Navy’s Only Directed Energy Lab on a Sea Test Range Breaks Ground at NBVC Point Mugu

NSWC PHD Technical Director Paul Mann, (far left); Cmdr. Andrew Olsen (back left) with NAVFAC/NBVC; Thomas Dowd, director, range department, NAWCWD/NAVAIR (front left); Jeff Harper (front center) of Harper Construction Co. Inc.; Marcos Gonzales (right back), NSWC PHD project lead for the Directed Energy Systems Integration Laboratory (DESIL); and NSWC PHD Commanding Officer Capt. Ray Acevedo (far right) at the DESIL groundbreaking, May 5. DANA WHITE

POINT MUGU, Calif. – Demonstrating that Naval Sea Systems Command (NAVSEA) remains open for business despite the pandemic, Navy leaders and private contractors have broken ground at Naval Base Ventura County’s Point Mugu for what will become the fleet’s only dedicated facility to test, fire and evaluate complete laser weapon systems in a maritime environment, the Naval Surface Warfare Center, Port Hueneme Division (NSWC PHD) said in a release.

The nearly 18,500-square-foot Directed Energy Systems Integration Laboratory (DESIL) will open in roughly a year along the Point Mugu Sea Range, enabling NSWC PHD to help accelerate delivery of laser lethality to the warfighter at sea, according to the release.

“Thank you to our partners who were able to join us today for this momentous occasion,” said Capt. Ray Acevedo, NSWC PHD’s commanding officer, at the small groundbreaking ceremony. “This lab is a great win for the Navy, and it further affirms that even during a crisis, the Navy and NAVSEA have been, and

continue to be, open for business, executing our mission."

> ***"The combination of capabilities will be unlike that of any other facility, and will provide customers with a versatile venue for technology maturation and weapon system integration and test. This is a game-changer for the Navy, and will ensure this new technology is well-supported as it becomes a mainstay on naval combatants." – Robert Harriman, DESIL systems engineer with NSWC PHD***

Naval Air Warfare Center Weapons Division, Naval Air Systems Command operates the 36,000-square-mile sea range, one of the reasons why NBVC was chosen for DESIL, said Thomas Dowd, director of the command's Range Department, during the ceremony.

"The value of the Point Mugu Sea Range is that you can put a facility of this nature right on the coastline, and it can operate in the sea range and take advantage of that testing capability," Dowd said. "The decision to build it here is a recognition of the value of the partnership we have between location, geography, maritime environment and engineering talent at the two centers."

Once operating, the facility recreates as realistically as possible how high-energy laser (HEL) weapons behave on a Navy ship platform – customers/users will test how HEL beams perform in sea conditions such as moisture, humidity, salt, fog, differing air densities and temperature changes will affect laser performance; how ships' systems will power and cool the energy-intense weapons; and will test them by shooting at targets on the sea range and in the air over the sea range. Directed energy (DE) team members will support HEL weapons once installed on ships. DESIL will also serve as a laboratory for integrating, testing and evaluating developers' new DE and HEL weapon prototypes.

Also attending the groundbreaking were Jeff Harper, owner and president of Harper Construction Co. Inc. of San Diego, which will build DESIL through a military construction contract, and Cmdr. Andrew Olson with Naval Facilities Engineering Command (NAVFAC), DESIL design manager.

NAVFAC prepared DESIL's request for proposal based on NSWC PHD's requirements, awarded the design/build contract to Harper and will monitor the construction. The lab's estimated cost is roughly $23 million.

Navy In-Service Engineering Agents (ISEA) for ship-based combat and laser systems, will operate DESIL, enabling the lasers to support the fleet as crucial components of the Navy's maritime superiority strategy.

"[At DESIL,] the ISEA engineers will recreate issues and investigate [engineering] issues for deployed DE-installed ships and use the lab as a test range asset," said Marcos Gonzalez, NSWC PHD project lead for DESIL. "It [DESIL] could [also] bring in industry-developed versions of lasers, and developers could perform firing exercises on the test range. We [also] want to make it open to others in the DE world, such as university researchers, because of its unique location, adjacent to the sea range."

During the ceremony, NSWC PHD Technical Director Paul Mann discussed DE's "enormous capability" for all warfighters across all military branches, and that DESIL's ability to enable weapon systems integration is essential to the Navy's delivery of that capability.

"Systems integration is going to allow government, military and industry professionals to come to this facility at Point Mugu and do extraordinary things for our United States and its citizens," Mann said. "The amazing success that's going to be hatched and inspired and born at this facility is something we haven't yet totally

imagined. When we are at our most lethal, we deter at our best, so this is an investment in the protection of our United States' citizens."

DESIL has also been designed to handle increasingly more powerful lasers.

The lab will include space to collaborate with Department of Defense, private industry and academia DE experts; a conference room; offices; and an area for high-velocity learning to potentially train Sailors.

"The combination of capabilities will be unlike that of any other facility, and will provide customers with a versatile venue for technology maturation and weapon system integration and test," said Robert Harriman, DESIL systems engineer with NSWC PHD. "This is a game-changer for the Navy, and will ensure this new technology is well-supported as it becomes a mainstay on naval combatants."