Coyote Aerial Target has 100th Launch

Northrop Grumman's GQM 163-A Coyote, a target vehicle used to simulate advanced anti-ship cruise missile threats. *NORTHROP GRUMMAN*

CHANDLER, Ariz. – Northrop Grumman Corp. is celebrating the 100th launch of its GQM-163A Coyote target vehicle, which continues to support testing ship anti-cruise missile defenses for U.S. and allied navies, the company said July 7.

The Coyote is a threat-representative target the U.S. Navy uses to prepare, train and qualify systems and crews aboard naval vessels. Northrop Grumman originally designed the target as a Mach 2.5+ sea-skimming target and later added the capability to attain Mach 3.5+ as a diving target from an altitude of over 50,000 feet.

"The unique speed, performance and versatility of this target has enabled us to meet multiple mission scenarios for our customer for over two decades," said Rich Straka, vice president of launch vehicles at Northrop Grumman. "As the only

supersonic sea-skimming target produced in the United States, the Coyote is part of a family of tactical targets that ensures U.S. Navy systems are ready and capable to defend against threats.”

Naval Air Systems Command awarded Northrop Grumman this program in 2000 with its initial launch in 2003. The total contract value is over $329 million. Along with this successful launch, the team has delivered more than 145 targets to the U.S. Navy. The U.S. Navy has ordered 218 targets to date with more options in the years ahead.

Northrop Grumman Begins Building New Missile Integration Facility

The Navy’s Advanced Anti-Radiation Guided Missile-Extended Range (AARGM-ER) completes its first live fire event July 19 off the coast of Point Mugu Sea Test Range in California. *U.S. NAVY*

ROCKET CITY, W.Va. – Northrop Grumman Corporation announced July 6 the construction of a new 113,000 square foot facility in West Virginia that will increase the company’s capacity within the defense industrial base to ensure delivery of current and future weapons to meet warfighter needs.

“Our new missile integration facility is a factory of the future, designed to affordably produce high quantities of missiles to meet increasing customer demand,” said Mary Petryszyn, corporate vice president and president of Northrop Grumman Defense Systems. “Northrop Grumman’s investments in manufacturing capacity, digital processes and emerging technologies translates into the rapid deployment of capability into the field.”

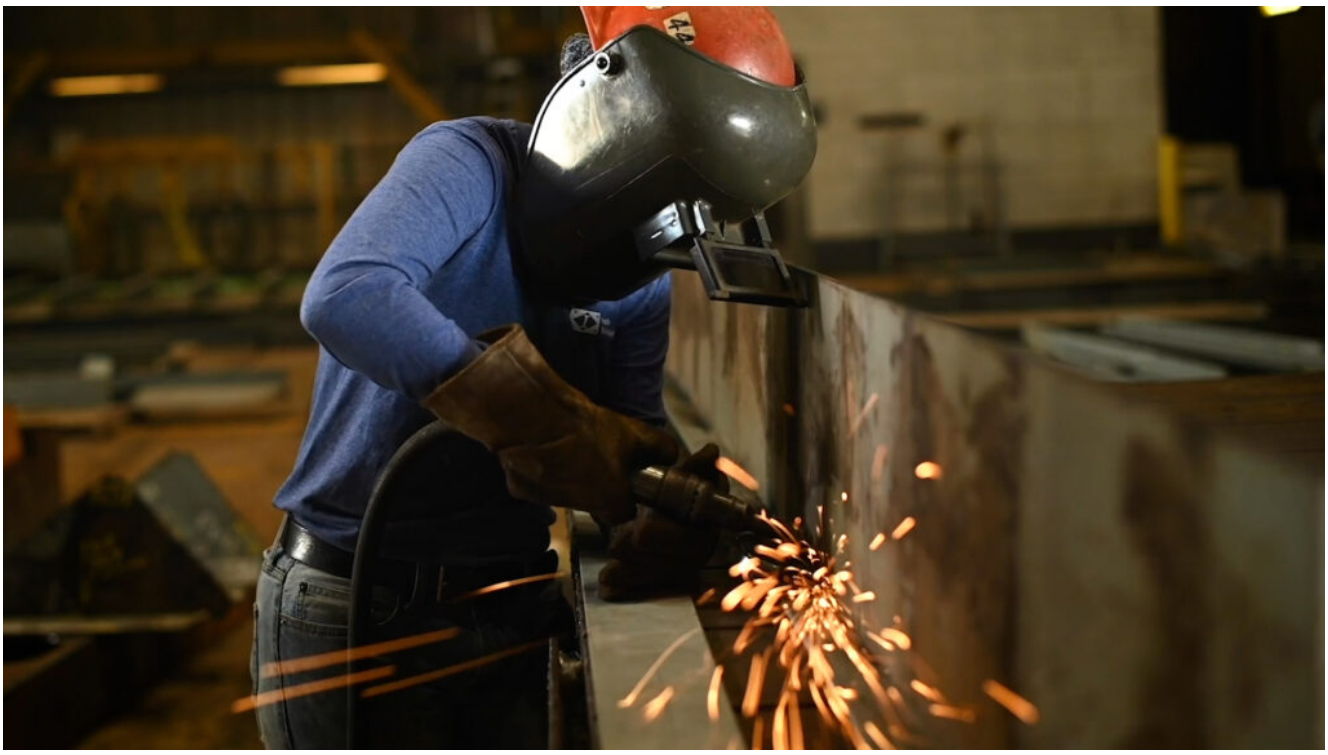
Once completed in 2024, the missile integration facility will have the capacity to support production of up to 600 strike

