

# Navy's AARGM-ER to Enter Production



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 photo*

PATUXENT RIVER, Md. – The Navy's Advanced Anti-Radiation Guided Missile – Extended Range (AARGM-ER) received Milestone C (MS-C) approval Aug. 23, allowing the program to move into its first phase of production, the Naval Air Systems Command said in an Aug. 25 release.

The Navy plans to award the first two low-rate initial production lots over the next several months.

“The combined government/industry team has worked tirelessly over the last few years to reach this milestone,” said Capt. Alex Dutko, Direct and Time Sensitive Strike (PMA-242) program manager. “We look forward to getting this new weapon with its increased capability and lethality out to the fleet as soon as possible.”

The MS-C decision comes just over two years after the Navy awarded the Engineering and Manufacturing Development (EMD) contract to its prime contractor, Northrop Grumman. The team conducted the first live-fire event in July to verify system integration and rocket motor performance, as well as initiate modeling and simulation validation.

Captive and live fire flight testing is planned to continue through 2022 and initial operational capability is planned for 2023.

The Navy is integrating AARGM-ER on the F/A-18E/F and EA-18G, and it will be compatible for integration on the F-35. By

leveraging the U.S. Navy's AARGM program, the AARGM-ER with a new rocket motor and warhead will provide advanced capability to detect and engage enemy air defense systems.

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# USS George H.W. Bush Completes Drydocking Availability at Norfolk Naval Shipyard



(Aug. 26, 2021) The aircraft carrier USS George H. W. Bush (CVN 77) transits the Atlantic Ocean after completing a Docking Planned Incremental Availability at Norfolk Naval Shipyard. GHWB is operating in the Atlantic Ocean in support of naval operations to maintain maritime stability and security in order to ensure access, deter aggression and defend U.S., allied and partner interests. *U.S. Navy/Mass Communication Specialist 3rd Class Novalee Manzella*

NORFOLK, Va. – USS George H.W. Bush (CVN 77) departed Aug. 26 for sea trials, marking completion of one of the largest and most complex aircraft carrier availabilities conducted at Norfolk Naval Shipyard (NNSY), NNSY Public Affairs and USS George H.W. Bush Public Affairs said in a joint Aug. 26 release.

The Drydocking Planned Incremental Availability (DPIA), which began in February 2019, marked Bush's first time out of the water since 2006. The shipyard workforce contributed 762,500 workdays of the 1.3 million workday availability, with the ship's crew, Alteration Installation Teams and contractors comprising the rest.

The DPIA included a number of complicated planned efforts including a complete shaft and propeller overhaul, rudder refurbishment, catwalk and tank preservation, and modernization and upgrades to electronic and combat systems, catapults, and hotel services.

“At the beginning of this challenging availability I shared with the project team this would be a marathon event due to the large work package and the length of time it would take to return George H.W. Bush to the Fleet,” said Project Superintendent Jeff Burchett. “At that time, we had no idea what we would face with the COVID 19 pandemic and the additional challenges it brought to the team to overcome such a major obstacle on top of the planned work. The team stepped up and worked through it.”

The ship’s commanding officer Capt. Robert “Aggs” Aguilar was complimentary of the collaboration between NNSY and the crew.

“The end of this maintenance period marks the beginning of our team’s ability to execute our primary mission which is to provide combat capability to Fleet and Joint Force commanders whenever and wherever it is needed,” said Aguilar. “We remain grateful for the teamwork with Norfolk Naval Shipyard to get us back to sea. Now the crew of George Herbert Walker Bush will bring the ship to life and return her to full operational capability.”

NNSY implemented process improvement and innovations in several areas of the availability, including the U.S. Navy’s first organic cold spray repairs at any of the four public shipyards to repair components on Bush. Laser scanning was used to facilitate installation of sponsons onboard, supporting first time quality. Additionally, the shipyard’s special emphasis group developed unique weight handling equipment using electric winches for servicing components while in dry dock.

“The team has been all-in with either fixing or elevating any issues as they occurred, with non-stop execution in mind to ensure USS George H.W. Bush was returned to the Fleet,” said Shipyard Commander Capt. Dianna Wolfson. “With such an extensive and challenging availability, it took a daily commitment from our team members in delivering technical excellence and skilled craftsmanship on Bush so it could be ready to excel in its mission and demonstrate Freedom at Work.”

