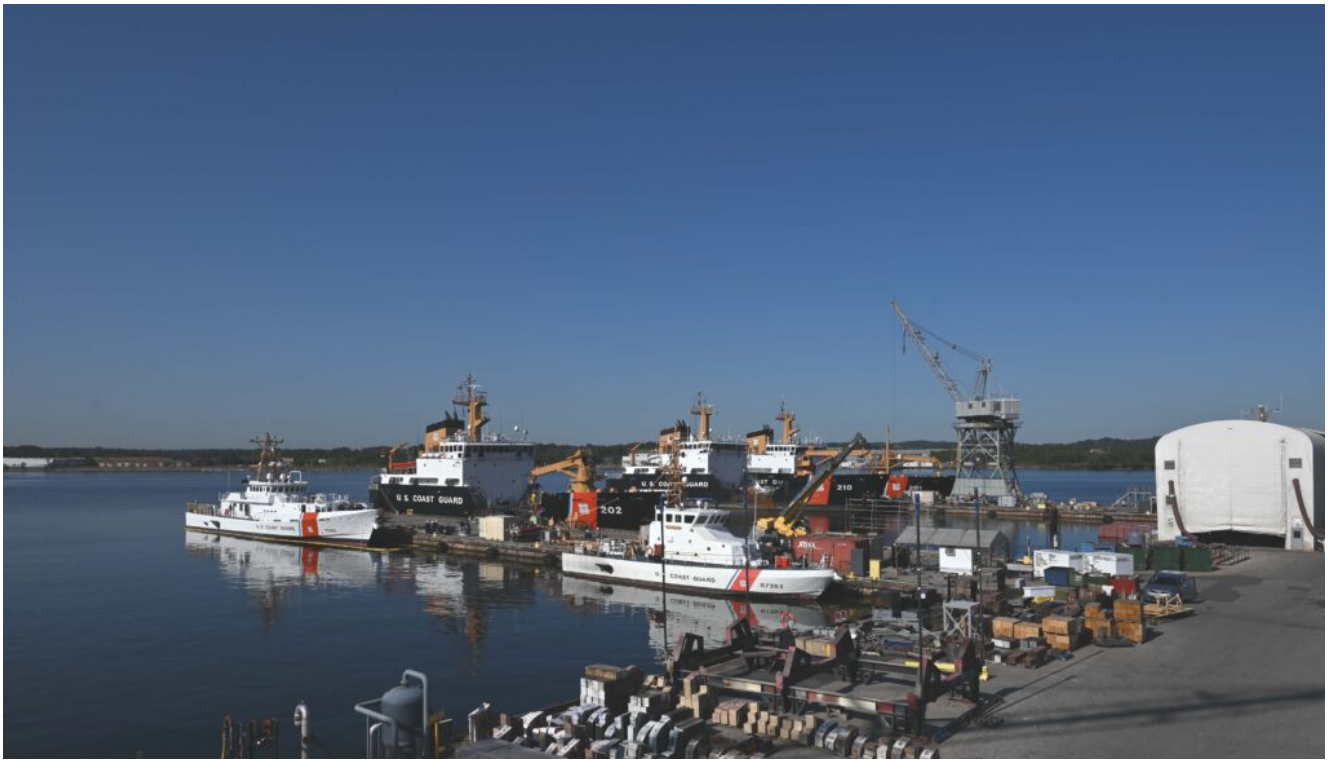
Coast Guard, Navy Competition for Ship Availabilities to Increase: USCG Official



The Coast Guard Yard at Curtiss Bay, Maryland, is the service's main cutter maintenance facility. *U.S. COAST GUARD*

ARLINGTON, Va. — The U.S. Coast Guard will be in "closer competition than we ever have before" with the U.S. Navy for dry dock and dockside availabilities for their ships, a Coast Guard official said during a panel on maintenance at the Surface Navy Association Annual Symposium on Jan. 12.