missiles per year. The facility's production operations will commence with the second lot of the Advanced Anti-Radiation Guided Missile – Extended Range low-rate initial production. Unlike traditional missile integration facilities, Northrop Grumman's facility is not limited to producing one type of missile but is easily modified to manage the integration of current and new missile programs.

Northrop Grumman will incorporate the latest in digital manufacturing including automation and the use of smart manufacturing equipment and modular work cells. These manufacturing approaches will allow the company to optimize quality, reduce costs, and maximize production capacity and production times to deliver missiles to the warfighter quickly.

The facility is expected to include expanded manufacturing workforce skillsets, adding engineering and manufacturing jobs to the area, reinforcing Northrop Grumman's leadership as one of West Virginia's largest manufacturing employers.

HII's Ingalls Shipbuilding to Hire 2,000-Plus Full-Time Shipbuilders



An employee from HII's Ingalls Shipbuilding division grinds metal during construction of a ship. *HII*

PASCAGOULA, Miss. – HII's Ingalls Shipbuilding division plans to hire more than 2,000 full-time shipbuilders as part of its future workforce plans, the company said July 6.

The new shipbuilders will join a skilled workforce that delivers critical capabilities to HII's national security customers, including amphibious warships, destroyers and national security cutters. Ingalls Shipbuilding is located on an 800-acre facility, having recently completed a state-of-the-art upgrade that includes covered workspaces to keep shipbuilders dry and cool.

"With a shipbuilding legacy of nearly 84 years, Ingalls offers careers dedicated to a service mission – building ships that protect and defend our freedoms," said Ingalls Shipbuilding President Kari Wilkinson. "We are excited to be adding new members to our team and to be providing a variety of stable career opportunities to our community."

Ingalls Shipbuilding's talent acquisition team will be hosting a hiring event from 9 a.m. to 12 p.m. on Saturday, July 9, at the Ingalls Maritime Training Academy located on Jerry St. Pé

Highway. Ingalls will be hiring pipe fitters, pipe welders, structural welders, ship fitters and seeking applicants for entry-level opportunities.

Competitive starting wages, day-one benefits, 12 paid holidays annually and opportunities for advancement make Ingalls a great place to work, the company said.

“With over 500 different jobs, there is no limit to what you can do at Ingalls,” said Susan Jacobs, vice president of human resources and administration. “Shipbuilding is hard work, but we strive to make sure our shipbuilders have the tools and conveniences they need to do the hard work well.”

