Austal USA Establishes Austal West Ship Repair in Alabama

A commercial ship exiting the Austal West Campus repair facility. *AUSTAL USA*

MOBILE, Ala. – Following the acquisition of additional waterfront along the Mobile River in September 2020, Austal USA quickly established a ship repair facility that has had a booming response, the company said in a Sept. 29 release.

“Almost immediately after word got out Austal USA had purchased the additional waterfront property, we were inundated with calls from commercial captains looking to return to Mobile to have their ships serviced,” said Mike Bell, Austal USA’s senior vice president of operations. “We are pleased with all of the positive feedback we have received from our ship repair customers thus far.”

Austal’s acquisition included 15 acres of waterfront property spanning almost 3,000 linear feet of waterfront pier space, a 20,000-ton certified Panamax-class floating dry dock, a 300,000-square-foot outside fabrication area, and 100,000 square feet of covered fabrication facilities all just 30 miles from the Gulf of Mexico.

While most of the shipbuilding industry associates Austal USA with advanced manufacturing of high-tech Navy ships, many more are now realizing the company has a highly-capable ship repair operation.

The Austal West Campus repair facility is conveniently located across the river from Austal USA’s 165-acre corporate headquarters providing access to deep water berthing for vessels up to 1,000 feet, advanced manufacturing capabilities including a friction stir welder, CNC machines, CNC cutting tables, and a carpenter shop, machine shop and electrical and

pipe shops. The repair facility also boasts heavy-lifting capability with mobile cranes, overhead cranes and wing wall cranes that travel the length of the 668-foot dry dock.

The services provided by Austal's Mobile ship repair operation range from conversions and upgrades to advanced ship repair. The machine shop and fabrication areas are fully equipped with overhead cranes, lathes, and CNC plasma cutters. Other technical services offered to the company's service clients include full-service detail design capability, 3-D modeling, field engineering support and dimensional accuracy control.

"At Austal USA we have always taken great pride in the quality and value of the new ships we build," Bell said. "We are now applying that same pride in the quality and value we provide our ship repair clients at our dry dock and repair yard."

Austal USA has earned a proven reputation as one of the safest shipyards in the industry, a characteristic that is proudly shared with the new service operation. The ISO 9001:2015-certified Austal West Campus is operated by a highly qualified, experienced ship repair and construction management team, focused on safety and customer satisfaction, maintaining a strong professional relationship with all applicable regulatory agencies.

Canadian Technology Companies Create Holographic Sonar

Display for Hunting Submarines

Kongsberg Geospatial and Avalon Holographics have partnered to develop a new holographic sonar display for submarines. *AVALON HOLOGRAPHICS*

OTTAWA, Ontario – Kongsberg Geospatial has partnered with Avalon Holographics to develop a revolutionary holographic sonar display for submarine warfare, in a project funded by the Canadian Department of National Defense IDEaS (Innovation for Defence Excellence and Security) program, Kongsberg said Sept. 29.

The system has been developed to reduce the cognitive load on passive sonar analysts by visualizing complex undersea environments on a revolutionary new holographic display.

What are sometimes thought of as 3-D displays are actually two-dimensional projections of three-dimensional scenes on a flat monitor. The geometry in the scene is necessarily distorted to create the illusion of looking at a three-dimensional object. To understand what they are looking at, an operator has to manipulate the view to look around the environment.

This is also limiting for situations in which multiple people are looking at the same display. A holographic display would provide a better solution for sharing 3-D information because the view on the data can be individualized, while the image itself remains static.

Avalon Holographics has created just that: a display that uses a complex array of millions of holographic elements or "hogels," to create a true, three-dimensional image that can be clearly seen from different angles without requiring the

use of headsets or goggles. This new display will combine passive sonar data with three-dimensional bathymetric data to create an accurate sensor picture that can be used to locate and identify possible undersea threats.

Passive sonars are used by naval ships to locate targets around the platform on which the primary sensor is located, when active sonar is not viable or tactically desirable.

