

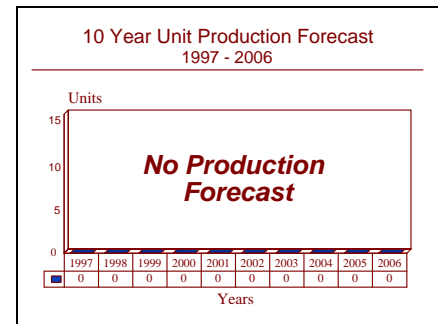
ARCHIVED REPORT

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AAQ-17 - Archived 10/98

Outlook

- No new-production contracts anticipated
- Focus on replacement of AAQ-17 with AAQ-26 upgrade



Orientation

Description. Forward-looking infrared (FLIR) system.

Sponsor

US Air Force
Warner-Robins Air Logistics Center
215 Page Road Ste. 106
Robins AFB, Georgia (GA) 31098-1662
USA
Tel: +1 912 926 2137

Contractors

Raytheon TI Systems
(formerly Texas Instruments Inc)
Defense Systems and Electronics Group
8505 Forest Lane
Dallas, Texas (TX) 75243
USA
Tel: +1 214 480 1417

Status. In service; production complete

Total Produced. Texas Instruments reported that just over 100 units had been produced through 1994. This number has probably changed little, if at all.

Application. US Navy SH-60B Seahawk, US Air Force AC-130U and AC-130H Spectre, A-10, B-52, and various other US Air Force SOC aircraft.

Price Range. The price of an AAQ-17 FLIR could not be identified.

Technical Data

Characteristics. The sensor provides a full, lower-hemispheric field of view, and boasts an MTBF of greater than 350 hours. Among its features are a video tracker, a symbology generator, the Mil-Std-1553 B databus, and an integrated helmet and display sighting system interface.

Design Features.

Dimensions	Metric	US
Weight:		
Infrared receiver	43.2 kg	95 lb
Control converter	21.8 kg	48 lb
Gimbal position control	2.3 kg	5 lb
Infrared set control	1.8 kg	4 lb
Fields of View:		
WFOV		13.7 deg x 18.2 deg
NFOV		3 4 deg
Fields of Regard:		
Elevation		+15 deg to -105 deg
Azimuth		+/- 200 deg
Power Requirements:	115 Vac, 3 phase	1900 W maximum
	28 Vdc	100 W maximum

Variants/Upgrades

In 1993, work began on an upgrade to the AAQ-17 which Texas Instruments spokesperson described as a more advanced system with “enhanced image resolution and improved target tracking.” The impetus behind the upgrade was an AC-130H and AC-130U modification program.

optics on existing AAQ-17 Infrared Detection Set (IDS) and enhanced AAQ-17E IDS installed on 19 AC-130H and AC-130U aircraft. The increased magnification and resolution of the second-generation FLIR will allow aircrews to better discriminate between targets and friendly craft while operating outside the range of threat systems.

The AAQ-26 upgrade (initially called AAQ-XX) to the AAQ-17 began in 1996. Its purpose is to modify the

Program Review

Background. The AN/AAQ-17 was developed in 1986 as a replacement for the AN/AAD-7 FLIR on the US Air Force AH-130H Spectre, the primary mission of which included fire suppression, navigation, and search.

Successful usage in these applications, as well as on the B-52 aircraft, led the US Navy to borrow the devices for the SH-60B Seahawk helicopters it deployed to the Gulf War. In this application, the sensor was mounted in a pod that enabled integration with no aircraft modification whatsoever. The set flew its first flight within 24 hours of its installation. In operational use the device was reportedly particularly adept at seeing through the dense black smoke of the Kuwaiti oil fires.

In a rushed response to Operations Desert Shield and Desert Storm, an RFP was issued to accomplish the early installation of the AAQ-17 (granted to IBM after that company successfully did the same for the Hughes AAQ-16). This enabled the AAQ-17 to be evaluated with the Westinghouse WF-360 and Martin Marietta Pathfinder FLIRs in flight tests of the A-10 for close air support at Nellis AFB, Nevada, in 1990.

The rapid advancement of FLIR technology has left the AAQ-17 a victim of premature obsolescence. TI, however, has devised an upgrade that offers extensive improvement – the AAQ-26 – which will slowly phase out the original AAQ-17. Thus upgrade work (as well as spares support) is keeping the AAQ-17 program going, most likely through the end of the decade.

US Navy SH-60B Seahawk helicopters deployed in the Gulf War used AAQ-17 sensors on loan from the US Air Force Special Operations Command.

Funding

	<u>US FUNDING</u>							
	<u>FY96</u>		<u>FY97</u>		<u>FY98</u>		<u>FY99</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&E</u> (DoD)								

PE#1160404B - Special Operations Tactical Systems Development Project SF100 - Aviation Systems Advanced Development^(a)

	-	5.6	-	1.5	-	2.4	-	16.5
		<u>FY00</u>		<u>FY01</u>		<u>FY02</u>		<u>FY03</u>
		<u>QTY</u>	<u>AMT</u>	<u>QTY</u>	<u>AMT</u>	<u>QTY</u>	<u>AMT</u>	<u>QTY</u>
Project SF100 - Aviation Systems Advanced Development	-	19.3	-	15.1	-	11.3	-	15.5

All US\$ are in millions.

^(a)This project investigates already developed technologies that can apply to specialized equipment to meet unique SOF aviation requirements. One component of this program is the **AAQ-26 upgrade**, which modifies the optics on existing AAQ-17 IDS and enhanced AAQ-17E IDS currently installed on AC-130U/H aircraft.

Recent Contracts

Contractor	Award (\$ millions)	Date/Description
Texas Instruments	5.1	June 1995 — FFP for 10 infrared receivers for the AAQ-17 FLIR on the AC-130H and the MC-130E. Completed March 1997 (F09603-95-C-0701)
Texas Instruments	12	Aug 1995 — FFP contract for design and testing of two upgrade kits for the AAQ-17 Gunship Infrared Detection Set applicable to the AC-130U and AC-130H aircraft. Completed June 1997 (F33657-95/C-0067)

Timetable

Dec	1986	Warner Robins Air Logistics Center awards contract for AAQ-17 development
Jan	1991	AAQ-17 deployed in Gulf War
Jun	1993	Next-generation AAQ-XX program announced
	1996	AAQ-26 upgrade began

Worldwide Distribution

Used by the US Air Force exclusively.

Forecast Rationale

The AAQ-17 has served the Air Force as a most valuable tool, especially during the Gulf War, where it was quickly and easily installed for use in applications where visibility was otherwise minimal. Of particular note was its performance in the thick black smoke of oil fires in Kuwait. The US Navy used the device on loan, and rumors surfaced of a possible Navy procurement. However, despite the system's excellent performance record, the sole customer has remained the US Air Force.

While it is combat-proven, competition among FLIR devices has expanded so quickly that obsolescence has claimed this unit prematurely.

Current contract work involves upgrade kits for the AAQ-17. This upgrade, a second-generation FLIR nomenclatured the AAQ-26, is to "provide the aircrew with operational capabilities safely outside the threat area, lessening crew vulnerability and limiting fratricide in

combat situations,” according to sole-source contractor Texas Instruments (now Raytheon TI Systems). Upgrade activity, which is currently funded through the end of the

decade, is the remaining focus of the AAQ-17 FLIR program. A follow-on is sure to soon enter the market, and no additional production AAQ-17 units are expected.

Ten-Year Outlook

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