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.

Modly: 'The Preeminence of U.S. Maritime Superiority' is Key to New Defense Strategy

NATIONAL HARBOR, Md. – The undersecretary of the Navy capped the 2018 Sea-Air-Space Exposition by touching on a number of the recurring themes that emerged during the three-day event at the Gaylord National Resort and Convention Center.

In the final Sea-Air-Space keynote speech, at the Secretary of the Navy Luncheon, Thomas B. Modly, spoke of the rapidly changing security environment, the need for agility not only among the services but industry that supplies them to keep ahead of the threat, and the new National Defense Strategy and its notion of competition – and the implications that would have for the Navy-Marine Corps team going forward.

"I took my initial oath office in the Navy as a midshipman in 1979, and back then the world was a dangerous place, we all thought," he said. "But today's world is even more complex, and the threats to our security even more varied across a broader spectrum.

These threats are outlined in the National Defense Strategy, which Modly said, "makes it increasingly clear that Russia and China want to shape a world consistent with their authoritarian models, and they will use every tool that is available to them to influence and coerce other nations' economic, diplomatic and security decisions."

At the same time, he said, "It does not ignore the growing and pervasive threats of North Korea and Iran, and it continues commitment to defeat violent extremism and the horrors they have perpetrated. … In short, we are re-entering an era of great power competition on a global scale, so we must be focused on responsibly developing forces that protect our people and our interests and our friends and allies around the world."

Fundamental to the implementation of this strategy, he said will be "the preeminence of U.S. maritime superiority," something that has been increasing challenged of late as new threats have emerged and existing threats have evolved.

"The Navy and Marine Corps will rise to this challenge and we will do so by building a bigger, better, more networked, more talented and more ready force," Modly maintained. "Thanks to

the support of Congress, we can say that we have already begun down this path to the future state of U.S. maritime supremacy."

The recent budget agreement not only will arrest declining readiness, it will help begin to restore it while continuing to increase lethality by building both capacity and capability, Modly said. But that can only be maintained with future budget stability and avoiding a return to the short-term continuing resolutions (CRs) of recent years that he said have proven so devastating.

"The pace of operations has put an immense strain on our fleet, leading to significant challenges to our ability to effectively provide forward presence and project power," he said. "We must return to a condition where we have enough well-maintained ships – manned by well-trained, well-rested, focused and competent crews – to meet the relentless security demands placed on them.

"We estimate that the nine consecutive continuing resolutions that we have experienced over the last several years have cost the Navy nearly $4 billion due to contract inefficiencies and interruptions that managing from CR to CR inevitably cause. We must end these inefficient boom-and-bust procurement cycles. Busts devastate workforce experience, they devastate efficiency and resiliency, and make it difficult for us to rebuild capacity when we need it."

Building the fleet to the stated goal of 355 ships is going to take significant capital and time, even with a stable budget environment. Based on what Modly described as "stable assumptions" that include constrained top-line funding and estimates of current shipbuilding capacity, that 355-ship level would not be achieved until 2052.

And the number of ships is only part of the equation, he maintained.

“The right number is more like 355-plus, because we also need to increase the lethality of those platforms and their ability to work in a networked fashion with both manned and unmanned assets that contain, restrain, confuse, overwhelm and decisively defeat our enemies,” Modly said. “A larger, more agile force will be the key determiner of the success of our maritime strategy.

“For my perspective, how we measure that ‘plus’ is far more important than how we end up counting the number of ships that make up the 355 mix. Specifically, how flexible and adaptable is it? How well does it collaborate and interoperate with allies and with unmanned assets or smaller combatant ships that don’t fit nicely in the categories we have today? How fast is it, not only over and under the water, but in the information space? Or how quickly can it be reconfigured to address different types of threats?

“These are the critical questions we will ask ourselves as we build this new fleet, and we will demand that industry also consider these questions when they work with us to build it.”

Building this agile maritime force also will require a serious and critical self-assessment of how the Department of the Navy does things as in organization, Modly added. “We must reverse the culture of normalized deviation that exists in some parts of the department. We will do this by demanding stronger accountability from all levels of the department.

“The quote ‘close enough for government work’ is a phrase I will not tolerate in the Department of the Navy because, frankly, that’s not close enough to what we need to compete and win in this new environment we find ourselves in as a nation.”