The new holographic sonar display created by Kongsberg Geospatial and Avalon Holographics is designed to increase underwater situational awareness with respect to target detection, supporting faster and more confident decision making when using passive sonar systems. The system will consist of three components: a sonar sensor system, a sonar map rendering system and the holographic display.

The sonar sensor system is located on board a surface vessel which could include a towed array, hull mounted sona, or sonobuoy receiver. Data from the system is fed to the sonar map rendering system containing the information required to create the operational images to populate the 3-D holographic display.

Kongsberg Geospatial is contributing the sonar map rendering system, a software system that leverages the company’s ISR applications, real-time situational awareness capabilities and real-time sensor integration technology. Avalon Holographics will be contributing the holographic display used to visualize the processed data.

“We’re excited to be delivering a new and unique user experience on a ground-breaking new display technology for situational awareness,” said Ranald McGillis, president, Kongsberg Geospatial. “Our battlespace visualization systems draw on our technical legacy with defense system display projects to create a world leading capability to exploit sonar

data and will help users to more effectively exploit complex sensor data.”

“Our ground-breaking holographic display technology applies to a wide range of applications, but the battlespace has always been a primary user focus,” said Russ Baker, cofounder, Avalon Holographics. “Together, Kongsberg’s TerraLens and Avalon’s Raydiance Engine are pioneering a new class of holographic situational awareness applications to transform 3-D battlespace visualization, GIS and underwater warfare. These bold steps are just one way we’re transforming the science-fiction of holographic visual experiences into science fact.”

The initial phase of the IDEaS project will run until November, during which time Avalon Holographics will be refining the performance of the display device, improving the software tools, and working with Kongsberg on software integration. Kongsberg Geospatial will be developing trials of different use cases for the systems including multi-sensor operations and target motion analysis. The goal is to proceed to the next phase of the project, which would involve enhancement of Kongsberg’s software, a more comprehensive integration with the display and porting to Avalon’s next-generation display technology.

DARPA’S Hypersonic Air-Breathing Weapon Concept

Achieves Successful Flight

An artist's conception of the Hypersonic Air-breathing Weapons Concept (HAWC) missile. RAYTHEON MISSILES & DEFENSE

ARLINGTON, Va. – DARPA, in partnership with the U.S. Air Force, completed a free flight test of its Hypersonic Air-breathing Weapon Concept (HAWC) last week, the agency said in a Sept. 27 release.

The missile, built by Raytheon Technologies, was released from an aircraft seconds before its Northrop Grumman scramjet (supersonic combustion ramjet) engine kicked on. The engine compressed incoming air mixed with its hydrocarbon fuel and began igniting that fast-moving airflow mixture, propelling the cruiser at a speed greater than Mach 5, or five times the speed of sound.

The HAWC vehicle operates best in oxygen-rich atmosphere, where speed and maneuverability make it difficult to detect in a timely way. It could strike targets much more quickly than subsonic missiles and has significant kinetic energy even without high explosives.

"The HAWC free flight test was a successful demonstration of the capabilities that will make hypersonic cruise missiles a highly effective tool for our warfighters," said Andrew "Tippy" Knoedler, HAWC program manager in DARPA's Tactical Technology Office. "This brings us one step closer to transitioning HAWC to a program of record that offers next generation capability to the U.S military."

Goals of the mission were vehicle integration and release sequence, safe separation from the launch aircraft, booster ignition and boost, booster separation and engine ignition and cruise. All primary test objectives were met.

The achievement builds on pioneering scramjet projects,

including work on the X-30 National Aero-Space Plane as well as unmanned flights of NASA's X-43 vehicles and the U.S. Air Force's X-51 Waverider.

"HAWC's successful free flight test is the culmination of years of successful government and industry partnership, where a single, purpose-driven team accomplished an extremely challenging goal through intense collaboration," Knoedler added. "This historic flight would not have been possible without the dedication of industry, U.S. Air Force, and Navy flight test personnel who persevered through the pandemic to make the magic happen."

