Raytheon, Navy Conduct Joint Test of Excalibur N5

Raytheon's sea-based Excalibur N5 projectile will more than double the maximum range of conventional 5-inch munitions and provide the same accuracy as the land-based version. U.S. Department of Defense

NATIONAL HARBOR, Md. – The U.S. Navy and Raytheon conducted a joint test of the Excalibur N5 munition with an eye toward firing it from Arleigh Burke-class destroyer Mk 45 guns, according to a Raytheon official.

The Navy has not made a decision on whether to buy the Excalibur N5 for use on ships, but the test – which took place last September at Yuma Proving Ground in Arizona – was a key step forward for the program, said John Hobday, head of Coyote & Rapid Development Programs for Raytheon, in a briefing at Navy League's Sea-Air-Space symposium on May 6.

The Excalibur N5 is based on the M982 Excalibur used by the Army, and it would use the same key parts. It is GPS guided, and Raytheon says it has double the current Mk 45 range (26 nautical miles versus 13).

The N5 reuses the guidance and fusing components from the Block 1B version of the Excalibur.

The Navy is "evaluating where they stand on it," and Raytheon has provided the Navy with all the necessary information, Hobday said.

The test involved six shots and the accuracy of the rounds and handling were evaluated.

"Excalibur N5 answers the Navy's need for a sea-launched, precision-guided projectile," said Sam Deneke, Raytheon Land Warfare Systems vice president, in a statement. "N5 doubles

the range of the Navy’s big guns and delivers the same accuracy as the land-based version.”

Services Continue to Examine Challenges, Obstacles of Operating in Arctic

Panelists at a Sea-Air-Space discussion May 6 on the operational and logistical challenges for agencies that operate in the Arctic region. Lisa Nipp

NATIONAL HARBOR, Md. – The Arctic continues to present operational and logistical challenges for the agencies that operate there, but studies are providing a clearer picture of how they should be adjusting to climate change, service leaders said during a panel presentation at the Navy League’s annual Sea-Air-Space exposition here.

“We are working on how to better understand the Arctic,” said Rear Adm. John Okon, commander, Naval Meteorology and Oceanography Command, and oceanographer and navigator of the Navy.

Noting that climate change is happening – and there are undeniable changes in sea ice over the last decade– Okon said the use of unmanned systems could be a force multiplier for missions in the Arctic.

“We know we are going to have to operate [in the Arctic] and protect the homeland,” he said.

Vice Adm. Daniel Abel, the U.S. Coast Guard’s deputy

commandant for operations, said the risks presented in the polar region are
growing each year.

“It is undeniable conditions are changing up there … the change has happened, and the change is happening,” Abel said.

[climate

Panelists at “Arctic: Strategies for the Frozen Domain.” Lisa Nipp
The Coast Guard’s annual Operation Artic Shield will once again take place this summer. Arctic Shield’s goal is to increase knowledge of
operating in the region, as the service sends additional personnel and
resources to the area to see how they react.

The Coast Guard has no full-time base in the Arctic, as the service operates there seasonally. Over the last several years, as sea ice has
melted sooner and shipping lanes have been opened for longer periods of time as
a result, the requirements for the Department of Homeland Security agency have
been more plentiful in the polar region.

Communicating with the Defense Department and allied nations through automatic identification systems and other means has presented unique
challenges for the Coast Guard, given the harsh climate conditions.

“We are making sure that our requirements work with U.S. Northern Command, and we have the abilities to communicate at the highest
latitudes,” Abel said.

> *“We are working on how to better understand the Arctic.”*
>
> *Rear Adm. John Okon, commander, Naval Meteorology and Oceanography Command, oceanographer and navigator of the Navy*

Jeffrey Hutchinson, commissioner of the Canadian coast guard, said he hopes the service continues to work closely with its counterpart agency in the United States.

“We want to strengthen our partnership role,” he said.

Echoing comments from fellow panelist, Hutchinson said climate change is an issue for the Arctic, and Canada needs to communicate to get support from allies along with improving its relationship with other nations that have a stake in the region.

U.S. Air Force Gen. Terrence O’Shaughnessy, commander, U.S. Northern Command, said the department is working on a unified approach among all agencies that operate in the polar region.

Noting that they all face common challenges, he said new technology is important in the Arctic and that continuing to better study the region will be a focal point going forward.

“The [Arctic] is a critically important topic,” he said.

Coast Guard Foreign Military Sales Boosting Standing With Partner Nations

NATIONAL HARBOR, Md. – The Coast Guard's foreign military sales program is fostering good relations with partner nations, increasing maritime governance and saving money, according to the program's director, Tod Reinert.

Speaking before a show floor audience on May 6 during Sea-Air-Space 2019 at National Harbor, Maryland, Reinert also described how foreign sales of aging Coast Guard vessels is keeping U.S. vendors busy with replenishment and refurbishment contracts – all necessary to ensure that the new owners have hale platforms with which to pursue their missions.

