Navy Digital Director: 'Resist the Urge for Complexity' in Combat Systems

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The Navy at first did not pay sufficient attention to the network for its unmanned systems, according to Kelly McCool, acting director of the Digital Warfare Office. She said Nov. 19 the service needs to resist the urge to "drive up complexity" and focus on interoperability. U.S. Navy / Anthony Powers

ARLINGTON, Va. — The official in the Office of the Chief of Naval Operations in charge of coordinating interoperability of the combat systems between the Navy's ships, submarines, aircraft and their sensors said the service needs to "resist the urge to drive up complexity."

Kelly McCool, acting director, Digital Warfare Office (DWO), in the Office of the Chief of Naval Operations, speaking Nov. 19 in the Virtual Combat Systems Symposium sponsored by the American Society of Naval Engineers, was addressing the Navy's Fully Integrated Combat Force concept.

"We're not focused on a single integrated combat system on a single platform. We need a force that's fully integrated and distributed," McCool said.

"The first challenge I see is that we don't write requirements to buy a fully integrated force," she said. "We write requirements and develop systems [with] interoperability as a second thought, as an after-thought, as a fall-out. We're learning some of those lessons with our unmanned systems where we did not pay enough attention to the networking, and now we're doing the corrective actions to make sure the network can support our unmanned systems. "We're going to fight on the network, so we have got to value and resource and set requirements that are associated with the networks and the data that is needed to make the timely decisions and the tools that are needed to make those timely decisions," she said.

She said that with the surface, subsurface, aviation and expeditionary resource sponsors, the information warfare/intelligence sponsor, and all of their stakeholders "there's the potential to drive up the complexity."

McCool said "the second challenge we all are faced with here is we really need to resist the urge to drive up the complexity in this problem so that we are not faced with another ForceNet or some effort that just becomes too complex, [with] too many stakeholders. In my experience, when you have a lot of stakeholders, we sometimes don't make those hard decisions about what is the most important. We add everybody's voice in and then you have some competing requirements. This drives complexity. It drives to the frustration that the acquisition timelines become long."

McCool, who spent most of her career so far on the acquisition side but now works on the resourcing side, said that she has strong interest in wanting to make sure we approach the requirements in a way that allows us to grow and evolve with the technology, and not be so complex and so prescriptive that we lock ourselves in too early and force some major acquisition development program. That said, there definitely is this space a need for the government to set some parameters."

She said that she was "really doubling down on the networks, getting the requirements right for our Naval Tactical Grid, getting the requirements right for the data, the decision support tools and the architectures we're going to need across the board and doing that in parallel with the Integrated Combat System development so that we're loosely coupled but we're not creating this development upon development that becomes a snowball that's unachievable.

"So, there's some black art there and we're going to have to work through that," she added.

MDA Admiral: Missile-Killing Navy SM-3 IIA Missile Overcame Target Track Drift to Make Successful Intercept

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A SM-3 Block IIA is launched from the USS John Finn, an Aegis Ballistic Missile Defense System-equipped destroyer, Nov. 16, as part of Flight Test Aegis Weapons System-44 (FTM-44). FTM-44 is a developmental test satisfying a Congressional mandate to evaluate the feasibility of the SM-3 Block IIA missile's capability to defeat an ICBM threat. Missile Defense Agency

ARLINGTON, Va. – The recent successful intercept of an intercontinental ballistic missile (ICBM) target by a shiplaunched SM-3 IIA missile proved the missile could compensate for track error built up over time, the Missile Defense Agency director said.

An SM-3 Block IIA missile, launched on Nov. 16 from the Arleigh Burke-class guided-missile destroyer USS John Finn (DDG 113) positioned northeast of Hawaii, intercepted and destroyed an ICBM-representative missile launched from the Ronald Reagan Ballistic Missile Defense Test Site, located on Kwajalein Atoll in the Republic of the Marshall Islands. Vice Adm. Jon Hill, director, Missile Defense Agency, speaking Nov. 19 at the Virtual Combat Systems Symposium of the American Society of Naval Engineers, said the Flight Test Aegis Weapon System-44 (FTM-44) was particularly challenging because of the distance involved and the scant sensor coverage of the target missile's flight path, which induces some drift in the fire-control solution that requires the SM-3 IIA missile to correct its course during flight.

