

RIM-66 / RIM-67 Standard Missile



国别：美国
类型：舰对空导弹
型号：RIM-66

 [图1](#)


 [图2](#)


 [图3](#)

 [图4](#)

 [声音](#)

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简介：

RIM-66 / RIM-67 Standard Missile

The Standard Missile-2 (SM-2) is the Navy's primary surface-to-air fleet defense weapon. The currently deployed SM-2 Block II/III/IIIA configurations are all-weather, ship-launched medium-range fleet air defense missiles derived from the SM-1 (RIM-GGB), which is still in the fleet. SM-2 employs an electronic countermeasures-resistant monopulse receiver for semi-active radar terminal guidance and inertial midcourse guidance capable of receiving midcourse command updates from the shipboard fire control system. SM-2 is launched from the Mk 41 Vertical Launching System (VLS) and the Mk 26 Guided Missile Launching System (GMLS). SM-2 continues to evolve to counter expanding threat capabilities, and improvements in advanced high and low-altitude threat interception, particularly in stressing electronic countermeasures (ECM) environments, are being implemented through modular changes to the missile sections. The Standard Missile was produced in two major types, the SM-1 MR/SM-2 (medium range) and the SM-2 (extended range). It is one of the most reliable in the Navy's inventory. Used against missiles, aircraft and ships, it first came into the fleet more than a decade ago. It replaced Terrier and Tartar missiles and is part of the weapons suit of more than 100 Navy ships. The SM-2 (MR) is a medium range defense weapon for Ticonderoga-class AEGIS cruisers, Arleigh Burke-class AEGIS destroyers, California and Virginia-class nuclear cruisers and Kidd-class destroyers with NTU conversions. Oliver Hazard Perry-class frigates use the SM-1 MR. The SM-2 is a solid propellant-fueled, tail-controlled, surface to air missile fired by surface ships. Designed to counter high-speed, high-altitude anti-ship cruise missiles (ASCMs) in an advanced ECM environment, its primary mode of target engagement uses mid-course guidance with radar illumination of the target by the ship for missile homing during the terminal phase. The SM-2 can also be used against surface targets. SM-2 Blocks II through IV are long-range interceptors that provide protection against aircraft and antiship missiles, thereby expanding the battlespace. The Block II version of SM-2 includes a signal processor to provide less vulnerability to ECM, an improved fuze and focused-blast fragment warhead to provide better kill probability against smaller, harder targets, and new propulsion for higher velocities and maneuverability. A Block III version of SM-2 provides improved capability against low altitude targets. Block IIIA, a modification to this version, extends capability to even lower altitudes. RIM-66C Block IIIA includes a new warhead that imparts greater velocity to warhead fragments in the direction of the target. Block IIIB is the next step in the continuing evolution of the Standard Missile family, incorporating an infrared (IR) guidance mode capability developed in Missile Homing Improvement Program (MHIP) with the radio frequency (RF) semi-active

guidance system of the proven SM-2 Block IIIA. The MHIP dual-mode RF/IR guidance capability is being incorporated to counter a specific fielded and proliferating electronic warfare systems in existing aircraft and ASCM threats. OPEVAL of SM-2 Block IIIB was conducted during April 1996, with missile firings by an Aegis cruiser that was completing workup training for deployment. Based on OPEVAL results, SM-2 Block IIIB is operationally effective and suitable. These SM-2 versions are provided as medium range (MR) rounds that can be fired from Aegis rail launchers, Aegis vertical launch systems (VLS), and Tartar rail launchers. The Block IV version was developed to provide extended range [ER], improved cross-range and higher altitude capability for Aegis VLS ships, as well as improved performance against low RCS targets and against complex ECM. The SM-2 Block IV is a kinematic improvement beyond the SM-2 Block III, incorporating a thrust-vector controlled booster, a more robust airframe, and guidance and control modifications for improved altitude/range/cross-range coverage against high-performance, low radar cross-section threats in a stressing electronic countermeasures (ECM) environment. In addition to providing significant increases in ship area defense capability, the SM-2 Block IV is the developmental stepping stone to SM-2 Block IVA, the Navy抯 Area Theater Ballistic Missile Defense (TBMD) missile. The Standard Missile-2 Block IV program experienced considerable development problems and schedule delays in 1991. Primarily due to booster problems, the first successful propulsion test vehicle firing was been delayed more than a year. As a result, the initial production decision, once scheduled for the middle of fiscal year 1991, slipped until December 1992, the first quarter of fiscal year 1993. Since only early IOT&E of SM-2 Block IV was conducted to support its LRIP decision, its capability was never fully determined (capability was not demonstrated against ASCM threat representative, maneuvering targets nor against low altitude, low Doppler targets). That is, the Block IV program was restructured, with the intention to proceed to DT&E/OT&E to support a full production decision if technical problems are encountered with development of the SM-2 Block IVA that preclude its retention of Block IV capability (never fully determined) against anti-air warfare threats. Block IVA adds a dual-mode radio frequency/infrared (RF/IR) sensor, an upgraded ordnance package, and autopilot/control enhancements to the SM-2 Block IV. The SM-2 Block IVA missile uses the TBMD-modified Aegis Weapon System on board Aegis cruisers and destroyers to track and engage TBMs, enhancing U.S. littoral warfare capability by allowing Aegis ships to provide TBMD for ships at sea and ground force embarkation areas ashore, without the constraints imposed by sealift or airlift. The SM-2 Block IVA upgrade is being developed to provide capability against theater ballistic missiles, although it is planned to retain capability against anti-air warfare threats. A System Design Review for SM-2 Block IVA was conducted in December 1993 and a Risk Reduction Flight Demonstration (RRFD) program was initiated in FY 1994. An Environmental Test Round (ETR-2A) was successfully launched in the summer 1996. On January 24, 1997, the Navy successfully demonstrated a Theater Ballistic Missile Defense capability when a ballistic missile target was shot from the sky for the first time using a new version of the Standard missile family. This Developmental Test Round (DTR-1) demonstrated the imaging infrared seeker and the capability to intercept a TBM. Full production approvals for SM-2 Blocks have been as follows: Block II was approved in December 1986; Block III in June 1988; Block IIIA in February 1992; and Block IIIB in September 1996, following the OPEVAL summarized below. Block IV was approved for LRIP in May 1995, but further development and procurement were deferred, depending on development of the Block IVA missile, the interceptor for the Navy Area TBMD program, and Block IVA retention of Block IV capability against anti-air warfare threats.

