Navy: Torpedo Tube-Launched Version of Razorback UUV Planned

ARLINGTON, Va. – The Navy is on track to deliver an operational unmanned underwater vehicle (UUV) for routine submarine deployment but also plans to develop the capability to launch it from a submarine's torpedo tubes.

The Razorback is a submarine-launched version of the Hydroid-built Littoral Battlespace Sensing Autonomous Underwater Vehicle, a version of the REMUS 600 UUV that entered full-rate production for the Navy in 2013. Details of the Razorback's payloads and capabilities are classified, but it is planned for launch and recovery from a Dry Deck Shelter, a compartment than can be carried on top of the hull of certain submarines.

"We're currently fielding those vehicles for integration with the Dry Deck Shelter and we have plans to develop a torpedo tube-launched version of that in the near future," said Capt. Peter Small, the Navy's program manager for UUVs and unmanned surface vehicles, Nov. 7 at the Naval Submarine League's symposium.

Navy Submarine Programs Facing Many Pressing

Challenges, Deadlines

ARLINGTON, Va. – The Navy's submarine production enterprise is besieged by growing demands as it moves Virginia-class construction to two a year, is building payload models for future Virginias and is designing new models, and is working on refueling some of the Los Angeles-class attack boats, while focusing on the No. 1 priority – keeping the Columbia-class program on the tight schedule to replace the aging Ohio-class boomers.

On top of all that is the urgent requirement to overcome the "debacle" of faulty welding in new ballistic-missile tubes that will impact the narrow schedule margin to meet the Columbia's firm 2031 start of patrols, and the possibility that Virginia production could be increased to three a year in the near future.

Adding to that staggering array of challenges described by the top submarine program officials Nov. 7, the Navy program managers and the sub building industry are confronted with a need to not only expand their workforces to meet the growing demands, but to find new skilled builders and designers to replace an aging cadre of workers.

But during their presentations at the Naval Submarine League's annual symposium, the Navy officials returned repeatedly to the crucial requirement to have the first Columbia-class ballistic-missile submarines ready for their nuclear-deterrence missions before the current Ohio-class boats hit their already extended service life.

"We're doing everything we can to deliver Columbia on patrol, on time," said George M. Drakeley, executive director in the submarine program executive office. "Beside keeping the Columbia program at an affordable cost, "our biggest challenge is to deliver on time."

History shows that the first of class in any ship program does not deliver on time, Drakeley said, noting “We don’t have that luxury.”

“It’s very important we get the Columbia out by 2031 as the Ohios retire,” he said, because “we’ve extended the Ohios [service life] from 30 to 42 years.”

Navy officials have said that they cannot guarantee that the oldest of the Ohio boomers would be able to submerge for a strategic patrol after 2031.

Earlier in the day, Adm. Frank Caldwell, director of Naval Nuclear Propulsion, showed the importance of the Columbia program by noting the ballistic-missile submarines were “the only survivable component” of the nuclear deterrent triad and would carry 70 percent of the warheads allowed by the New Start treaty with Russia.

Capt. Jonathan Rucker, program manager for Columbia, said they were “in full swing” with detailed design and advanced procurement underway and would be ready to start construction in 2021. In addition to focusing on keeping on schedule, Rucker said, “to ensure the Navy gets 355 ships … we need to get Columbia down to an affordable program cost.”

To do that, he said, “my staff is working on how to get to ‘no,’ which means don’t change requirements.”

To get a head start on Columbia construction, the program started production of the common missile compartments, which also will be used in the Royal British Navy’s Dreadnaught ballistic missile submarines.

But last summer, inspectors discovered “this missile tube debacle,” he said, referring to a large number of substandard welds. The program office is working with industry to address the flawed welding and to impose a more stringent oversight regime, but correcting the flaws has taken 10 months from the

schedule.

Capt. Christopher J. Hanson, program manager for the Virginia submarines, noted that they were now steadily producing two boats a year, were building the first of the Virginia Payload Modules, which will increase the boats' strike capabilities, and were working on designs for improved future versions.