In recent years, Ingalls Shipbuilding facility upgrades have also included additional hydration stations, improved access to work sites and tool rooms, and expanded meal choices in the shipyard, including a Chick-fil-A.

Boeing, ESG, Lufthansa Technik Expand Partnership to Support German P-8A Poseidon Fleet

From left to right: Michael Haidinger, president, Boeing Germany, Central & Eastern Europe, Benelux & Nordics; Alan Carson, business director, Aerospace Campaigns, ESG; Björn Malmus, Head of Programme, P-8A Poseidon, German Procurement Agency for the Bundeswehr, BAAINBw; Indra Duivenvoorde, senior director, Boeing Government Services, Europe & Israel; Michael Hostetter, vice president, Boeing Defense & Space, Germany; Michael von Puttkamer, vice president, Special Aircraft Services, Lufthansa Technik. *BOEING*

BERLIN – Boeing, ESG Elektroniksystem- und Logistik-GmbH and Lufthansa Technik have signed a three-party agreement that reinforces joint efforts to support Germany's new P-8A Poseidon fleet, Boeing announced July 5. With the new agreement, Boeing, ESG and Lufthansa Technik will be the team responsible for executing the P-8A sustainment program in Germany.

"We are expanding our partnership with ESG and Lufthansa Technik in the form of a three-party agreement that will allow us to best support our German customer and the operational needs of the German navy," said Indra Duivenvoorde, senior director, Boeing Government Services Europe & Israel. "This partnership demonstrates our commitment to directly supporting our customer locally with German industry primes."

The new agreement builds on two separate memoranda of

understanding signed separately with ESG and Lufthansa Technik in 2021 and now involves all three parties, outlining additional detail regarding each company's role in the German P-8A program.

"This agreement underlines our joint performance promise and our commitment to provide the Bundeswehr with urgently needed capabilities," said Christoph Otten, CEO of ESG. "At the same time, we see this as a special obligation to proactively contribute our capabilities and competencies to the program as a long-standing technology and innovation partner of the German armed forces and the Naval Aviation Command, particularly in the areas of systems integration, aviation certification or secure communication."

With the formalization of this new industry partnership, Boeing, ESG and Lufthansa Technik will provide support to the German customer in all areas of aircraft sustainment and training that will bring the highest operational availability to the German Navy's P-8A fleet.

First deliveries to Germany are slated to take place in 2024 and Boeing estimates that the P-8A program will employ up to 250 people in Germany.

US Supplying Ukraine with 23 Metal Shark Military Vessels

A U.S. Navy 40 PB built by Louisiana's Metal Shark. Six of these new Navy craft will be sent to Ukraine as part of an assistance package. *METAL SHARK*

JEANERETTE, La. — To help Ukraine to better protect its coastline, waterways and ports, the United States is providing the country with a range of defense articles, including 23 welded-aluminum military vessels built by Louisiana-based Metal Shark.

Last week the Defense Department announced that six of the U.S. Navy's new 40 PB maritime combat vessels would be sent to Ukraine as part of a $450 million security assistance package. Built by Metal Shark and delivered to the Navy in 2021 as part of a currently active defense contract for 50 vessels, these next-generation vessels feature six Mk16 weapons foundations plus a large forward foundation for stabilized, remote operated, optically guided Mk49/Mk50 weapons systems. Ballistic protection enables the 40 PB to sustain extended firefights, allowing crews to respond with overwhelming force while remaining secure and protected from hostile fire.