Bob Thomas, U.S. Coast Guard deputy assistant commandant for engineering and logistics (CG-4D), said that the Coast Guard is competing for resources with both the industry and the Navy as retention and recruiting struggles. persist throughout the military. Along with maintenance areas that the Coast Guard hasn't historically dealt with, such as cyber, that creates an intensely competitive environment, he said.

The Coast Guard has seen many of the same recruiting and

retention challenges as the other services, Thomas noted.

“The workforce has almost become a migrant workforce,” he said. “They’ll shift to where the work is, [or] who’s paying the most. […] That drives the cost way up when people are competing for limited resources. You get to pay more for the same thing, or sometimes it’s not available.”

Collaborating to Retain Workforce Numbers

However, he added that the Coast Guard is working closely with the Navy to help mitigate some of these issues, mentioning a number of collaborative efforts that he thinks are “going to pay off huge for the Coast Guard.”

Navy Rear Adm. Scott Brown, deputy commander for logistics, maintenance, and industrial operations, also said that 2022 was “not a great year” in terms of staffing at the public shipyards, stating that they were short by 1,200 personnel, with 37,000 total working in those shipyards.

“A big focus of our efforts is to improve the recruiting and incentives for folks that come into the shipyards,” he said.

Brown said he believes that, in addition to the economy, the state of the shipyards and changing demographics are the primary reasons why the Navy continues to struggle with recruiting and retention.

To offset some of those challenges, the Navy is looking not only to boost pay, but to also offer career development opportunities to sailors. For example, the Navy has introduced a program to help mechanical expert tradespeople, a promotion that keeps them “turning wrenches” while still providing advancement opportunities.

Small Torpedo Being Prototyped by Raytheon to Arm the Navy's Submarines

YOKOSUKA, Japan (Oct. 18, 2022) The Los Angeles-class fast-attack submarine USS Springfield (SSN 761), arrives at Fleet Activities Yokosuka for a scheduled port visit, Oct. 18, 2022. Springfield is forward-deployed to Guam and routinely operates in the U.S. 7th Fleet area of responsibility, conducting maritime security operations and supporting national security interests. *U.S. NAVY / Mass Communication Specialist 2nd Class Travis Baley*

ARLINGTON, Va. – Raytheon is building prototypes of a small torpedo that is designed to attack hostile submarines and defend the U.S. Navy's submarines from incoming torpedoes.

The Compact Rapid Attack Weapon (CRAW) is designed to be launched from a submarine's decoy launcher rather than the submarine's torpedo tubes, and thus will not require a separate launcher to be installed on a submarine, said Bill Guarini, Raytheon's director of Requirements and Capabilities for Under Systems, in a Jan. 6 interview with Seapower.

Applied Physics Design in Action

Raytheon was awarded a Navy contract in September in a down-select decision to take a data package from Penn State's Applied Physics Laboratory's design of its nine-foot-long Very Lightweight Torpedo, updated with Technology Insertion 1 – that addresses obsolescence issues – and develop a prototype of the CRAW. Raytheon is to build 18 CRAW prototypes and 12 turn-around kits, the latter to be used to restore used CRAW prototypes to a re-usable condition. The prototypes will be delivered to the Navy with the Technology Insertion 2 data package.

Guarini sees the CRAW as a natural fit with Raytheon's existing torpedo business. The company builds the Mk54 lightweight torpedo deployed in surface warships and anti-submarine aircraft.

The CRAW prototypes will be built at the company's facility in Portsmouth, Rhode Island.

Hot Production Line for

Navy's Ship-to-Shore Connectors

Landing Craft, Air Cushion (LCAC) 104, attached to Assault Craft Unit 4, approaches the Wasp-class amphibious assault ship USS Kearsarge (LHD 3) for well deck operations Dec. 1, 2022. LCAC 100 is the Navy and Marine Corps next generation landing craft designated to replace the legacy LCAC, providing a more reliable and capable high speed amphibious connector to deliver Sailors and Marines and their equipment from ship to shore. *U.S. NAVY / Mass Communication Specialist Mark O. Klimenko*

ARLINGTON, Va. – Three years after the first Ship-to-Shore Connector (SSC) was delivered to the Navy, the service has accepted delivery of six SSCs, with a total of 24 under contract, with manufacturer Textron, the program manager said Jan. 11 at the Surface Navy Association's annual symposium.