And Drakeley noted that "Congress has put into law" the requirement to negotiate with industry on increasing the construction rate to three a year, which might happen by 2022 or '23.

Meanwhile, they are working on ways to refuel the nuclear reactors on five of the older Los Angeles-class attack boats to extend their service lives as part of an effort to expand the sub fleet from 48 to 60 to meet the demands from regional combatant commanders.

Strategy Drives Undersea Warfare Programs

ARLINGTON, Va. – The Navy is working on greater integration of all aspects of undersea warfare, including strategic deterrence, attack submarines, unmanned undersea vehicles, seabed infrastructure and the surface and air anti-submarine assets, to ensure its investments and tactics all will contribute to a possible fight, the director of Undersea Warfare said Nov. 8.

"We are, no kidding, having the strategy drive the programs … to make sure we're not buying things we don't need to win the war," Rear Adm. John Tammen told the Navy Submarine League's

annual symposium. The directions from the National Defense and National Security strategies are guiding an Integrated undersea investment strategy, he said.

A crucial focus of those investments is the modernization of the sea-based strategic deterrence with the Columbia ballistic-missile submarine to replace the current Ohio-class boomers.

“There really is no margin for Columbia,” to be on patrol by 2031, Tammen said, repeating a message heard earlier in the day from Vice Adm. Johnny Wolfe, director of Strategic Systems Programs. The ballistic-missile subs are “the only survivable component” of the strategic deterrence triad and provide 70 percent of the nuclear deterrent warheads, he said.

Keeping Columbia on schedule is critical because the Navy is extending the service life of the Ohios out to 42 years and “we’ve never taken a submarine out to 42 years.” To ensure the Ohio-class boats can remain operational for 42 years, the Navy stood up a study that will use the four early Ohios now serving as guided-missile subs as a test, he said.

They also will continue to modernize the Ohios to keep them relevant out to 42 years, Tammen said, using technology going into the new models of Virginia-class attack subs.

Tammen also discussed the little-known fact that the new Nuclear Posture Review said the sea-based strategic deterrence program would have “at least 12 Columbia” boats. It has been widely understood that the program called for only 12 of the new boomers.

Without going into any details, Tammen said “we’re going to keep the Columbia [production] line hot after the 12th boat, so if we need to build more than 12, we can.”

The limit on 12 Columbias is generally based on the number of nuclear warheads and delivery vehicles allowed under the New

Start arms control treaty with Russia.

Tammen put considerable focus on the efforts to develop a family of unmanned undersea vehicles noting that they have consolidated unmanned underwater vehicle (UUV) programs into his N-97 office, while closely cooperating with Expeditionary Warfare (N-95), which plans to use unmanned underwater systems in its mine warfare missions.

“Every day we have conversations on how we can move faster with UUVs,” he said.

In apparent response to some criticism of the slower development of UUVs, compared the aerial or ground unmanned systems, Tammen said, “unmanned undersea vehicles are truly autonomous. There is no joystick [controller] and no lawyer standing behind the joystick.” And they “have to ensure we can get the data off of them, to make them relevant.”

Although the primary purpose of producing the Virginia Payload Modules was to increase the Tomahawk strike capabilities of the attack subs, Tammen said the modules also could launch smaller UUVs. And the Navy is looking at other weapons that could go into the modules as part of the increased focus on tactical warfare capabilities.

Looking ahead, Tammen said his office was working on designs for block 5, 6 and 7 Virginia-class subs, but after that “we get to a new SSN,” which will “put fast back into fast attack. Fast with stealth.”

Navy to Christen Expeditionary Fast Transport Puerto Rico

ARLINGTON, Va. – The Navy will christen its newest Expeditionary Fast Transport, the future USNS Puerto Rico (T-EPF 11), during a ceremony Nov. 10 at the Austal USA shipyard in Mobile, Alabama, the Defense Department said in a release.