The HAWC flight test data will help validate affordable system designs and manufacturing approaches that will field air-breathing hypersonic missiles to our warfighters in the near future.

Boeing Awarded Contract for Five P-8A Aircraft for Germany

Boeing has been awarded a production contract for five P-8A Poseidon aircraft for Germany. *BOEING*

ARLINGTON, Va. –The U.S. Navy awarded Boeing a production contract for five P-8A Poseidon aircraft for Germany, the company said Sept. 28. First deliveries are slated to begin in 2024 when the P-8A Poseidon will eventually replace Germany's fleet of P-3C Orion aircraft.

"We're pleased to have finalized this sale to Germany and to

expand our footprint in-country by bringing the P-8A and its unique multi-mission capabilities to the German Navy," said Michael Hostetter, vice president, Boeing Defense, Space & Security, Germany. "The P-8 will ensure the German Navy's ability to perform long-range maritime surveillance missions and will play a pivotal role in the region by leveraging existing infrastructure in Europe and full interoperability with NATO's most advanced assets."

German industry is a critical partner with the P-8A Poseidon program. By working with local partners, Boeing will provide support, training and maintenance solutions that will bring the highest operational availability to fulfill the German Navy's missions. On June 17, Boeing signed agreements with ESG Elektroniksystem-und Logistik-GmbH and Lufthansa Technik AG to collaborate in systems integration, training, and sustainment work. German companies that currently supply parts for the P-8A include Aircraft Philipp Group GmbH, Aljo Aluminium-Bau Jonuscheit GmbH and Nord-Micro GmbH.

"With strategic agreements and industry partnerships already in place, we stand ready to deliver a robust sustainment package for the German Navy's P-8A fleet," said Dr. Michael Haidinger, president, Boeing Germany, Central & Eastern Europe, Benelux and Nordics. "Together with the German Navy, the Federal Ministry of Defense and local industry, we will ensure maximum operational availability that will allow the German Navy to meet the full range of its maritime challenges."

Deployed around the world with more than 135 aircraft in service, and over 350,000 collective mishap free flight hours, the P-8A will significantly advance Germany's antisubmarine warfare, antisurface warfare, intelligence, surveillance and reconnaissance and search and rescue mission capabilities.

Germany is the eighth nation to have acquired the P-8A, joining the United States, Australia, India, the United

Kingdom, Norway, Korea and New Zealand.

Foundation Honors Sen. John Warner, Premieres Film About Elvis's Contribution to USS Arizona Memorial

The promotional poster for the new film about Elvis Presley's fundraising efforts for the USS Arizona Memorial. *WORLD WAR II FOUNDATION*

The World War II Foundation held a world premiere for its newest production, "Elvis and the USS Arizona," and honored the late Sen. John Warner at the Kennedy Center in Washington, D.C. this past week.

Warner received the foundation's Senator Bob Dole World War II Leadership Award, presented annually to "an individual of the Greatest Generation or their family who as an individual reflects the values of self-sacrifice, public service and everlasting commitment to our nation's principles of freedom and democracy."

The presentation was made to Warner's wife, Jeanne, by Secretary of Veterans Affairs Denis McDonough, with keynote remarks by Chairman of the Joint Chiefs of Staff Gen. Mark Milley. CNN's Jake Tapper served as master of ceremonies.

The film, produced by Tim Gray and narrated by Jim Nantz with Kyle Chandler, will air on public televisions this fall. It recounts the contribution made by the wildly popular

performer, Elvis Presley, and his sold-out performance on March 25, 1961, at Bloch Arena on Naval Station Pearl Harbor to raise money to complete the USS Arizona Memorial. Presley was in Hawaii filming his movie, “Blue Hawaii.”

The Elvis Presley benefit raised over $60,000 for the USS Arizona Memorial and brought awareness of the fundraising effort. The memorial was completed and officially dedicated in 1962. Presley would visit the Arizona Memorial every time he performed in Hawaii.

