Bell Begins HSVTOL Risk Reduction Testing at Holloman Air Force Base

Release from Bell Textron

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HOLLOMAN AIR FORCE BASE, N.M. (13 September, 2023) Bell Textron Inc., a Textron Inc. (NYSE: TXT) company, today announced the delivery of a High-Speed Vertical Takeoff and Landing (HSVTOL) test article to Holloman Air Force Base for demonstration and technology evaluation. The team will leverage the Arnold Engineering Development Complex Holloman High Speed Test Track to test the folding rotor, integrated propulsion and flight control technologies at representative flight speeds.

“The HSVTOL test article delivery and start of sled testing

operations serves as a major milestone in our mission to develop the next generation of high-speed vertical lift aircraft," said Jason Hurst, executive vice president, Engineering, Bell. "Bell plans to showcase HSVTOL technology informed by more than 85 years of high-speed rotorcraft development and leverage lessons learned to produce a flying prototype with game-changing capabilities."

The objective of Bell's sled test operations is to validate key technologies through a full-scale, integrated demonstration in a representative operating environment. Bell plans for the test article to execute a series of HSVTOL high-speed transition maneuvers, a first of its kind capability for vertical lift aircraft. Prior to delivery at Holloman Air Force Base, Bell successfully completed functional demonstrations at Bell's Flight Research Center.

Bell's High-Speed Vertical Takeoff and Landing (HSVTOL) technology blends the hover capability of a helicopter with the speed (400+ kts), range, and survivability of jet aircraft. Bell has developed high-speed vertical lift technology for more than 85 years, pioneering innovative VTOL configurations like the X-14, X-22, XV-3 and XV-15 for NASA, the U.S Army and U.S. Air Force, and continues to build on its proven history of fast flight from the Bell X-1.

Austal USA Awarded US$91.5 m LCU Contract by US Navy

[Release from Austal USA]

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Sep 12, 2023

Austal USA Awarded US$91.5 m LCU Contract by US Navy

Austal Limited (Austal) (ASX: ASB) is pleased to announce Austal USA has been awarded a US$91,535,551 (AU$143.4 million) fixed-price incentive and firm-fixed-price type contract for the construction of three Landing Craft Utility (LCU) 1700 class craft.

The contract follows a previous contract for the detail design of the vessels and includes options for manufacture of an additional nine vessels and associated support arrangements.

The steel hull LCU 1700-class possess heavy-lift capability with 170 ton payload capacity, and will be deployed with the Navy's amphibious assault ships to support a range of military operations including the delivery of tracked and/or wheeled vehicles, troops and cargo from ship to shore, shore to shore and back to ship.

Austal Limited Chief Executive Officer Paddy Gregg said the new contract reinforces Austal USA's position as a critical capability partner to the United States Navy and further diversified the company's steel shipbuilding portfolio.

"The LCU are an essential capability of the US Navy, and we're proud to be contributing to this important shipbuilding program with up to 12 vessels to be constructed," he said.

"Austal USA continues to diversify its product portfolio, with production continuing on two Towing, Salvage and Rescue Ships (T-ATS) and the 8,500sq metre Auxiliary Floating Dry Dock Medium (AFDM) on the company's state-of-the-art steel line. Austal USA also holds multiple ship contracts for the Navy's TAGOS-25 ocean surveillance ship, and the U.S. Coast Guard's Heritage-class Offshore Patrol Cutter (OPC) programs."

The LCU 1700-class has a roll-on / roll-off monohull configuration, with hydraulically controlled bow and stern ramps that allow multiple vessels to connect and form a causeway for fast and secure unloading and loading. The craft are designed to be transported within, and load/unload from the well decks of amphibious assault ships, carrying loads up to 3.5 metres high, above the vessel's vehicle deck. With a crew of 13, each vessel can conduct independent open ocean Page 2 of 3 transits or operations at sea with a range of 1,200 nautical miles (at 8kn) and a top speed of 11 knots.