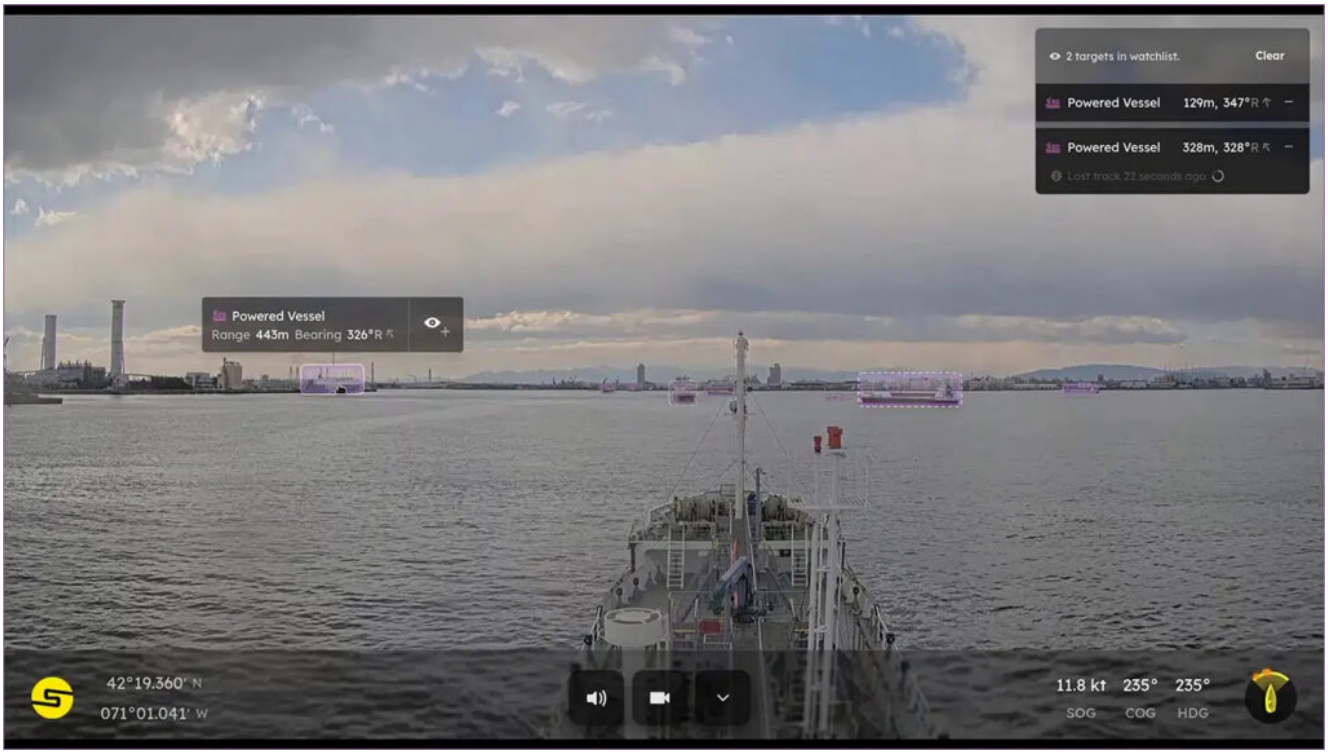
At Metal Shark's Franklin and Jeanerette, Louisiana, production facilities, production is well underway on 17 additional vessels for Ukraine, including 10 38-foot Defiant pilothouse patrol vessels, four 38-foot Defiant center console patrol vessels, and three 36-foot Fearless high-performance military interceptor vessels. Each of these vessels are proven military platforms optimized for the Ukraine mission.

The boats are being built and delivered as part of a long-range foreign policy strategy years in the making, but recent events in Ukraine have caused an acceleration of the timelines. As a result, vessels will begin shipping immediately.

"Metal Shark has been working closely with the U.S. Embassy in Kiev since 2019 to develop the strategy now being implemented to support Ukraine's maritime capabilities, so it is fulfilling to see that the vessels will arrive when they are most needed," said Henry Irizarry, Metal Shark's vice president of International Business Development. "Metal Shark provides next-generation, proven platforms to partner nations, but most importantly, we create long term partnerships with end users to train boat crews and provide seamless technical support to assure 24/7 operational readiness."

