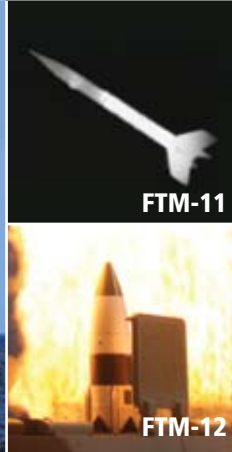


Standard Missile-3 Missile Defense from the Sea



Standard Missile-3 with Aegis BMD provides global defense against short- to intermediate-range ballistic missiles with its demonstrated lethal hit-to-kill capability.

Benefits

- Defense against short- to intermediate-range ballistic missiles
- High velocity interceptor provides large defended areas and multiple engagement opportunities
- Flight proven, in production and deployed
- Modular design enables evolutionary, spiral growth in capability
- Strong international potential - Standard Missile deployed with over 13 international Navies

Ballistic Missile Defense

Standard Missile-3 is being developed for Aegis Ballistic Missile Defense (BMD) as part of the Missile Defense Agency's Ballistic Missile Defense System (BMDS). The Aegis BMD system integrates SM-3 with the Aegis Weapon System (AWS) aboard U.S. Navy cruisers to provide an umbrella of protection against short to intermediate-range ballistic missile threats. SM-3 is compatible with the MK 41 Vertical Launching System (VLS) deployed on many U.S. Navy and international surface combatants.

Concept of Operation

As a ballistic missile threat rises above the horizon, ship's radar acquires, begins tracking, and the weapon system begins calculating the engagement solution. Upon command from the ship's weapon system, the SM-3 boosts out of the launcher and establishes radio communication with the ship.

After MK 72 booster burnout, the MK 104 Dual Thrust Rocket Motor (DTRM) ignites. In-flight communications from the ship guide the missile toward the predicted intercept point. After MK 104 burnout and separation, the MK 136 Third Stage Rocket Motor (TSRM) ignites, propelling the third stage out of the atmosphere. Throughout its flight, the missile continues to receive in-flight target updates from the ship to refine the intercept guidance solution. The TSRM contains two separate pulses that can be initiated to optimize the engagement timeline. During flyout, the third stage pitches over and ejects the nosecone, exposing the SM-3 Kinetic Warhead (KW). Following TSRM burnout roughly 30 seconds before intercept, the SM-3 KW separates from the third stage and immediately searches for the target based on pointing data received from the ship. The KW acquires the ballistic

missile warhead with its long-wavelength imaging infrared seeker. The KW's Solid Divert and Attitude Control System (SDACS) precisely maneuvers the KW to enable a hit-to-kill intercept. As the KW closes on the target, it will identify the lethal payload area and shift its guidance aimpoint to ensure a lethal hit, destroying the target with more than 130 megajoules of kinetic energy, or the equivalent of a 10 ton truck traveling at 600 miles per hour.

Mission Assurance

The SM-3 test program follows the Navy's philosophy of rigorous system engineering to support incrementally increasing capability and reduce risk. Mission Assurance is designed into the missile from the beginning. Extensive ground-testing of the missile subsystems and early ship system integration coupled with operational ship crew training have resulted in a highly successful flight test program and deployment.





Third Stage Rocket Motor

- Two independent pulses provide mission flexibility
- Integral warm gas/cold gas attitude control system

Lightweight Deployable Composite Nosecone
Kinetic Warhead
Third Stage Guidance Section
Third Stage Rocket Motor
Staging Assembly

MK 104 Dual Thrust Rocket Motor (DTRM)

Steering Control Section (SCS)

MK 72 Booster



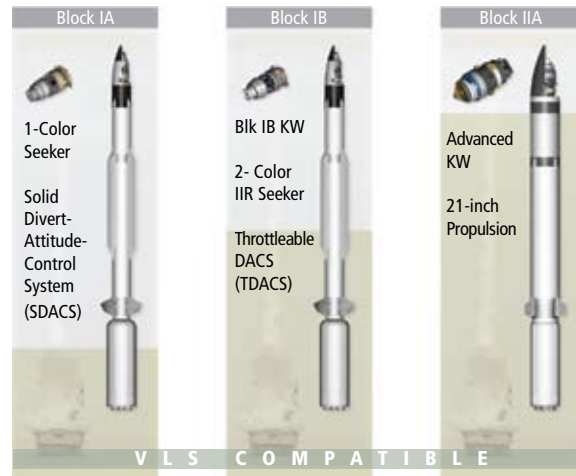
Third Stage Guidance Section

- RF datalink enabling in-flight target updates from the ship
- GPS-aided midcourse guidance



Kinetic Warhead

- High resolution LWIR seeker
- Discrimination and lethal aimpoint guidance
- Solid divert and attitude control system



SM-3 Evolution

The engagement scenarios incorporated ascent and descent phase intercepts, aimpoint selection and guidance, and lethal aimpoint intercept. All of the scenarios were performed under operationally realistic conditions with U.S. Navy officers and crew.

Operational Flexibility

The flexibility of sea-basing and the high velocity of SM-3 provide multiple engagement opportunities with the capability to intercept threats in their ascent, midcourse and descent phases. The inherent mobility of the ship gives the operational commander the flexibility to respond to changing threat scenarios. The system provides the ability to defend an entire geographic region while maintaining multi-mission capability.

Continuous Evolution

SM-3 has a spiral upgrade path designed to counter the evolving ballistic missile threats. The SM-3 Block IB will incorporate a two-color, all reflective infrared seeker, enabling longer range acquisition and increased threat discrimination. A Throttleable DACS (TDACS) is also in development to provide a more flexible and lower cost alternative to the SDACS. The U.S. and Japan are co-developing the SM-3 Block IIA, which will incorporate 21" 2nd and 3rd stage rocket motors, providing a significant increase in engagement capability and larger defended areas. The Block IIA will also provide a larger, more capable KW to counter future ballistic missile threats.

International Potential

The Standard Missile international base opens the door for SM-3. SM-3 is a model for international cooperation. Japan is the first nation to procure SM-3 for their Kongo-class ships. In addition, the U.S. and Japan have a long history of cooperation on SM-3, including the Japan-US Cooperative Research (JCR)

program and the existing SM-3 Cooperative Development (SCD) program. In addition to Japan, The Netherlands and other nations have participated in BMD studies and tracking exercises. Standard Missile is already deployed in more than 13 international navies worldwide, providing the potential for a global BMD capability.

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