

ARMY PROGRAMS

Wide Area Munition (WAM) - Advanced Hornet

The Wide Area Munition (WAM) is a smart, autonomous top-attack anti-tank munition intended to defeat armored combat vehicles from a standoff distance. It uses acoustic and seismic sensors in its ground platform to detect, track, and classify potential targets, and then launches an infrared detecting submunition (sublet) over the top of the selected tracked target. Once a sublet detects a target, it fires an explosively formed penetrator (EFP) to defeat it. Threat target vehicles include tanks, engineer breaching vehicles, and lightly armored tracked vehicles. The variant currently in Low-Rate Initial Production (LRIP) is the Hand Emplaced WAM (HE-WAM), also referred to as the Hornet. Its design characteristics include the ability to be carried and emplaced by one person; the capacity for a 360-degree; a lethal radius of 100 meters; and a fully autonomous employment from final arming to target engagement.

A product improvement of the HE-WAM, called Advanced Hornet, included two types of improvements. First, communications changes were made, adding a two-way communications with status confirmation feature, a redeploy-before-arm capability, a safe passage mode, and other features designed to allow networking of emplaced munitions. Second, the current HE-WAM sublet was replaced by an adaptation of one developed for the Sensor Fuzed Weapon (SFW) pre-planned product improvement (P³I) program. The HE-WAM warhead was substantially different than the Advanced Hornet warhead. In particular, the HE-WAM had a single EFP made from tantalum, while the Advanced Hornet warhead used a multiple-fragment EFP made of copper. The Advanced Hornet used an active laser rangefinder, in addition to the HE-WAM's passive infrared sensor. With these improvements, the Advanced Hornet warhead was intended to expand the WAM target set to include heavy wheeled vehicles.

The WAM Required Operational Capability (ROC) approved in March 1990 envisioned a "Family of WAM" concept of three variants: hand-emplaced, Volcano Scatterable Mine System-delivered, and Army Tactical Missile System-delivered. Only the hand-emplaced variant has been developed. In September 1996, the Army approved HE-WAM for LRIP and Advanced Hornet entered the EMD Phase of its development. Although HE-WAM was expected to enter full-rate production (FRP) at the end of 1998, the Army opted not to proceed into FRP. DOT&E submitted a Live Fire Evaluation report on HE-WAM to Congress in July 1999. The combination of test activities was adequate to support an assessment of the lethality of HE-WAM against its expected targets and to draw some inferences regarding the weapons' effectiveness. In March 2001, the Army gave HE-WAM a Conditional Materiel Release for 377 units. Work continued on development of the Advanced Hornet system with an anticipated full-rate production decision scheduled for 2004.

In FY00, the DoD Inspector General (IG) initiated an investigation of the WAM Program. A draft report circulated for review and comment was critical of the management of the program and recommended an OSD-level program review and that the program be placed under DOT&E oversight for operational testing.

An Operational Requirements Document (ORD) update incorporated newly required interoperability and more specific command and control, reliability, and operational



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effectiveness capabilities. The ORD was forwarded for approval in September 2001. Specific target dates for Milestone C and FRP decisions were established as of January 2003 and December 2004, respectively. Supporting operational tests were scheduled to begin in October 2002 and May 2004.

Funding for the program ended due to the inability of the program to demonstrate developmental progress and maintain program schedules, as well as attention resulting from the DoD IG investigation and report. The Army did not support funding this program in its FY04-09 Program Objective Memorandum. The program was terminated at the end of FY02.

TEST & EVALUATION ACTIVITIES

No operational testing of Advanced Hornet was accomplished in FY02. Technical problems encountered during developmental testing and the lack of available troops to conduct operational testing in October 2002 resulted in the delay of the Milestone C and FRP decisions. DOT&E continued working with the Army to develop an Advanced Hornet Test and Evaluation strategy and the operationally realistic test events required to support that strategy.

The Live Fire Integrated Product Team (IPT) concluded that another lethality Live Fire program would be required for Advanced Hornet due to the warhead change and the addition of heavy wheeled vehicles to the target set. The IPT, with DOT&E participation, nearly completed an updated Live Fire Test and Evaluation (LFT&E) strategy before program termination. The only testing related to Live Fire conducted during FY02 was done by the system contractor, who determined that the multiple-fragment EFP liner used in the Advanced Hornet warhead would be identical to that in SFW P³L.

TEST & EVALUATION ASSESSMENT

Although HE-WAM entered LRIP in September 1996 it will not enter full-rate production, and no additional operational testing is planned. Advanced Hornet remained in EMD throughout 2002, but no operational assessments of Advanced Hornet communications and warhead improvements were made.

Live Fire Testing of the current HE-WAM against actual threat vehicles demonstrated its lethality when critical areas of target vehicles were struck. The damage inflicted by tower shots generally led to substantial degradation in target mobility (and sometimes catastrophic loss). In contrast, end-to-end firings of tactical HE-WAMs against moving T-72 tanks tended to hit areas at the rear and edges of the targets, where there were fewer critical components. Hence, the warhead was less effective under more realistic operational conditions. Additionally, HE-WAM was not effective out to its required range and was only marginally effective at half the required range. If the full potential of the warhead is to be realized, improvements are needed in sublet accuracy relative to the critical areas of the targets. A goal of the Advanced Hornet LFT&E program is to assess whether the lethality potential of the warhead has been achieved.