Metal Shark is a diversified shipbuilder specializing in the design and construction of welded aluminum and steel vessels from 16 feet to over 300 feet for defense, law enforcement, and commercial operators. Key customers include the United States Navy, Marine Corps, Coast Guard, Air Force, Army, foreign militaries, law enforcement agencies, fire departments, passenger vessel operators, pilot associations, towboat operators and other clients worldwide.

Sea Machines Unveils Advancement in Vessel Navigation Instrumentation



The AI-ris marine computer vision navigation sensor's view. *SEA MACHINE ROBOTICS*

BOSTON – Sea Machines Robotics Inc., a developer of autonomous command and control and advanced perception systems for the marine industries, has unveiled AI-ris, a new marine computer vision navigation sensor designed to improve safety and performance while vessels are underway, the company said June 21.

The company revealed this new technology during Seawork2022, the largest European commercial marine exhibition. Sea Machines' AI-ris, (artificial intelligence recognition and identification system) uses digital cameras and AI-processing to detect, track, classify and geolocate objects, vessel traffic and other potential obstacles in the majority of operational conditions, day or night, to equip crew with best-in-class situational awareness. Computer vision helps improve

safety for vessels and is also a critical technology for the advancement of autonomous command and control systems.

Boats and ships operate in the planet’s most dynamic environment and the limitations of conventional navigation sensors leave the bulk of perception work to the human eye and brain for continuous scanning of the waterway. Fatigue, distraction, and confusion can lead to misses and mistakes. The U.S. Coast Guard reported that in 2020, 36% of boating accidents were collisions and allisions, with the primary cause being improper lookouts and operator inattention. The commercial marine industry suffers from similar challenges. Sea Machines designed AI-ris to be ever alert, with the ability to deliver predictable operational results that can improve vessel reliability, as well as eliminate liabilities caused by human error.

“Sea Machines is dedicated to building the future of ocean mobility. We envision a future with fewer accidents at sea. We are revolutionizing marine navigation with data-driven intelligence, autonomy and connectivity,” said CEO Michael G. Johnson, Sea Machines. “AI-ris enables a tremendous performance and safety increase. The superior capabilities of computer vision and AI will ensure a safer, more productive voyage.”

“AI-ris is always scanning for obstacles and can alert the operator of potentially dangerous situations. It also labels objects very small in size, like swimmers, kayakers or animals, to those very large, like another ship,” said CTO Trevor Vieweg, Sea Machines. “With the ability to detect, classify and geolocate such targets via optical sensors, AI-ris augments and surpasses the capabilities of existing marine sensor technologies, like radar and automatic identification system, enabling greater performance and achieving the highest levels of safety. In the future, this technology may also help responders detect marine oil spills.”

AI-ris is commercially available now and can be installed aboard existing vessels, as well as new builds.

Lockheed Martin Partners with U.S. Indo-Pacific Command in Successful Multi-Domain Experiments

Aircraft from Carrier Air Wing (CVW) 9 fly over the Nimitz-class aircraft carrier Abraham Lincoln (CVN 72), front left, America-class amphibious assault ship USS Tripoli (LHA 7), front center, Nimitz-class aircraft carrier USS Ronald Reagan (CVN 76), front right, Ticonderoga-class guided-missile cruiser USS Mobile Bay (CG 53), middle left, Arleigh Burke-

class guided-missile destroyer USS Benfold (DDG 65), middle center, Ticonderoga-class guided-missile cruiser USS Antietam (CG 54), middle right, Arleigh Burke-class guided-missile destroyer USS Spruance (DDG 111), back left, and Arleigh Burke-class guided-missile destroyer USS Fitzgerald (DDG 62), back right, as they sail in formation during Valiant Shield 2022. *U.S. NAVY / Mass Communication Specialist 3rd Class Thaddeus Berry*

BETHESDA, Md. – Lockheed Martin paired its DIAMONDShield battle management system with four Virtualized Aegis Weapon System nodes deployed across hundreds of miles to successfully demonstrate multi-domain operations during a recent U.S. military exercise, the company said June 21.