The destroyer used engage-on-remote capabilities to intercept the ICBM target, with the ships own sensors not used for targeting. Target track data was passed to the ship through the Command-and-Control Battle Management Communications (C2BMC) network.

After launch, when the SM-3 IIA missile "opens it eyes, it's going to be dealing with a lot of error it the track" Hill said. "It's got to divert – our terminology for maneuvering – so it's got to maneuver to collide, because we do kineticenergy intercepts."

The missile's nose section is equipped with four small rockets firing sideways to alter the missile's terminal course to make the intercept.

Hill explained that kinetic-energy intercepts are necessary because, with a potential weapon of mass destruction, "the best way to take it all out is with imparting kinetic energy – a direct hit."

The missile's own video data link to the ship, as well as a space-based sensor, confirmed the destruction of the target.

Hill said the factors involved – "precision guidance from the Aegis Combat System [on the destroyer]; a missile that has the ability to seek and divert to run right into the ICBM. That was a big challenge coming into FTM-44."

"FTM-44 was the sixth flight test of an Aegis BMD-equipped

vessel using the SM-3 Block IIA guided missile. FTM-44, originally scheduled for May 2020, was delayed due to restrictions in personnel and equipment movement intended to reduce the spread of COVID-19," the Navy said in a release.

An animation of the test, test video, photos, and additional information about all elements of the U.S. Missile Defense System can be found at https://www.mda.mil.

Admiral: Submarine-Launched UAS Proving 'Awesome Capability'

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The Los Angeles-class attack submarine USS Annapolis (SSN 760), which has demonstrated a submarine-launched unmanned aerial system. U.S. Navy / Petty Officer Virginia Schaefer ARLINGTON, Va. – The Navy has developed and demonstrated a submarine-launched unmanned aerial system (SLUAS) for beyond line-of-sight targeting solutions and deployed it to the fleet in September 2020, the Navy's submarine procurement admiral said.

Rear Adm. Dave Goggins, program executive officer for Submarines, speaking Nov. 18 in a webinar for the annual symposium of the Naval Submarine League, said the SLUAS was "a pretty awesome capability to provide to the fleet."

Goggins said in a PowerPoint briefing that mid-tier acquisition authorities approved in March 2019 were used to begin the project in May 2019. Three demonstrations were conducted in 2019 and 2020. Initial operational capability was achieved in September.

Only eight months after the project was started, the Navy conducted an at-sea demonstration of the SLUAS from the Los Angeles-class SSN USS Annapolis, launching them "from periscope depth, control them out to tactically significant ranges — well beyond the line of sight," Goggins said. "By doing so she was able to target and conduct a rapid simulated torpedo attack against a participating surface ship, in case the USS Charleston, pretty much at near-maximum effective range of that torpedo, by flying that UAV to obtain a firepoint solution after gaining that initial sonar gain."

Another demonstration was conducted against a surface ship and a land site. So far, 21 SLUAS UAVs have been employed in demonstrations. The Defense Innovation Unit, which partnered with non-traditional industry companies to reduce cost and enhance capability, completed final flyoffs in July.

"I have five SLUAS shipsets in the fleet today and we will continue to deliver this capability," Goggins said. "We're really working on the evolution of that capability going forward."

Admiral: Block VI Virginia SSN Leads to Next-Generation SSN

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The Virginia-class attack submarine South Dakota (SSN 790). The Block VI version of the Virginia-class submarine will build on the acoustic advancements of SSN 790. U.S. Navy / Mass Communication Specialist 1st Class Steven Hoskins ARLINGTON, Va. — The Navy has announced features for the Block VI version of the Virginia-class nuclear-powered submarine (SSN), which will be the steppingstone to the next-generation SSN (SSNX).

