

SCSTC Launches Virtual Maintenance Trainer Pilot at the Waterfront



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DAHLGREN, Va. – The Navy has authorized the delivery of the most advanced maintenance training systems to the waterfront. To achieve this, Commander, Naval Surface Force, U.S. Pacific Fleet, Commander, Naval Education and Training Command, and Navy Regional Maintenance Center and Naval Sea Systems Command Director, Surface Ship Maintenance and Modernization, have approved Surface Combat Systems Training Command (SCSTC) to execute a six-month Virtual Maintenance Trainer (VMT) pilot program across the waterfront community.

The VMT, an immersive 3D training tool built to support Aegis Weapon System (AWS) maintenance training, is part of the Director, Surface Warfare's (OPNAV N96) program of record,

Surface Training Advanced Virtual Environment-Combat Systems (STAVE-CS). These VMT solutions are currently delivering the right training, at the right time, in the right way in our schools, so Sailors are ready to maintain their equipment at peak capability and reliability to win the high-end fight.

“In an effort to optimize this initiative, we want to test the effectiveness of standalone VMT systems to support maintenance skill, proficiency training, and maintenance support,” said SCSTC’s Commodore, Capt. George A. Kessler, Jr. “Our goal is to get the SPY-1D(V) Radar and Aegis Computer Network Technician [ACNT] VMTs out to the fleet to learn how our ships, training teams, and maintenance teams might utilize the tools to support just in time training prior to a maintenance check, casualty troubleshooting support and maintenance training proficiency. SCSTC will then take that feedback to update the systems and provide a scaled-up plan to better support the fleet.”

From April 2023 through October 2023, SCSTC will collect and analyze data captured from two Baseline 9 (BL 9) Technology Insertion (TI)-16 ships, the Arleigh Burke-class destroyers USS Frank E. Petersen, Jr. (DDG 121) and USS Lenah Sutcliffe Higbee (DDG 123); Regional Maintenance Centers (RMCs) in San Diego and Pearl Harbor; and supporting SCSTC waterfront detachments. To facilitate the delivery of these tools, SCSTC loaded VMT capability on standalone laptops and provided them to each location for use.

SCSTC and the manufacturer then provided training at each location to cover system specifics to include functionality, operation, employment, and data collection. The initial Train the Trainer (TtT) session was conducted with Frank E. Petersen, Jr., Hawaii RMC, and SCSTC Detachment Middle Pacific, 18-20 April. Separate sessions were conducted with Southwest RMC, SCSTC Detachment Southwest, and Lenah Sutcliffe Higbee. The training was well received and set the baseline for the execution of the pilot over the next six months.

Why have VMTs aboard ships?

A knowledge refresher tool for technicians will be the primary use of VMT aboard ships. The VMT will provide technicians an opportunity to refresh themselves on proper procedures, tools, skills, and techniques needed to support preventive maintenance efforts while at sea.

“Typically, technicians have a number of infrequent maintenance tasks that they need to perform on their systems,” explained Mr. Christopher Odachowski, a management analyst for SCSTC HQ’s technical support directorate, N9, and primary lead for the pilot initiative. “These tasks that support preventive maintenance can be challenging for technicians if they have not performed it in a long time, or have limited experience. The VMTs can be used to practice maintenance virtually in a safe environment to refresh knowledge and build confidence prior to physically performing the check on the tactical equipment. Technicians can also practice complex repairs to the system prior to execution.”

The secondary use of a VMT aboard a ship is for Combat System Training Team events.

“The VMT can be employed in the training environment to simulate system casualties the ships currently train to address throughout the basic and advanced phase of training,” Odachowski said.

The VMT provides realistic casualty control and repair scenarios at a level not seen to date on the waterfront. The Combat Systems Training Team (CSTT) can shift from yellow sticky notes and talking through the casualty response to the technicians actually working through the symptoms, executing the associated work packages, and getting their ship back in the fight.

Execution of pilot aboard ships

The VMT hosts software that is a virtualization of the technical insertion TI-16 AWS hardware set along with a virtualization of SPY-1D(V). Frank E. Petersen, Jr. and Lenah Sutcliffe Higbee were selected for this pilot to maximize applicability since both ships have the TI-16 hardware and AN/SPY-1D(V) with Multi-Mission Signal Processor (MMSP) radar. The ships will conduct a six-month test period comprised of two elements; free play and specific training events, with 557 ACNT scenarios and 247 Aegis SPY-1D scenarios at their disposal.

“DDG 121 and DDG 123 will use the VMT as desired and the system will record utilization and document technician proficiency,” explained Lt. Shane Ortiz, SCSTC HQ’s training directorate’s, N7, waterfront coordinator. “During the initial load-out and training, the ships will also identify specific, upcoming infrequent maintenance checks to conduct targeted training prior to execution and collect feedback upon conclusion of maintenance.”

Why have VMTs at specific waterfront locations?

Typically, technicians and Instructors at the RMCs and SCSTC’s waterfront detachments have been trained in earlier versions of the ACNT or SPY systems but do not receive the specific schoolhouse training on the newest systems that they will have responsibility for in their area of operation.

“Having a VMT onsite, along with initial training on the use and operation of the VMT, will help technicians and Instructors expand their knowledge of these newer systems,” explained Mr. Ron Lavold, a management analyst for SCSTC HQ’s N9 and secondary lead for the pilot program. “The VMT is not solely for apprentice level technicians. This pilot will assist us with our overall goal in expanding the VMT’s utilization across all skill levels.”

Another goal of this pilot is to evaluate the VMT as a

potential distance support tool at the RMCs. The VMT is designed as a distributed training tool, with Voice over Internet Protocol (VoIP), and real time live student monitoring. These built-in capabilities potentially could be employed to support forward deployed technicians with troubleshooting of their systems when casualties are beyond their technical expertise.

Execution of pilot at RMCs and SCSTC waterfront detachments

SCSTC and the RMCs will create a recommended training plan for technicians assigned to the RMC maintenance and SCSTC waterfront detachment teams to develop and maintain proficiency on BL 9 and SPY-1D(V) with MMSP radar. RMCs will then execute the recommended training proposals, evaluate the VMT for viability as a potential distance support tool for the fleet, and provide focused feedback on VMT usefulness in preparation for maintenance actions.

Feedback process

SCSTC has created a feedback team that will be collecting quantitative

and qualitative data from VMT users throughout the six-month period to determine efficiency of the VMT as a training tool.

“Quantitative data will be collected from the VMT files recorded in each user profile, bi-weekly usage emails, and a user questionnaire,” said Mr. Eric Hall, a management analyst for SCSTC HQ’s N7. “Qualitative

data will be collected during focused fleet feedback discussions.”

Post Pilot

SCSTC will provide a summary of findings to Navy leadership and recommendation for next steps if the VMT capability aboard ships and onboard RMCs and supporting SCSTC waterfront

detachments proves to be beneficial.

“The launch of this VMT initiative is a result of an incredible amount of teamwork between headquarters and our learning sites and detachments, SCSTC AEGIS Training and Readiness Center, SCSTC Det Middle Pacific, SCSTC Det Southwest; Regional Maintenance Centers; and our industry partners,” said SCSTC’s Executive Director, Mr. Brian Deters. “We are excited and look forward to the results of this important event.”

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