The ship will now complete sea trials and multiple certifications before beginning a pre-deployment training cycle.

“It’s been a unique privilege leading the project team of this availability throughout its entire duration at Norfolk Naval Shipyard,” said Burchett. “When starting the project, we adopted a quote from George H.W. Bush himself: ‘This is my mission and I will complete it.’ It’s taken a lot of teamwork and perseverance, on top of working through unexpected challenges, but today we can say the mission is complete and USS George H.W. Bush—and the Navy—is all the better for it.”

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## **Sailor, Marines Killed in Kabul Terrorist Attack**



UK coalition forces, Turkish coalition forces, and U.S. Marines assist a child during an evacuation at Hamid Karzai International Airport, Kabul, Afghanistan, Aug. 20. At least 13 U.S. military personnel were killed and 15 wounded in a suicide bomb attack six days later. *U.S. MARINE CORPS / Staff Sgt. Victor Mancilla*

*This report was updated on Aug. 27.*

ARLINGTON, Va. – A suicide bomber attacked a gate at the Hamid Karzai International Airport in Kabul, Afghanistan, Aug. 26, killing 13 U.S. military personnel and wounding at least 15 others, U.S. military officials said.

Killed were 11 Marines and one Sailor, according to official statements as of 27 Aug. A press report said that the 13<sup>th</sup> military person killed was a soldier. The service identities of the 15 wounded personnel have not been announced yet, pending notification of next of kin, though some are confirmed to be Marines, according to the HQMC statement.

The units of the dead and wounded have not been announced. The 24th Marine Expeditionary Unit, staged from the USS Iwo Jima Amphibious Ready Group, had dispatched Marines to Kabul in mid-August as part of the U.S. forces deployed to the Kabul airport to evacuate Americans and certain Afghan nationals who had helped with the U.S. war effort.

The attack is believed to have been conducted by ISIS-K, rather than the Taliban, said Marine Gen. Kenneth F. McKenzie Jr., commander, U.S. Central Command, speaking Aug. 26 via internet link to reporters at the Pentagon. At least 79 other people were killed at the scene of the attack, which included small arms fire as well as a suicide vest.

A second attack thought to have occurred at the Baron Hotel near the airport turned out not to have occurred, said Army Maj. Gen. William “Hank” Taylor, the Joint Staff’s deputy director of regional operations, in an Aug. 27 briefing to reporters.

Secretary of Defense Lloyd J. Austin III issued the following statement:

“On behalf of the men and women of the Department of Defense, I express my deepest condolences to the loved ones and

teammates of all those killed and wounded in Kabul today.

“Terrorists took their lives at the very moment these troops were trying to save the lives of others.

“We mourn their loss. We will treat their wounds. And we will support their families in what will most assuredly be devastating grief.

“But we will not be dissuaded from the task at hand.

“To do anything less – especially now – would dishonor the purpose and sacrifice these men and women have rendered our country and the people of Afghanistan.”

Chief of Naval Operations Adm. Mike Gilday also memorialized in the following statement the Navy and Marine Corps personnel lost in the attacks:

“This is a solemn day for the U.S. Navy and Marine Corps team. Those warriors who died gave their lives to save thousands of men, women and children, Americans and Afghans alike.

“Their courage and selflessness represent the highest ideals of America. We pay solemn tribute to their sacrifice.

“To the families and loved ones who grieve – you are not alone. We stand beside you in this pain, humbled by the loss of these heroes, grateful that individuals of such valor chose to serve among us.”

Commandant of the Marine Corps Gen. David H. Berger issued the following statement:

“It is with extremely heavy hearts that we learned several Marines and other service members were killed and wounded in the Kabul attacks today. Our thoughts and prayers are with the families as they are notified of this devastating loss.

“These fallen heroes answered the call to go into harm’s way

to do the honorable work of helping others. We are proud of their service and deeply saddened by their loss. As we mourn, we also keep those who are still over there protecting Americans and our Afghan partners at the forefront of our thoughts. Our Marines will continue the mission, carrying on our Corps' legacy of always standing ready to meet the challenges of every extraordinary task our Nation requires of her Marines.

"I am continually humbled by the courage and warrior spirit exhibited every day by Marines across the globe. The sacrifices Marines make on behalf of freedom must never go unnoticed or unappreciated. I ask that you keep these Marines and service members, and especially their families, in your thoughts and prayers."

