formation with the German frigate FGS Hessen, Ticonderoga-class guided-missile cruiser USS Normandy, Danish frigate HDMS Peter Willemoes, Canadian frigate HMCS Montreal, Arleigh Burke-class guided-missile destroyer USS Thomas Hudner, Spanish Armada frigate Álvaro de Bazán, Dutch frigate HNLMS De Zeven Provinciën, French frigate FS Chevalier Paul, Dutch frigate HNLMS Van Amstel and Arleigh Burke-class guided-missile destroyer USS McFaul, Nov. 7. *U.S. NAVY / Mass Communication Specialist 3rd Class Jacob Mattingly*

ATLANTIC OCEAN – USS Gerald R. Ford (CVN 78), the U.S. Navy's newest and most advanced aircraft carrier, joined six NATO allies for exercise Silent Wolverine in the Eastern Atlantic Ocean on Nov. 8, U.S. Naval Forces Europe and Africa Public Affairs said Nov. 9.

Silent Wolverine tests the first-in-class aircraft carrier capabilities through integrated high-end naval warfare scenarios alongside participating NATO allies. Exercise participants include Canada, Denmark, Germany, France, the Netherlands, Spain, and the United States.

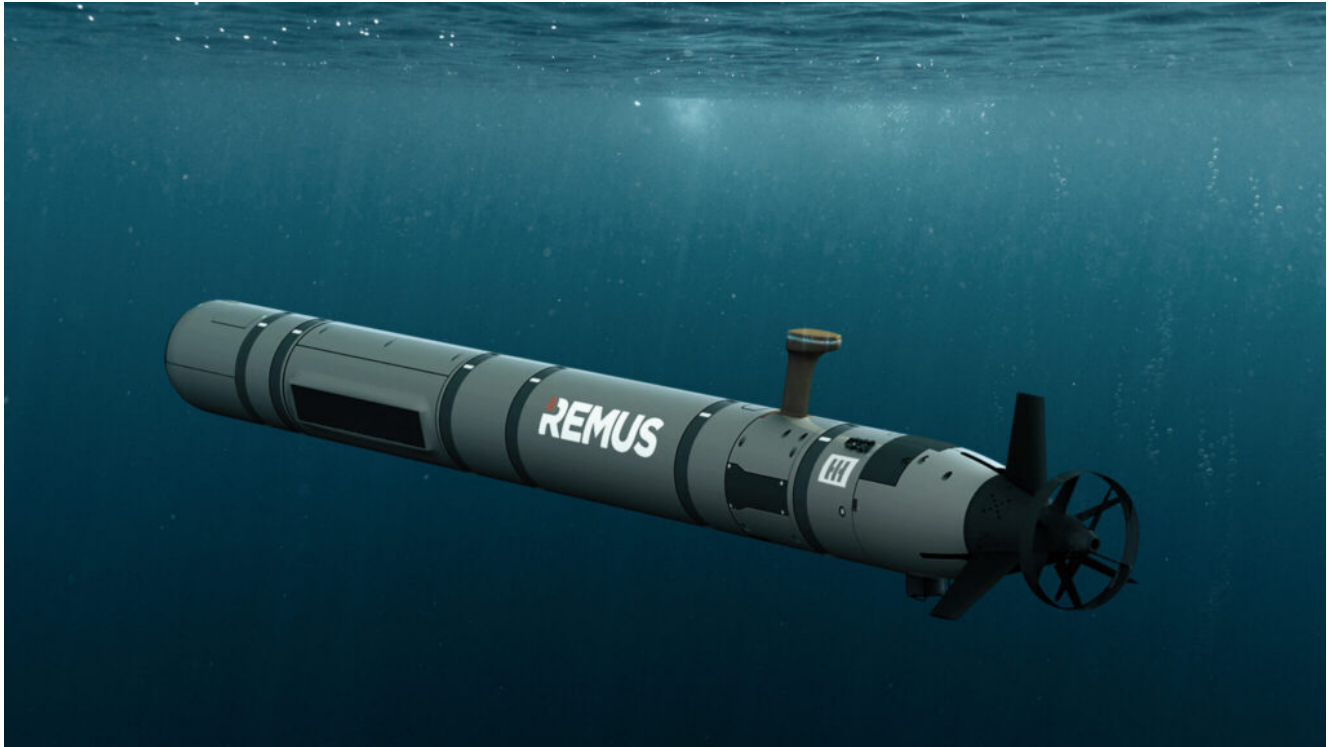
“The challenges of tomorrow are upon us – in the here and now. Silent Wolverine demonstrates our commitment to deepening interoperability with our allies and partners, while testing the advanced, cutting-edge warfighting capabilities of the Ford-class aircraft carrier in a highly relevant operational environment,” said Adm. Stuart B. Munsch, commander, U.S. Naval Forces Europe and Africa, and Allied Joint Force Command Naples.