"Block VI continues that trend of delivering increasingly capable and lethal platforms block to block," said Rear Adm. Dave Goggins, program executive officer for Submarines, speaking Nov. 18 in a webinar for the annual symposium of the Naval Submarine League.

"Block VI will focus on building upon the acoustic superiority advancements of 790 [USS South Dakota, SSN 790]," Goggins said. "The key thing here is to really enable that organic subsea, seabed warfare capability for the first time."

Goggins said the Navy is looking at improved stealth to operate in contested environments; enhanced sonar performance resulting in greater tactical advantage [found] in a bow conformal array; the ability to sense and interact with more of the water column and seafloor.

Other improvements being considered are additional payloads and an improved propulsor.

He said the "key thing is the capabilities chosen for Block VI also have to dual purpose of improving the VCS [Virginia-class submarine] performance and also proving out technologies that will serve as the backbone for our future SSNX design.

"We will spend the next year evaluating the maturity [and] feasibility of these capabilities followed by a down-select next year. That allows us to mature the technology and develop the required line of paperwork in support the Block VI contract."

The Navy plans to procure the Block VI boats in fiscal 2024-2028.

U.S. Navy Awards BAE Systems \$76.3M Contract for USS Stout's Maintenance

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The Arleigh-Burke class guided-missile destroyer USS Stout (DDG 55) sails alongside the Henry J. Kaiser class oiler USNS Joshua Humphreys (T-AO 188) in this 2018 photo. U.S. Navy / Mass Communication Specialist Seaman Kaleb Sarten NORFOLK, Virginia — BAE Systems has received a \$76.3 million contract from the U.S. Navy to drydock and perform maintenance and modernization work aboard the guided-missile destroyer USS Stout (DDG 55), the company said in a Nov. 18 release. The docking selected restricted availability (DSRA) contract for the Norfolk-based destroyer includes options that, if exercised, would bring the cumulative value to \$100.5

million.

BAE Systems' Norfolk shipyard will begin working aboard the 510-foot-long ship in January 2021. Under the awarded DSRA contract, BAE Systems will drydock the ship; perform hull, tank and mechanical work; install upgraded electronic and electrical systems; and make other shipboard improvements.

"Our team of employees, subcontractors and Navy personnel are working hard to sustain the workhorse of the fleet – the Arleigh Burke class destroyer," said Mark Whitney, deputy general manager of BAE Systems Ship Repair and general manager of Norfolk Ship Repair. "We look forward to applying our vast experience to modernize the USS Stout, so that its crew members can do their jobs in defense of our nation for many years to come." The USS Stout is named in honor of U.S. Navy Rear Admiral Herald F. Stout (1903-1987). During World War II, then-Commander Stout commanded a destroyer that was assigned to the Little Beaver squadron under then-Commodore Arleigh Burke. He earned two Navy Cross medals for command of the ship. The Stout became the fifth ship of the Arleigh Burke class of guided-missile destroyers, which now numbers 68 ships.

Admiral: Navy Needs Steady Course on Unmanned Underwater Vehicles

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Sailors assigned to Coastal Riverine Squadron 3 and the expeditionary mine countermeasure company of Explosive Ordnance Disposal Mobile Unit 5 retrieve a MK 18 Mod 2 unmanned underwater vehicle (UUV) during a transit through the Northern Mariana Islands in this August 2020 photo. U.S. Navy / Mass Communication Specialist 2nd Class Cole C. Pielop ARLINGTON, Va. – The U.S. Navy is pushing hard to field more and different types of operational unmanned undersea vehicles (UUVs) but needs a steady-growth approach to match technology with testing and training.

The UUV progress is "very promising and we just need to hold the course but not go so fast that we're buying systems that aren't ready and aren't tested," said Rear Adm. William Houston, director of Undersea Warfare in the Office of the Chief of Naval Operations (OPNAV), speaking Nov. 18 in a webinar for the annual symposium of the Naval Submarine League. Houston said the Navy has progressed from a UUV detachment to full UUV squadron that is fully manned, with "four times the manning of a typical submarine squadron" with detachments on each coast.

