

# Garmin G3000 Selected to Modernize Navy and Marine Corps F-5 Aircraft



An F-5N Tiger-II from the “Sun Downers” of Fighter Squadron Composite 111 takes off from Naval Air Station Key West’s Boca Chica Field in 2020. *U.S. NAVY / Danette Baso Silvers*

OLATHE, Kansas – Garmin International Inc. announced Sept. 13 the selection of the Garmin G3000 integrated flight deck by Tactical Air Support Inc. as part of a contract with the U.S. Department of Defense’s F-5N+/F+ Avionics Reconfiguration and Tactical Enhancement/Modernization for Inventory Standardization (ARTEMIS) program.

Tactical Air first selected the Garmin G3000 for their F-5 adversary aircraft training fleet in 2018. This recent award builds upon Tactical Air and Garmin’s strategic relationship now serving the DoD fleet of F-5 adversary aircraft. Garmin’s commercial-off-the-shelf G3000 open architecture supports integration with a wide range of mission equipment including military sensors, helmet mounted displays and advanced

electrically scanned radar systems.

"It is an honor to team with Tactical Air and have our versatile G3000 integrated flight deck chosen for the ARTEMIS contract with the Department of Defense," said Carl Wolf, Garmin vice president of aviation sales and marketing. "Garmin is proud to see our integrated flight deck technologies, deployed now on over 25,000 aircraft, also being adopted by the U.S. military and enhancing the mission and safety capabilities of our nation's warfighters."

The F-5 is a supersonic, multi-role tactical fighter and attack aircraft that in this role will provide air-to-air combat training, close-air support training, tactical development and evaluation support. The upgraded F-5 Advanced Tiger will be used in an aggressor training role, and the G3000 will transform the cockpit with one large area display and two touchscreen controllers. These upgrades bring modern safety systems and new tactical capabilities to the older airframes while also solving parts obsolescence and reliability issues within the existing avionics system.

"Tactical Air is thrilled to have Garmin's cutting edge G3000 in the F-5 AT cockpit," said RC Thompson, Tactical Air CEO. "The Garmin integrated flight deck gave us an outstanding COTS solution to the Navy and Marine Corps' recently purchased fleet of F-5 aircraft to make them an even more capable adversary fighter for our aviators to train against."

The G3000 boasts a large and vibrant high-resolution flight display that seamlessly interfaces to the F-5's existing mission computer, enabling advanced mapping, tactical radio capabilities, radar display and more. The non-proprietary interface, software-based human-machine interface and mission integration will enable the DoD to rapidly deploy new technologies in the future, while providing access to the latest in commercial Communication, Navigation, Surveillance/Air Traffic Management (CNS/ATM) capabilities.

Tactical Air has integrated the L3Harris ForceX mission computer along with a wide range of military sensors, communications equipment, and weapons systems into the G3000 touchscreen HMI.

In addition to night vision goggle compatibility, the G3000 contains modern, state-of-the-art synthetic vision technology that blends an “out-the-window” view of surroundings on the large area, primary flight displays, which is particularly helpful during nighttime operations and during close air support missions. Additional features within the G3000 integrated flight deck on the F-5 include Terrain Awareness and Warning System, Traffic Collision Avoidance System and Automatic Dependent Surveillance-Broadcast (ADS-B IN) traffic.

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## **USNS Mercy Team Concludes Pacific Partnership in Solomon Islands**



Pacific Partnership 2022 leadership, Solomon Island leaders and members of the international diplomatic corps in the Solomon Islands pose for a photo during the PP22 Solomon Islands closing ceremony aboard Military Sealift Command hospital ship USNS Mercy (T-AH 19). *U.S. NAVY / Mass Communication Specialist 2nd Class Jacob Woitzel*

SOLOMON ISLANDS – The Solomon Islands-Pacific Partnership 2022 team wrapped up two weeks of collaboration across several lines of effort during a closing ceremony on board USNS Mercy (T-AH 19), on Sept. 10, Leslie Hull-Ryde of Commander, Logistics Group Western Pacific, said in a Sept. 14 release.

