

Aegis Missile Guidance System

SPY-1D(V) Transmitter and MK 99 Fire Control System



Raytheon manufactures two major parts of the Aegis missile guidance system, which is used on destroyers and cruisers to protect the battle group.

Benefits

- Combat proven
- Delivers a high-power, shock-capable and reliable system
- Performs search, track and missile guidance functions
- Built using decades of expertise and continually enhanced technology
- Provides whole life services and support

Shield of the Fleet

Aegis is an integrated missile guidance system used on U.S. Navy and allied ships to protect the battle group. Using an S-band phased-array radar, the Aegis SPY-1 radar acquires and tracks multiple targets, such as planes and missiles, and defends against them. It operates as an integrated single ship system, as well as in a ship-to-ship network.

SPY-1D(V) Transmitter and MK 99 Fire Control System
Raytheon is the designated agent and manufacturer of two Aegis components: the SPY-1D(V) Transmitter and the MK 99 Fire Control System. The SPY-1D(V) is a high-powered transmitter that is combat proven and shock reliable. It supports search, track and missile guidance functions. As the interface between the radar and the missile, the Fire Control

System communicates with the missile control station, notifying it of the air threat, and then illuminates the target to be destroyed.

Program Management
Raytheon's Aegis program management office is co-located with Aegis engineering. Manufacturing is based at Raytheon's Integrated Air Defense Center in Andover, Mass.

Proven, Global Expertise
Since initial design work began on the Aegis system in the 1960s, Raytheon has been an integral part of the U.S. Navy's Aegis team. The first SPY-1 Transmitter was delivered in 1981. Since then Raytheon has continually enhanced its technology. By the end of 2007, Raytheon delivered 131 deck-houses of SPY-1 Transmitters and 327, MK 99 Fire Control Systems.

First Commissioned Aegis Ships

- Aegis ship – USS Ticonderoga (CG47), Jan. 22, 1983
- Vertical launch – USS Bunker Hill (CG52), Sept. 20, 1986
- Destroyer-class – USS Arleigh Burke (DDG51), July 4, 1991
- Japanese maritime Self-Defense Force's fleet – JDS Kongo (DDG173), Mar. 25, 1993
- Spanish navy's F-100 class Aegis frigates – Avaro de Bazan (F101), Sept. 2002
- Republic of Korea's navy KDX-111 King Sejong the Great class destroyers (DDG 991), expected commissioning in Dec. 2008
- Royal Australian navy Hobart class Air Warfare Destroyers, expected 2014

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Field Tested

Aegis SPY-1 Transmitters and MK 99 Fire Control Systems are on all U.S. Navy destroyers and cruisers. This includes 27 Ticonderoga-class cruisers and 62 Arleigh Burke-class destroyers. Additionally, the systems are in service with Japanese Kongo class destroyers and the Spanish F-100 class frigates. They are an integral part of the plans for the Republic of Korea's King Sejong the Great class destroyers and the Royal Australian navy's Hobart class destroyers.

Whole Life Services and Support

In addition to manufacturing the SPY-1D(V) Transmitter and MK 99 Fire Control System, Raytheon provides engineering services to customers to handle technical issues and potential upgrades. Raytheon currently provides whole life services and support via a performance-based logistics contract with the Naval Inventory Control Point (NAVICP) for all domestic and FMS ships. Raytheon also develops and updates provisioning requirements, technical manuals and ORDALT instructions. System integration support is provided at the production test center and at the combat system engineering development site. Raytheon also provides test team support at both shipyards and field engineering support in Korea.



SPY-1D(V) Transmitter Group

MK 99 Fire Control System

Data Converter	MK 15
Director Control (LM)	MK 200
Transmitter	T-1384
Antenna	AS-3444/SPG-62
Antenna Director	MK 82

AN/SPY-1D(V) Transmitter Group

RF Monitor	AM-7493
Final Power Amplifier	AM-7491
High Voltage Power Supply	PP-8375
Transformer	TF-603
Driver	7492



MK 99 Fire Control System Components

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Customer Success Is Our Mission