The principal speaker is congresswoman Jenniffer González-Colón, resident commissioner of Puerto Rico. Supreme Court Justice Sonia Sotomayor will serve as the ship's sponsor. In a time-honored Navy tradition, she will christen the ship by breaking a bottle of sparkling wine across the bow.

"This ship honors the Commonwealth of Puerto Rico and the contributions Puerto Ricans have made to our nation and Navy and Marine Corps team," said Navy Secretary Richard V. Spencer. "USNS Puerto Rico will provide our commanders high-speed sealift mobility and agility and I am thankful for this ship, her crew, and our industrial force teammates whose service makes this great ship possible."

The future USNS Puerto Rico will be the first active ship in naval service to honor the island in the West Indies east of Hispaniola. An Alaska-class cruiser named Puerto Rico was authorized July 19, 1940, but construction was canceled June 24, 1943.

With an all-aluminum shallow-draft hull, the EPF is a commercial-based catamaran capable of intra-theater personnel and cargo lift providing combatant commanders high-speed sealift mobility with inherent cargo handling capability and agility to achieve positional advantage over operational distances.

EPF-class ships are designed to transport 600 short tons of military cargo 1,200 nautical miles at an average speed of 35 knots. The ship is capable of operating in shallow-draft ports and waterways, interfacing with roll-on/roll-off discharge facilities, and on/off-loading a combat-loaded Abrams main battle tank (M1A2).

The EPF includes a flight deck for helicopter operations and an off-load ramp that will allow vehicles to quickly drive off the ship. EPF's shallow draft (under 15 feet) further enhances littoral operations and port access.

The EPF program delivered its ninth ship late last year, USNS City of Bismarck (T-EPF 9), with delivery of USNS Burlington (EPF 10) planned for mid-November. Puerto Rico and Newport (EPF 12) are currently under construction at Austal's shipyard.

Navy Submarine Warfare Director: Navy to Keep Columbia SSBN Line 'Hot' After 12th Boat

ARLINGTON, Va. – The Navy plans to keep the production line of the Columbia-class nuclear-powered ballistic-missile submarine (SSBN) ready for new submarine production, the Navy's director for submarine warfare said.

"What we are going to do is we're going to keep the Columbia line hot," Rear Adm. John Tammen, said Nov. 8 at the Naval Submarine League's annual symposium. "That gives us the

option, if STRATCOM [U.S. Strategic Command] says we need more than 12, well then we can produce more than 12."

Keeping the line open also may aid in a smoother transition to the Navy's next submarines, possibly large mother ships for unmanned underwater vehicles and other types mission systems.

"If STRATCOM doesn't need more than 12, then we're looking at what we call the Large-Volume Host Platform, where we'll take that center section – we haven't nailed down the concept – but there will be the ability to host vehicles on board inside that center section," Tammen said.

Also speaking at the symposium, Vice Adm. Johnny Wolfe, director of Strategic Systems Programs, noted that the Defense Department's Nuclear Posture Review calls for a minimum of 12 Columbia-class SSBNs, not a hard limitation of 12 boats.

The design of the lead boat of the new class, Columbia, is 83 percent complete. Construction is scheduled to begin next year. The boat is scheduled for its first patrol in 2031.

Next Sub-Launched Ballistic Missile 'Won't Be Completely New'

ARLINGTON, Va. – The Navy's next-generation submarine-launched missile (SLBM) will not be a completely new design but will incorporate some of the current Trident D5 Life-Extension (D5LE) version systems.

The follow-on missile is currently known as the Trident D5LE2, according to Vice Adm. Johnny Wolfe, director of Strategic

Systems Programs (SSP).

“What Ohio [-class SSBN] has today [D5LE] is what Columbia will initially have until we get the Life-Extension 2,” Wolfe said Nov. 8 at the Naval Submarine League’s annual symposium.

To lower technical and schedule risk in the Columbia-class ballistic-missile submarine program, the Navy decided to arm the boats initially with the existing Trident D5LE missile rather than develop an entirely new missile concurrent with the development of the submarine. At some point in the service life of the Columbia class, the boats will receive the D5LE2.