Now in its 17th year, Pacific Partnership is the largest annual multinational humanitarian assistance and disaster relief preparedness mission conducted in the Indo-Pacific. This year, the hospital ship USNS Mercy (T-AH 19) serves as the PP22 mission platform.

While this year's mission marked Mercy's inaugural visit to Solomon Islands, Pacific Partnership 2022 returned to the Solomon Islands late August, continuing to build on a

foundation established during the previous four PP missions here.

“It’s great to bring Pacific Partnership back to Solomon Islands and continue to deepen these friendships and partnerships we hold so dear,” said Capt. Hank Kim, Pacific Partnership 2022 mission commander.

Pacific Partnership is a unifying mission that fosters enduring friendship and cooperation among many nations. This year’s mission in the Solomon Islands includes participants from the host nation, the United States, Japan and Australia.

“This collaborative effort amongst our partners and hosts is what this mission is all about,” Kim said. “As we learn from each other and grow as professionals, we enhance our collective ability to respond to any disaster we may face. As the Pacific Partnership moto goes, ‘we are preparing in calm to respond in crisis’.”

PP22 events are coordinated with the host nation and are planned based on the requirements and requests of the Solomon Islands. Engagements in Honiara and beyond included medical care and exchanges, engineering projects, discussions on humanitarian assistance and disaster relief, and community outreach events, including band concerts and sporting events.

During the mission stop, the PP22 team conducted more than 5,800 medical engagements, including more than 4,500 dental procedures, distributing more than 1,000 eyeglasses, and performing more than 50 surgeries; more than 80 consultations with local pet owners; a humanitarian assistance and disaster relief workshop that included the Solomon Islands National Disaster Management Office and other first responders; 16 band concerts; and four engineering projects. In addition to events in Honiara and Guadalcanal Province, Pacific Partnership activities, to include medical knowledge exchanges, took place



in Gizo and Malaita.

In addition to Solomon Islands, this year's Pacific Partnership mission included stops in Vietnam, Palau, the Philippines and engineering engagements in Fiji and Papua New Guinea.

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## Boeing Reveals First of New Innovative Defense Factories



Boeing Phantom Works' Advanced Composite Fabrication Center in Mesa, Arizona, leverages the latest in digital engineering and advanced manufacturing to produce components for future advanced combat aircraft. *BOEING*

MESA, Ariz. – Boeing's Defense, Space & Security business unit unveiled on Sept. 12 its new Advanced Composite Fabrication Center, which has been purpose-built to produce advanced composite components for future combat aircraft, the company

said in a release.

The new facility in Mesa, Arizona, will be a secure production facility operated by Phantom Works, BDS' proprietary research, development and prototyping division. The construction phase of the 155,000 square-foot facility is now complete, and the center is expected to be fully operational this fall.

"Boeing pioneered a new era of digital aerospace engineering on programs like the T-7, MQ-25 and MQ-28, and now we're leading the way again by digitally transforming our entire production system to build the next generation of advanced combat aircraft," said Ted Colbert, Defense, Space & Security president and CEO. "The new Advanced Composite Fabrication Center and the factories that will follow it position Boeing to deliver the most digitally advanced, simply and efficiently produced and intelligently supported aircraft to military customers."

Leveraging best practices from recent new-start programs like the MQ-28 Ghost Bat, MQ-25 Stingray, T-7A Red Hawk and proprietary efforts, the ACFC will enable Boeing to scale a platform-agnostic, modular and flexible digital production system across future BDS programs, providing unprecedented speed, agility and cost efficiency. Additional new factories supporting subsequent phases of production are under construction in the St. Louis region and slated to come online over the next few years.

"The ACFC capitalizes on the latest in digital engineering – from initial concept and design to the production floor and sustainment – and its capabilities are aligned directly with our customers' need to design, build and field advanced combat aircraft on dramatically accelerated timelines," said Steve Nordlund, Boeing Phantom Works vice president and general manager. "We are committed to a future where our platforms are more modular and adaptable, our software is more modifiable and scalable, and where our customers have a common experience

across all of our products – providing disruptive advantages from seabed to space.”