Most recently, the Navy took delivery of LCAC 104 and LCAC 106

in June 2022 and November 2022, respectively, said Capt. Jason Grabelle, program manager for amphibious assault and connectors.

Four SSCs are currently at Assault Combat Unit 4 (ACU-4) in Norfolk, Va., he said, and a number of them are going through post-delivery testing and trials. Multiple craft are currently under construction. The next milestone will be LCAC 105 going to acceptance trials.

Past Issues Resolved

In terms of differences between the aging LCAC platform and the SSC craft that will replace it, Grabelle said the two vessels basically do the same thing. The primary differences concern the four gas turbine engines on the SSC, as well as a lower life cycle cost for the SSC.

“ACUs are not only the operators, they are the maintainers,” Grabelle said. “All the plus-ups we’ve made on the SSC are related to improving operational availability and maintainability.”

Asked whether past issues with the gearbox and blade cracking are behind the program, Grabelle said those problems were no longer an issue.

“We definitely have a steady production baseline,” he said. “We are getting more and more craft delivered to the fleet … and the production line is hot and moving along.”

Official: Navy Seeking 18 LAW Ships in POM-25

The Light Amphibious Warship will be much larger than this utility landing craft, and it will also have the ability to discharge its cargo and passengers onto unprepared shores. *U.S. NAVY / Mass Communication Specialist 3rd Class Keith Nowak*

ARLINGTON, Va. – The Navy will attempt to "lock in" a plan to procure 18 light amphibious warfare (LAW) ships in the Defense Department's Program Objective Memorandum-2025 (POM-25), Marine Corps Brig. Gen. Marcus Annibale, director of expeditionary warfare (OPNAV N95), said at the Surface Navy Association's annual symposium on Jan. 11.

"The light amphibious warship will birth a new class of ships," Annibale said. "And the inventory goal is 18 [for the] initial capacity. That's mapped to the Marine Littoral

Regiment."

Last April, SEAPOWER reported that the Marine Corps planned to least two commercial ships over the next two years to experiment with the LAW ship concept known as landing ship medium (LSM), according to Brig. Gen. Mark Clingan, assistant deputy commandant for Combat Development and Integration and deputy commanding general of Marine Corps Combat Development Command.

A LAW/LSM ship would be designed to carry 75 Marines in a Marine Littoral Regiment and land them ashore in an expeditionary environment. These ships would be less attractive targets for enemy missiles than a larger amphibious warfare ship, Clingan remarked.

Annibale also said that he remained focused on a capacity goal of 31 amphibious ships for the Marines: 10 LHA/LHD large-deck amphibs, and 21 LPD/LSD amphibious transport docks.

Mine Countermeasures

Another priority is to deliver the Mine Countermeasures Mission (MCM) package for the Independence-class Littoral Combat Ship (LCS), he said.

"The MCM mission package is on the cusp of IOC [initial operational capability]," Annibale said. "The USS Cincinnati is doing trials on it.

"We don't want to put the man in the minefield, we want to put the sensor in the minefield," he continued, noting that allies such as the Dutch and Belgians are involved from a NATO standpoint. "So very exciting times on all the capabilities that go with the MCM mission package."

SECNAV Names Future Oceanographic Survey Ship USNS Robert Ballard

Military Sealift Command oceanographic survey ship USNS Pathfinder. *U.S. NAVY*

WASHINGTON – Secretary of the Navy (SECNAV) Carlos Del Toro announced Dec. 21 that a future Pathfinder-class oceanographic survey ship will be named USNS Robert Ballard (T-AGS 67).

The future USNS Robert Ballard will honor Dr. Robert Ballard, a retired U.S. Navy commander, and former director of the Center for Ocean Exploration. A tenured professor of

oceanography at the University of Rhode Island's Graduate School of Oceanography, he is widely known as a discoverer of the final resting place of the R.M.S. Titanic. The name selection follows the tradition of naming survey ships after explorers, oceanographers and distinguished marine surveyors.

