

AGM-88 HARM

High-Speed Anti-radiation Missile



The AGM-88 HARM is the combat planners' weapon of choice for the suppression of enemy air defense radar.

Benefits

- Long-range standoff
- Real-time targeting
- Multiple attack modes
- Simple maintenance

Background

The AGM-88 High-Speed Anti-radiation Missile (HARM) is a joint United States Navy and Air Force program developed by the Navy and Raytheon. HARM was designed as a technically advanced follow-on to standard ARM and Shrike missiles, with deliveries beginning in 1982. Continued hardware and software upgrades have allowed HARM to counter advanced radar threats. HARM has proven itself in both reliability and combat performance. Its first combat use was in Libya in 1986. During Operation Iraqi Freedom in 2003, the firing of more than 400 missiles eliminated the radar threat.

Operation

HARM's primary mission is to suppress or destroy surface-to-air missile radar, early warning

radar and radar-directed air defense artillery systems. Once airborne, HARM can operate in three modes: preemptive, missile-as-sensor and self-protect. In long-range preemptive scenarios, HARM is fired before locking on to the threat radar. Targeting is provided through preflight planning or cued via on- or offboard sensors. Most aircraft are equipped to utilize HARM as a sensor, providing cockpit displays that enhance aircrew target selection and threat prosecution. Radar warning receivers used with the self-protect mode and other more sophisticated electronic warfare support measures (ESM) systems provide additional capabilities for locating enemy radar emitters. Once the aircrew selects the target, the missile is launched, homes in on the target, makes in-flight corrections and eliminates the threat.

AGM-88 HARM Features

Guidance

Anti-radar homing seeker
Broadband RF antenna and receiver
Solid-state digital processor

Warhead

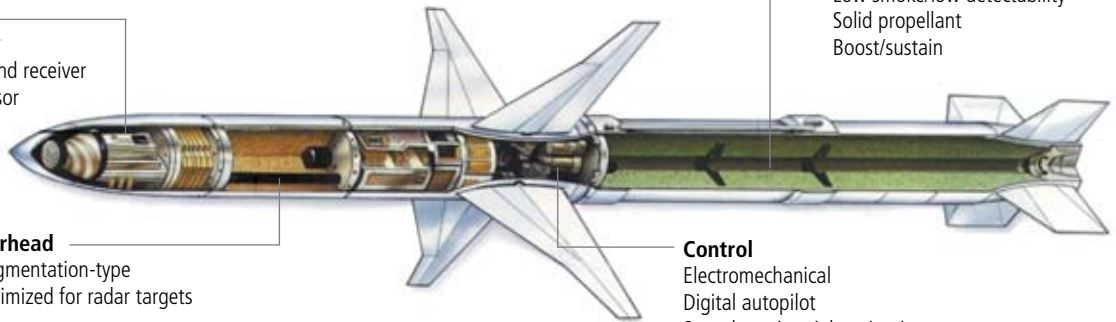
Fragmentation-type
Optimized for radar targets

Rocket Motor

Low smoke/low detectability
Solid propellant
Boost/sustain

Control

Electromechanical
Digital autopilot
Strapdown inertial navigation system



HARM specifications

Length:	13.7 ft	417 cm
Wingspan:	44 in	112 cm
Diameter:	10 in	25 cm
Weight:	800 lb	363 kg



Onboard ESM

- Use existing onboard computers and receivers
- May use existing wires, control and displays
- Example: ECR Tornado with emitter locating system



Missile-as-Processor

- Avionics and wiring requirements preclude use of onboard ESM or command launch computer
- Use existing wires, controls and displays; add avionics interface
- Examples: F-16, IDS Tornado



Command Launch Computer

- Add CLC to avionics suite
- Add wires and controls as required
- Example: F/A-18

HARM Program Highlights

HARM is produced by Raytheon and delivered to the U.S. military for use on a variety of Navy, Air Force and Marine Corps aircraft, including the EA-6B, F-16 and F/A-18. The U.S. government makes HARM available to international customers through Foreign Military Sales. A number of countries have selected HARM for use on F/A-18, F-16 and Tornado aircraft.

There are a number of other aircraft that are candidates for HARM integration. Raytheon manufactures integration, test and support equipment that complete the HARM weapon system suite. Raytheon is the depot for refurbishment and repair. HARM was designed with performance and quality in mind. In field use HARM demonstrates reliability four times better than specification,

with performance accuracy reported as 30 percent better than design requirements. The real proof of a weapons system lies in its combat effectiveness. In all recent conflicts, HARM played a central role in suppressing and eliminating enemy radar threats.

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