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# HII Begins Fabrication of Amphibious Transport Dock Ship Pittsburgh



HII's Ingalls Shipbuilding division in Pascagoula, Mississippi. *HII*

PASCAGOULA, Miss. – HII's Ingalls Shipbuilding division started fabrication of the U.S. Navy's newest San Antonio-class amphibious transport dock Pittsburgh (LPD 31) on Sept. 7, the company said in a release. The start of fabrication signifies that the first 100 tons of steel have been cut for the ship.

“The start of fabrication on LPD 31 demonstrates our ability



to continue manufacturing quality ships for our Navy and Marine Corps partners,” said Mike Pruitt, Ingalls Shipbuilding LPD program manager. “Our shipbuilders are excited to be reaching this milestone in construction and are committed to seeing Pittsburgh serve our nation well into the future.”

Ingalls has delivered 12 San Antonio-class ships to the Navy and has three more under construction, including Richard M. McCool (LPD 29), Harrisburg (LPD 30) and Pittsburgh (LPD 31), which will be the second Flight II LPD.

LPD Flight II is the next generation amphibious ship to replace Whidbey Island (LSD 41) and Harpers Ferry (LSD 49) classes of dock landing ships. Amphibious transport docks are a major part of the Navy’s 21st century expeditionary force, deployed with a U.S. Marine Corps Air-Ground Task Force for amphibious and expeditionary crisis response operations that range from deterrence and joint-force enablement to humanitarian assistance and disaster relief.

LPD 31 is the fifth Navy vessel to be named after the historic city of Pittsburgh, Pennsylvania. The first ship was an ironclad gunboat and served during the American Civil War. Since then, the name Pittsburgh has been assigned to four vessels that have served the U.S. during conflict.

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## **Navy F/A-18 Super Hornet Flies with LITENING Targeting Pod**



The LITENING advanced targeting pod has had its first flight on a Navy F/A-18 Super Hornet. *NORTHROP GRUMMAN*

ROLLING MEADOWS, Ill. – Northrop Grumman's LITENING advanced targeting pod has successfully completed its first test flights on the U.S. Navy's F/A-18 Super Hornet. The Navy selected LITENING to replace the legacy targeting pods on the F/A-18 fleet in early 2022.

"This first flight demonstrated LITENING's ability to rapidly add modern, upgradeable mission capabilities to the Super Hornet," said James Conroy, vice president, navigation, targeting and survivability at Northrop Grumman. "The pod's digital video, autonomous target tracking, and laser sensors will give Naval aviators an entirely new set of capabilities for operations over land and sea today, and the growth capabilities built into LITENING's modular design ensure that the pod can evolve to meet changing requirements."

During the flight, pilots executed maneuvers and operations representative of combat missions, including ground moving target tracking, air-to-air tracking and target designation. The pilots also engaged the eye-safe training laser mode that allows the pod to be used for realistic training with combat controllers on the ground. The pilots were able to carry out these operations without advance training, showing the ease of use that has been made possible by close collaboration with the aviation community.

LITENING is currently in service with the Marine Corps, Air Force, Air National Guard and international customers. Northrop Grumman has delivered more than 900 LITENING pods.

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## **Britain's Flagship Heads to USA Ahead of Autumn on European Operations**



NATO Ambassadors observe an F-35 Lightning jet land on the flight deck of Her Majesty's Ship Queen Elizabeth, Nov. 22, 2021. *U.S. MARINE CORPS / Staff Sgt. Bryani Musick*

WASHINGTON – In the coming months, HMS Queen Elizabeth will be at the heart of a powerful task group made up of thousands of Sailors, up to 10 ships, F-35B Lightning jets, helicopter squadrons and Royal Marines Commandos which will operate across Europe this autumn, said Georgina Burros, chief communications officer for Global Issues for the British Embassy in Washington, D.C.