NRL Testing New Structural Acoustic Sonar for AUV Mine Hunter

NATIONAL HARBOR, Md. – The Navy is pushing out new autonomous underwater vehicles (AUVs) that utilize low-frequency wavelengths to identify objects deep underwater. The Office of Naval Research (ONR) and the Naval Research Laboratory (NRL) presented data at their Sea-Air-Space booth April 11 showing how this method makes it easier for ships to see mines below the sea bottom.

Zachary Walters, researcher at NRL, noted that every object has a unique acoustic fingerprint, and with the new method, structural acoustic (SA) sonar, AUVs can determine what each individual object is.

The low-frequency wavelengths used in SA also offer the chance to "punch into the deeper sediment" in the ocean, Walters said.

Of course, there are infinite number of objects potentially hidden in the sea, so NRL is focusing more on target recognition rather than identifying every bit of clutter.

"We do know what our targets that we are interested in look like, either through laboratory measurements, at-sea measurements or through forward numerical modeling," Walters explained. "And, so, we use those … to build up a library of objects that we are interested in, and we pass this on, along with the data we measure at sea, to our automated classifiers."

According to Waters, SA is currently being transitioned out to the field for testing with Knifefish, a mine-hunting AUV. As it gathers more research, NRL hopes to "extend to much larger

ranges and higher area of coverage," which will be transitioned to Knighfish in later updates.

The NRL's ultimate goal for SA is to create AUVs that run fully autonomous operations. Walters believes that effort will rely on the continued cooperation of ONR and NRL.

Sea Services Feel More Prepared After Complicated 2017 Hurricane Season

NATIONAL HARBOR, Md. – What has been described as a complicated hurricane season brought new challenges for the maritime forces in 2017. With hurricanes hitting Texas and Florida in back-to-back months, it was the first year on record that two category four storms made landfall in mainland United States.

On top of that, islands such the Virgin Islands and Puerto Rico were hit hard by Hurricane Maria, causing massive wind damage and power outages.

While taxing at first, sea service leaders at the Hurricane Update Panel at the Sea-Air-Space Exposition April 11, said they were pleased with their combined efforts to help the affected areas during the time of crisis and feel more prepared for the expected above-average 2018 hurricane season.

The panelists collectively had years of storm relief experience but even that wasn't enough to fully prepare for the four major hurricanes in 2017.

Maj. Gen. Pat Murphy, director of the National Guard Bureau

Joint Staff, led the National Guard's response efforts for Hurricane Sandy when it hit the Northeast in 2012. But not even Sandy could compare to Hurricane Harvey, Irma and Maria individually, let alone collectively.

"Hurricane Sandy was originally referred to as 'Super Storm Sandy,'" Murphy joked, "but since the summer of 2017, I've not heard it called 'super' anymore. Because it really paled in comparison to what happened in 2017. I would categorize Sandy as a different type of event and not to the magnitude of the past summer's events."

Handling the historic meteorological events quickly became a joint command effort once Hurricane Irma and Maria left, according to Rear Adm. Jeffery Hughes, former commander, Expeditionary Strike Group.

"Relationships are absolutely critical," Hughes said. "At no point in my near 30-year career have I ever placed a higher premium on relationships, because it drives that unity of effort."

Hughes also was reassured that they had full control on when and where they were allowed to respond.

"At no point did I ever not have the authorities to allow me to respond immediately," he said. "At no point was I waiting to say, 'I would really like to do something, but I'm waiting to be told that I could.' We had the authorities in place, and we had the unity of effort throughout the entire response team, from the federal and territorial level, to allow us to go in and save lives."

However, the response effort didn't go as smoothly as anticipated, at first. Most of the relief-related issues stemmed from Hurricane Maria's damage to the Virgin Islands and Puerto Rico. The sea services successfully sent the needed resources to the islands, but the lack of power and the situation of the islands slowed down the distribution process.

Of course, lack of power wasn't the only challenge for the relief effort. Murphy later pointed out the limited capability of Puerto Rico's resources also made delivering equipment in a timely fashion difficult.