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## **STRATCOM Chief: China's Nuclear Buildup a 'Strategic Breakout' Requiring U.S. Strategic Rethinking**



U.S. Navy Adm. Charles A. Richard, commander of U.S. Strategic Command (USSTRATCOM), provides remarks during the 24th annual Space and Missile Defense Symposium at the Von Braun Center in Huntsville, Alabama, Aug. 12. *U.S. NAVY / Capt. Ron Flanders*  
ARLINGTON, Va. – The Chinese government's rapid military buildup across all domains is a "strategic breakout" from its minimum deterrent nuclear posture to one that can coerce other nations, the commander of U.S. strategic forces warned Aug. 25.

Rapid expansion of intercontinental ballistic missile (ICBM) silos, road mobile ICBMs, six or more Jin-Class ballistic missile submarines carrying nuclear weapons that can reach the continental United States from the South China Sea, and bombers armed with air-launched ballistic missiles have given China a “true triad” of sea, air and land nuclear capability, Adm. Charles Richard, head of U.S. Strategic Command said.

In a virtual conversation with Hudson Institute Senior Fellow Rebecca L. Heinrichs, Richard said that amounted to a “final brick in the wall, a final piece of capability designed to build a military that is capable of coercion.”

Given the changing threat environment, “right now is the ideal time” for Defense Secretary Lloyd Austin’s planned reviews of the national defense strategy, nuclear posture and missile defense, Richard said. “We have never before had two peer nuclear-capable opponents [Russia and China] that have to be deterred at the same time, [but] we have to deter differently.”

Russia remains the strategic and nuclear pacing threat “at least for a little bit longer,” with over 2,000 non-treaty constrained warheads and novel capabilities like hypersonic weapons, Richard said.

The United States is developing its own hypersonic weapons. The Navy plans to first deploy Conventional Prompt Strike (CSP) capability hypersonic missiles on Zumwalt-class guided missile destroyers and later, Virginia-class Block 5 submarines. STRATCOM has both strategic deterrence and nuclear deterrence as missions.

“If we had this [hypersonic] capability, it would enable us to accomplish strategic deterrence better than what we can do using the nuclear effect alone,” Richard said.

STRATCOM “will be ready to receive the first service hypersonic capability at intercontinental range the day they

make it available,” he said. “We are already working the concepts. I have the targeting. I have the command and control.”

Analysts studying commercial satellite images in recent weeks have discovered the Chinese government is building two large fields of ballistic missile launching silos in the country’s western desert, but U.S. officials including Richard, have not commented directly on the development.

The STRATCOM chief said it is not enough to plan around all the missiles, submarines and other weaponry the People’s Liberation Army already has.

“It would not be a wise assumption to think somehow ‘They’re done,’” Richard said, explaining that officials should not lose sight of “What is the next thing we’re going to find, and where does this end?”

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## **Navy Tests Second Stage Hypersonic Rocket Motor**



Navy Strategic Systems Programs conducted a successful test of the Second Stage Solid Rocket Motor on Aug. 25 as part of the development of the Navy’s Conventional Prompt Strike offensive hypersonic strike capability and the Army’s Long Range Hypersonic Weapon. *U.S. NAVY*

WASHINGTON – Navy Strategic Systems Programs successfully conducted a test of the Second Stage Solid Rocket Motor (SRM) Aug. 25 in Promontory, Utah, as part of the development of the Navy’s Conventional Prompt Strike offensive hypersonic strike capability and the Army’s Long Range Hypersonic Weapon, Navy

SSP public affairs said in an Aug. 26 release.

This was the initial live-fire test of the second stage SRM and follows a successful test of the first stage SRM on May 27. This test marked the successful testing of both stages of the newly developed missile booster, as well as a thrust vector control system on the SRM. These tests are a vital step in the development of a Navy-designed common hypersonic missile that will be fielded by both the Navy and Army.

The second stage SRM will be part of a new missile booster for the services and will be combined with a Common Hypersonic Glide Body (CHGB) to create the common hypersonic missile. Each service will use the common hypersonic missile, while developing individual weapon systems and launchers tailored for launch from sea or land. This successful SRM test represents a critical milestone leading up to the next series of Navy and Army joint flight tests and will lead to the fielding of the CPS and LRHW weapon systems.

