DD(X) Land Attack Destroyer

DD(X) is the replacement for retiring *Spruance* (DD 963) class destroyers and *Oliver Hazard Perry* (FFG 7) class frigates, which are reaching the end of useful service life. The Navy plans the DD(X) to be a multi-mission destroyer featuring a composite deckhouse and a Wave-Piercing Tumblehome Hull displacing about 14,000 tons. Optimized for the land-attack mission, it will have two Advanced Gun Systems (AGSs) with a combined magazine capacity of approximately 750 rounds of long-range land attack and conventional munitions. Each AGS will consist of a single-barrel 155mm gun supplied from an automated magazine. An Advanced Vertical Launch System (AVLS) with 80 cells will host Tomahawk Land Attack Missiles, Standard Missiles (SM2-MR) for local air defense, Evolved Seasparrow Missiles for engagement of both airborne and seaborne threats, and Vertical Launch Anti-Submarine Rockets for engagement of submarine threats. Two 40mm Close-In Gun Systems will enhance self-defense against air and surface threats.

DD(X)'s integrated power system will allow sharing of electrical power between propulsion motors and other electrical requirements such as combat system and auxiliary services. The Navy expects the new Dual Band Radar suite and the Integrated Undersea Warfare System to provide state-of-the-art battle space surveillance and advances in survivability and a total ship computing environment to allow a significant reduction in crew size. Introduction of additional new technology could reduce manning with each successive flight of the DD(X) spiral development.

Designed to operate independently or as an integral part of Naval, Joint, and Combined Expeditionary Strike Forces, DD(X) is intended to be capable of providing strike and firepower support for ground operations and contributing to the protection of friendly naval forces through the establishment and maintenance of surface and undersea superiority and local air defense. The DD(X) design plans to incorporate full-spectrum signature reduction to allow the ship to operate in all threat environments.

On April 29, 2002, the Navy announced that it had selected Northrop Grumman Ship Systems to be the design agent for DD(X). Raytheon is the DD(X) system integrator. Approval to proceed with construction of the lead ship will be sought at Milestone B in FY05.

TEST & EVALUATION ACTIVITY

DOT&E is participating in DD(X) requirements and design reviews for the ship system Engineering Development Models (EDMs) and has been active in development of the draft DD(X) Test and Evaluation Master Plan and LFT&E Management Plan.

DOT&E is participating in Multi-Function Radar test planning.

DOT&E participated in the data analysis of the ex-*Caron* (DD 970) Weapons Effects Test, conducted in December 2002. This test gathered data on fire and smoke spread caused by an internal burst weapon without any attempt to contain or suppress the fire. DOT&E is also participating in the planning for a similar test on ex-*Peterson* (DD 969), which will also demonstrate a Design Agent-developed Automatic Fire Suppression System.

DD(X) will be a multi-mission destroyer featuring a composite deckhouse and a Wave-Piercing Tumblehome Hull displacing about 14,000 tons.

TEST & EVALUATION ASSESSMENT

The Operational Requirements Document for DD(X) has not been approved so design and mission capability requirements are not solidified. Although no operational testing has been done, plans for extensive prototyping of the new technologies to be introduced in DD(X) will provide a rich environment for early operational testing of key DD(X) features. Twelve EDM's are being developed for systems perceived to have the greatest risk. Among them are, AGS, Long Range Land Attack Projectile (LRLAP), AVLS, deckhouse, total ship computing environment, and the Integrated Propulsion System. Preliminary design reviews of almost all the EDM's have been completed and development is progressing. Additionally, the program office is using ex-*Radford* (DD 968) to support early at-sea developmental testing of some of the new technologies.

An early operational assessment is scheduled prior to Milestone B, with four other operational assessments scheduled prior to operational evaluation. The early operational assessment will start 4QFY04. Operational evaluation is scheduled for FY13.

Some operational testing challenges remain to be worked out. There is no shore-based range that will accommodate end-to-end testing of the AGS using the LRLAP. Additionally, safe and operationally realistic self-defense testing with Evolved Seasparrow Missiles against anti-ship cruise missiles can only be accomplished with the Self Defense Test Ship.