

San Diego Chapter of SAVE International report on January 11, 2006 Program A Tour of the Sea Fighter (FSF-1)

A contact was made through by our local chapter, which developed into an arrangement for a tour of a Navy experimental ship home ported in San Diego. The attendees were mostly engineers and included members of other organizations such as Simon Wong Engineering, Jacobs Engineering, RBF Consulting, Ninyo & Moore, and the Value Management Institute. They were very interested in the incorporation of “off the shelf” current technology to develop a flexible combatant platform that is trying to break records from manning levels efficiencies to mission capabilities. It is currently undertaking tests that range from hull operational capabilities to its use with remotely controlled weapon systems.



Photo courtesy U.S. Navy
FSF-1 Sea Fighter

The ship was the first Fast Sea Frame (FSF) developed by the Office of Naval Research (initially called X-Craft then christened Sea Fighter (FSF-1) on Feb 5, 2005). It was to be used for evaluating the hydrodynamic performance, structural behavior, mission flexibility, and propulsion system efficiency of high-speed vessels as well as serving as a test bed for developmental mission packages. Operationally, X-Craft is also to demonstrate minimum manning concepts. With a combined U.S. Navy and Coast Guard crew of 26, it will serve as a “risk reduction” experimental vessel for Littoral Combat Ship and Deepwater Program concept of operations development at sea.

The Sea Fighter is an aluminum catamaran designed to operate effectively in littoral, or coastal, waters. It can maneuver in as little as 11 feet of water. The experimental vessel will be used to test the hydrodynamic performance, structural performance, structural behavior, mission flexibility and propulsion-system efficiency of high-speed vessels.

The Navy christened Sea Fighter at Nichols Bros. Boat Builders, Whidbey Island, WA. Rep. Duncan Hunter, chairman of the House Armed Services Committee, delivered the principal address while his wife, Lynne Hunter, served as the ship’s sponsor. The ship will be home ported in San Diego, California.



Photo courtesy U.S. Navy

The Sea Fighter has four water jets as the primary propulsion which delivers the power to make it the fastest Navy ship of its size and offers great maneuverability. The independent water jets make sideways movement possible, simplifying operations and berthing. The power plants are diesels and gas turbines. The diesels will primarily power the ship during long-range cruising speeds, while the gas turbines will enable the sea fighter to travel at least 50 knots in calm seas and more than 40 knots in sea state four.

Sea Fighter is the first vessel that the Navy has designed specifically as a hull which supports interchangeable mission packages and allowing for a true “plug and fight” mission module capability. It also allows quick interchange of mission modules, which are standard 20 foot containers and are housed in the ship’s large mission bay. Access to the main payload deck is via a large lift down from the flight deck or over folding ramps at the stern. The missions supported include battle force protection, mine countermeasures, anti-submarine warfare, amphibious assault support, and logistics/humanitarian support. The multi-purpose stern ramp allows the Sea Fighter to launch and recover manned and unmanned surface and sub-surface vehicles up to the size of a Rigid-Hull Inflatable Boat.



Photo courtesy U.S. Navy

From its dual spot flight deck, X-Craft was able to simultaneously operate two H-60 type helicopters (and/or unmanned aerial vehicles). The ship is also testing a low light vision prototype system installed on the flight deck to facilitate night vision goggle assisted landings.

The ship will have a crew of 26 comprised of four Navy officers and 12 enlisted Sailors working alongside a Coast Guard officer and nine Coast Guard enlisted personnel. As Sea Fighter has been designed for operation with minimum manning, all crew members will be expected to cross-qualify in other areas of responsibility aboard the ship. The small crew will be responsible for all operations and basic maintenance, requiring a significant shift in the normal levels of manning currently used to accomplish various missions and tasks.

Sea Fighter also will be among the first U.S. Navy ships to employ "paperless" navigation through the use of the Sperry Marine Electronic Charting and Display Information System (ECDIS) and Voyage Management System (VMS). Typically, the ship will operate with just three watch standers and one roving patrol to monitor and configure engineering systems. This reduced manning will be supported by a level of automation and sophisticated monitoring of systems and equipment previously absent on US Navy ships.

For more information on the ship's mission and see:

<http://science.howstuffworks.com/sea-fighter.htm/printable>

The latest video on the ship was aired on the military channel of Time Warner cable and has scenes which show our host describing the operational capabilities.

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