The Department of Defense successfully tested the CHGB on March 20, 2020. The services are working closely with government national laboratories and industry to continue development and production of the CHGB. The Navy is the lead designer of the CHGB, and the Army leads production of the CHGB.

Information gathered from this and future tests will further inform the services offensive hypersonic technology development. The Department of Defense is working in collaboration with industry, government national laboratories, and academia to field hypersonic warfighting capability in the early-to mid-2020s.

Hypersonic weapons, capable of flying at speeds greater than five times the speed of sound, or Mach 5, are highly maneuverable and operate at varying altitudes. In a matter of minutes, Navy and Army warfighters can defeat high-value

targets hundreds or even thousands of miles away. Delivering hypersonic weapons is one of the DoD's highest priorities.

The common hypersonic missile design for sea and land-based applications provides economies of scale for future production and relies upon a growing U.S. hypersonics industrial base.

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## Navy Orders Three PteroDynamics UAS to Deliver Cargo



PteroDynamics' Transwing vertical takeoff and landing unmanned aircraft. *PTERODYNAMICS*

COLORADO SPRINGS, Colo. – PteroDynamics, an aircraft design and manufacturing company that develops innovative vertical take-off and landing (VTOL) aircraft, has secured a contract with Naval Air Warfare Center Aircraft Division (NAWCAD) to deliver three VTOL prototypes for the Blue Water Maritime Logistics UAS program, the company said in an Aug. 23 release.

In 2018, Military Sealift Command and Fleet Forces Command identified a need for the United States Navy to develop a capability to autonomously deliver cargo with unmanned aircraft to and from ships at sea. Their analysis found that 90% of critical repair cargo delivered at sea by helicopters and V-22 aircraft weighed less than 50 pounds. A VTOL UAS can fill this critical need and free the manned aircraft to perform other higher priority missions.

“We are honored to be selected for this important project,”

said Matthew Graczyk, PteroDynamics' CEO. "This contract is the start of an important partnership, and we look forward to delivering the prototypes to NAWCAD."

"This is an exciting milestone for our distinctive VTOL aircraft," added Val Petrov, PteroDynamics' founder and chief technology officer. "Our design is well suited for operations on ships where windy conditions and tight spaces challenge other VTOL aircraft during takeoffs and landings."

"Using unmanned, autonomous aircraft for delivery of these critical payloads is an important capability for the Navy to have," said Blue Water's project lead, Bill Macchione. "The innovative design of PteroDynamics offers significant potential for both military and civilian missions."

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## **Advising for Growth: Coast Guard's 5th District Monitors Massive Mid-Atlantic Maritime Expansion**



The CMA CGM Marco Polo, the largest container ship to call on a U.S. East Coast port, arrives at the Port of Virginia in May. *PORT OF VIRGINIA*

The Port of Virginia is something of a little-understood region on the nation's vast maritime map, and yet is one of the busiest, most strategically important ports in the nation.

Located at Hampton Roads, it ranks seventh among North America's largest ports, with five major terminals (compared

to 25 at the Port of Los Angeles, the largest, and probably best-known port). It's a neighbor to the world's largest naval base, Naval Station Norfolk.

Like much of the nation's maritime infrastructure, the general public often doesn't see the mighty industrial lifting done at a port like the Port of Virginia, which employs nearly 400,000 people directly and indirectly and contributes about \$92 billion annually to Virginia's economy.

Its public profile could increase over time, not least due to the ever-expanding economy in the Mid-Atlantic region that has resulted in a 2.6% compounded annual growth rate since 2015, according to data from the Port of Virginia's 2020 Annual Report. The primary drivers of Virginia's transformative growth – which translates into more cargo, new jobs and bigger regional investments – is the arrival or expansion of multinational companies like Amazon, engineering giant Navien and Acesur, which specializes in IT and enterprise security.

### **Coast Guard Oversight**

The 5th District of the U.S. Coast Guard, which has four sectors stretching from New Jersey to South Carolina, advises on how to accommodate this economic growth while making sure the waterways are also safe for traditional maritime uses.

Rear Adm. Laura M. Dickey, 5th District commander, says there have been a host of changes in Virginia and the rest of the region, from adapting to massive container ships to dealing with renewable energy needs and climate-related initiatives.

