

More Powerful Laser Systems Are Needed, Navy Technologist Says



The U.S. Navy installed the first ODIN laser weapon system on the guided-missile destroyer USS Dewey. The system is due to be fitted onto eight more ships in the next three years, a Navy technologist said on July 7 during a webinar. CHRIS CAVAS ARLINGTON, Va. – The U.S. Navy’s official most heavily engaged in the development of directed-energy (DE) weapons said the service is focused on fielding the sea service’s family of laser systems to warfighters but is also working to improve the systems’ power and beam control.

“We’ve been working hard for the last five to seven years to try to bring directed energy forward in a meaningful sense to the warfighter and the operational community while at the same time advancing the technology,” said Frank Peterkin, senior technologist for directed energy at the Office of Naval Research, speaking July 7 at a Directed Energy Summit webinar sponsored by Booz Allen Hamilton.

Peterkin said that lasers primarily would be installed on surface combatants, particularly Flight II Arleigh Burke-class guided-missile destroyers but also, potentially, amphibious transport dock ships and littoral combat ships. “There have been discussions [about] even putting lasers on aircraft carriers,” he added.

The Navy’s initial mission sets lasers will be dazzling sensors on enemy platforms and engaging and defeating unmanned aerial vehicles. Future missions likely include defeating incoming missiles, including swarms.

Peterkin said the “exquisite optics” of a laser’s beam

director system will augment situational awareness and better direct other weapons as well.

He said the installation of the laser weapon on the amphibious transport dock ship USS Portland last October has gone well, with the ship's crew accommodating of Navy engineers amidst the difficulties of working during the COVID-19 pandemic. The Portland's laser weapon demonstrated its ability to defeat a drone earlier this year. He said the amphib's crew is quickly learning how to operate and sustain the weapon, with which the ship will deploy in 2021.

The Navy will install the ODIN [Optical Dazzling Interdictor, Navy] laser weapon system on eight ships over the next three years, Peterkin said. An ODIN already is installed on the Arleigh Burke-class destroyer USS Dewey.

He also stressed the need for more electrical power as the Navy develops its laser weapons to take on more than one target simultaneously. It was not just a matter of a more powerful beam, he said, but also of directing the weapon to more rapidly respond to incoming threats, such as swarms. "Power will get you faster kills," he said, noting also that beam control also needed significant improvement.