Today, the USS Arizona Memorial is the most visited location in Hawaii, thanks in large part to Elvis Presley.

The mission of the nonprofit World War II Foundation is to tell the personal stories of those who were swept up in the most devastating conflict known to man and make these films accessible for free to students, educators, classrooms and the global public.

“Our documentaries rank in the top five of most requested programs nationally on American Public Television stations,” said Gray.

Boeing to Build New Factory in Illinois to Produce MQ-25 Stingray

Boeing will build the U.S. Navy’s MQ-25 Stingray unmanned aerial refueler at a new 300,000 square foot facility at MidAmerica St. Louis Airport in Illinois. The facility will feature state-of-the-art manufacturing processes and tools,

including robotic automation and advanced assembly techniques, to improve product quality and employee ergonomics. *BOEING*
ST. LOUIS – Boeing will build the Navy's newest carrier-based aircraft at a new high-tech facility in Illinois, bringing the benefits of digital aircraft design and production to the Navy and up to 300 advanced manufacturing jobs to the greater St. Louis region, the company said Sept. 17.

The new 300,000 square-foot facility at MidAmerica St. Louis Airport, scheduled for completion in 2024, initially will employ approximately 150 mechanics, engineers and support staff who will build the MQ-25 Stingray, the Navy's first operational, carrier-based unmanned aircraft. Employment could reach up to 300 with additional orders.

"The world's largest aerospace company is doubling down on Illinois because of our unparalleled assets in the transportation and logistics sector and the world-class talent of our people," said Gov. J.B. Pritzker. "To prepare our communities for the future, my administration is committed to making continued investments that will modernize our airports, spark new innovation and bring jobs and economic opportunities to our communities from Chicago to St. Clair and beyond. I want to thank the Boeing company for their vote of confidence in Illinois, as well as St. Clair County leadership and the MidAmerica Airport team for giving companies another reason to choose Illinois."

Boeing digitally engineered the entire MQ-25 aircraft and its systems, resulting in high-fidelity models that are used to drive quality, efficiency and flexibility throughout the production and sustainment process. The new MQ-25 facility will include state-of-the-art manufacturing processes and tools, including robotic automation and advanced assembly techniques, to improve product quality and employee ergonomics.

"The team and state-of-the-art technology we're bringing to

the Navy’s MQ-25 program is unprecedented, and we’re incredibly proud to be expanding both as we build the future of autonomous systems in Illinois,” said Kristin Robertson, vice president and general manager of Autonomous Systems, Boeing Defense, Space & Security. “We’ve received great support from MidAmerica Airport and countless dedicated employees, and we’re excited to build the Navy’s first operational, carrier-based unmanned aircraft right here in the Metro East.”

For two years, Boeing and the Navy have been flight testing the Boeing-owned MQ-25 test asset from MidAmerica Airport, where in recent history-making missions T1 has refueled an F/A-18 Super Hornet, an E-2D Hawkeye and an F-35C Lightning II.

The U.S. Navy intends to procure more than 70 MQ-25 aircraft to help extend the range of the carrier air wing, and the majority of those will be built in the new facility. Boeing is currently producing the first seven MQ-25 aircraft, plus two ground test articles, at its St. Louis facilities, and they will be transported to MidAmerica for flight test. The MQ-25 program office, including its core engineering team, will remain based in St. Louis.

The new MQ-25 facility will be in addition to existing manufacturing operations at Boeing St. Clair, which produces components for the CH-47 Chinook, F/A-18 Super Hornet, F-15 and other defense products.

AT&T, Naval Postgraduate

School to Jointly Research 5G, Edge Computing Solutions

A Naval Postgraduate School deployment plan for the 5G and edge computing work. *NAVAL POSTGRADUATE SCHOOL*

AT&T and the Naval Postgraduate School (NPS) have entered into an agreement to explore and develop 5G and edge computing-based maritime solutions aimed at benefitting national defense, homeland security, and industries such as shipping, oil and gas, recreational boating and more.