"There is a tremendous amount going on across the district," Dickey told *Seapower*. "In addition to our normal Coast Guard missions, we are really seeing an explosion of growth in the maritime transportation system, in the ports and in trying to keep up with that, making sure that the traditional uses of the waterways, and these new uses – or these growing uses – will work in concert with each other.

“And then where is our role in that? [We are] making sure that we’re prepared for these changes that we’re seeing, and doing our part to evaluate them, and doing so in a holistic way that integrates all the different aspects of what happens in a port, or the approaches to our ports from offshore.”

Dickey said the Coast Guard team in the 5th District is adapting much like their maritime partners to new uses of the waterways, including offshore renewable energy initiatives – mainly wind farms – and, to a lesser extent, preparations for sea level rise.

With new construction in the region, for example, the Coast Guard is tasked with examining these projects and their parameters. It’s more of an advisory role rather than a regulatory or law enforcement capacity, an important distinction given the cross-section of different interest groups and government agencies.

“The Port of Virginia is going through some amazing expansion, [and] there is a tremendous amount of activity going on,” Dickey said. “We have our traditional [missions] but we also have some uncharted territory and this explosive growth that all has to be harmonized ... so that these activities in these ports happen safely and are done in a way that supports the economy but also takes into consideration all of the other traditional uses of our waterways.”

Dickey said wind farms are at the center of new development throughout the 5th District. There are at least eight projects in development potentially in the Mid-Atlantic region. In Virginia, the Coastal Virginia Offshore Wind project is in its initial phase. Located about 27 miles off the coast of Virginia Beach, the pilot project consists of two 12-megawatt turbines that cost about \$300 million and are expected to generate enough electricity to power 3,000 homes. It is the second offshore wind farm operation in the United States after Block Island Wind Farm in Rhode Island.

“Wind farms are huge,” Dickey said. “It is an emerging area, and it is one where the Coast Guard is not responsible for signing off on the permit, but we do play a role in advising the Bureau of Ocean Energy Management and others. Our role is to review the projects and see how they fit with traditional uses of the waterways to make sure that we are able to do our own missions.”

The Coast Guard works with multiple partners, interest groups and fellow federal agencies on wind farm programs, having done so in the Northeast for more than two decades to support the construction of wind farms in Block Island and Nantucket Sound (the latter was rejected by local interest groups in 2017). Communication, transparency and sharing knowledge are the key to successfully executing such projects.

“If you have wind farms that are too close together, can you still do search and rescue properly in there, or do they run into traditional fisheries grounds, or are they in the way of traditional or necessary fairways so that commerce can come in and out?” Dickey said.

“There are an awful lot of these projects. It is the wave of the future, and it is something that we are having to rapidly adjust to make sure that we’re looking at things in a holistic way. We are working with headquarters and everybody to make sure that we come up with a process that is repeatable and standardized in a sense but is also flexible to adjust to the particulars of each project.”

Dickey cited several port deepening projects, among them the Ports of Wilmington, North Carolina and Delaware Bay, where ongoing deepening and dredging of ports and harbors is essential for handling the increasingly larger container vessels coming daily through the port to one of the area terminals.

Dickey described a constant cycle of challenges in keeping up

with growing trade volume at the Port of Virginia, which is the No. 1 exporter of vegetables and soybean products, and a leader in recycled wastepaper and animal feed exports.



The Ewell, a U.S. Army Corps of Engineers Norfolk District survey vessel, sails past cranes at the Virginia Port Authority's Norfolk International Terminal. The first phase of Norfolk Harbor's deepening project is set to begin next January. *U.S. ARMY / Patrick Bloodgood*

### **Fewer, but Larger, Ships**

In late May of this year, the CMA CGM Marco Polo, the largest container ship to call on a U.S. East Coast port, arrived at Virginia International Gateway, marking a milestone for the Port of Virginia. The vessel is nearly 1,300 feet long and can carry 16,022 20-foot equivalent units.

"[Trade] is such a huge part of our economy and globalization and the Coast Guard has got to make sure that it happens safely, and how do we do that," said Dickey. "The Coast Guard is agnostic on all of this. Our job is to make sure that maritime activity occurs safely and is deconflicted."