The foreign military sales program is "extending production lines, sharing overhead costs and [sustaining] a robust vendor base," Reinert said.

The Coast Guard has delivered more than 540 "assets," worth more than $1 billion, to 75 partner nations during the past 20 years. The list of benefactors is long. Bangladesh, Vietnam, Yemen and Saudi Arabia got response boats. The Philippines received riverine boats, and Tunisia got near-shore patrol boats. U.S. Central Command stands to take possession of retired medium-response boats as well.

Recipient nations stand to take ownership of decommissioned high-endurance cutters, Island-class

patrol boats, medium-endurance cutters and patrol boats – in a time frame
generally beginning sometime next year and spanning into 2024, Reinert
said.

These countries
must rely upon their acquisitions to conduct search-and-rescue, maritime
safety, law enforcement and national defense missions akin to those the Coast
Guard performs every day – the cornerstones of its mission to protect the
nation's 95,000 nautical miles of coastline, Reinert said.

Milestone C Decision Expected in Late May for Presidential Helicopter

Marine Helicopter Squadron One (HMX-1) runs test flights of the new VH-92A over the south lawn of the White House on Sept. 22, 2018, Washington D.C. The Navy is projected to reach Milestone C for the VH-92A in May. U.S. Marine Corps / Sgt. Hunter Helis

NATIONAL
HARBOR, Md. – The Navy expects to reach a Milestone C decision in late May for
the VH-92A presidential transport helicopter. Such a decision would mark
approval for the helicopter to enter low-rate initial production.

Speaking to an audience at the Navy League's Sea-Air-Space Expo in National Harbor, Maryland, Marine Maj. Gen Greg Masiello, the Navy's program executive officer for Air, ASW, Assault and Special Mission PEO (A), said the program team has three VH-92As, two of which it is running through Developmental Test, with the two alternating flights every other day.

Program officials have a meeting scheduled May 30 with James F. Geurts, assistant secretary of the Navy for Research, Development and Acquisition, who has the milestone decisional authority.

The Navy is developing the Lockheed Martin/Sikorsky VH-92A as a replacement for the VH-3D and VH-60N helicopters flown in support of the president and other high-level government officials by Marine Helicopter Squadron One.

Modularity the Key to Keeping Ship Systems in Shape, Says Mercury Systems

NATIONAL HARBOR, Md. – Like every other entity that relies upon technology to do its job, the Navy has to constantly contend with systems that fail or become outdated. When such

systems are situated on ships that could be situated anywhere in the world, the challenge potentially becomes even more acute.

Andover, Massachusetts-based Mercury Systems thinks they have the answer to the conundrum. Building on the company's years of experience working with numerous Navy programs, most notably the Aegis Combat System, they believe that a modular approach offers the best method of ensuring seamless functionality. With that, Mercury Systems introduced its second-generation Intel Xeon scalable processors at Sea-Air-Space 2019.

"Commercial products go obsolete, and technology changes too fast," said Rick Studley, chief of technologies for Mercury Systems Trusted Missions Solutions in Chantilly, Virginia, during a Monday interview.

Mercury Systems provides hardware on nearly every surface combatant big-deck ship and submarine in the Navy. With its modular approach, the company's products allow for switching out old or broken components for new ones in complex systems without changing shock isolation, power or cooling already in place.

"We can abstract applications from underlining hardware, making the technology insertion much easier," Studley said.

Moreover, with the presence of multiple virtual machines, systems can run on smaller sets of hardware – saving valuable shipboard space. This is done by

running “virtual twin” systems in parallel with existing ones, for example, on a system like Aegis. The “twin” systems can take passive taps from the actual system – data from sensors, with the weapon system’s actual code. In simplistic terms, the “twin” can integrate with the actual server. Over time, tactical servers, which are bare-metal and redundant, would evolve into fully virtualized systems, Studley said.

“The goal is to move away from redundancy and toward resiliency, so that no single element in the system is so important that you can’t afford to lose it [and still function],” he said.

[and still function]

“It’s totally modularized and virtualized. You accept that failures are going to happen, but your machine keeps working,” Studley said. “The system heals itself around these failures.”

The process allows for greater sharing of technology across platforms, applications and systems, Studley said. The Navy would save money by having an infrastructure that is easily upgraded, managed and deployed, he added.

Last HH-60H Helicopters to Be Retired This Year

U.S. Air Force 320th Special Tactics Squadron combat controllers and U.S. Marine Corps 3rd Reconnaissance Battalion operators exit two U.S. Navy HH-60H Sea Hawk helicopters assigned to Helicopter Sea Combat Squadron-85 (HSC-85), shown here following their extraction July 13, 2017, from Shoalwater Bay Training Area in Queensland Australia. U.S. Air Force / Capt. Jessica Tait

NATIONAL HARBOR, Md. – The Navy will retire is last HH-60H Seahawk special operations support helicopters this year, an official said.