Winter: F-35 Test Flight This Week Will Wrap Up SDD Flight Tests

NATIONAL HARBOR, Md. – The joint program manager for the F-35 joint strike fighter said the last test flight of the aircraft's system design and development (SDD) program is imminent.

Speaking April 11 to an audience at the Sea-Air-Space Exposition, Vice Adm. Mat Winter said, "the last SDD test flight event will occur this week, maybe even today."

Winter said the SDD program has accrued 9,000 flight and 67,000 test points. So far, 82 percent of the specification verification has been completed, with 100 percent completion scheduled by the end of the year.

Winter also said the program has "started some of the pre-IOT&E [initial operational test and evaluation]," with formal operational test scheduled for the fall.

Full-rate production, scheduled for the fourth quarter of 2019, will formally mark the end of SDD.

So far, the program has delivered 280 F-35s of all types out of a planned total of 3,220 aircraft for all nations involved in the program. All aircraft rolling off the line now are

equipped with the Block 3F software, which brings all combat capability developed in the SDD program. The first post-3F software will be delivered in June, Winter said.

The Navy eventually will procure 353 F-35Cs and the Marine Corps will procure 273 F-35Bs and 67 F-35Cs.

The Marine Corps F-35B deployed with a detachment of Marine Fighter Attack Squadron (VMFA) 121 on board the USS Wasp last month, and the USS Essex will take on board a detachment from VMFA-211 this summer for deployment. VMFA-211's F-35Bs will mark the first deployment of the 3F software. The USS America and the USS Makin Island will be the next amphibious assault ships to operate the F-35B.

The Navy's first operational fleet squadron, Strike Fighter Squadron 147 (VFA-147) is in F-35C training and is scheduled to become safe for flight in October, the same month it will conduct its carrier qualifications. The squadron is scheduled to deploy on board USS Carl Vinson.

The USS Abraham Lincoln will be the second carrier to deploy with the F-35C. This ship also will host the F-35C's at-sea IOT&E in August with Carrier Air Wing Seven.

By the end of 2024, the F-35 is scheduled to be operational on eight amphibious assault ships and four aircraft carriers.

Winter said the prices for Lot 10 F-35s, being delivered in 2018, are: F-35A, $94.3 million; F-35B, $122.4 million; and F-35C, $121.2 million.

He said that for Lots 14/15, "all three will be under $100 million."

The current production rate for the F-35 is seven to nine per month. The goal for full-rate production is 12 to 15 per month.

New Technologies Drive Demand for More Power Aboard Ships

NATIONAL HARBOR, Md. – The rapid growth of power-hungry new technologies and the accelerating drive for directed-energy weapons is requiring the Naval Sea Systems Command (NAVSEA) to put increasing efforts into new means to generate, control and store electrical energy aboard Navy ships, the director of the electric ship office said April 11.

Although NAVSEA has been working on providing electrical power to Navy ships for more than a century, what is different from the past are the "notion of directed energy," and the need for higher power radars and other sensors that reach out farther, said Stephen P. Markle, director and program manager of the electric ship office.

So the concern for designing new ships is "not only the hull, but at the end of the day, it's a combat system. The real focus has to be on the warfighting capability," Markle said at a briefing at the Sea-Air-Space Exposition.

Markle noted the extensive effort in his office over the last several years on meeting the higher energy demands for the DDG 51 Flight III ships, with the powerful SPY-6 radars and other sensors. That was in addition to the ongoing work on the energy requirements for the still undefined future surface combatants, which he said would be a "family of systems," including both large warships and unmanned vessels.

Markle referred the industry representative in the audience to the upcoming 2018 Naval Power and Energy Technology Development Road Map, which would describe "the product areas we're interested in."

Those include control, energy storage, generators, motors, prime movers and power converters.

A major problem with electrical energy on warships, he noted, was the frequent and massive surges in power demands with activation of sensors, which requires means to stabilize the electrical systems.

There also are increasing needs to reduce the size of the electrical generators and to meet the demand for directed-energy weapons – such as lasers and the proposed electromagnetic railgun – that require instant bursts of massive amounts of power and much greater ability to store energy, he said.

Current batteries able to provide those high-levels of power would be too large, so they are experimenting with new batteries made with lithium iron and phosphate, and with fly wheels, Merkle said.