

ARCHIVED REPORT

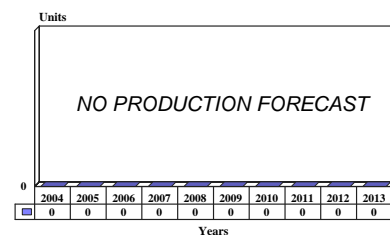
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PAS-18 - Archived 11/04

Outlook

- No new contractor has been chosen by the USMC

10 Year Unit Production Forecast
2004 - 2013



Orientation

Description. Lightweight thermal imaging sight; also known as the WASP (Wide Angle Stinger Pointer).

Sponsor

U.S. Marine Corps
 Marine Corps Systems Command
 Quantico, Virginia (VA) 22134
 USA

Contractors

Raytheon Systems Co
 (formerly Hughes Aircraft Co)
 Mahwah Electro-Optics Center
 1300 MacArthur Boulevard
 Mahwah, New Jersey (NJ) 07430-2052
 USA
 Tel: +1 201 327 2302
 Website: <http://www.raytheon.com>

Note: In January 2002, Raytheon announced that it would no longer produce the PAS-18. A new contractor has yet to be determined.

Status. In service. Future production in doubt as USMC looks for new producer or replacement.

Total Produced. An estimated 1,390 units were produced through 2002.

Application. Mounted on the FIM-92 Stinger surface-to-air missile/launcher MANPADS assembly.

Price Range. Unit price could not be determined from available contract information. Based upon comparative systems, a rough estimate would be US\$35,000 per unit.

Technical Data

Characteristics

Size (less eye cup)
 Weight
 Field of view
 Resolution (medium range)
 Frame rate

Metric

33.78 cm x 9.39 cm x 15.74 cm
 2.49 kg
 12 x 20 deg
 2.25
 60 FPS

U.S.

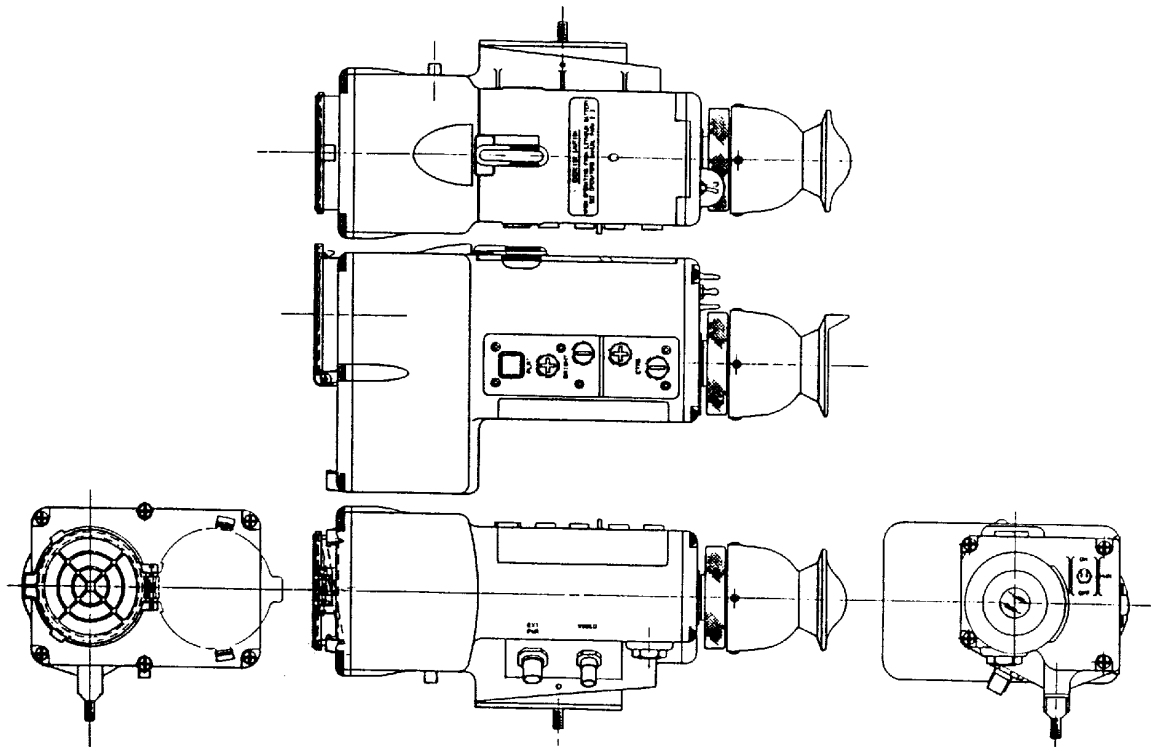
13.3 in x 3.7 in x 6.2 in
 5.5 lb

Spectral range	3.7 - 5.0 microns
Detector elements	64
Detector material	PbSe
Characteristics (continued)	
Cooling	TE
Display	CRT
Mission time	12 h @ 50% duty cycle
Battery	BA-5847/U-6V lithium

Design Features. The PAS-18 Stinger night sight is designed for mounting on the FIM-92 Stinger missile launcher. The PAS-18 operates in the launcher's infrared spectrum, providing long-range detection and wide-angle acquisition. Push-button controls are incorporated into the system sight for ease of operation, and an RS-170 television format is utilized for remote viewing and/or videotaping for training and post engagement analysis. A BA-5847/U lithium battery

Auxiliary power can be applied from any 9 or 32 Vdc external supply. The lead solenoid detector array is thermoelectrically cooled, which dispenses with the need for cryogenics or gas bottles.