Wolfe said the SSP will begin trade studies in 2020 to “define an SLBM that can deploy throughout the life of Columbia,” which is slated to serve to 2084. The studies will determine which D5LE components can be continued in the next missile and which will need to be modernized or replaced for D5LE2.

The D5LE2 “won’t look like the D5 that we’ve got today, it won’t be completely new, it will be somewhere in the middle,” he said.

“If you look at the decisions that we made on Columbia, as we went down to 16 [launch] tubes [from 24 on the Ohio class], part of that decision was made because there was an assumption that the reliability of this weapon system way out in the 2070s and 2080s will be just as reliable and supportable as it is today with the current Trident,” he said.

Wolfe pointed out that the Trident missile inventory will decline to a point where new production will be needed. Part of the challenge is to sustain the industrial base to build, for example, rocket motors, so that the expertise is not lost during procurement troughs and would not have to be reconstituted.

“Our challenge is that whatever we do next has, at a minimum, the reliability, accuracy and supportability that we’ve got

today," he said.

Sparton, Leidos Team on Mk5 Acoustic Device Countermeasure

DELEON SPRINGS, Fla. – Sparton Corp. has teamed with Leidos Maritime Systems to support the Acoustic Device Countermeasure (ADC) Mk5 program, Sparton said in a Nov. 6 release.

The Mk5 is a next-generation countermeasure intended to replace the ADC Mk3. The ADC Mk5 is a 3-inch diameter expendable device that is submarine launched from internal signal ejectors and is part of a submarine's defense against acoustic-homing torpedoes.

On Sept. 13, the U.S. Navy announced Leidos had been awarded the contract (valued up to $36.1 million) under a competitive solicitation. Sparton will contribute to the contract's scope of work, which includes the design, development, fabrication, integration, testing and low-rate initial production of the U.S. Navy's Mk5 program. Sparton will also provide manufacturing services to support system fabrication.

"Sparton is excited to leverage our knowledge of maritime acoustic communication systems, packaging, and deployment systems for this new opportunity", said Jim Lackemacher, group vice president of the Engineered Components & Products Segment. "Sparton looks forward to collaborating with Leidos to bring this vital capability to the fleet."

Navy EP-3 Intercepted Over the Black Sea

NAPLES, Italy – A U.S. EP-3 Aries aircraft flying in international airspace over the Black Sea was intercepted by a Russian SU-27 on Nov. 5, U.S. Naval Forces Europe-Africa/U.S. 6th Fleet Public Affairs said in a release.

“This interaction was determined to be unsafe due to the SU-27 conducting a high-speed pass directly in front of the mission aircraft, which put our pilots and crew at risk,” the release said. “The intercepting SU-27 made an additional pass, closing with the EP-3 and applying its afterburner while conducting a banking turn away. The crew of the EP-3 reported turbulence following the first interaction, and vibrations from the second. The duration of the intercept was approximately 25 minutes.

“While the Russian military is within its right to exercise within international airspace, this interaction was irresponsible. We expect them to behave within international standards set to ensure safety and to prevent incidents, including the 1972 Agreement for the Prevention of Incidents On and Over the High Seas (INCSEA). Unsafe actions increase the risk of miscalculation and potential for midair collisions.

“The U.S. aircraft was operating in accordance with international law and did not provoke this Russian activity.”

Sikorsky Awarded Contract to Sustain Navy, Marine Super Stallion, Sea Dragon Helicopters

STRATFORD, Conn. – Sikorsky, a Lockheed Martin company, was awarded a performance-based logistics contract with a value of $717 million to provide supply and logistics support to the entire fleet of in-service CH-53E Super Stallions and MH-53E Sea Dragon helicopters, the company said in a Nov. 5 release.

The H-53E is a battle-proven heavy-lift helicopter continuing to support the U.S. Marine Corps and Navy in missions at home and around the world.