This ASX announcement has been approved and authorised for release by Paddy Gregg, Austal Limited's Chief Executive Officer.

DOD Exercises Option on Second Micro Nuclear Reactor Design

Release from the U.S. Department of Defense

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SEPT. 13, 2023

As part of the Strategic Capabilities Office (SCO) initiative Project Pele, the Department of Defense (DOD) has awarded a contract option to X-energy, LLC of Rockville, Maryland in order to develop an enhanced engineering design for a transportable micro nuclear reactor.

In 2022, SCO selected BWX Technologies, Inc. of Lynchburg, Virginia to build a prototype micro reactor. This work is underway and long lead hardware fabrication has begun. By executing this contract option with X-energy, SCO seeks to develop a complementary micro reactor design that builds upon X-energy's developments completed under Project Pele in 2022. This option continues funding for X-energy to develop its design to meet the technical requirements of Project Pele, targeting a reactor design which is ready for licensing by the Nuclear Regulatory Commission (NRC) for both commercial ventures and military resiliency.

"Due to their extraordinary energy density, nuclear reactors have the potential to serve multiple critical functions for meeting resiliency needs in contested logistical environments," said Dr. Jeff Waksman, Project Pele program manager. "By developing two unique designs, we will provide

the Services with a broad range of options as they consider potential uses of nuclear power for both Installation and Operational energy applications in the near future.”

The DOD uses approximately 30 Terawatt-hours of electricity per year and more than 10 million gallons of fuel per day—levels that are only expected to increase due to anticipated electrification of the vehicle fleet and maturation of future energy-intensive capabilities. A safe, small, transportable nuclear reactor would address this growing demand with a resilient, carbon-free energy source that does not add to the DOD’s fuel needs, while supporting mission-critical operations in remote and austere environments.

This contract option for one year of work by X-energy will not result in a completed engineering design, but will allow a thorough analysis of design options, leading to a Preliminary Engineering Design and initiation of a regulatory preapplication process.

“The Strategic Capabilities Office specializes in adapting commercial technology for military purposes,” said Jay Dryer, SCO director. “By nurturing and developing multiple micro reactor designs, SCO will not just provide options for the military Services, but will also help jumpstart a truly competitive commercial marketplace for micro reactors.”

Teledyne FLIR Defense Demonstrates Groundbreaking

UAV Vehicle Reconnaissance Technology at DSEI in London

Release from Teledyne FLIR

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‘Black Recon’ tech concept will enable crews in fighting vehicles to autonomously launch and recover small drones for immediate, covert situational awareness without leaving the vehicle

LONDON, September 12, 2023 – Teledyne FLIR Defense, part of Teledyne Technologies Incorporated (NYSE:TDY), is showcasing a new technology concept at this week’s DSEI conference in London that will allow crews to autonomously launch small drones operated from inside a military vehicle; perform reconnaissance, surveillance, and target acquisition (RSTA); and then recover the aircraft without ever having to leave the safety of the vehicle.

The Black Recon™ Vehicle Reconnaissance System (VRS) is a development program that features an entirely new micro-unmanned aerial vehicle (UAV) designed to withstand the rigors of traveling on infantry and other fighting vehicles. The system is built to provide continuous untethered reconnaissance at flight speeds that allow the UAV to work ahead of advancing vehicles, supplying valuable situational awareness even beyond line of sight.

Fitted inside a hardened launch box mounted to a vehicle, Black Recon’s deployment system can launch up to three UAVs during a mission. When one returns, a unique cradle-arm autonomously recovers the drone using patented technology to precisely track, capture, and dock the UAV – day or night, even in poor weather. Drones are then automatically recharged for the next mission

With its thermal and visual payload, Black Recon delivers live imagery and targeting information to vehicle crews. Operators can use the system for a wide range of missions, such as assessing if terrain is passable, sweeping for mines and improvised explosive devices, or performing close-up inspection under bridges using onboard illumination. The system provides high precision RSTA and can perform GPS-denied operations.