The exercise, Valiant Shield 2022, is a biennial training activity involving thousands of U.S. military personnel and more than 200 ships, aircraft and ground vehicles with a focus on integrating forces in multiple domains, and is a cornerstone of the U.S. Indo-Pacific Command's integrated deterrence strategy to prevent conflict in the region.

During the 12-day event in Guam and other locations in the Pacific, Lockheed Martin partnered with the U.S. Indo-Pacific Command to experiment with using artificial intelligence to enable rapid decision-making – in seconds or minutes compared to hours – at strategic, operational and tactical levels of missions across air, land, sea and space.

"We recognize our customers' need to rapidly integrate emerging technologies into mission-focused solutions," said Joe Ferrara, Lockheed Martin's advanced concepts director supporting the exercise. "Through experiments like Valiant Shield, we are learning collaboratively with our customers to advance Joint All Domain Operations, with the intent of delivering capability faster to the warfighter."

With 14 Lockheed Martin engineers in the field, the company introduced DIAMONDShield and VAWS into a series of offensive and defensive scenarios involving Lockheed Martin's High

Mobility Artillery Rocket System and PAC-3 Missile Segment Enhancement. DIAMONDShield's artificial intelligence technology analyzed operational command and control data in real-time during dynamic fires, and provided commanders with decision aids to recommend assets to respond to incoming threats.

After commanders decided how to engage, the VAWS next-generation combat system routed precision targeting data and detailed orders to front-line assets like the PAC-3 MSE and HIMARS. Using machine-to-machine interfaces, VAWS transmitted the information digitally across existing military service data stovepipes, a concept known as coordinating "digital force orders." In this case, the Marine end user was able to execute a commander's intent without having to manually translate the order into Marine doctrine, regardless of whether the order came from an Air Force, Army, or Navy commander. This also saved users time because they no longer had to read coordinates over a radio, and it reduced room for error by eliminating the risk of misinterpreting spoken instructions.

The team will use the experience and feedback to optimize training and improve the systems for the next exercise.

This is the fifth military exercise in which the company has partnered with the U.S. Indo-Pacific Command. Beginning in 2019 with Talisman Sabre and as part of the command's Pacific Deterrence Initiative, Lockheed Martin has participated in a series of exercises that have each demonstrated progressively expanded capabilities: Talisman Sabre 2021 and 2019, Northern Edge 2021 and Valiant Shield 2020.

Missile Defense Agency Awards Raytheon $867 Million for SM-3 Block IIA Missiles

Japanese and U.S. forces announced the successful completion of a Standard Missile-3 (SM-3) Block IIA flight test from the Point Mugu Sea Range, San Nicolas Island, California, in 2018. *MISSILE DEFENSE AGENCY / Ralph Scott*

TUCSON, Ariz. – Raytheon Missiles & Defense, a Raytheon Technologies business, has been awarded an $867 million Missile Defense Agency contract to deliver SM-3 Block IIA missiles to the United States and partners, the company announced June 14.

“The SM-3 Block IIA interceptor was developed in partnership with Japan, and it features a larger rocket motor and kinetic warhead that allow it to defend broader areas from long-range ballistic missile threats,” said Tay Fitzgerald, president of Strategic Missile Defense at Raytheon Missiles & Defense. “Our strong cooperation with Japanese industry was essential to the development of this next-generation solution that can defeat complex threats around the world from sea and land.”

The SM-3 interceptor is a defensive weapon the U.S. Navy uses to destroy short- to intermediate-range ballistic missiles. The interceptor uses sheer force, rather than an explosive warhead, to destroy targets in space. Its “kill vehicle” hits threats with the force of a 10-ton truck traveling 600 miles per hour. This technique, referred to as “hit-to-kill,” has been likened to intercepting a bullet with another bullet.

The SM-3 Block IIA interceptor’s kinetic warhead has been enhanced, improving the search, discrimination, acquisition and tracking functions, to address advanced and emerging threats. The missile intercepted an advanced ballistic-missile threat in its first live target test in early 2017.