Operational Characteristics. The sight is aligned at the factory, allowing it to be transferred from one launcher to another without loss of boresight. According to Raytheon product information, the quick-release



Production Configuration

Source: Magnavox

provides over seven hours of continuous operation. Mission time is 12 hours at 50 percent duty cycle.

mounting bracket allows the PAS-18 to be mounted to the next launcher in under 10 seconds.

Variants/Upgrades

P³I. As listed in FY93 PEDS documents, the USMC was planning to initiate preplanned product improvement (P³I) studies to increase the PAS-18's resolution

and to achieve a weight reduction. However, no related developments were listed in subsequent PEDS.

Program Review

In FY91, the Marine Corps awarded developmental contracts to three vendors to produce two sights each to be used with the Stinger missile launcher. Magnavox's PAS-18 was ultimately selected as the winning design.

The system was originally developed by Magnavox (now Raytheon) in 1988. It was the first lightweight thermal imager in U.S. service designed specifically for use with man-portable, shoulder-fired weapons. The system gives the FIM-92 Stinger surface-to-air missile system the ability to track and engage air targets at night and in adverse weather. It was used during the Persian Gulf War – about 100 units were delivered to the U.S. Marine Corps for deployment with ground forces.

Magnavox (now Raytheon) was awarded a US\$1.8 million contract in June 1992 for Stinger night sights for the U.S. Marine Corps. A US\$10.1 million modification followed in November 1993 for an undisclosed number of systems for the USMC; the completion date was January 1996.

In 1997, Hughes (now Raytheon) was awarded a contract for Stinger night sights for the German Very Short Range Air Defense (VSHORAD) system. The contract was for an initial 60 systems for the German Air Force, with the option to buy additional systems for the Army and Navy. The Stinger night sights are used in the German Stinger MANPADS and SA-16 missile VSHORAD systems.

The U.S. Department of Defense received a request in the summer of 1997 for a large quantity of Stinger missiles and Stinger night sights for the government of

Korea. Although not confirmed, it can safely be assumed that this order did indeed go through.

Given the growing number of Stinger missiles distributed throughout the favored nations of the U.S. and considering the missile's current robust production schedule, similar production for the PAS-18 night sight for export orders throughout the rest of this decade seemed almost a certainty. Given the scarcity of publicized contracts for either the missile or the accompanying systems, however, the level of production is difficult to confirm.

The prospects of future production for PAS-18 were dealt a fatal blow with the news in January 2002 that Raytheon would no longer produce the system. Citing a significant decline in orders, and a formidable requalification effort to design replacement systems, the company felt it would be unable to support former price levels and lead times.

The USMC was quick to start the process of finding a new supplier for the system. Indicating that their existing PAS-18 inventory would be in need of upgrading in the very near future, the service let it be known that it would seek out commercial-off-the-shelf alternatives.

Talk has also turned to an even easier fix to the situation. Raytheon may be in the process of offering up a PAS-18 equivalent of the company's very popular VAS-5 Driver's Vision Enhancer (DVE); or at least a system based on the DVE's technology.

Funding

No recent funding information is available. The last specific listing appeared in the FY93 P-1 under line item #87, Night Vision Equipment, showing a USMC total procurement allocation of US\$13.9 million for PAS-18 (referred to as the Stinger Night Sight).

Recent Contracts

<u>Contractor</u>	<u>Award (\$ millions)</u>	<u>Date/Description</u>
Hughes	N/A	May 1997 – Contract for an initial 60 Stinger Night Sights systems for German Very Short Range Air Defense (VSHORAD) systems for the German Air Force, with options for additional systems for the Army and Navy.

Timetable

<u>Month</u>	<u>Year</u>	<u>Major Development</u>
	FY88	PAS-18 developed
	FY91	PAS-18 selected for USMC Stinger Night Sight program
	FY92	PAS-18 transitioned to low-rate initial production
	FY93	PAS-18 transitioned to full-rate production
Apr	1994	Denmark becomes first export customer
	1996	Marine Corps modification contract completed
May	1997	Hughes (now Raytheon) awarded contract for Stinger night sights for VSHORAD systems
	1997	Korea orders Stinger missiles with accompanying night sights
Jan	2002	Raytheon pulls out of PAS-18 development

Worldwide Distribution

The PAS-18 is currently in service with the **United States** Marine Corps, the Army and Navy of **Denmark**, and the armies of the **Netherlands**, **Germany**, and **Korea**.

Forecast Rationale

With Raytheon stopping full-rate production and no new contractor selected as of September 2003, it would appear that the PAS-18 program is drawing to a close. The system's primary sponsor, the United States Marine Corps, had begun a search in 2002 for a new contractor for the much-needed system. With their existing PAS-18 inventory in imminent need of upgrading, the service also announced their intentions to explore the option of commercial-off-the-shelf alternatives.

The Stinger system is scheduled to stay in service in the U.S. into the next decade, so it is anticipated that the USMC will need to maintain at least a low-rate of production of PAS-18 for spares and replacements. Assuming that a supplier is found, this production would last at low rates through the decade. Although the production outlook has been zeroed-out, the USMC may yet select a new contractor; in which case this report will be updated accordingly. This report will otherwise be archived next year 2004.

Ten-Year Outlook

No new production is forecasted.

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