Gerald R. Ford is a first-in-class U.S. aircraft carrier that incorporates 23 new technologies comprised of significant advances in propulsion, power generation, ordnance handling and aircraft launch systems. The Ford-class aircraft carrier generates an increased aircraft launch and recovery capability with a 20 percent smaller crew than Nimitz-class aircraft carriers.

“We are honored to be sailing alongside some of the most capable navies in the world during our first deployment as we increase our proficiencies and demonstrate the warfighting capabilities that Ford brings to the fight,” said Rear Adm. Greg Huffman, commander, Carrier Strike Group 12.

The Gerald R. Ford CSG consists of the Ford-class aircraft carrier USS Gerald R. Ford (CVN 78), Ticonderoga-class guided-missile cruiser USS Normandy (CG 60), and Arleigh Burke-class guided missile destroyers USS McFaul (DDG 74), and USS Thomas Hudner (DDG 116). The Gerald R. Ford CSG is conducting their first deployment to the U.S. European Command area of responsibility to exercise with allies.

HII Announces REMUS 620 Next-Generation, Submarine-Deployable Medium UUV



HII's REMUS 620 *HII*

ARLINGTON, Va. – HII's Mission Technologies division has developed a new generation of medium unmanned underwater vehicle (MUUV) – the REMUS 620 – that leverages advances incorporated in its smaller REMUS 300 UUV, the company said in a Nov. 7 press conference and news release.

The REMUS 620 is based on the design of the REMUS 300, which has been selected by the U.S. Navy as its new Lionfish small UUV. The REMUS 620 will feature longer range and endurance, capable of a battery endurance of up to 110 hours and a range of 275 nautical miles. With a synthetic-aperture sonar installed, the REMUS 620 will have a battery life of 78 hours and a range of 200 nautical miles. The MUUV can sprint up at 8 knots and will have a navigation accuracy of 0.1% of distance travelled, said Duane Fotheringham, president of Mission Technologies' Unmanned Systems business group.

The 12 $\frac{3}{4}$ -inch-diameter REMUS 620 has the same size and weight as the REMUS 600, of which the company has delivered 175 to customers in the United States, United Kingdom, Australia and Japan. The REMUS 600 is the basis for the U.S. Navy's MUUVs currently used by mine countermeasures squadrons (Mk18 Mod 2 Kingfish), Naval Oceanographic Office (Littoral Battleship Sensing-Autonomous Undersea Vehicle) and submarine force (LBS-Razorback). The REMUS 620 is designed for such missions as mine countermeasures, hydrographic surveys, intelligence collection, surveillance, cyber warfare and electronic warfare.

The REMUS 620, developed with HII's internal funding, features modern core electronics and navigation and communications systems and modular, open architecture interfaces to accommodate wet or dry payloads, including towed payloads and custom payloads developed by customers. The UUV includes HII's Odyssey suite of advanced autonomy solutions for intelligent, robotic platforms, including the Odyssey Mission Management Software.

Mission data can be offloaded from the UUV by a removable hard drive, WiFi and Iridium satellite link, with other options including line-of-sight RF, high-data rate transmission, acoustic modems, optical modems and plug-in ethernet, Fotheringham said.

The REMUS 620 features several interchangeable batteries that can be quickly exchanged for fully charged batteries.

The REMUS 620 can be deployed from submarines, surface combatants, amphibious warfare ships, small manned or unmanned craft and helicopters. The new UUV can also be a platform from which to launch small UUVs or UAVs.

Fotheringham said that the U.S. Navy has said it has launched and recovered REMUS 600 Razorbacks from the dry-deck shelters of submarines and out of torpedo tubes.

“Recently there has been quite a bit in the press about the Navy’s efforts for launch and recovery of UUVs back into the torpedo tubes,” he said. “Those stories indicated the Razorback vehicles are being tested with that capability of recovery back into a torpedo tube.”

He said the capability to recover UUVs back into a torpedo tube is being worked by Woods Hole Oceanographic Institution, where the REMUS technology originally was developed.

“That solution that [Woods Hole] is developing for torpedo tube recovery is also compatible with the REMUS 620,” Fotheringham said.

“Retaining a forward strategic advantage requires the ability to deliver a multitude of effects from under the sea,” Fotheringham said. “The REMUS 620 is the first medium UUV designed to accurately deliver this range of advanced above-and-below water effects at long range.”

“We are prototyping and building the first vehicle now,” Fotheringham said. “We expect the first vehicle to be completed and in the water in 2023 with customer delivery in late ’23 or early ’24.”

He said HII was in discussions with the U.S. Navy about the REMUS 620 but was not free to offer details.