But the aircraft carrier will first deploy to the East Coast of the United States to undertake parts of HMS Prince of Wales' deployment as its sister ship undergoes repairs.

"After a period of maintenance it is fantastic for the fleet flagship to be underway again to conduct operational activity with allies and partners," said Capt. Ian Feasey, HMS Queen Elizabeth's commanding officer.

The Royal Navy task force will work closely with allies and partners across Europe – from the Baltic all the way south to the Balkans and Black Sea region – over the coming months.

The operations are part of galvanized NATO efforts in the face of Russia's unprovoked invasion of Ukraine to safeguard security, stability and prosperity across Europe. HMS Queen Elizabeth will primarily be focused on operations in the Baltic and work closely with forces from Denmark, Estonia, Finland, Iceland, Latvia, Lithuania, the Netherlands, Norway and Sweden.

Together, these nations form the U.K.-led Joint Expeditionary Force, designed to react to crises whenever and wherever they unfold.

Before the operational phase of the deployment, HMS Queen Elizabeth will be in New York to host the Atlantic Future Forum, a conference that brings together the brightest minds and most influential thinkers from defense and beyond to strengthen U.K. and U.S. bonds.

Submarine-hunting frigate HMS Richmond will accompany the aircraft carrier across the Atlantic.

At the same time, the Royal Navy's Littoral Response Group is completing its final preparations before deploying to the Mediterranean to operate with NATO allies and partners in a region vital for European security.

The amphibious task group is made of more than a thousand Sailors and Royal Marines and will be led by HMS Albion.



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# Boeing Demos Open Autonomy Architecture for Manned-Unmanned Teaming with MQ-25



Boeing's MUM-T demonstration included three different naval aircraft tasking four virtual, autonomous MQ-25s to conduct intelligence, surveillance and reconnaissance missions. Here a simulated F/A-18 Super Hornet interacts with a simulated MQ-25. *BOEING*

ST. LOUIS – Boeing has digitally demonstrated a new open autonomy architecture for MQ-25 that will allow the U.S. Navy to increase mission effectiveness by integrating manned-unmanned teaming (MUM-T) capability at speed and scale, the company said Sept. 6.

The non-proprietary architecture, based on the government-

owned Open Mission System specification, is the foundation for advanced MUM-T. A Boeing-led team virtually demonstrated how other aircraft can use MQ-25's architecture and task it to conduct tanking and intelligence, surveillance and reconnaissance missions – all within the mission airspace and without traditional communications with the ship-based ground control station.

Boeing's MUM-T demonstration included Northrop Grumman's E-2D Advanced Hawkeye command and control aircraft, Boeing's P-8A Poseidon maritime patrol and reconnaissance aircraft and Boeing's F/A-18 Block III Super Hornet fighter. Using their existing operational flight program software and data links, the aircraft safely and efficiently tasked four virtual, autonomous MQ-25s to conduct ISR missions. The F/A-18 also used its advanced tactical data links and Boeing's conceptual "Project Black Ice" crew vehicle interface, which significantly reduced aircrew workload.

"Large swaths of ocean could be surveilled, identified and targeted when MQ-25 is teamed with carrier-based assets such as the E-2D or the land-based P-8A patrol aircraft," said Don "BD" Gaddis, director, MQ-25 Advanced Design. "Through this demonstration, our customers saw how this digital, open approach to MUM-T is key to fielding critical warfighting capability at much lower cost and with greater speed and agility."

For example, the demonstration showed how both the P-8A and E-2D could easily task an MQ-25 teammate with an ISR mission specifying only the search area and no-fly zones. Using an onboard autonomy framework developed by Boeing subsidiary Aurora Flight Sciences, the MQ-25 autonomously did the rest – including validating the command against its operational constraints, planning its route and conducting its search pattern, among many other tasks.

Aurora also created and demonstrated a prototype platform

abstraction layer – a software boundary that decouples MQ-25's flight safety and flight critical components from mission software and sensor hardware. This commercial best practice allows third-party "app" integration on MQ-25. Using an Aurora-provided software development kit, Naval Air Warfare Center Aircraft Division created a new radar search application for MQ-25 that was successfully used during the demonstration.

