

# ARCHIVED REPORT

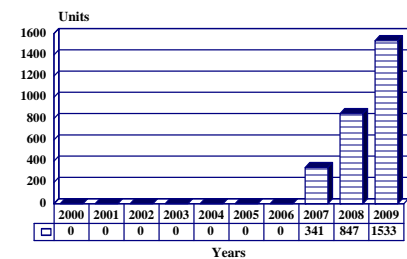
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## Joint Advanced Weapon System (JAWS) - Archived 9/2001

### Outlook

- The JAWS program is examining the possible development of a replacement for HELLFIRE, TOW and Maverick
- The US Army and Marine Corps could develop a Common Missile System to replace HELLFIRE and TOW
- This Common Missile System could enter development around the 2003-2004 timeframe
- A new anti-armor missile is expected to enter service by 2010

10 Year Unit Production Forecast  
2000 - 2009



### Orientation

**Description.** Fire-and-forget multimission missile system.

**Sponsor.** The US Department of Defense through the US Army Aviation and Missile Command (AMCOM), Huntsville, Alabama, and the US Marine Corps Research, Development and Acquisition Command, Quantico, Virginia, USA. The US Army is the lead service for JAWS.

**Contractors.** No civilian prime contractor has been selected for the JAWS program. Contractors that expressed an interest in this program include: Lockheed Martin Corporation, Orlando, Florida; Boeing, St. Louis, Missouri; and Raytheon Missile Systems, Tucson, Arizona. Overseas defense firms could also become involved in this development effort.

**Status.** Under study by the US Army and Marine Corps. Various options are being explored for meeting US Army and Marine Corps requirements including: a common missile system; two separate systems that

incorporate considerable commonality; two separate missiles with common guidance systems; and even the development of two completely separate and distinct missile systems. Depending on the approach selected, this new missile system could enter service anytime between 2006-and-2010.

**Total Produced.** Full-scale production has not commenced.

**Application.** The destruction of hostile armored vehicles and main battle tanks from airborne launch platforms (helicopters and vertical- take-off and landing aircraft) and ground vehicles. An anti-ship capability also could be incorporated into this missile, and possibly the ability to engage airborne targets.

**Price Range.** Due to the fact that this program is in the earliest development stage, price estimates are somewhat speculative. Considering what this system may be required to do, the per-unit price could be anywhere from \$87,000 to \$100,000 or more.

### Technical Data

**Design Features.** The Joint Advanced Weapon System (JAWS) could perform various missions for the US Marine Corps. The missile itself is expected to be a high-speed system with a range of 8 to 10 kilometers (4.97 to 6.21 miles), and possessing an autonomous

fire-and-forget engagement capability. The weight of the system could range from 27 kg to 300 kg. Depending on its final mission requirements, the JAWS could be outfitted with a datalink. The JAWS may be compatible with existing TOW and HELLFIRE missile

launchers. The missile is expected to use insensitive munition technology so that it can be transported safely aboard surface warships.

## Variants/Upgrades

Once development is completed, the JAWS could form the basis for a number of different models, although for the time being it is impossible to determine the differences that will exist. Considering the multiple missions that JAWS will be expected to fulfill, variations on the initial design are likely.

## Program Review

**Background.** With the decline in overall defense outlays, the US Armed Forces have begun to more closely consider the joint development of multirole weapon systems. Previous programs of this type have fallen victim to inter-service rivalries, funding shortfalls and technological limitations. Nevertheless, the services are continuing to explore the feasibility of multi-mission missiles with the latest US Marine Corps effort known as the Joint Advanced Weapon System or JAWS.

The JAWS program is the successor to an earlier effort that involved the development of an advanced helicopter-borne weapon system. The US Army has also been involved in the study of multirole weapon systems, such as the Air-Launched Offensive Air Defense System and at least six other previous titles.

The US Army's efforts focused on The Army Combined Arms Weapon System (TACAWS), which was originally intended to provide a next-generation surface-to-air and air-to-air replacement for the FIM-92 Stinger (eventually this was expanded to include ground-to-air, air-to-air, air-to-ground and ground-to-ground missions). The US Marine Corps eventually persuaded the US Army to join JAWS, resulting in TACAWS being converted into a technology base effort for JAWS.