Speaking to an audience at the Navy League's Sea-Air-Space expo in National Harbor, Maryland, Marine Maj. Gen Greg Masiello, the Navy's program executive officer for Air, ASW, Assault and Special Mission PEO (A), said the last seven of the HH-60Hs in the inventory would be retired and replaced by the next-generation Seahawk, the MH-60S.

The HH-60H is flown by reserve Helicopter Sea Combat Squadron 85 and deploys in support of Navy special warfare forces and other forces.

MH-60S helicopters for the squadron will be modified with the 7.62 mm GAU-17 six-barrel rotary machine gun used for fire suppression.

The HH-60H is the last of three Seahawk versions from the H-60's initial naval service: the SH-60B, SH-60F, and HH-60H. The MH-60R and MH-60S are the latest versions in the Navy.

Service Chiefs Tout Agility, but MARAD in Need of Funding to Flex Muscle

The sea services chiefs (from left) – U.S. Navy CNO Adm. John M. Richardson, Marine Corps Commandant Gen. Robert B. Neller, Coast Guard Commandant Adm. Karl Schultz and Rear Adm. Mark Buzby of the U.S. Maritime Administration – during their panel discussion May 6 at Sea-Air-Space 2019. Lisa Nipp

NATIONAL HARBOR, Md. – The sudden order to send the Abraham Lincoln carrier strike group to the U.S. Central Command theater in response to threats from Iran is a great example of the value of the Navy's dynamic deployment concept, Chief of Naval Operations Adm. John M. Richardson said at the Navy League's Sea-Air-Space 2019 exposition.

Although the Lincoln's deployment into the Mediterranean had been planned, "this is a great demonstration of what we've been working on, dynamic deployment," Richardson said May 6. Naval maneuver forces are "dynamic by design," but Richardson said he found it encouraging that if the national command authority

needed the Lincoln strike group to go to the Middle East it can do so immediately.

At the opening session of the Navy League's annual Sea-Air-Space exposition, Richardson responded to a question about National Security Advisor John Bolton's announcement that the administration had ordered the Lincoln and its escorts to cut short its planned Mediterranean exercise and sail to the Persian Gulf region after warnings that Iran may be planning attacks on U.S. forces. Bolton said an Air Force bomber unit also was being sent to the region.

The sea services chiefs at their panel discussion at SAS. Lisa Nipp

Asked how the Navy would respond to President Donald Trump's decision to reverse the 2020 budget proposal to skip the mid-life refueling of the aircraft carrier Harry S. Truman, Richardson noted that he had told Congress, which has opposed the decision, that the Truman's early retirement was reversable. "Now we will have to find the resources going forward," to invest in the new technologies, such as unmanned systems, that were to be funded with money saved from retiring Truman.

Appearing on the same panel, Marine Corps Commandant Gen. Robert B. Neller

agreed with Richardson that the challenge of effective leaders was to anticipate the need to change their organizations and policies, rather than waiting to respond to a disaster. Neller cited the changes the Marines are making to respond to the growing threats of cyber and electronic warfare attacks from peer competitors as an example. The first shot of a major conflict would be against the networks and the U.S. forces must prepare to operate without the assured communications they have become accustomed to, Neller said.

> *“This is a great demonstration of what we’ve been working on, dynamic deployment.”*
>
> *Chief of Naval Operations Adm. John M. Richardson*

Also on the panel, Coast Guard Commandant Adm. Karl Schultz said his service was engaging in more national security operations, such as the recent freedom of navigation transit of the Taiwan Straits, in addition to its heavy load of maritime security and safety missions. Schultz said the Coast Guard was looking forward to getting its first new Arctic icebreaker and hoped to get initial funding for a second one in the fiscal 2021 budget.

Retired Rear Adm. Mark Busby, administrator of the Maritime Administration, said the materiel readiness of his 46 sealift vessels, which have an average age

of 44 years, had
gotten a bit worse since his warnings last year. Busby was hopeful Congress
would fund the three-part program MARAD and the Navy have urged to modernize
his fleet by updating some ships, buying some newer commercial ships and
building a small number of vessels. Asked about the threat to global
shipbuilding industry from China's rapidly growing ship production
capabilities, Busby said U.S. shipbuilding survived only due to Navy production
and commercial ships for the Jones Act, which required U.S. built ships for
commerce between U.S. ports.

Analysis Underway for E-6B Mercury Aircraft Replacement

A U.S. Navy E-6B Mercury airborne command post flies over Solomons Island, Maryland. An analysis is underway for a replacement for the E-6B. U.S. Navy photo.