"Dr. Ballard's career, explorations, research and focus on teaching the next generation of oceanographers is remarkable, and I am pleased to name T-AGS 67 in his honor," said Del Toro. "One of my enduring priorities is building a culture of warfighting excellence, and that includes lifelong learning amongst DoN personnel. The name Robert Ballard displayed across the stern of this ship will serve as an inspiration to all who see it while highlighting the results of commitment to education and exploration."

Ballard was born in 1942, growing up in San Diego, Calif. After he graduated from the University of California, Santa Barbara, in 1965, he earned an Army Reserve Commission, ultimately requesting and transferring to the U. S. Navy when called to active service in 1967. Assigned to the Office of Naval Research as a liaison officer at Woods Hole Oceanographic Institution in Massachusetts, Ballard worked extensively with deep-submergence vehicle Alvin (DSV-2). After transitioning to the Naval Reserve in 1970, he completed a Ph.D. in marine geology and geophysics at the University of Rhode Island. He continued to work at Woods Hole, where he was part of a team that discovered deep-sea thermal vents near the Galapagos Rift. Best known for his 1985 discovery of R.M.S. Titanic at a depth of 12,000 feet, Ballard also led other shipwreck discoveries, including USS Yorktown (CV-5), USS Quincy (CA-39) and President John F Kennedy's PT-109. Ballard retired from U.S. Naval Service in 1995. In 1989, he founded the distance learning program the JASON Project, which reached 12 million school children; and the Institute for Exploration in Mystic, Conn, and is also the founder and president of the

Ocean Exploration Trust.

“I am humbled to have the U.S. Navy’s oceanographic ship, USNS Robert Ballard (T-AGS 67) as a namesake. As a 17-year-old, in 1959, I went on my very first oceanographic cruise, and very early in my oceanographic career, the U.S. Navy placed a central role and continues to do so to this day,” said Dr. Robert Ballard. “It is indeed an honor to know that the USNS Robert Ballard will continue to explore the oceans long after I am gone.”

Secretary Del Toro has designated Mrs. Barbara Earle Ballard, Dr. Ballard’s spouse and president of Odyssey Enterprises, as the ship’s sponsor.

Military Sealift Command’s Special Mission program supports worldwide oceanographic programs with ships that perform acoustical, biological, physical and geophysical surveys. These ships gather data that provides much of the military’s information on the ocean environment. The collected data helps to improve technology in undersea warfare and enemy ship detection. The oceanographic and hydrographic survey ships’ multi-beam, wide-angle precision sonar systems make it possible to continuously chart a broad strip of ocean floor. Survey ships have charted three-fourths of the world’s coastlines, making it easier for navigators to find their way along both well-traveled and not-so-familiar shipping routes.

General Dynamics Electric Boat Awarded $5.1 Billion for

Columbia-Class SSBNs

An artist’s rendering of the Columbia class of submarines, currently under construction. *GENERAL DYNAMICS*

GROTON, Conn. – General Dynamics Electric Boat announced Dec. 21 the U.S. Navy has awarded a $5.1-billion modification of the previously awarded Columbia Integrated Product and Process Development Contract for the Columbia class of submarines, the nation’s next-generation sea-based strategic deterrent.

Electric Boat is the prime contractor on the Columbia program, which will replace the aging Ohio class ballistic-missile submarines (SSBNs). The District of Columbia (SSBN 826) and Wisconsin (SSBN 827) are presently under construction.

The contract modification has a value of $5,134,324,189. Work will be performed in Groton, Connecticut; Quonset Point, Rhode Island; and Newport News, Virginia; and is expected to be completed by October 2030. The award funds advance procurement and advance construction of critical components and material to support Build II (the next five ships in the class), efforts to support continuous missile tube production, enhancements to develop the Submarine Industrial Base, and

sustained class maintenance and support.

“This award enhances Electric Boat’s efforts to maintain the Columbia-class production and delivery schedule. Advance procurement of long lead time materials and component construction is critical to the program, and the strategic investments in the development and expansion of the Submarine Industrial Base will help stabilize and grow the supply chain, which increases manufacturing capacity, reduces risk and ultimately drives timely delivery of submarines to the Navy,” said Kevin Graney, president of General Dynamics Electric Boat.