The scope of the contract includes repairs, overhauls, spares, obsolescence mitigation and asset management services over four years. Contract performance is based on material availability metrics with additional incentives added for demand reductions, maintainability enhancements and aircraft readiness contributions.

The expanded comprehensive arrangement will cover additional readiness-critical components, including main and tail rotor blades, main gearbox, main rotor head and flight control components, as well as accessories such as refueling probe and cargo system components.

“We expect the expanded performance-based logistics to measurably improve material availability and reduce support cost while increasing overall aircraft readiness,” said Pierre Garant, Sikorsky senior program manager, Marine Corps In-Service Programs. “Our support infrastructure and past performance-based logistics successes will result in Sikorsky continuing to reliably provide mission support critical to the

warfighter.”

As the Marine Corps’ heavy lift-helicopter designed for the transportation of heavy material and supplies, the CH-53E Super Stallion is compatible with most amphibious class ships. With four-and-one-half hours’ endurance, the helicopter can move heavy equipment over rugged terrain in bad weather and at night. The MH-53E Sea Dragon fills the Navy’s need for long-range minesweeping missions, in addition to heavy-lift duties. The H-53E has consistently proven its worth to the fleet commanders with its versatility and range.

The contract will provide the vital and affordable support to the entire fleet – expanding a reliable base of long-term sustainment as the aircraft continue to fully operate until the introduction of the replacement aircraft, the Sikorsky CH-53K King Stallion.

Fairbanks Morse Awarded Engine Contract for Navy’s First Flight II LPD

WASHINGTON – Fairbanks Morse, an EnPro Industries company, has been awarded a contract to build and deliver the four main propulsion diesel engines (MPDE) that will power LPD 30, which will be the U.S. Navy’s first LPD Flight II class ship, the company announced Oct. 30.

The newly designed ship will be based on the San Antonio-class hull, but the LPD Flight II is fitted with a fully capable flight deck and hangar, a well deck, and the vehicle and cargo capacities to support and sustain more than 500 combat-

equipped Marines for up to 30 days. Each engine will feature common rail (CR) fuel injection technology.

The engines are scheduled to be delivered in the second and third quarters of 2020 to Huntington Ingalls Shipbuilding in Pascagoula, Mississippi. Fairbanks Morse will then support installation, testing and sea trials for the vessel. The four sequentially turbocharged 16-cylinder FM Colt-Pielstick PC 2.5 diesel engines with CR fuel injection will deliver over 31 megawatts of propulsion power and are among the largest medium-speed diesel engines manufactured in the United States.

“As an American manufacturer of medium speed engines, we take great pride in delivering engines and systems for the U.S. Navy and U.S. Coast Guard. This contract is particularly special as it is for the first LPD Flight II class ship,” said Deepak Navnith, Fairbanks Morse president. “As a company, we place significant value on innovation and it was at the heart of this win. The common rail fuel injection technology on the LPD PC 2.5 engines will lower total lifecycle costs for the Navy by reducing fuel consumption, lowering emissions, and reducing engine maintenance, enabling the Navy to spend more time at sea at a lower cost.”

The common rail system technology uses a common high-pressure fuel header, high-pressure pumps, electronically controlled fuel delivery, electronic governing system and a new control system to deliver a precise amount of fuel throughout all engine operations. The common rail technology will deliver improved specific fuel consumption at all operating points, resulting in millions of dollars saved by the Navy over the operational lifetime of the power systems.

Fairbanks Morse engineers in Beloit, Wisconsin, worked with the MAN Energy Solutions teams in Augsburg, Germany, and St. Nazaire, France, along with the U.S. Navy to apply MAN’s proven commercial technology from the 32/44CR engine onto the FM Colt-Pielstick PC 2.5V STC engine.

Each engine will be built at the Fairbanks Morse manufacturing facility in Beloit, creating numerous jobs for American workers. Fairbanks Morse engines are installed on approximately 80 percent of U.S. Navy ships that have a medium-speed power application.