"Aurora's robust software development kit enables our Navy teammates to rapidly integrate new capabilities," said Graham Drozeski, vice president of Government Programs for Aurora Flight Sciences. "The platform abstraction demonstration met test objectives for resource sharing between multiple onboard systems and supervisors, and these efforts will greatly reduce government test and certification costs as new capabilities are added over time."

The demonstration was aligned to the future warfighting capabilities in the Navy's Unmanned Campaign Framework. Boeing will continue to refine the autonomy, sensors, interface exchanges and crew vehicle interfaces required for MUM-T.

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## **U.S. Maritime Forces Arrive for UNITAS LXIII hosted by Brazil**



A U.S. Marine Corps UH-1Y Venom helicopter assigned to Light Attack Helicopter Squadron (HMLA) 773 hovers above the landing pad of the San Antonio class dock landing ship USS Mesa Verde (LPD 19) in the North Atlantic Ocean, Aug. 16. HMLA 773 launched three UH-1Y Venom and two AH-1Z Viper helicopters from McGuire Air Force Base and embarked them aboard the USS Mesa Verde for transit to Brazil in support of exercise UNITAS LXIII hosted by the Brazilian Navy and Marine Corps. *U.S. MARINE CORPS / Cpl. Colton K. Garrett*

RIO DE JANEIRO, Brazil – Navy and Marine forces are set to arrive in Rio de Janeiro in support of UNITAS LXIII, the world's longest-running multinational maritime exercise scheduled to take place Sept. 8-22, the U.S. Naval Forces Southern Command / U.S. 4th Fleet said in a Sept. 1 release.

This year's exercise is hosted by the Brazilian navy and will included 20 participating nations, 19 ships, one submarine, 21 aircraft, accounting for approximately 5,500 total military personnel that will conduct operations principally off the coast of Rio de Janeiro.

UNITAS, Latin for “unity,” was conceived in 1959 and has taken place annually since first conducted in 1960. This year marks the 63rd iteration. This year, Brazil will host UNITAS in conjunction and celebration of the bicentennial anniversary of both their nation’s independence and navy’s founding.

“This exercise is an incredible opportunity for all participating nations to come together as professional mariners on the sea, under the sea, in the air and in the littorals, to operate and grow as a team in order to strengthen our partnerships and enhance our collective maritime posture,” said Rear Adm. Jim Aiken, commander U.S. Naval Forces Southern Command/U.S. 4th Fleet. “Congratulations to Brazil on 200 years of independence and excellence in the maritime domain on the sea and on the land.”

In addition to the United States, UNITAS LXIII will bring together 19 nations from across Central and South Americas, the Caribbean, Europe, and Africa to train forces in joint maritime operations that enhance tactical proficiency and increase interoperability. Participating nations include Belize, Brazil, Cameroon, Chile, Colombia, Dominican Republic, Ecuador, France, Guyana, Jamaica, Mexico, Namibia, Panama, Paraguay, Peru, South Korea, Spain, United Kingdom and Uruguay.

“Exercise UNITAS is a highly anticipated premier training opportunity for all the participating nations’ navies and marine corps in the Western Hemisphere,” said Lt. Gen. David Bellon, commander of U.S. Marine Corps Forces, South and Marine Forces Reserve. “UNITAS highlights the foundation of our partnerships and our dedication to building and sustaining the social and military relationships necessary to achieve common objectives and regional security.”

The initial in-port phase will include cultural exchanges, sporting events, community relations projects and the



opportunity for UNITAS LXIII partners to participate in bicentennial events such as the Bicentennial Naval Parade scheduled for Sept. 7 along the coast of Rio de Janeiro.

Following opening ceremonies on Sept. 8, naval forces will conduct combined and joint operations as a multi-national task force, executing an event-driven scenario to train in multiple warfare areas. Ships and sailors will head to sea for maritime operation training and Marines will move inland to conduct amphibious training ranges before coming back together in support of a culminating multinational amphibious landing.