At 560 feet long with a displacement of nearly 21,000 tons, the submarines of the Columbia class will be the largest ever built by the United States. Ships of the Columbia class will have a fuel core that will power the submarine for its entire service life, eliminating the need for a mid-service refueling. Electric Boat will deliver the lead ship to the Navy in 2027.

USNS Comfort Completes 12th Iteration of Continuing Promise 2022

A graphic depicting hospital ship USNS Comfort (T-AH 20) and the flags and names of all the countries the ship visited during Continuing Promise 2022. *U.S. NAVY / Mass Communication Specialist 2nd Class Ethan J. Soto*

NORFOLK, Va. – The hospital ship USNS Comfort (T-AH 20) returned to its homeport in Norfolk, Virginia, concluding Continuing Promise, Dec. 21, 2022, said Mass Communication Specialist 3rd Class Deven Fernandez, U.S. Naval Forces Southern Command / U.S. 4th Fleet, in a release.

The Continuing Promise 2022 team worked collectively with participating host and partner nations to enhance regional interoperability and disaster response capabilities, increase security and stability in the region, and foster new and enduring friendships in Caribbean, Central and South American region.

Comfort visited Guatemala, Honduras, Colombia, Dominican Republic and Haiti throughout the mission. The crew aboard Comfort included U.S. military and civilians, more than a dozen non-governmental organizations and military members from Brazil, Canada, Chile, Colombia, Dominican Republic, Ecuador, Honduras, Netherlands and United Kingdom.

Continuing Promise 2022 saw more than 13,000 patients, participated in more than 25 subject matter expert exchanges,

conducted five humanitarian assistance and disaster relief workshops, shared in 18 Women, Peace and Security initiative events and partook in 11 community relations engagements.

“I am so delighted to have shared this remarkable experience with the men and women of the Continuing Promise 2022 team,” said Capt. Kathryn Elliott, commanding officer of the Medical Treatment Facility aboard the hospital ship USNS Comfort (T-AH 20). “We overcame adversity to provide medical care to the community in these host nations. Along the way we learned so much from our partners. The exchange of information that took place was vital to building upon our long-lasting relationships with the countries of this region. This is Comfort’s mission and a true continuing promise.”

Over the course of the 2-month mission, there were many accomplishments by the Comfort team. Here are a few of the highlights from Continuing Promise 2022.

Puerto Barrios, Guatemala
Oct. 26 – Oct. 31
• 44 surgeries conducted
• 2,957 prescriptions filled
• 7 concerts performed by the U.S. Fleet Forces band
• Pediatric cardiology care provided, which is not available in the area
• Provided life changing surgeries, such as receiving full use of hands

Puerto Cortes, Honduras
Nov. 1 – Nov. 7
• 23 surgeries conducted
• 3,350 prescriptions filled
• 7 concerts performed by the U.S. Fleet Forces band
• Held refresher course of BLS for the volunteers at the Red Cross
• Refurbished local school in Puerto Cortes

Cartagena, Colombia
Nov. 11 – Nov. 20
• 143 surgeries conducted
• 7,012 prescriptions filled
• 6 concerts performed by the U.S. Fleet Forces band
• Refurbished local school by adding a new coat of paint
• Supported embassy in the handover of materials to local community
Santo Domingo, Dominican Republic

Nov. 27 – Dec. 6
• 87 surgeries conducted
• 7,446 prescriptions filled
• 137 patients received physical therapy treatment
• 209 X-Rays taken
• 78 Ultrasounds performed

Jeremie, Haiti
Dec. 11 – Dec. 17
• 14,012 prescriptions filled
• 1,035 patients seen
• 55 pallets of medical supplies and other goods donated

Since its inaugural mission in 2007, Continuing Promise missions have treated more than 595,000 patients and conducted over 7,250 surgeries in the region. The successful completion of the mission marks the end of the 12th Continuing Promise.