NATIONAL HARBOR, Md. – An analysis of alternatives (AOA) is underway in the Office of the Secretary of Defense for a replacement for the Navy's E-6B Mercury strategic communications aircraft.

Speaking to
an audience at the Navy League's Sea-Air-Space conference here, Marine Maj. Gen

Greg Masiello, the Navy's program executive officer for Air, ASW, Assault and Special Mission PEO (A), said that his office is supporting the AOA. PEO(A)'s portfolio includes the E-6B aircraft.

The E-6B is the legacy platform that relays strategic communications to and from the Navy's ballistic-missile submarines and national command authority, a program called TACAMO (Take Charge and Move Out). The E-6B also serves in the airborne command post (ABNCP) role for U.S. Strategic Command, flying with a battle staff onboard.

The AOA is for the NEAT program, which is a simplification of the terms NAOC (National Airborne Operations Center)/EA (ABNCP/TACAMO). The AOC mission is performed by the Air Force E-4B aircraft.

Navy Looks to Enlist Industry in All-Hands Cybersecurity Mission

NATIONAL HARBOR, Md. – If the U.S. Navy hopes to thwart cyber attackers, the sea service will need industry's help. Capt. Ann Casey intends to garner as much of this outside help as

possible.

“We want the ability to do a more advanced hunt,” Casey said May 6 during an interview at the Navy League’s Sea-Air-Space conference.

As director of information and capability at the Fort Meade, Maryland-based Fleet Cyber Command, Casey intends to find experts attending the show that would help “look inside our own networks at a more advanced level than we currently do.”

Industry hopefully can provide assistance in fostering advances in artificial intelligence (AI) and machine learning (ML), Casey said.

The processes involve “getting a machine to do some computations that can assist users,” Casey said. “Our sensors get a large amount of data. We want machines to parse that data and tell us what’s important.”

> *“We want the ability to do a more advanced hunt.”*
>
> *Capt. Ann Casey*
> *director of information and capability, Fleet Cyber Command*

Casey’s role is an integral part of a U.S. Defense Department-wide effort, spearheaded by the newly created Joint Artificial Information Center. The effort entails seeking protections for all the Navy’s cyberspace operations, including communications systems. The process involves a bit

more than merely
stopping hackers, she said.

“If you’re using McAfee or Symantec [on a personal computer], you
don’t care who’s hacking you – you just want it to stop,” Casey said.

The Navy, on the other hand, cannot take such a simplistic approach.

“We care about tactics, techniques and procedures – in other words, who’s hacking us,” Casey said. “We’re looking for ways in the future to
prevent it.”

Casey’s shop also is part of the effort to conduct offensive cyber
operations, should it be ordered to do so.

“The best dialogue I
can have would be if somebody from industry is presenting a new approach,
particularly in cybersecurity,” Casey said. “After having a conversation, I
would go back and engage our entire community. On an as-needed basis, we could
invite the contractor to come back and speak to us – sometimes in a classified
arena.”

BAE Systems Sensor Technology Guides Next-Generation Missile to Readiness

Artist’s rendering of the LRASM. BAE Systems

NASHUA, New Hampshire – BAE Systems worked closely with Lockheed Martin to deliver Long-Range Anti-Ship Missiles (LRASM) to the U.S. Air Force, achieving Early Operational Capability (EOC) for the B-1B bomber ahead of schedule, BAE said in a May 6 release. The Air Force accepted delivery of production LRASM units following successful simulation, integration, and flight tests that demonstrated the missile’s mission readiness.

“We’re quickly delivering critical capabilities to warfighters to meet their urgent operational needs,” said Bruce Konigsberg, Radio Frequency (RF) Sensors product area director at BAE Systems. “Our sensor systems provide U.S. warfighters with a strike capability that lets them engage protected, high-value maritime targets from safe distances. The missile provides a critical advantage to U.S. warfighters.”

BAE Systems’ long-range sensor and targeting technology enables LRASM to detect and engage protected ships in all weather conditions, day or night, without relying on external intelligence and navigation data.

BAE Systems and Lockheed Martin are working closely together to further mature the LRASM technology. The companies recently signed a contract for the production of more than 50 additional sensors and are working to achieve EOC on the U.S. Navy’s F/A-18E/F Super Hornet in 2019.

The advanced LRASM sensor technology builds on BAE Systems’ knowledge in electronic warfare (EW), signal processing and targeting technologies, and demonstrates the company’s ability to apply its world-class EW technology to small platforms. The successful LRASM sensor program demonstrates the company’s ability to quickly deliver advanced EW technology to warfighters.

As part of the company’s electronic warfare capacity expansion initiatives, it locates key programs where they will be optimally staffed to quickly transition from design to production, accelerate deliveries, and improve product affordability. The company’s work on the LRASM program is conducted at state-of-the-art facilities in Wayne, New Jersey and Nashua, New Hampshire.