Of course, this was not the end of the US multimission missile effort's evolution. TACAWS has now metamorphosed into the Future Missile Technology Integration (FMTI), researching technology for possible insertion into existing and future missile systems. Also, the US Army has launched the Common Missile System (CMS) program. This program could provide a replacement for the US Army and Marine Corps AGM-114 HELLFIRE and BGM-71 TOW missiles. If ongoing research proves the feasibility of designing a multi-mission missile, the CMS program could bring together into one program the US Army's Modernized HELLFIRE and Marine Corps' JAWS. A common missile system would enable the services to maximize commonality within their respective missile inventories, reducing cost and increasing interoperability.

Yet differences do remain. Besides the HELLFIRE and TOW, the US Marine Corps wants its new missile to replace the AGM-65 Maverick and to possess more stand-off range. This has led to disagreements over the future system's maximum diameter and weight. Furthermore, the US Marines want a system capable of being launched from a fixed-wing aircraft.

Should these problems be overcome, the US Army and Marine Corps could begin procurement of a new common missile system around the 2008-2010 time frame.

JAWS. The JAWS is a proposed joint service program which will fulfill US Army and Marine Corps Mission Needs Statement requirements for the post-2000 force structure. To support an FY2000 new start decision, joint trade studies are under way, as is development of Milestone 0 support documentation. The initial basis for trade studies is improvements to the AGM-114 HELLFIRE, including alternative seekers and rocket motor improvements, but the services also want the missile to replace the BGM-71 TOW. The JAWS Mission Needs Statement requires a state-of-the-art technology solution which counters air and surface threats in the post-2000 battlefield.

Under a JAWS concept study, the US Army and Marine Corps are compiling information on missiles such as the AGM-114 HELLFIRE, Starstreak and Mistral to determine whether it is possible to design a next-generation system capable of meeting the requirements of more than a single service, and possibly mission applications. The services hope to take advantage of advances in seeker, warhead and airframe technologies. Technologies under consideration include focal plane arrays and imaging infrared seekers. The services are looking for a lightweight, reduced signature, extended-range, reduced time-of-flight, day/night, adverse weather, countermeasure resistant, fire-and-forget multipurpose weapon system. The missile would replace the FIM-92 Stinger aboard US Marine Corps helicopters (and possibly on the Avenger), and the BGM-71 TOW and AGM-114 HELLFIRE in all their applications.

Service officials have stated that this will not be an easy system to develop. Furthermore, the JAWS may eventually end up fulfilling only one or two of the originally designated mission categories. Nevertheless, the services believe that the development of a common system is better than numerous separate efforts, even if JAWS fulfills only one of the stated mission requirements. The pooling of resources would also provide the services with greater savings.

**AAWS-H.** Besides considering the procurement of a common missile systems, the US Marine Corps is also exploring its options for replacing just its TOW anti-armor systems. Under the Anti-Armor Weapon System - Heavy (AAWS-H) project, the service will gather information on the best and most economical means for replacing its aging TOWs. As with similar US Army efforts, the AAWS-H is seen as providing the US Marine Corps with a fallback option should the Common Missile System project prove unsuccessful. The US Marine Corps has not ruled out buying one or more US Army weapon, including the Line-Of-Sight-Anti-Tank (LOSAT) and TOW Fire & Forget (see separate LOSAT and BGM-71 TOW reports).

In April 2000, the Naval Surface Warfare Center, Dahlgren Division (NSWCDD) Weapons Systems Department issued a request for information seeking

sources capable of producing an alternative or replacement system for the US Marine Corps BGM-71 TOW. The service is interested in upgrading or replacing its TOWs, while maintaining or improving the performance of the existing system. The AAWS-H is to be an all weather, day/night, fire-and-forget system with the capability to launch the current stockpile of TOW ammunition with no degradation in performance. This latter need is desired, but not necessary.

The AAWS-H will have to demonstrate a high degree of lethality against current and future main battle tank threats. A capability against other targets such as bunkers, fortifications, personnel, material, and lightly armored vehicles is also desired.

The US Marine Corps desires a system with a reduced launch signature, increased range over the current TOW system (4,000 meters minimum), and an integrated Armor Active Protective Systems countermeasure capability.