U.S. Naval Forces Southern Command/U.S. 4th Fleet supports U.S. Southern Command’s joint and combined military operations by employing maritime forces in cooperative maritime security operations to maintain access, enhance interoperability and build enduring partnerships in order to enhance regional security and promote peace, stability and prosperity in the Caribbean, Central and South American region.

Naval Postgraduate School and Stanford University Formalize Partnership to Address Global Climate Change, Energy Security and Sustainability

Secretary of the Navy Carlos De Toro was on hand for the signing of an Education Partnership Agreement between the Naval Postgraduate School (NPS) and the Stanford Doerr School of Sustainability on Dec. 15. *U.S. NAVY / Javier Chagoya*

MONTEREY, Calif. – The Naval Postgraduate School (NPS) and Stanford University Doerr School of Sustainability have created a formal partnership to address the challenging issues

of global climate change, energy security and sustainability.

The announcement was made on Dec. 15 at the NPS campus in Monterey, California.

The Education Partnership Agreement (EPA) was signed by NPS President Vice Adm. (ret.) Ann E. Rondeau and Dr. Arun Majumdar, dean of the Doerr School of Sustainability, during a ceremony that was presided over by Secretary of the Navy Carlos Del Toro.

“Bold climate action is a mission imperative for the Department of the Navy, and we must harness all of the tools at our disposal in order to make urgently needed change,” said Del Toro. “This collaboration between the Naval Postgraduate School and Stanford University will bring together two globally recognized hubs of research and innovation, focused on realizing solutions that our Navy and our nation can employ now and in the future.”

According to a press release from NPS, the Navy’s climate strategy highlights two major performance goals in its response: building climate resilience and reducing climate threats. But, the release said, it also underlines the importance of leveraging and empowering the education of Sailors and Marines to meet the challenges of climate and energy security and sustainability through knowledge and innovation.

“The combination of expertise, operational experience, education and entrepreneurship in this partnership with Stanford and their Doerr School of Sustainability is truly unique and a powerful contribution to the global climate challenges ahead of us all,” said Rondeau.

The NPS Climate and Security Network (CSN) brings together the school’s collective expertise on climate security and creates opportunities for interdisciplinary collaboration and information sharing. Through the CSN’s efforts, NPS student

and faculty have contributed to the development of key climate strategies and plans within the Department of Defense and conduct research to inform future force design, force generation and deployment considerations.

The Doerr School is a new addition to the Stanford campus. Launched in May 2022, the school works with local and global collaborators to understand the challenges of climate change and find solutions that can be executed with impact at scale. The school includes multiple academic departments, including the Woods Institute for the Environment and the Precourt Institute for Energy; a sustainability accelerator to drive policy and technology solutions at scale; and a newly established Oceans Department located at the Hopkins Marine Station in Monterey.

Academic collaboration and research partnerships between NPS and Stanford are not new. Both schools have partnered on research efforts, leveraging each other's strengths as well as their proximity in Northern California – the schools are 90 minutes apart by car.

Under the partnership agreement, NPS and the Doerr School of Sustainability will conduct joint research with the CSN and other NPS departments and groups, including the Energy Academic Group, Center for Infrastructure Defense, Meteorology, Oceanography, National Security Affairs, Defense Management and Engineering to investigate climate security, energy security, sustainability and more.

Naval Medical Research Center

Begins Phase 1 Testing of Diarrhea Vaccine

Dr. Frederic Poly and Dr. Renee Laird, research scientists with Naval Medical Research Center (NMRC), pose for a photo in the Enteric Diseases laboratory. NMRC's Enteric Diseases Department, led by Poly, have partnered with the National Institute of Health's National Institute of Allergy and Infectious Diseases to begin phase 1 testing of a new vaccine for Campylobacter jejuni, a foodborne pathogen. *U.S. NAVY / Michael Wilson*

SILVER SPRING, Md. – Researchers with Naval Medical Research Center (NMRC)'s Enteric Diseases Department have partnered with the National Institute of Health's National Institute of Allergy and Infectious Diseases to begin phase 1 testing of a new Campylobacter jejuni vaccine, NMRC announced in a Dec. 19 release.