The NPS and AT&T experiments with 5G and edge computing are expected to result in the identification of advanced technology solutions such as a connected system of unmanned and autonomous vehicles that can improve critical elements of national defense, such as multi-domain situational awareness, command and control, training, logistics, predictive maintenance and data analytics.

The research includes the use of edge computing, where data is processed locally near a device to speed the completion of computing tasks.

The parties entered into a three-year Collaborative Research and Development Agreement (CRADA). Under the agreement, super-fast, low latency AT&T 5G networking and edge computing capabilities will support a broad array of 5G-focused experiments on NPS facilities incorporating artificial intelligence, robotics, internet of things, machine learning, data analytics and smart base solutions.

As part of the CRADA, one initiative is the NPS' Sea Land Air Military Research (SLAMR) program. SLAMR conducts activity at Camp Roberts in South Monterey County, California, and, to a lesser extent, on the NPS main campus and at SLAMR's beach lab north of the main campus in Monterey.

The NPS SLAMR program will explore the development of 5G and edge computing-powered sea applications that connect crewed and non-crewed vessels and sensors. Experiments will be conducted within the SLAMR's multi-domain laboratory. The program is also focused on providing all-domain maritime solutions for a broad array of defense, industry and commercial applications.

The vision guiding the SLAMR program is to eventually have a command and aquatics operations facility with which to perform localized, unmanned aerial, surface, and underwater robotic vehicle activity. It is expected the facility and some of the experimental vehicles will be connected and powered by AT&T networking capabilities, including 5G and edge computing services.

The placement of AT&T's 5G networking infrastructure is underway at NPS in accordance with a real estate license. It includes a tower and a short-range antenna on a prefabricated pad to be located at the SLAMR beach lab within walking distance from the main NPS campus. A key goal of the equipment placement is ease of access for faculty and students conducting autonomous vehicle research at a former waste-water treatment facility on the site.

Rusty Murdaugh Named President of Austal USA

Austal USA President Rusty Murdaugh. *AUSTAL USA*

MOBILE, Ala. – The Austal USA Board of Directors announced the election of Rusty Murdaugh as President of Austal USA effective Sept. 9, the company said in Sept. 15 release.

Murdaugh joined Austal USA in 2017 as chief financial officer and has been serving as interim president since February.

Murdaugh, a long-time veteran of the defense industry, brings sound business acumen and superior fiscal management skills to Austal USA. Before Austal, Murdaugh held leadership positions with Esterline Corporation, Avnet, United Technologies (formerly Goodrich), and Honeywell.

Austal USA Board Chairman Larry Cavaiola said, “Over the course of the last six months, the company has secured multiple contracts under Rusty’s leadership and is well-positioned for continued growth. Rusty has a clear strategic vision to grow the company’s business and lead Austal USA’s worldwide operations.”

As interim president, Murdaugh aggressively led the addition of steel shipbuilding to the Austal USA manufacturing operations and led the company’s facility expansion in Mobile by acquiring additional waterfront and services capability on the Mobile River.

“I am honored to be selected to lead this great company,” Murdaugh stated. “I am excited about the opportunity to lead the world’s finest shipbuilders, and I’m looking forward to the growth ahead in the coming years as we win new shipbuilding and ship maintenance contracts.”

The election comes as the company grows its diverse portfolio of new construction, service and support, and autonomous vehicle contracts. The company has submitted a bid to build the U.S. Coast Guard’s Offshore Patrol Cutter and is executing a preliminary design and concept study for the U.S. Navy’s Light Amphibious Warship program. The company also recently secured two services and maintenance contracts, expanding its post-delivery business.

Pentagon and Lockheed Martin Agree to F-35 Sustainment Contracts

Pilots with Marine Fighter Attack Training Squadron 501 (VMFAT-501) fly the F-35B Lightning II during the Marine Corps Air Station Beaufort Air Show, April 28. *U.S. MARINE CORPS / Warrant Officer Bobby J. Yarbrough*

FORT WORTH, Texas – The F-35 Joint Program Office awarded the Lockheed Martin industry team annualized contracts covering fiscal years 2021-2023 to support operations and sustainment of the global F-35 fleet, supporting mission readiness and further reducing costs, the company said in a Sept. 13 release.