Also underway are tunnel and road expansions at the Chesapeake Bay Bridge-Tunnel and with the Hampton Roads Bridge-Tunnel (HRBT) Expansion Project. In a groundbreaking ceremony in October 2020, officials kicked off the \$3.8 billion HRBT Expansion Project, which will add twin, two-lane bored tunnels and widen portions of Virginia's Interstate 64 to reduce congestion and ease access to the Port of Virginia and Naval Station Norfolk. The project, which gets underway in 2022, is the largest infrastructure project in the commonwealth's history.

"The [projects] are going on across the Mid-Atlantic region as these ports all try to remain competitive," Dickey said. "It is an interesting thing where the volume of ships goes down because [the vessels] are able to carry so much more. But you

need to accommodate these large ships, and what does that do for the safety of ships as they try to pass each other in channels? Does it shut down things?"

Dickey said her team in the 5th District is doing is Port Access Route Studies, or PARS, which ensure, in part, that new projects and construction are integrated with the potential future uses of areas.

"How do we make sure that the waterways and approaches to our ports are deconflicted with all the different types of things that people want to do?" Dickey said.

"We are reviewing the access to ports. How do we get ships moving in and out of our ports and navigating here in the safest manner, and then what is the impact of a wind farm? Where can those even be permitted to be leased, [and] does that fit with access to the ports? That entails outreach to all the stakeholders, whether that is private industry, the DoD, recreational users, commercial fishing users and environmental groups," she said.

"We are well postured, because we are very tightly [linked with] our port partners in each location. We have area maritime steering committees and consultative groups where we know most of the folks, so we get a sense of what's going on and what the impact might be, and then we take a look at these projects."

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# **General Dynamics Mission**

# Systems Introduces Badger Software-Defined Radio for Voice, Data Communications



General Dynamics Mission Systems' new Badger software-defined radio, unveiled at Sea-Air-Space 2021. *GENERAL DYNAMICS MISSION SYSTEMS*

General Dynamics Mission Systems recently introduced its new Badger software-defined radio at the Navy League's Sea-Air-Space Symposium in National Harbor, Maryland.

The Badger is based on the company's established AN/USC-61(C) Digital Modular Radio (DMR) providing secure communications aboard U.S. Navy surface combatants, aircraft carriers and submarines as well as fixed sites at shore installations. General Dynamics has delivered more than 900 DMR radios to the Navy.

According to Stan Kordana, vice president of Surface Systems at General Dynamics Mission Systems, Badger meets a customer need for a radio offering the same waveforms, security and flexibility of the four-channel DMR, but with a more compact footprint. The two-channel Badger is a quarter of the size of DMR, and provides the same level of Multiple Independent Levels of Security (MILS) for ship-to-ship and ship-to-shore voice and data communications.

"The reduced size, weight and power make it ideal for smaller platforms across multiple domains that only require two channels, and at the same time simplifies logistics and reduces costs," Kordana said.

According to Kordana, "Badger is the only radio available that provides high frequency, very high frequency, ultra high frequency and SATCOM Mobile User Objective System [MUOS]

waveform capability. The integration of MUOS significantly enhances beyond line-of-sight, or satellite voice and data communications.”

Bill Rau, vice president, Surface Ship Warfare System, said Badger has programmable embedded NSA certified Type 1 encryption that secures communications and simplifies the system architecture.

“It has MILS capability which enables it to communicate simultaneously at multiple levels of security on each of the radio’s two channels – and each one can be tuned to a broad range of frequencies. Furthermore, Badger’s software-defined, flexible open architecture enables future next-generation communications including waveforms, encryption algorithms and advanced network connectivity to be easily incorporated as needs evolve.”

The first DMR units were delivered to the Navy in the early 2000s, Rau said, adding, “we’re expecting to hit the 1,000<sup>th</sup> delivery in the coming months.”

According to Rau, DMR is the first software-defined radio to become a communications system standard for the U.S. military.

“It’s on every class of surface ship, aircraft carrier, submarine and shore installation. DMR is a compact four-channel radio. With only a few DMRs, ships can essentially replace an entire ‘radio central’ room of legacy radios and equipment on older ships.”

Because these are software defined radios, Rau said, “In many cases, waveforms and features can be updated by adding software, without needing to send the radio back to a depot.”

Badger doesn’t replace DMR. “It’s a newer, smaller version based on the DMR but with two channels instead of four.” Rau said. “Badger takes the goodness of the DMR and puts it into a smaller package with a modern voice-over internet protocol

interface to the ship systems so it can be used on even more platforms, including unmanned surface vessels.”