“Black Recon represents a groundbreaking new capability and a force multiplier for warfighters to take on near-peer adversaries,” said Dr. JihFen Lei, executive vice president and general manager of Teledyne FLIR Defense. “The ability to launch and recover UAVs in seconds from a vehicle, without exposing the crew, will enable fighting units to maintain operational tempo and leverage the system when it’s needed most – in dynamic, uncertain, and complex environments.

“We continue to refine Black Recon’s technology and are excited about future applications, not only for the military but also other areas like law enforcement, border security, and critical infrastructure protection. We look forward to sharing the concept with industry partners during DSEI,” Lei added.

Navy Deploys Automated Energy Assessment Tools to the Fleet

Release from Naval Sea Systems Command

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Sept. 8, 2023

Naval Sea Systems Command Public Affairs

WASHINGTON, D.C. – Engineers at the Naval Sea Systems Command have achieved an important milestone with the installation of the Global Energy Information System (GENISYS) suite onboard DDG 51 Arleigh Burke-class guided missile destroyers.

The GENISYS suite includes a Shipboard Energy Assessment System (SEAS) and digital log books (eLogBook) to link fuel consumption, mission, and environmental data to provide operators afloat and ashore an integrated platform from which they can monitor and manage energy consumption across the Fleet.

“One of our main priorities at NAVSEA is digital transformation so that we can provide the best level of support to the Fleet,” said Peter McCauley, NAVSEA technical warrant holder for machinery integration and program manager for fleet energy management. “This initiative is a great example of how we are harnessing feedback from our Fleet commanders, leveraging innovation from the Navy’s Small Business Innovation Research Program, and linking it to other applications such as condition-based maintenance to drive a greater understanding of our onboard equipment to optimize operational excellence.”

The Shipboard Energy Assessment System integrates sensors and other sources of energy-related data from human and equipment performance trends to produce a real-time operational data model. The model then serves a command and control function as it delivers recommendations to inform operator actions pertaining to energy usage and availability.

The eLogBook provides Sailors with a smart logging capability for the bridge deck log, engineering log, daily fuel and water log to automate data collection directly into the Navy Energy Usage Reporting System. Combined with SEAS, data aggregation and reporting is significantly enhanced providing greater mission presence and awareness, operational decision-making, and more effective prioritization of energy investments.

“We now have the capability to align shipboard energy consumption against mission data at multiple levels, including individual ship, operational commander, homeport, ship class, or by the assigned Fleet,” said Capt. Megan Thomas, Naval Surface Force Atlantic’s force materiel officer.

Following rigorous field-testing earlier this year, both systems are now being installed on DDG 51 class destroyers where they will undergo testing and crew training before becoming operational later this year. Installation of the system onboard San Antonio-class amphibious transport dock

ships is planned to commence in 2024.

NAVSEA is the largest of the Navy’s six system commands, responsible for the building, buying, maintaining, and inactivation of ships, submarines and systems for the U.S. Navy. The Naval Systems Engineering and Logistics Directorate (SEA 05) manages the engineering and scientific expertise, knowledge and technical authority necessary to design, build, maintain, repair, modernize, certify and dispose of the Navy’s ships, aircraft carriers, submarines and associated combat and weapons systems.

Vigor Begins Work on USCGC John McCormick at Ketchikan Shipyard

Release from Vigor

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Ketchikan-based cutter to undergo repairs and maintenance at local facility

KETCHIKAN, Alaska (September 12, 2023) – The U.S Coast Guard has awarded Vigor Alaska, a Titan company, a contract to perform maintenance and repairs on U.S. Coast Guard Cutter John McCormick at the Ketchikan Shipyard. USCGC John McCormick will be the first U.S. Coast Guard maintenance solicitation awarded at the Ketchikan Shipyard since 2011. The Fast Response Cutter is stationed at Coast Guard Base Ketchikan, just 3.5 miles from Ketchikan Shipyard, ensuring work on this locally-based vessel supports jobs in Ketchikan's local economy. Work on the vessel begins this week.