Campylobacter jejuni, a foodborne pathogen, is one of the most

common causes of diarrheal illness in the U.S. and abroad, and can impact readiness of deployed or traveling service members.

Phase 1 testing, currently underway at Cincinnati Children's Hospital Medical Center, focuses on the safety and best means of Campylobacter vaccine delivery. Researchers will vaccinate 60 patients in total as part of Phase 1 testing. This first phase of testing is expected to continue through the end of 2023.

Phase 2 testing will involve vaccinating groups of adults with a dose of the vaccine determined in phase 1, to determine its effectiveness in protecting against Campylobacter. NMRC researchers expect to begin phase 2 testing by 2025 at the earliest, depending on funding and the facilities available.

Diarrhea is a frequently occurring illness during military operations, despite modern preventive medicine efforts. The impact of severe diarrhea can be debilitating and impair a service member's ability to do their job. Acute diarrheal illness during deployment is commonly responsible for loss of duty days, negatively affects mission readiness and may be fatal in the worst cases.

"With really infectious diarrhea, you get cramping, and if you have cramps, you can't really operate," said Dr. Frederic Poly, head of NMRC's Enteric Diseases Department, who has been involved with the project since 2005. "You can develop a fever; you're going to get dehydrated and you're going to lose cognitive perception. These are all symptoms that will negatively impact how you function."

Following recovery from initial infection and bouts of diarrhea, individuals can still experience long-term effects of infection.

“With Campylobacter, there’s potential downstream effects, like irritable bowel syndrome or Guillain-Barré syndrome, which can lead to respiratory and neurological issues,” noted Lt. Yuliya Johnson, a microbiologist with NMRC. “It doesn’t happen to everyone, but there is still an associated risk we hope to mitigate by developing a vaccine.”

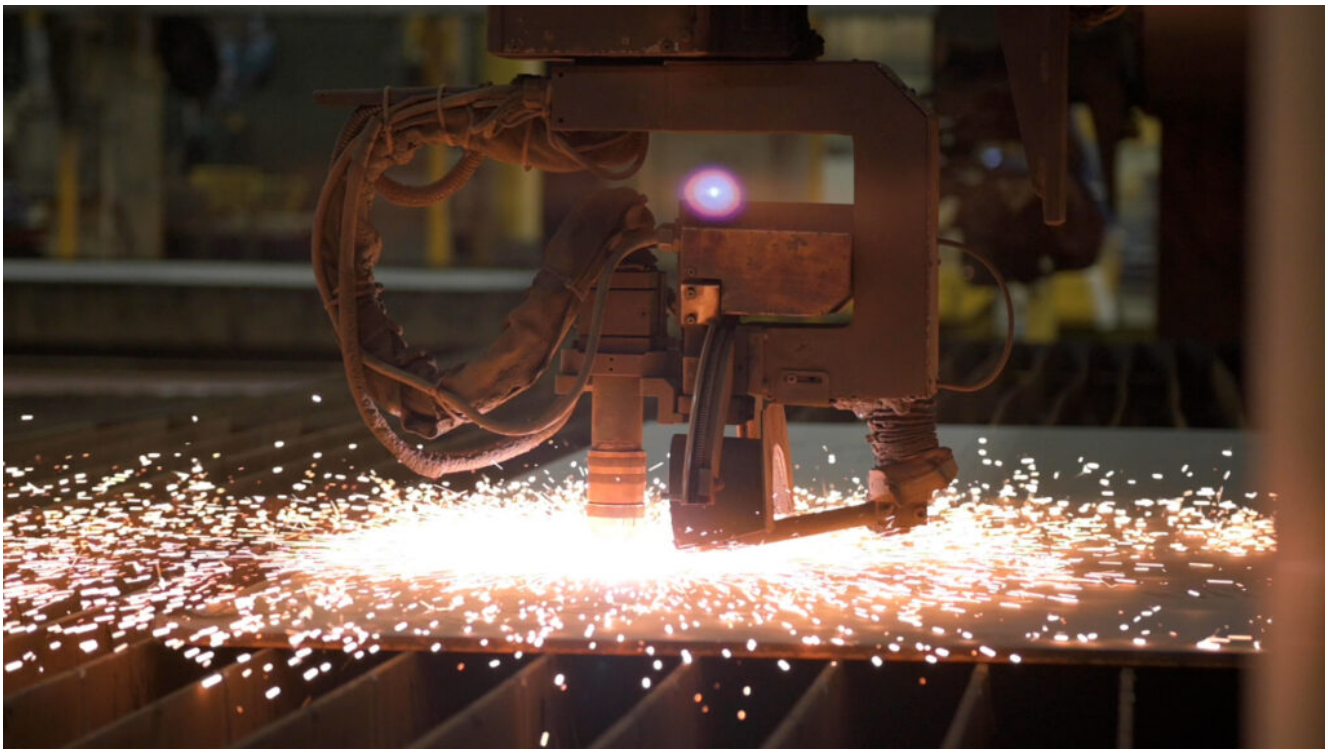
According to Poly, this vaccine will be the first developed for use against Campylobacter, and if successful, has the potential to benefit civilian and pediatric populations as well. Vaccination at a young age can curb developmental issues caused by diarrhea that might otherwise affect physical and mental development in children.