"We have at Port Hueneme [California] a test facility so we are fully moving forward on the testing and innovation," Houston said. "One thing we're working with industry is we want to get the prototypes tested and let those smart Sailors say what works and what doesn't work and move on from there. Our concern right now is we are going so fast that we want to go into production right away. We have to ... get the requirements right. If you put on too many requirements, we will delay the testing [by] Sailors. We're working through that. We've got great support from OPNAV."

Addressing UUV operations with submarines, Houston said that working with smaller UUVs has had "great success. [Submarine Force Pacific] is really leading the way with the UUV [squadron] out there. They've done a lot of significant testing based on where they're at and we've had some very promising results, both with ROVs [Remotely Operated Vehicles] and UUVs. We're at the point now where we've gone over some of the launch and recovery issues on the smaller-size [UUVs].

Houston said he also is "a big fan of ROVs. … So, we are putting additional emphasis on ROV while supporting the UUV portfolio that we have."

He said the development of UUV technology and operations is going in "fits and starts, and it's tough technology, but we are partnered with the best in industry and we're leveraging every source that we can."

Marines' Presidential Helicopter Headed for IOC in July

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Marine Helicopter Squadron (HMX) 1 conducts test flights of the new VH-92A helicopter over the South Lawn of the White House, Sept. 22, 2018, in Washington, D.C. U.S. Marine Corps / Sgt. Hunter Helis

ARLINGTON, Va. – The next generation of executive transport helicopter for the president of the United States is planned for Initial Operational Capability (IOC) in July 2021, a Navy spokeswoman said, but the decision of when to place the aircraft in service will be determined by the White House.

The VH-92A, built by Sikorsky Aircraft Corp., a Lockheed Martin company, was selected in 2014 to replace the VH-3D and VH-60N helicopter fleet used to transport the president and other government executives. Six VH-92As were ordered in 2019. Followed by six more in February 2020. Total inventory will be 23 VH-92A aircraft, comprised of 21 operational fleet aircraft and two test aircraft.

The presidential helicopter fleet is operated by Marine Helicopter Squadron One, based at Marine Corps Air Station Quantico, Va., with a detachment at Joint Base Anacostia-Bolling in Washington.

"Government testing to validate system performance and prepare for Initial Operational Test and Evaluation is progressing on schedule and will support an Initial Operational Capability (IOC) planned for July 2021," the Navy spokeswoman said. "The VH-92A will enter service post IOC at the determination of the White House Military Office."

Columbia SSBN Hull Shows Potential for SSGN, Admiral Says

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An artist's rendering of the future Columbia-class ballistic missile submarines. U.S. Navy illustration

ARLINGTON, Va. – The hull form of the U.S. Navy's Columbiaclass ballistic-missile submarine (SSBN) has characteristics that may lend themselves to be ideal for a future guidedmissile submarine (SSGN), the Columbia's program executive officer said.

"The light we learned from the Ohio SSGNs – certainly having the larger-diameter hull is a perfect fit for a follow-on SSGN design," said Rear Adm. Scott Pappano, program executive officer for the Columbia SSBN, speaking Nov. 17 in a webinar for the annual symposium of the Naval Submarine League.

The Navy converted the four oldest Ohio-class SSBNs — Ohio, Florida, Michigan and Georgia — to SSGNs which returned to service between 2006 and 2008. They are armed with up to 154 Tomahawk missiles and can carry special operations forces for covert insertion and extraction in hostile territory. Each SSGN has Blue and Gold crews that typically swap out while the submarine is deployed for yearlong periods. Florida became the first of its class to participate in combat operations when it launched more than 90 Tomahawk missiles against targets in Libya during Operation Odyssey Dawn in March 2011.

"Without making any decisions for the Navy right now, certainly the Columbia hull form would make a very good model to build upon for a future SSGN." Pappano said. "My guess is that if we determine that is a need in the future, the Columbia would be the frame that we would go build that ship on."

"Nothing will happen before the end of the Columbia SSBN program," he emphasized.