"Vigor and our skilled employees are looking forward to beginning work on CGC John McCormick at our local Ketchikan Shipyard," said Adam Beck, Vigor EVP of Ship Repair. "Having a

strong partnership with the Coast Guard supports family wage jobs in Ketchikan and helps get vessels back into service patrolling our coastlines faster. We are grateful for the opportunity to serve the Coast Guard and ready to get to work."

The $3.65 million contract represents a significant milestone in Vigor's tenure as operator of Ketchikan Shipyard, which is owned by the Alaska Industrial Development and Export Authority (AIDEA). The critical partnership between owner and operator supports a strong local economy in Ketchikan.

"AIDEA is proud to partner with Vigor in providing jobs in Ketchikan and boosting the local economy," said Randy Ruaro, Executive Director of AIDEA. "We applaud USCG in trusting the Ketchikan Shipyard for this important maintenance work and look forward to similar projects in the future. The U.S. Coast Guard's District 17 fleet has an Alaska maintenance facility to rely on."

Work on USCGC McCormick will cover comprehensive maintenance and repair of the vessel. After USCGC McCormick is dry docked, the skilled team at Ketchikan Shipyard will inspect the hull plating, conduct maintenance on the ship's propulsion system and renew hull coatings, as well as several other key maintenance and repair operations. Work is anticipated to last through the fall, with approximately 40 employees supporting the project.

In addition to USCGC McCormick, Vigor continues to conduct critical work for the Alaska Marine Highway System at Ketchikan Shipyard. Maintenance work on MV Kennicott began last month and will continue into November. Work on MV Stikine was completed earlier this year.

Leonardo DRS Unveils New 5-inch Electro-Optical/Infrared Stabilized Gimbal for Group 1 UAS Platforms

Release from Leonardo DRS

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Available with Company's Market-Leading TENUM 1280 High-Performance Infrared Imager

ARLINGTON, Va.– Sep. 11, 2023– Leonardo DRS, Inc. (NASDAQ: DRS) announced today that it is releasing its next-generation 5-inch stabilized, multi-sensor EO/IR payload gimbal, with market leading high-definition nighttime imaging capability.

The Small Unmanned Aircraft System Tactical Agile Gimbal (STAG)-5 LLD gimbal is designed for small, unmanned aircraft systems, including common launch tube UASs, small tactical multirotor UAVs, and light fixed-wing aircraft and helicopters.

The STAG-5 LLD is the latest advancement in the DRS STAG-5 family of gimbals designed for Class 1 UAS platforms used across the U.S. military for a range of missions. The gimbal provides a combination of the newest small high-performance sensors including high-definition electro-optical, high-definition long-wave infrared, short-wave infrared, laser range finder and a laser target designator. The gimbal systems are highly stabilized, Modular Open Systems Architecture (MOSA) compatible, less than 6" diameter and weigh under five pounds. STAG-5 LLD delivers higher performance through significant savings in weight and volume over current competitor products.

The high-definition long-wave package includes the industry leading DRS TENUM 1280 10-micron uncooled camera core. TENUM is a commercial off-the-shelf sensor providing ultra-high resolution and long-range imaging performance in a small package.

“Adding this high-performance gimbal for day and night use to our STAG-5 family of systems provides the warfighter a market leading capability to improve airborne operations, including JTAC missions, from small, highly portable UAV platforms,” said Jerry Hathaway, senior vice president & general manager of the Electro-Optical & Infrared Systems business. “We are proud of our innovative team that developed this breakthrough capability, it offers UAS primes, operators, and end-users a new choice to improve their intelligence surveillance reconnaissance-targeting mission execution and effectiveness.