A significant focus of UNITAS LXIII is the cooperation and integration of the multinational navy forces with marine corps and naval infantries. The maritime domain includes the littorals that incorporates the ocean and the area inland from the shore which can be supported and defended directly from the sea.

U.S. forces participating in UNITAS LXIII include USS Lassen (DDG 82), USS Mesa Verde (LPD 19), USS Albany (SSN 753), Commander, Amphibious Squadron Eight (COMPHIBRON 8), Helicopter Sea Combat Squadron 22 (HSC 22), Helicopter Maritime Strike Squadron 70 Detachment 2 (HSM 70 Det 2), Patrol Squadron Sixteen (VP-16), Special Boat Team 22 (SBT 22), Mobile Diving and Salvage Unit (MDSU) Det 2, Seal Platoon from Seal Team 8, Explosive Ordnance Disposal Mobile Unit Two (EODMU-2), Beachmaster Unit Two (BMU-2), USCG Pacific Area Tactical Law Enforcement Team (PAC AREA TACLET), Commander, Destroyer Squadron 40, (COMDESRON 40), Fleet Surgical Team (FST) 8, 25th Marine Regiment, 3d Battalion 25th Marine Regiment, 3d Force Reconnaissance Company, 4th Light Armored Reconnaissance Company (4th LAR), 4th Combat Engineer Battalion (4th CEB), 6th Engineer Support Battalion (6th ESB), 4th Air Naval Gunfire Liaison Company (ANGLICO), 4th Civil Affairs Group (4th CAG), Marine Aircraft Group 49 (MAG-49), U.S. Marine Corps Forces South (MARFORSOUTH), and

USNAVS0/FOURTHFLT.

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.

U.S. Marine Corps Forces, South is the Marine Corps component to U.S. Southern Command, is responsible for planning exercises, operation, and overall Marine Corps support for the SOUTHCOM assigned area of responsibility.

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**General Atomics Awarded  
Contract Continuing EMALS,  
AAG Evaluation for French  
Carrier**



French Armaments Procurements Agency (DGA) members observe flight operations on USS Gerald R. Ford's (CVN 78) flight deck during a ship visit, April, 23, 2021. DGA executive leadership visited Ford to view the electromagnetic aircraft launch system (EMALS) and advanced arresting gear (AAG) in operation, to enable France to refine the design of the Future French Carrier. *U.S. NAVY / Mass Communication Specialist 3rd Class Dalton Lowing*

SAN DIEGO – General Atomics Electromagnetic Systems announced it has been awarded a contract by US Naval Air Systems Command to continue development and evaluation of tailored configurations of the Electromagnetic Aircraft Launch System (EMALS) and Advanced Arresting Gear (AAG) as a potential Foreign Military Sale to the French navy for their next generation aircraft carrier, Porte-Avions Nouvelle Génération (PANG).

"We are proud to be supporting the ongoing efforts between our nations to realize the potential of integrating EMALS and AAG onboard the future flagship of the French Marine Nationale," said Scott Forney, president of GA-EMS. "For decades, France's

Charles de Gaulle and U.S. Nimitz-class carriers have provided interoperable capabilities to conduct joint operations and launch and recover aircraft on each other's ships. EMALS and AAG onboard next generation French and U.S. aircraft carriers will provide increased interoperability between our navies and greater flexibility to launch a wider range of current and future aircraft for the decades to come."

GA-EMS will continue evaluating optimal EMALS and AAG configurations for performance and document ship interfaces and impacts on the PANG. The contract will culminate in 2023 with a system requirements review and an evaluation of French suppliers for potential component manufacturing in France.

Under previous contract awards over the past two years, GA-EMS participated in carrier studies to investigate the feasibility of implementing EMALS and AAG for the future French carrier design. In December 2021, the U.S. State Department announced it approved a possible Foreign Military Sale for a two EMALS and three AAG configuration to France.