The annual contracts fund critical sustainment activities for aircraft currently in the fleet and build enterprise capacity to support the future fleet of more than 3,000 F-35 aircraft. This includes industry sustainment experts supporting base and depot maintenance, pilot and maintainer training, and sustaining engineering for the U.S. and allies across the globe. It also covers fleet-wide data analytics and supply chain management for part repair and replenishment to enhance overall supply availability for the fleet.

“Together with the F-35 Joint Program Office, we recognize the critical role the F-35 plays in supporting our customers’ global missions and the need to deliver this capability affordably,” said Bridget Lauderdale, Lockheed Martin vice president and general manager of the F-35 program. “These contracts represent more than a 30% reduction in cost per flying hour from the 2020 annualized contract and exemplify

the trusted partnership and commitment we share to reduce sustainment costs and increase availability for this unrivaled fifth-generation weapon system.”

The fiscal 2021-2023 contracts represent a planned next step in further reducing overall operations and support costs for the F-35 program, which are shared between government and industry. Lockheed Martin has reduced our cost per flight hour by 44% in the past five years, with a forecasted reduction of an additional 40% in the next five years. The cost savings in the fiscal 2021-2023 annualized sustainment contracts support Lockheed Martin’s efforts to realize these goals. The savings will be achieved through improved cost and velocity in the supply chain, continued reliability improvements, and greater manpower efficiencies to provide product support solutions across the growing, global fleet.

The contracts also pave the way for a longer-term, performance-based logistics (PBL) agreement for the F-35 program. PBLs are an industry best practice, facilitating agile sustainment solutions for the fleet and incentivizing even further affordability and performance results.

The F-35 Joint Program Office, together with each U.S. service, international operators and the F-35 industry team, leads F-35 sustainment and global support. The 2021 annualized sustainment contract will cover industry sustainment activities through Dec. 31, 2021.

Program data shows the F-35’s reliability continues to improve as the jet is approximately twice as reliable as fourth-generation fighters. It also shows maintenance labor hours needed per flight hour are well within the contractual requirement, while the global fleet is averaging around 70% mission capable rates. Lockheed Martin has significantly lowered its share of cost per flight hour over the last five years, and the broader F-35 team is working across government and industry to achieve greater affordability.

More than 690 aircraft have been delivered and are operating from 21 bases around the globe. More than 1,460 pilots and 11,025 maintainers have been trained and the F-35 fleet has surpassed 430,000 cumulative flight hours.

Navy Establishes New Medal to Honor Fallen Civilians

Photo of the Angela M. Houtz Medal for Fallen Civilians.The new award aims to honor Department of the Navy (DON) civilian employees who are killed or sustain serious injury through considerable personal sacrifice in the performance of their duties. *U.S. NAVY / Mass Communication Specialist 1st Class Ford Williams*

WASHINGTON – Department of the Navy (DON) civilian employees who are killed or sustain serious injury through considerable personal sacrifice in the performance of their duties are now eligible to receive the Angela M. Houtz Medal for Fallen Civilians, said Mass Communication Specialist 1st Class Ford Williams in a release.

The award honors the fidelity and essential service of civilian employees who were killed or sustain serious injury in the performance of their official duties as a result of criminal act, natural disaster, terrorist act, or other circumstances as determined by the secretary of the Navy.

“While Department of the Navy civilians may not be on the front lines, they do face many of the same dangers as our uniformed personnel because of where they work and what they do,” said Garry Newton, the deputy assistant secretary of the Navy for civilian personnel. “It was long past time to make it

possible for commanders to fully recognize the service of all department personnel.”

The medal is named for Angela M. Houtz, a DON intelligence analyst who died during the terrorist attack on the Pentagon on September 11, 2001.