DMR and Badger are produced at the General Dynamics Mission Systems facility in Scottsdale, Arizona.

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# HII Celebrates Ceremonial First Cut of Steel for the Aircraft Carrier Doris Miller



Members of Doris Miller’s family attend the ceremonial first cut of steel for the aircraft carrier Doris Miller (CVN 81) at Newport News Shipbuilding division, Aug. 25, 2021. *HUNTINGTON INGALLS INDUSTRIES*

NEWPORT NEWS, Va. – Huntington Ingalls Industries hosted a ceremonial event Aug. 25 at its Newport News Shipbuilding division that marked the first construction milestone in the life of the aircraft carrier Doris Miller (CVN 81), the company said in a release.

During a small ceremony held inside of a manufacturing facility, Thomas Bledsoe, the great nephew of the ship’s namesake, gave the order to “cut that steel” to shipbuilder Gerald Bish, who operated a large plasma-cutting machine that sliced into a steel plate. Shipbuilders, U.S. Navy leadership, elected officials and Doris Miller’s relatives signed their names on the plate.

“Today we recognize the start of construction of the fourth ship of the Gerald R. Ford class,” said Jennifer Boykin, president of Newport News Shipbuilding. “From this day

forward, our shipbuilders will put their hearts into every pipe they fit, every unit they lift and every inch of steel they weld.

“Shipbuilders, I thank you for the hard work, innovation and dedication you will put into transforming this first piece of steel into an awe-inspiring aircraft carrier.”

Ceremony participants included U.S. Rep. Bobby Scott, D-Virginia, who offered remarks; Rear Adm. James Downey, program executive officer for aircraft carriers; Master Chief Petty Officer of the U.S. Navy Russell Smith; shipbuilders and six members of Miller’s family.

“It is so fitting and timely during a period of significant discussion and change we come together to begin construction of one of our Navy’s next great aircraft carriers, in the name of one of the finest heroes of the greatest generation,” Downey said. “We will construct a sound and mighty warship worthy of his legacy.”

Members of Virginia’s congressional delegation, including Reps. Rob Wittman and Elaine Luria also attended the event. Other guests included Capt. Andrew P. Johnson, commanding officer of Supervisor of Shipbuilding, Conversion and Repair, Newport News.

Doris Miller is the second ship named in honor of Miller, and the first aircraft carrier ever named for an African American. This also is the first aircraft carrier named in honor of a sailor for actions while serving in the enlisted ranks.

Miller is credited with heroic actions while serving aboard the Newport News-built West Virginia (BB 48) during the Dec. 7, 1941, attack on Pearl Harbor, Hawaii. Miller’s bravery earned him the Navy Cross.

Doris Miller also is the second ship of the two-carrier contract award HII received in January 2019 for the detail

design and construction of the Gerald R. Ford-class aircraft carriers; Enterprise (CVN 80) being the first ship of the contract.

Newport News currently is performing early manufacturing of Doris Miller, which includes structural fabrication and shop work. The ship also will be the second aircraft carrier built completely using digital drawings and procedures rather than traditional paperwork packages and products.

Doris Miller's keel is scheduled to be laid in 2026 and delivered to the Navy in 2032.

"The Doris Miller story provides so many lessons to us as Americans," Bledsoe said. "The Miller family cannot express in words what this means to us, to Americans and to anyone inspired by Doris Miller's story."

The Ford class features new software-controlled electromagnetic catapults and weapons elevators, a redesigned flight deck and island, and more than twice the electrical capacity of the preceding Nimitz-class carriers. These aircraft carriers are designed to be the centerpiece of the nation's security strategy and support and protect the global economy through the protection of sea lanes around the world.

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**Strike Groups with Fifth-  
Generation Fighters  
Demonstrate Interoperability,**

# Interchangeability



Ships from four nations take part in large scale formation sailing. On Aug. 24, the ships of the United Kingdom Carrier Strike Group, led by the Royal Navy flagship HMS Queen Elizabeth, met with the USS America, USS New Orleans, JS Ise and JS Asahi. Working with ships from the US Navy and the Japan Maritime Self Defence Force, a close formation was formed and on completion the Japanese ships broke away to conduct a ceremonial sail past. *ROYAL NAVY / Dan Rosenbaum*

A multinational task force is operating together as part of Large Scale Global Exercise 2021 (LSGE 21) in the Pacific.