An initial operational capability of 2006 is desired. The US Marine Corps has not determined how many AAWS-H systems it will procure, but it hopes to replace roughly 1,000 TOWs now in service on its M998 HMMWVs, light armored vehicles and helicopters.

## Funding

Funding for the JAWS program under PE#0205601N HARM Improvements. The US Army is providing funding for common missile research through its Modernized HELLFIRE and Future Missile Technology Integration (FMTI) program elements.

	<u>US FUNDING</u>									
	<u>FY98</u>		<u>FY99</u>		<u>FY2000</u>		<u>FY2001 (Req)</u>			
	<u>QTY</u>	<u>AMT</u>	<u>QTY</u>	<u>AMT</u>	<u>QTY</u>	<u>AMT</u>	<u>QTY</u>	<u>AMT</u>	<u>QTY</u>	<u>AMT</u>
<u>RDT&amp;E</u>										
US Army										
Proj - 1	-	-	-	-	-	-	-	-	-	5.0
Proj - 2	-	3.9	-	7.1	-	19.8	-	-	-	13.4
US Navy (USMC)										
Proj - 3	-	0.9	-	0.9	-	1.5	-	-	-	2.9

All \$ are in millions.

**Proj - 1** PE#0604329A Modernized HELLFIRE.

**Proj - 2** PE#0603313A Missile & Rocket Advanced Tech. Project D263 FMTI.

**Proj - 3** PE#0205601N HARM Improvement. Project E2211 Joint Advanced Weapons System (JAWS).

## Recent Contracts

No contracts have been awarded for the JAWS since this program remains an in-house effort.

## Timetable

<u>Year</u>	<u>Major Development</u>
1970s	Development of multirole system under study
1980s	Study of multirole systems development continuing
1990	JAWS program unveiled
1990s	Research proceeding
2003-2004	Development of a joint missile system could commence
2008-2010 <sup>(a)</sup>	Tentative deployment date of multimission missile

<sup>(a)</sup> estimate

## Worldwide Distribution

JAWS is likely to be exported by the United States if production is commenced. However, since this program is in its early stages, no specific customers can be identified outside of the United States Armed Forces.

**User Country(s).** If this program moves ahead into production, the **US Armed Forces** will be the initial operator.

## Forecast Rationale

The United States is interested in developing a multi-mission missile that is capable of meeting the requirements of both the US Army and Marine Corps. Whether this desire for a common missile systems becomes a reality remains to be seen. For now, the services have various options open to them for meeting their future anti-armor missile requirements.

After the termination of Follow-On-To-TOW (FOTT), the US restructured its future anti-armor missile development plans. As part of this process, the Pentagon took another look at possibly meeting its TOW and HELLFIRE follow-on requirements with a single missile or two missiles based on a common guidance technology.

The US Army plans to develop the TOW Fire & Forget missile to meet its immediate TOW replacement needs, but hopes to provide itself a long-term solution via the

Common Missile System (CMS) program. The US Marine Corps is also interested in this system. The CMS could be in service by the 2008-2010 timeframe, replacing US Army and Marine Corps HELLFIRES and TOWs. Should this effort fail, the services could go their separate ways and develop systems with far less commonality, aimed at meeting their individual requirements.

Depending on the course followed, the US could begin to field a new anti-armor missile system, common or otherwise, anywhere between 2006 and 2010. The US Army has mentioned a Common Missile System objective in the around of 50,000 units. The US Marine Corps could add another 3,000-to-5,000 missiles to this total. If no common solution is found, these amounts will be divided up about such programs the TOW Fire & Forget, Modernized HELLFIRE, LOSAT, etc.

## Ten-Year Outlook

### ESTIMATED CALENDAR YEAR PRODUCTION

<u>Missile</u>	<u>(Engine)</u>	<u>High Confidence Level</u>					<u>Good Confidence Level</u>			<u>Speculative</u>			<u>Total 00-09</u>
		<u>thru 99</u>	<u>00</u>	<u>01</u>	<u>02</u>	<u>03</u>	<u>04</u>	<u>05</u>	<u>06</u>	<u>07</u>	<u>08</u>	<u>09</u>	
NOT SELECTED													
COMMON MISSILE SYSTEM	UNSPECIFIED	0	0	0	0	0	0	0	0	341	847	1533	2721
Total Production		0	0	0	0	0	0	0	0	341	847	1533	2721