# Newport News to Utilize Unique Schedule on JFK, New Cost-Saving Contract on Two More Carriers

The final piece of the underwater hull of the future aircraft carrier USS John F. Kennedy is lowered into place last year at Huntington Ingalls Industries' Newport News Shipbuilding. Matt Hildreth/HII

NATIONAL HARBOR, Md. – The combination of a two-ship purchase and investments in new technologies and facilities at the Newport News shipyard will enable the U.S. Navy to obtain future aircraft carriers with increased survivability and lethality at much lower cost, the carrier program manager said on May 6.

The future Gerald R. Ford class of nuclear-powered carriers will provide the increased capabilities needed in the era of "Great Power Competition" – and the two-ship contract will save an estimated $4 billion, program manager Capt. Philip Malone told a Naval Sea Systems Command briefing at the Navy League's annual Sea-Air-Space exposition here.

Malone is responsible for the next three of the Ford-class ships, CVN-79, the future John F. Kennedy, which is under construction, and CVNs 80 and 81, which will be produced under the dual-ship contract signed in January.

In addition to the $4 billion estimated savings from that contract, Malone said those two ships will benefit from the use of an integrated digital shipbuilding system Newport News is adopting and shipyard improvements that will allow major reductions in the man hours required.

CVNs 80 and 81 also will be built with greater survivability and lethality from an advanced radar, greater electrical power generation, integration of the fifth-generation F-35C Lighting II joint strike fighters and increased aircraft sortie rate over the legacy Nimitz class carriers, he said.

Malone said the Navy will acquire the Kennedy under a unique two-phase delivery, with the first phase providing a carrier that can test its aircraft launch and recovery systems and basic ship functions followed by a second phase that will install the advanced air surveillance radar and other combat systems. The unusual delivery process was necessary to have Kennedy operational in time to replace the Nimitz, which will hit its 50-year service life later this decade, he explained.

Malone cited Newport News' investments in the digital or 3D computerized shipbuilding process and in new facilities that will enable more ship components to be

produced out of the weather. Those improvements were made with monetary
incentives from the Navy and will sharply reduce the hours required to build
the ships, he said.

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# Navy Unmanned Maritime Systems Office Expects Major Developments in Next Couple Years

The Orca extra-large UUV recently completed its design stage. Lockheed Martin

NATIONAL HARBOR, Md. – The Navy's Unmanned Maritime Systems program office is juggling the development of a lot of unmanned surface and underwater vehicles right now, and they expect numerous big developments for several programs in the next year or two.

Capt. Pete Small, Unmanned Maritime Systems program manager, told attendees at the Navy League's Sea-Air-Space symposium May 6 that a new draft request for proposals was recently released for a medium unmanned surface vehicle (USV), and the Navy was "aggressively" moving forward with that program.

The Navy is also accelerating a large USV program, and an analysis of alternatives for that effort will wrap up by the end of this year, Small added. The program hopes for a fiscal 2020 start for that platform, and Chief of Naval Operations Adm. John Richardson personally wants to see the project bear

fruit “ASAP,” the captain said.

On the unmanned underwater vehicles (UUV) side of the house, the extra-large UUV Orca recently finished the design phase. It will feature a modular payload and the Navy hopes to take delivery at the end of calendar year 2020, with buys continuing through 2022, Small said.

The Snakehead large-displacement UUV is expected to complete its critical design review this quarter, and the Navy hopes to have it in the water by fiscal 2021.

And the Razorback, slated for the fiscal 2020 timeframe, would be hosted on a submarine and the Navy is developing a torpedo tube-launched version. The Navy recently issued a request for information on that project and received some responses from industry.

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# Saudi LCS Construction to Begin by End of 2019

The Saudi version of the LCS will be modeled off of the Freedom-class littoral combat ships, like the USS Sioux City (LCS 11) and USS Milwaukee (LCS 5) shown here. U.S. Navy / Mass Communication Specialist Seaman Marianne Guemo

NATIONAL HARBOR, Md. – Construction on a version of the Littoral Combat Ship for the government of Saudi Arabia is on track to start by the end of this calendar year, according to a Navy official.

Ghadeer Halim, deputy program manager for International Small Combatants (PMS 525), said after a presentation from her program office at Navy League’s Sea-Air-Space symposium May 6

that the current plan calls for the construction of four LCSs for the Saudi government with the option for four more for a possible total of eight ships.

Lockheed Martin was awarded a $282 million contract for design and materials for the construction of the four Multi-Mission Surface Combatant ships back in November.

The ships will differ from the U.S. Navy LCS in that the module will be permanent and fixed rather than replaceable with a different module.

The United States and Saudi Arabia came to an agreement on an $11.2 billion deal back in 2015 that included a modified version of the LCS.

The ship would be based on Lockheed's Freedom-class LCS, one of two different LCS types. (Austal USA builds the Independence-class.)

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# Indo-Pacific Policy More Complex Than Only China and Russia

Panelists discuss the complexities of a region dominated by two near-peer superpowers but also full of friendly nations.
Seapower / Victoria Bottlick
NATIONAL HARBOR, Md. – As the nation grapples with striking a balance between competing with great power challenges and preparing for the possibility of conflict, the Indo-Pacific region poses perhaps the most significant challenge, Dr. Mara Karlin believes.

