

Large, Medium USVs to Enhance Distributed Maritime Operations



The medium-displacement unmanned surface vehicle prototype Sea Hunter pulls into Joint Base Pearl Harbor-Hickam, Hawaii, Oct. 31, 2018. There is currently one Sea Hunter operating with Surface Development Squadron One and a second is planned. U.S. NAVY / Mass Communication Specialist 1st Class Corwin M. Colbert

ARLINGTON, Va. – The U.S. Navy is working hard and making progress in developing concepts and making technological advances in developing its planned large and medium unmanned surface vessels (USVs), said the admiral in charge of their development.

“USVs are one of the centerpieces of distributed maritime operations,” said Rear Adm. Casey Moton, program executive officer, Unmanned and Small Combatants (PEO-USC), speaking June 23 at an event sponsored by the U.S. Naval Institute, Huntington Ingalls Industries and the Center for Strategic and International Studies – a Washington think tank.

Moton said the Navy views the future Large USV (LUSV) and Medium USV (MUSV) as platforms that will enable the fleet to operate in a more distributed manner either as part of a carrier strike group or as vessels pressed forward with an acceptable risk of attrition.

The LUSV and MUSV are envisioned as distributed platforms with lower cost than manned warships that will have sensors and/or missiles and that normally will operate under the protection of a carrier strike group. Both types of USVs will need to be capable of open-ocean transits, Moton said.

The LUSV, for example, is envisioned to be a node in the Aegis protective network and could function as an "add-on magazine" of missiles, Moton said.

Moton's office is "laying a lot of the foundational work" for USV operations by developing mission autonomy; navigation and control systems; hull, mechanical and electrical reliability; cyber and anti-tamper protection; and integration of the USV into the Aegis Combat System, with a focus on retiring risk in the prototype phase of development. Moton said the LUSV to be equipped with vertical-launch systems.

The Navy's Surface Development Squadron One in San Diego now operates the single Sea Hunter USV, which he said has been exercising with guided-missile destroyers. A second Sea Hunter is under construction.

The Navy's two Overlord commercial-standard vessels with unmanned systems also have been busy with concept and systems development. One of the Overlord vessels made two long transits of 1,400 nautical miles from the Gulf of Mexico to Norfolk, Virginia, and back, in an autonomous mode, Moton said.

One of the concepts being worked on is the degree to which people will be involved in servicing the LUSV, for example. Personnel will need to be involved in maintenance, resupply, protection, and moving the vessel in and out of port. The need for personnel to temporarily board and stay onboard these vessels for a period is one of the areas being studied. Redundancy of some systems may reduce the need for unscheduled maintenance. A goal is to have a 30-day threshold of operation between preventative maintenance periods.

"Our starting point for those two vessels [LUSV and MUSV] is we are driving from a technology standpoint to try and automate everything that we can," Moton said.

He said the Navy has two more Overlord vessels under

construction that will be delivered in fiscal 2021.

“The plan is to push our prototypes out to the West Coast [for the Surface Development Squadron One] but we’re looking for opportunities for the East Coast as well,” Moton said.

The first program-of-record LUSV is planned for procurement in fiscal 2023.