Kongsberg Maritime’s Promas propulsion system now available for navy vessels

Release from Kongsberg

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The Promas propeller and rudder system delivers increased fuel efficiency, better manoeuvrability and extended range for naval platforms

DSEI 2023, 12th September 2023 – Kongsberg Maritime has concluded a research programme that shows its Promas propeller and rudder system can deliver a host of benefits for naval

platforms including significant fuel savings, greater range and improved manoeuvrability.

Originally designed for commercial ships, Promas combines rudder and propeller into one propulsion system. Most naval twin-screw vessels use conventional rudders placed off-centre from the shaft centreline. Promas can deliver fuel savings of more than 5% which can translate into increased range, boosting the capability of naval platforms.

The research, carried out by Kongsberg's Hydrodynamic Research Centre (HRC), has shown that naval vessels relying on traditional rudder and propeller systems can increase their efficiency and manoeuvrability with the adoption of the Promas propeller and rudder system.

The HRC tested and compared the Promas bulb-rudder system, and the conventional off-centre rudder system used by navies on a typical naval aft ship dummy design. The dummy design consisted of an open shaft configuration with V-bracket and high shaft inclination angle to produce a typical wake field for a naval twin screw vessel.

The tests compared propulsive efficiency, rudder forces, cavitation inception speed, cavitation, pressure pulses, and noise levels between Promas and conventional navy propulsion for ship speeds up to 25 knots. At 25 knots, the Promas system reduced power consumption by 6%. The rudder forces with Promas are also much higher. The system demonstrated less drag at small rudder angles and a higher lift at larger angles than a conventional navy system. This improves slow speed and harbour manoeuvring.

Patrik Kron, Kongsberg Maritime's Chief of Naval Systems, said: "We've known for many years how Promas brings a quick improvement in efficiency for commercial operators, and this latest research demonstrates how these benefits can be offered to our governmental customers.

“By being able to demonstrate an improved efficiency of around 6%, for navies, this means their vessels are able to extend their range, something which can be crucial on longer missions.

“We know there is a large market for grey and light grey ships operating up to 25 knots, so our initial research has focussed on that speed range, but we’re continuing our research to consider how Promas could enhance the operational capability of combatants which operate at up to 30 knots”.

Undersea Technology Innovation Consortium Launches Inaugural ‘UTIC Challenge’ in AUKUS Countries

Release from Undersea Technology Innovation Consortium

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Academic Institutions in Australia, the United Kingdom, and the United States

are Invited to Participate

The Undersea Technology Innovation Consortium (UTIC) has announced the first UTIC Challenge. The inaugural challenge calls on academic institutions to propose innovative workforce

development strategies in the undersea technology sector/field.

The challenge is open to teams from academic institutions located in Australia, the United Kingdom, and the United States and is designed to promote continued collaboration among the three nations participating in the AUKUS agreement.

In 2021, the AUKUS agreement established a tri-lateral security pact between Australia, the United Kingdom, and the United States. The agreement promotes information and technology sharing and fosters integration of related undersea technology science and technology, industrial bases, and supply chains.

"The partnership between Australia, the United Kingdom, and the United States is an opportunity to share both physical resources and intellectual capital to improve security and trilateral ties. Maintaining long-term growth and innovation within AUKUS will require developing the future workforce. Industry and academia will need to partner to build a solid foundation for the next generation of innovators and manufacturers," stated U.S. Senator Jack Reed, Chairman of the Senate Armed Services Committee.

Participating teams will choose one of two categories for their response to the inaugural challenge. Based on their choice, teams will submit a position paper outlining their approach and strategy. The two categories are:

Strengthening the training environment for current/future technologists who *develop critical undersea technology*.

Strengthening the training environment for manufacturing professionals who *build and support undersea technology applications.*

UTIC will choose at least one winning team per category. Each winning team will receive a $15,000 award to be used for

related scholarships or similar academic program investments, and their submission will be published and recognized on underseatech.org.