Karlin, director of strategic studies at the Johns Hopkins School of International Studies, made that observation as she introduced a panel of four military and civilian government experts, each of whom plays a key role in formulating related policies in the region.

It stands to reason that each panelist recognized the increasing threats posed by China and Russia. Still, they noted that the matrix is considerably more complicated. Eyes cannot be focused on the two large superpowers at the expense of other friendly nations in the region. Also, while China and Russia loom as potential adversaries, it is imperative that the U.S. and its partners work as closely together with them on areas of common interest.

Representing the Coast Guard and Marine Corps, Vice Adm. Linda Fagan and Gayle Von Eckartsburg discussed how each respective service shares a forward-deployed mission that makes their presence essential in the Pacific. Both Fagan and Von Eckartsburg emphasized that neither service is a “garrison force.”

“The Coast Guard has never been more relevant,” said Fagan, the service’s Pacific Area commander. “The demand for the signal we bring into the region has never been higher.”

Besides watching Chinese and Russian activities and fostering goodwill among allies, Fagan placed equal importance in “modeling legitimate behavior,” so that “China can see what a responsible Coast Guard looks like.”

If the Chinese can learn from the U.S. Coast Guard how to conduct, for example, more effective search-and-rescue operations, so be it.

Von Eckartsburg, director of the Marine Corps Pacific Division office of Plans, Policy and Operations, described a “persistent forward force.” Of the roughly 40,000 Marines now deployed around the world, the vast majority is west of the International Dateline, she said.

“We’re in a constant state of motion, leveraging presence to maintain readiness at the same time,” Von Eckartsburg said.

Joel Szabat the Assistant Secretary of Transportation for Aviation and International Affairs, discussed the three most important “pillars” of stability in the region – economy, governance and security.

“We need to remember that this is not about containing or encircling any one country,” Szabat said. “We want to help people, regardless of who our competitors are.”

Security commitments

with U.S. allies would assure the free flow of commerce, Szabat said. The nation faces significant related challenges in this arena, he believes. U.S. sealift is old and needs to be recapitalized, he said. The size of the U.S. merchant fleet, which handles much of the military's sealift capability, is good enough for small-to-medium operations.

"We don't have enough mariners, or U.S.-flagged merchant marine," Szabat said.

Walter Douglas, who heads the State Department Bureau of East Asian and Pacific Affairs, cited an Asian Development Bank statistic that states the region needs an estimated $1.7 trillion in investment to sustain healthy economic growth.

"There's nowhere near that amount of money available in one state," Szabat said.

The emphasis, then, would be to have "money centers" and corporations step in with "transparent" investments. The government and private sectors would ensure that such funding would not be subject to the troubles endemic to secret deals.

"That money gets spent in the wrong places," Szabat said. "We can't have that. We need open

governance. We have to see [to it] that investment laws are transparent.”

Equally imperative, Douglas said, is working to ensure that investments are evenly distributed. While putting money into traditional stable partners like Japan, Australia and Singapore would remain important, more could be done to help open emerging economies. He said that Vietnam, for example, badly wants help developing its infrastructure – from anywhere but China.

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# SAS Panelists Express Full Support for Space Force; Warn of Personnel, Logistical Challenges of Standing Up New Military Branch

Sea services leaders at Sea-Air-Space – (from left) Navy Rear Adms. David Hahn and Christian Becker, Marine Brig. Gen. Lorna Mahlock and Coast Guard Capt. Greg Rothrock – showed support for the U.S. Space Force, but warned standing up a new military branch is a significant personnel and logistical challenge – and won’t happen overnight. Lisa Nipp

NATIONAL HARBOR, Md. – Sea services leaders expressed unwavering support during a May 6 panel discussion for the nation’s future ventures in space – no matter whether the

effort is split among the nation's existing military branches or a new United States Space Force is created.

The panelists at Navy League's Sea-Air-Space 2019 reiterated the need to increase the nation's space initiatives as rival nations such as
China, Russia, India and Japan build their push toward the stars.


The panelists debate the U.S. Space Force. Lisa Nipp

"Space is no longer an uncontested environment," said Rear Adm. Christian Becker, commander, Space and Naval Warfare Systems Command.

As other countries stake their spots in space, the U.S. needs to hold its "ground," like when the maritime forces were first formed, Becker
explained.

"Space is very much akin to the maritime," Becker said. "We first went to sea to trade, and then we went to sea when we realized other
people could stop our trade. … Made sure we can maintain freedom at sea."

Don't expect the U.S. Space Force to appear overnight, however. Services like the Navy, Marine Corps and Coast Guard are still evaluating
the personnel needed to staff an agency dedicated to the Final Frontier.

> *"Space is no longer an uncontested environment."*
>
> *Rear Adm. Christian Becker, commander, Space and Naval Warfare Systems Command*

"We are assessing as part of the [Navy Department] how we can meet the mission needs of the Space Force," Becker

said. “We’re not there yet at our level of understanding, but that’s what we have to pursue.”

Finding and retaining the talent necessary to develop a fully operational Space Force is a significant challenge, said Brig. Gen. Lorna Mahlock, the Marine Corps’ chief information officer.

“It’s exciting to think about space … but we have to make sure we develop the skill [to maintain a Space Force] and do it right,” Mahlock said.

However, she emphasized that, no matter the obstacles, the Marine Corps “embraces building the Space Force” and will offer its full support.

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# 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."

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# 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.

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# 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.

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# 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.