The U.K. Carrier Strike Group 21 (CSG 21) and U.S. Expeditionary Strike Group 7 (ESG 7) are conducting multinational advanced aviation operations as part of U.S. Indo-Pacific Command's LSGE 21.

According to Lt. Cmdr. Sherrie Flippin, spokesperson for ESG 7, "LSGE is a Joint Staff-sponsored exercise intended to rehearse the integration of defense activities in the Indo-Pacific Region. LSGE 21 is the first iteration of this event, involving the coordination of operations, activities, and investments in support of large-scale operational maneuvers.

"Currently, both HMS Queen Elizabeth Carrier Strike Group and USS America Expeditionary Strike Group are conducting multinational advanced aviation operations to further enhance proficiency and capability to respond to shared challenges in the region."

LSGE 21 commenced Aug. 2 and is taking place throughout the Indo-Pacific region. It will run until the end of this week.

Royal Navy Commodore Steve Moorhouse commands Carrier Strike Group 21 and is embarked aboard HMS Queen Elizabeth (R08). Rear Adm. Chris Engdahl is in command of ESG 7 and is aboard his flagship, USS America (LHA 6). They spoke to a

small group of reporters by phone while they were underway on Tuesday.

HMS Queen Elizabeth leads the U.K.'s Carrier Strike Group and is operating a mixed air group of F-35Bs, with a squadron of U.K. jets and a squadron from the U.S. Marine Corps, Marine Fighter Attack Squadron 211 (VMFA 211), and is escorted by surface combatant escorts from the U.S. Navy, Dutch Navy and Royal Navy – HMS Defender (D36), USS The Sullivans (DDG 68), HMS Kent (F 78) and HNLMS Evertsen (F805).

“HMS Queen Elizabeth is the largest warship has ever built for the Royal Navy, and she was designed from the keel up to operate the F-35B aircraft,” said Moorhouse. “We have our own 617 Squadron of Royal Air Force and Royal Navy personnel, as well as a U.S. Marine Corps Squadron. When we talk about a fifth-generation aircraft, we now have ourselves a fifth-generation aircraft carrier. This is the largest force of fifth-generation aircraft to put to sea anywhere in the world.”

For LSGE 21, both strike groups have been contending with a multi-domain tactical scenario, from undersea to surface and air, as well as cyber and space, and to include the Marines going ashore and operation on land.

The USS America Expeditionary Strike Group (AMA ESG) is carrying Sailors and Marines from 31st Marine Expeditionary Unit with aviation support from Marine Medium Tiltrotor Squadron 262 (Reinforced), and Marine Fighter Attack Squadron 12 (VMFA 12), along with staff members from Expeditionary Strike Group 7, Amphibious Squadron 11, and Destroyer Squadron 7, Tactical Air Control Squadron 12, Fleet Surgical Team 7 and an embarked helicopter detachment from Helicopter Sea-Combat Control Squadron 25. Also part of the ESG is USS New Orleans with personnel from Naval Beach Unit 7, Fleet Surgical Team 7, and additional personnel from the 31<sup>st</sup> MEU.

“For years we have operated with partners, and we’ve been able to talk and communicate. But what we’re really trying to do here is take it to the next level of integrating. Our Dutch and American warship are absolutely integral to our strike group operations,” Moorehouse said. “But as we operate with the America strike group, our aircraft – both fixed and rotary – have been flying and operating from each other’s deck seamlessly.”

“We extended the range of our fifth-generation fighters by moving them from one aircraft carrier to another. We recovered, rearmed, refueled and relaunched those planes to continue the mission,” Engdahl added.

Helping to sustain the task force at sea are the Royal Fleet Auxiliaries RFA Fort Victoria and RFA Tidespring. Furthermore, USS America is optimized for aviation operations and does not have a well deck for LCACs (landing craft air cushion) or LCUs (landing craft-utility) with amphibious vehicles inside.

“One of her attributes is the capacity for significantly more fuel than other amphibious ships – literally millions of gallons of fuel – which means she can supply fuel to the other ships in company,” Engdahl said.

Engdahl said LSGE 21 provided great practice to enhance the tactical abilities of the crews of the ships and the aviation units embark.

“It reflects the strength of our alliance, our partnerships, the ongoing military relationship. And the relationship that we have is really bolstered by the interchangeability of the platforms that we employ.”