The SM-3 interceptor is a critical piece of the Phased Adaptive Approach for missile defense in Europe. The interceptor is being carried by U.S. Navy ships deployed off Europe’s coast and is now operational at a land-based site in Romania, further enhancing Europe’s protection.

BAE Systems to Build Seekers for LRASMs

An LRASM in flight. *LOCKHEED MARTIN*

NASHUA, N.H. – BAE Systems has received a $38 million contract from Lockheed Martin for additional guidance systems for Lockheed Martin's Long-Range Anti-Ship Missile (LRASM) program, the company said June 14.

BAE Systems' advanced radio-frequency sensor enables LRASM to strike specific, high-value maritime targets from long range in aggressive electromagnetic warfare environments.

"We're advancing the state of small electronic warfare systems through our efficient LRASM seeker design, which delivers discriminating capabilities at an affordable cost," said Larry Glennon, Small Form Factor product line director at BAE Systems. "Our seeker enables the U.S. Navy, U.S. Air Force,

and our allies to find the proverbial needle in the haystack with high-performance, multi-mission missiles.”

The LRASM provides warfighters with a capable precision strike weapon intended for use from airborne platforms including B-1B Lancer bombers, F/A-18E/F Super Hornet fighters, F-35 Lightning II fighters, P-8A Poseidon maritime patrol aircraft and surface vessels via the Mark 41 Vertical Launching System. The missile’s diversity of launch platforms, survivability, range and lethality provide critical capability and flexibility to warfighters.

Work on BAE Systems’ seeker takes place at the company’s advanced manufacturing facilities in Wayne, New Jersey, Greenlawn, New York and Nashua, New Hampshire.

HII Christens LPD Richard M. McCool Jr.

Ship sponsors Kate Oja and Shana McCool christen the ship named after their grandfather, Richard M. McCool Jr., on June 11. Looking on are Eric Raven, undersecretary of the Navy, Kari Wilkinson, president of Ingalls Shipbuilding, and Capt. Jeffrey Baker, prospective commanding officer of the ship. HII

PASCAGOULA, Miss. – HII announced June 11 that its Ingalls Shipbuilding division christened the company's 13th amphibious transport dock, Richard M. McCool Jr. (LPD 29), constructed for the U.S. Navy.

"For nearly two decades, we have had the opportunity to build these amphibious ships, and we look forward to continuing this journey with such a valued partner," Ingalls Shipbuilding President Kari Wilkinson said. "Today we reflect on Richard M. McCool Jr.'s bravery and heroism in front of a ship that will carry another generation of brave Sailors and Marines into missions defending our freedom."

LPD 29 is named to honor U.S. Navy Capt. Richard M. McCool Jr., who was awarded the Medal of Honor for his heroic actions in rescuing survivors from a sinking destroyer and for saving

his own landing support ship during a World War II kamikaze attack. His rescue efforts took place exactly 77 years prior to the day Richard M. McCool Jr. (LPD 29) was christened.

Undersecretary of the Navy Erik Raven was the keynote speaker.

“Richard M. McCool Jr. truly embodied the spirit of service above self,” Raven said. “The Sailors and Marines who will sail on this future ship carry on that legacy following the example of spirit, patriotism and selflessness set by Richard M. McCool Jr.”

When speaking of America’s defense capabilities, Raven said, “We are able to deploy exquisite capabilities across the globe in great part due to our dedicated shipbuilders and our talented team. These talented Americans are essential to making sure that our naval forces have the ships that they need.”

Richard M. McCool Jr. is co-sponsored by Shana McCool and Kate Oja, granddaughters of the ship’s namesake. Together, the two sponsors officially christened Richard M. McCool Jr. by smashing a bottle of sparkling wine across the bow of the ship. McCool spoke on behalf of both sponsors at today’s ceremony.

When speaking about her grandfather’s heroic acts some 77 years ago, McCool said, “To the commanding officer and future crew of this ship, may she (the ship) keep you safe. And in the words of our grandfather, may you always remember to fight as a unit and not as individuals.”