The first-in-class USS Gerald R. Ford (CVN 78) recently completed its 10,000th successful launch and arrested landing using EMALS and AAG. The systems continue to perform successfully as CVN 78 prepares for its upcoming deployment. GA-EMS is currently under contract with the Navy to support CVN 78 sustainment requirements and is delivering EMALS and AAG for the next two Ford-class carriers currently under construction, John F. Kennedy (CVN 79) and Enterprise (CVN 80). GA-EMS is also working with the Navy to determine the EMALS and AAG contract and schedule requirements for the fourth Ford-class aircraft carrier, Doris Miller (CVN 81).

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# Australian Navy Submariners to Train on British Nuclear Submarines



Australian submariners will train on the new U.K. submarine HMS Anson. *U.K. MINISTRY OF DEFENCE*

LONDON – Royal Australian Navy submariners will join United Kingdom crews to train on the newly commissioned Astute-class nuclear-powered attack submarine HMS Anson, the U.K. Ministry of Defence said Aug. 31.

Prime Minister Boris Johnson and Defence Secretary Ben Wallace hosted new Australian Deputy Prime Minister Richard Marles at Barrow to see the commissioning of the Anson.

The announcement came as Marles and Wallace emphasized the importance of the deep defense ties between the U.K. and Australia, following the development of the trilateral AUKUS partnership working with the United States, which was represented today by the U.S. Defense Attaché, Navy Capt. Leland.

Hosting Marles on his first official visit to the U.K. since the new Australian government came to power, the prime minister and ministers attended the commissioning of the fifth of seven new Astute-class Royal Navy submarines.

With naval capability at the center of the two powers' future



defense relationship, the visit reinforced the priorities of the Integrated Review and significance of the AUKUS partnership, which links the U.K., the United States and Australia in promoting stability in the Indo-Pacific region.

The U.K. and U.S. already have welcomed Royal Australian Navy personnel on its specialized nuclear training courses, and more will follow next year, before Australian submariners go to sea. The training and exchanges mark the beginning of a multigenerational naval partnership between the three AUKUS nations.

Marles, who is also minister for defense, visited Barrow, having also seen the Type 26 frigate shipbuilding facility in Govan, accompanied by the First Sea Lord, Adm. Sir Ben Key.

"Today is a significant milestone in the U.K. and Australia's preparation to confront growing threats to the liberal democratic order, especially in the Indo Pacific," said Wallace. "Not only have we progressed our defense planning but Minister Marles participated in the commissioning of our latest attack submarine, on which will Royal Australian Navy submariners will be embarked as we develop our shared capabilities in the years ahead."

One of the most sophisticated underwater vessels ever built, HMS Anson represents £1.3 billion of U.K. investment. Capable of defending the U.K.'s interests at home and overseas, HMS Anson will be armed with up to 38 Spearfish Heavyweight Torpedoes and Block V Tomahawk land attack missiles, able to tackle targets at a range of up to 1,000 miles.

"HMS Anson is the cutting edge in submarine design and construction, ensuring operational advantage in the underwater battlespace, the last great stealth domain," said Key. "Given the world we live in, there is no more important tool in the United Kingdom's arsenal: silent, unseen, and a key instrument of our global, modern, ready Royal Navy."

At 97 meters long, HMS Anson stands at around the length of two Olympic swimming pools, with 240 kilometers of cabling, enough to stretch from Barrow-In-Furness to its new home in Faslane, Scotland.

HMS Anson will remain in Barrow for the coming weeks while undergoing final checks and rigorous testing to the numerous complex systems that make up a nuclear-powered submarine, before sailing to HM Naval Base Clyde in Faslane to prepare for sea trials.

HMS Anson will join four other Astute Class submarines in service with the Royal Navy – HMS Astute, HMS Ambush, HMS Artful and HMS Audacious.

Two further boats – Agamemnon and Agincourt – are in various stages of construction at BAE Systems' Barrow-In-Furness site as part of £11.2 billion overall investment in the whole Astute-class program.