History of SWEF

The Surface Warfare Engineering Facility (SWEF) is a part of the Port Hueneme Division, Naval Surface Warfare Center (PHD NSWC). At the time it was established, PHD NSWC was known as the Naval Ship Missile Systems Engineering Station (NSMSES), or "Nemesis."

The SWEF complex has been in existence since early 1973 when engineering laboratories were housed in two prefabricated butler huts and three aluminum buildings. As SWEF's responsibilities expanded, additional prefabricated buildings were added.

The main SWEF facility (Building 1384) became operational in 1986, and is named after Vice Admiral Eli T. Reich who is considered the individual most responsible for the establishment of NSMSES in 1963.

Day-to-day Operations

There are three primary types of systems and equipment installed at the SWEF complex: combat systems, computer systems, and satellite communication systems.

Combat systems include search radar systems, fire control radar systems and missile launching systems.

Statistics on SWEF Building 1384

Height: five stories (74 feet)
Square feet: 50,000
Length: 173 feet
Width: 91 feet
Above average sea level: 10 feet
60 Miles northwest of Los Angeles

Multiple computer systems are located within the SWEF for the purpose of computer program development and maintenance. Specialized equipment is available for programmers to simulate and emulate combat system components. Computer programs are developed for shipboard applications and to investigate potential computer program problems and improvements identified by the fleet. Computer programs that control combat systems onboard ship are thoroughly tested at the SWEF before being sent to the ships.

Satellite communication systems have capabilities of transmitting and receiving audio and video information from satellites.

On a day-to-day basis, SWEF personnel investigate, verify and resolve problems reported from the fleet; they use SWEF systems to train personnel to operate and maintain those systems; and they develop engineering changes to improve system reliability, maintainability, safety and effectiveness.

SWEF personnel verify equipment modification and installation procedures in order to minimize fleet problems. They also develop and test computer program enhancements and software procedures, develop and maintain the technical documentation used to support systems in the fleet, and perform Combat System Integration Testing (CSIT).

PHD NSWC: A Heritage of Fleet Support

Since our inception in 1963 as the Naval Ship Missile Systems Engineering Station (NSMSES), our civilian and military workforce at the Port Hueneme Division, Naval Surface Warfare Center (PHD NSWC) has dedicated itself to supporting the Navy's surface fleet.

Aerial View of PHD NSWC

PHD NSWC is the Navy's center of excellence for in-service engineering and integrated logistics support for surface warfare combat and weapon systems. PHD NSWC provides "cradle-to-grave" system support that extends from the earliest design phase to the ultimate retirement of the surface weapon or combat system.

Whether we perform engineering, logistics or other support tasks, our vision is the same…. We are Committed to Safe, Effective, and Affordable Warfare Systems that Enable Ships and Sailors to Fight and Win.

Listening to the fleet, taking ownership of the problem, performing fleet systems engineering, and solving the fleet's problems are the services that constitute the character of PHD NSWC, and will carry the command into the next century as an invaluable part of the surface Navy.

Self Defense Test Ship Remote Site is Important Link Facility

The Self Defense Test Ship Remote Site (SDTSRS), building 5219, provides the Navy with the unique capability for performing land-based remote testing that interfaces with the weapon systems on the Self Defense Test Ship (SDTS). This "laboratory" uses Commercial Off the Shelf (COTS) technology linking computer based weapons control with the SDTS platform. It has fiber optic network link capability that allows fast interface switching to connect both SDTS and the Pacific Missile Test Center/Range. This allows live fire testing of a number of missile and gun systems.

Self-Defense Test Ship Remote Site (SDTSRS)

The Self Defense Test Ship is the former USS DECATUR (DDG 31), and is another "one-of-a-kind" Navy asset. Its mission is to support the entire spectrum of integrated self defense systems engineering, test and evaluation. Combat systems installed on the SDTS are controlled at SWEF.

"We are Committed to Safe, Effective, and Affordable Warfare Systems that Enable Ships and Sailors to Fight and Win."

PHD NSWC Vision Statement

NAVSEA
PORT HUENEME
Surface Warfare Center Division

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NAVSEA
PORT HUENEME
Surface Warfare Center Division

VADM Eli T. Reich

Surface Warfare Engineering Facility

A vital and unique facility
helping to ensure Safe, Effective,
and Affordable Warfare Systems,
located at
Port Hueneme Division,
Naval Surface Warfare Center

Safe, Effective, and Affordable Warfare Systems Depend on SWEF

It's one-of-a-kind. . .a unique facility. No other single building in the world has the equipment and capability to provide engineering and technical support for such a large number of fleet surface combat systems in one location.

The Surface Warfare Engineering Facility (SWEF) was constructed to provide in-service engineering and life cycle support of weapon/combat systems. This land-based test site and laboratory facility allows test and evaluation of fleet systems without utilizing fleet assets. In addition, the unique SWEF assets provide an oceanfront environment and avoid having to equip a laboratory at sea.

The Port Hueneme Division, Naval Surface Warfare Center (PHD NSWC) is responsible for ensuring that shipboard warfare systems work effectively, safely and reliably. The SWEF complex provides PHD with the means to meet this responsibility.

SWEF functions as a land-based test site, making it possible to emulate ship combat/weapon systems and evaluate shipboard operational problems.

Everyday, SWEF is involved in safe and effective engineering support of combat and weapons systems aboard Navy ships. PHD NSWC engineers and technicians use the SWEF combat systems radars, directors, computer systems and launchers to evaluate and improve these systems.

For example, to improve AEGIS SPY-1 radar antenna systems, the engineering team is investigating ways to evaluate the effectiveness of the antenna systems sensors using the Portable Planer Near Field Test Set. This test set allows engineers to check AEGIS class ships during a port visit to ensure the sensors are not degrading during their in-service life cycle.

Self defense systems engineers and technicians use the Target Acquisition System (TAS) radar and NATO systems director and computers to determine system effectiveness by testing and evaluating commercially manufactured circuit cards for computer system interfaces. The TAS and NATO computer systems software interfaces are being used to improve safety by improving threat identification and inputting graphic displays during shipboard active testing.

The SWEF Vertical Launch System (VLS) is being used to evaluate the effectiveness of new alloys and in measuring stresses of metal parts on the hatches. In addition, SWEF supports an Engineering Academy where local engineering students perform hatch timing measurements to improve launcher effectiveness. Parts for the VLS deluge systems are being evaluated for safety by testing new materials and/or parts replacements and improvements.

A variety of the same systems found aboard ships of the fleet are available for NAVSEA sponsors and customers, thereby affording a cost effective, practical and safe means of ensuring systems on naval vessels work better, safer, longer and more cost effectively.

What does the future hold for SWEF? PHD NSWC is developing support for Battle Group Interoperability, giving the fleet a direct line to SWEF through the Battle Force Information Network (BFIN). Also, "Sailor-to-Engineer Connectivity" allows direct network access by fleet personnel to PHD NSWC engineers, technicians and logisticians to find solutions to problems and answers to inquiries. In addition, plans are beginning for the creation of a "Virtual Test Capability" at SWEF.