New Shock Test Database Developed by Naval Surface Warfare Center Philadelphia



160613-N-DN943-001
ATLANTIC OCEAN - 160613-N-DN943-001 ATLANTIC OCEAN (June 10, 2016) The littoral combat ship USS Jackson (LCS 6) successfully completes the first of three scheduled full-ship shock trials. The shock trials are designed to demonstrate the ship's ability to withstand the effects of nearby underwater explosions and retain required capability. (U.S. Navy photo by MC2 Michael Bevan/Released)

By Keegan Rammel, NSWCPD Public Affairs / Published June 5, 2020

Naval Surface Warfare Center, Philadelphia Division (NSWCPD) recently worked alongside Naval Sea Systems Command (NAVSEA) and Naval Sea Logistics Center (NSLC) to establish a new official online database called eForms for all Navy shock data for shock hardened shipboard equipment across the Fleet.

Naval ship systems and equipment must meet survivability requirements. Shock qualification verifies equipment will not fail if the ship's hull experiences an Underwater Explosion (UNDEX) event. NSWCPD serves as the NAVSEA lead for shock qualification for Navy shipboard equipment.

"For shipboard equipment installation to be authorized, it must meet applicable shock requirements, accomplished either by qualification or with a Shock Deficiency Correction Plan (SDCP); eForms allows for both, providing a 'one-stop shop' with eShock and eSDCP," explained Christina Backes, Engineering Manager for Shock Certification – Surface Ships, who was involved in eShock development.

The Electronic Shock Module of eForms, known as eShock, was developed to serve as an agile and secure way to store and access official Navy shock data.

"Shock qualification of shipboard equipment provides a baseline level of survivability independent of threat. Qualified equipment ensures ship survivability and keeps the sailors safe," said Rob Tronzo, NSWCPD's Ship Systems Hardening branch head. "Now, eShock serves as a repository for information that facilitates future shock extensions, provides Navy-wide access, and utilizes the NSLC eForms platform leveraging their Authority To Operate (ATO) across the Navy."

"[The eShock module] supports a user-friendly method for managing submission, tracking, approval, and documentation of information required to ensure execution of shock hardening requirements for Navy vessels," said Nadeen Bogonis, NSLC Project Manager of eForms.

The new site not only provides database functionality as a searchable repository for current and historic shock qualification documentation, including Naval Nuclear Propulsion Information (NNPI) data capabilities, but also ensures durable communications are retained in a centralized location.

Moreover, it introduces a new way to transmit data submitted for approval. The new submission process results in better records management because all data is entered through the eShock module, accomplishing submittal requests, tracking, and approvals. This reduces time for engineers to retrieve necessary data, streamlines the review and approval process, and reduces the possibility of results being lost when individuals retire.

"The eShock module mitigates cost and schedule risk by ensuring data is captured and readily available for anyone who needs it," Tronzo explained. "The tool provides 5x to 10x improvement in high velocity learning. It reduces stove piping and allows the data to be more easily accessed, expediting the delivery of data to the necessary parties."

Beyond shock qualification data, a module under development, called eSDCP, is also the single official location for the SDCP Process. An SDCP is a document that provides corrective action information for equipment required to be shock qualified. The eSDCP module will be available to the Navy community in eForms in FY21.

"Historically, our code has developed and managed the online Navy Shock Database (NSDB). Over time, due to network limitations, the server became restricted to just Philadelphia," Backes said. "This tool allows the data to be both secure and accessible across the Naval enterprise."

The eShock module is accessible for Department of Defense personnel and vendors at: https://eforms.nslc.navy.mil.

NSWCPD employs approximately 2,700 civilian engineers, scientists, technicians, and support personnel doing research and development, test and evaluation, acquisition support, and in-service logistics engineering for Navy ships. NSWCPD is also the lead organization providing cybersecurity for all ship systems.

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