“UTIC looks forward to collaborating with academic innovators to foster sustainable growth in the undersea technology workforce. AUKUS countries continually cultivate forward thinking, creative maritime defense professionals, and the goal of the UTIC Challenge is to expand upon this tradition,” said Molly Donohue Magee, UTIC executive director.

Timing for the challenge is:

Launch and Expressions of Interest – September 2023

Questions and Answers/ Submissions – October – December 2023

Judging – December 2023 – January 2024

Winner Notification – February – March 2024

For more information about the UTIC Challenge program, please visit **Underseatech.org/challenge**, or contact UTIC at **undersea@underseatech.org**.

USS Milwaukee (LCS 5) Decommissions

Release from Littoral Combat Ship Squadron Two

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11 September 2023

NAVAL STATION MAYPORT (Sept. 8, 2023) – Freedom-variant

littoral combat ship (LCS) USS Milwaukee (LCS 5) was decommissioned in Mayport, Fla., September 8.

As an operational unit, Milwaukee and its crew played an important role in the defense of our nation and maritime freedom. Milwaukee and its Sailors were key to determine the operational success and deployment capabilities of today's LCS platform.

During the ceremony guest speaker, Vice Adm. Dirk Debbink (USN, Ret), former chairman of Milwaukee's commissioning committee wished the crew of Milwaukee fair winds and following seas as they bid farewell to their ship.

"We are all very proud of the way this ship served our Navy and our nation since that cold day in November 2015." said Vice Adm. Dirk Debbink (USN, Ret), former chairman of Milwaukee's commissioning committee. "She was the first true serial production ship of the Freedom Class, having incorporated literally hundreds of changes, lessons learned from Freedom and Fort Worth."

Milwaukee and its Sailors contributed a tremendous amount of work and time to ensure success of the LCS program during the ship's time in naval service. Milwaukee completed two successful deployments in April 2022 and June 2023. The ship deployed to U.S. Fourth Fleet and integrated with the embarked US Coast Guard Law Enforcement Detachment (LEDET), other US warships, Department of Defense, Department of Justice, Department of Homeland Security, and SOUTHCOM/JIATF-S. During their second deployment, Milwaukee and her embarked LEDETs, seized an estimated $30 million in suspected cocaine and three detainees during interdictions as sea, preventing 954kgs of cocaine from entering the United States. She also transported six detainees and case packages on behalf of USCGC BEAR in support of the counter-narcotic/interdiction mission. While deployed, Milwaukee provided maritime security presence

enabling the free flow of commerce in key corridors of trade.

“Throughout the life of the ship, the Sailors that sailed Milwaukee led the way in training and operations that led to fleet improvements and culminated with operational success that supported national security objectives and demonstrated U.S. commitment to our allies.” said Cmdr. Jason Knox, Milwaukee’s commanding officer. “Not only can her Sailors be proud of their distinctive accomplishments, but the City of Milwaukee, Wisconsin can be proud of their ship, too.”

Milwaukee was designed by Lockheed Martin and constructed by Marinette Marine Corporation (Fincantieri) Marinette, Wisconsin, Milwaukee was commissioned November 21, 2015, in Lake Michigan at Milwaukee’s Veteran’s Park. Mrs. Sylvia Panetta, wife of former Secretary of Defense Leon Panetta, served as the ship’s sponsor.

USS Milwaukee (LCS 5) is the fifth United States Navy Warship named after the city of Milwaukee, Wisconsin. The ship represents the proud people of the Milwaukee community. Upon decommissioning, Milwaukee’s Sailors will receive follow-on orders to new assignments.

LCS are fast, agile, mission-focused platforms designed to operate in near-shore environments, winning against 21st-century coastal threats. LCS are versatile and are capable to support a broad spectrum of fleet missions and operate alongside regional navies and coast guards while supporting forward presence, maritime security, sea control, and deterrence missions around the globe.

For more news from Commander, Littoral Combat Ship Squadron Two, visit https://www.surflant.usff.navy.mil/lcsron2/ or follow on Facebook at https://www.facebook.com/comlcsron2/