Poly, NMRC’s most recent senior civilian of the quarter for science, leads the NMRC Enteric Diseases Department. The department, composed of 23 full time microbiologists, molecular biologists, biochemists and immunologists, researches treatments for the prevention of infectious bacterial diarrhea.

This past year, the department completed development and clinical evaluation of a prophylactic against another military relevant enteric pathogen, ETEC (enterotoxigenic E. coli). The enteric diseases lab is also working on the development of an oral prophylactic to prevent infection from several other intestinal pathogens.

NMRC and its commands are engaged in a broad spectrum of activity from basic science in the laboratory to field studies in austere and remote areas of the world to investigations in operational environments. In support of the Navy, Marine Corps and joint U.S. warfighters, researchers study infectious diseases, biological warfare detection and defense, combat casualty care, environmental health concerns, aerospace and undersea medicine, medical modeling, simulation, operational mission support, epidemiology and behavioral sciences.

HII Begins Fabrication of Amphibious Assault Ship Fallujah



HII has started fabrication of the future USS Fallujah. *HII*

PASCAGOULA, Miss. – HII's Ingalls Shipbuilding division started fabrication of the U.S. Navy's newest amphibious assault ship Fallujah (LHA 9) on Dec. 19, the company said in a Dec. 20 release. The start of fabrication signifies that the first 100 tons of steel have been cut for the ship and that the shipyard is ready to move forward with the construction of the ship.

"Our shipbuilders are proud of the work they do for the security of our nation and for our Navy and Marine Corps customers," said Eugene Miller, Ingalls Shipbuilding LHA program manager. "The start of fabrication on Fallujah is a significant milestone in the construction of this large-deck

amphibious ship and demonstrates our ability to maintain a sustained LHA production line at Ingalls.”

For nearly 50 years, Ingalls has built large-deck amphibious assault ships and is the sole shipbuilder for amphibious ships. Ingalls has delivered 15 large-deck ships, including the Tarawa-class, LHA 1-5; the Wasp-class, LHD 1-8; and most recently the America-class, LHA 6 and LHA 7. The third of the America class, Bougainville (LHA 8), is currently under construction.

The America class is a multi-functional and versatile ship that is capable of operating in a high density, multi-threat environment as an integral member of an expeditionary strike group, an amphibious task force or an amphibious ready group.

In October, Ingalls was awarded the $2.4 billion U.S. Navy fixed-price-incentive contract for the detail design and construction of Fallujah. Similar to Bougainville, Fallujah will retain the aviation capability of the America-class design while adding the surface assault capability of a well deck and a larger flight deck configured for F-35B Joint Strike Fighter and MV-22 Osprey aircraft. These large-deck amphibious assault ships also include top-of-the-line medical facilities with full operating suites and triage capabilities.