Navy to Field Hypersonic Weapon First on SSGNs

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Ohio-class guided-missile submarines, such as the USS Florida (SSGN 728) shown here in 2019 in the Mediterranean, will be equipped with the Conventional Prompt Strike capability in 2025. U.S. Navy / Mass Communication Specialist 3rd Class Drew Verbis

ARLINGTON, Va. – The U.S. Navy plans to deploy its conventional hypersonic weapon, known as the Conventional Prompt Strike (CSP) capability, on submarines by 2025, the admiral in charge of strategic weapons said.

The CSP will be deployed by the U.S. Army first in 2023, but the first Navy deployment is scheduled for 2025 on the Ohioclass guided-missile submarines (SSGNs), said Vice Adm. Johnny Wolfe, director of Strategic Systems Programs, speaking Nov. 17 in a webinar for the annual symposium of the Naval Submarine League. The Navy has four SSGNs in the fleet.

The CSP will them be deployed in 2028 on the Block V Virginiaclass attack submarines (SSNs) with the Virginia Payload Module

In a PowerPoint slide, Wolfe showed the Initial Unit Training without the All-Up Round will begin in 2021. A canister hot-

launch operational demonstration is planned for 2022. Delivery of the Army's prototype truck-hauled delivery system is scheduled for 2023. The delivery of the All-Up Round – including the hypersonic glide body – is planned for 2024.

Limited operational capability is scheduled for the SSGNs in 2025, and Initial Operational Capability on the Virginia-class SSNs in 2028.

"Hypersonics in the DoD [Department of Defense] is very much a priority within the Navy," Wolfe said. "In Conventional Prompt Strike we are focused on how do we ... take all of the successes that we've had in the research development and flight testing and start production and transition that into a military capability that we can give to the Army at about the 2023 time frame and continue to push that forward so that we get to a Navy capability on SSGN in the 2025 time frame."

Wolfe said the CSP effort "is a very rapid program but we are having a lot of success. Right at the beginning of the COVID [pandemic] we flew our second Navy flight test of this hypersonic glide body."

He said the test flight was "extremely successful," and met and exceeded every single test requirement.

"That was the springboard for us to now start that transition out of our national team into industry for a capability that we can produce," Wolf said. "We are in this year finishing up the development of the booster that that glide body will go on - [a] common booster and common glide body between the Army and the Navy – as we get into static fires. Eventually we'll do flight testing from land and then ultimately get to that first SSGN."

Wolfe said the CSP program was on a very compressed timeline, but we have stayed on schedule. ... For a conventional capability, this really is a game changer."

USS Cheyenne to Lead Los Angeles-Class Submarine Life Extension

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Los Angeles-Class fast-attack submarine USS Cheyenne (SSN 773) and its crew arrive at Joint Base Pearl Harbor-Hickam after completing a deployment in 2019. U.S. Navy / Mass Communication Specialist 1st Class Daniel Hinton ARLINGTON, Va. – The last Los Angeles-class nuclear-powered attack submarine (SSN) built, USS Cheyenne, will be the first of the class selected to go through a service life-extension program, a senior Navy admiral said.

The Navy is planning to refuel six Los Angeles-class SSNs, said Adm. Frank Caldwell, director of the Navy's Nuclear Power Program, speaking Nov. 16 in a webinar for the annual symposium of the naval Submarine League.

The Navy is undertaking the effort to shore up the numbers of attack submarines in the fleet as other boats in the Loc Angeles class are decommissioned in order to partially fill in the "trough" in the mid-2020s when the inventory of SSNs declines to 41 boats.

"We will extend these boats for another operating cycle," Caldwell said. "To get after this, over the last two years, we've been making the required investments in cranes, equipment and facilities to support these refuelings at the Portsmouth Naval Shipyard [Kittery, Maine]. This is a big effort, and there is a lot of work going on."

Rear Adm. Ed Anderson, commander, Undersea Warfare, also

speaking in the webinar, said the Navy is hoping to squeeze more than a 10-year nominal operational cycle out of each of the six submarines in the life-extension program.

"We're gathering the data to give the fleet as much time as possible," he said. Refueling of the Cheyenne will begin in February 2022, Caldwell said.