

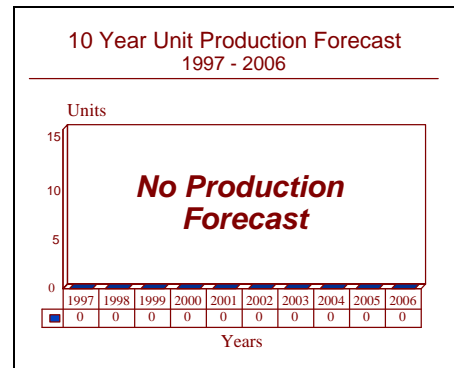
ARCHIVED REPORT

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AAQ-4/AAQ-8(V) - Archived 01/98

Outlook

- Majority of production thought complete
- Limited spares/export production likely
- MIRTS derivative developed for export sales



Orientation

Description. Infrared Countermeasures Systems

Sponsor

US Air Force
 Warner Robins Air Logistics Center
 215 Page Road, STE 106
 Robbins Air Force Base, Georgia (GA) 31098-1662
 USA
 Tel: +1 912 926 2137
 Fax: +1 912 926 9597

Contractors

Northrop Grumman Corp
 Rolling Meadows Site
 600 Hicks Road
 Rolling Meadows, Illinois (IL) 60008-1098
 USA
 Tel: +1 708 259 9600
 Fax: +1 708 870 5705

Status. Export sales; limited spares production.

Total Produced. Unknown.

Application. Active infrared countermeasures system to provide enhanced aircraft survivability against infrared weapons and tracking systems in supersonic aircraft and helicopters.

Price Range. Unknown.

Technical Data

Characteristics

Dimensions

AAQ-8(V)

Size:

Weight:

Construction:

Cooling:

Metric

25.4 cm diam. x 228.6 cm length

90.8 kg

Pod, External

Forced Air

US

10 in diam. x 90 in length

200 lb

Software: Fully Programmable
 Input Power: 3.5 kvA (115 VAC, 400 Hz, 30)

Design Features. The AAQ-4 was introduced as an internally configured system on Air Force EB-66 aircraft during the Vietnam era. It is still in service and, since it is reprogrammable, has undergone a series of updates to retain its effectiveness against new threats. The system has also been reconfigured for helicopter application and updated with multithreat capabilities for redeployment on US Air Force HH-53s. In the helicopter configuration, the dual transmitter provides protection on bands I and II without engine suppressors.

The AAQ-4 uses a visual caesium infrared source to produce a highly effective jamming signal. The jammer is 84 cm long by 33 cm in diameter and weighs 63.5 kg.

The AAQ-8(V) was developed in response to a US Air Force need for an IR jammer (for use on combat aircraft) capable of operating in a supersonic environment. As a second-generation system, the AAQ-8 uses a visual caesium lamp source and, according to Northrop Grumman, has no moving parts. It is promoted as having greater reliability than competing systems that use

mechanical techniques. Operational since 1972, the AAQ-8(V) was initially used in Southeast Asia on F-4 and A-7 aircraft and is currently deployed on Air Force C-130s. It is also used on F-5s.

During 1985 the system underwent trials fitted to a British Aerospace Buccaneer operated by the Royal Air Force Establishment. The AAQ-8(V) reportedly has been procured for use on transport aircraft and some US Army aircraft. Details, however, remain highly classified. There are two versions of the AAQ-8(V): the -V1, which utilizes a ram-air turbine as a power source, and the -V2, which uses an internal power source.

AAQ-8(V) key features include user-selectable response to real-time missions; interchangeable IRCM configurations - i.e., conformal, internal, or pod; system control, threat tables, and countermeasure strategies stored in user reprogrammable memory; digital system control for adaptable threat response; and electronic technique modulation for maximum flexibility.

Variants/Upgrades

MIRTS. Northrop Grumman has also developed the Modularized IR Transmitting Set (MIRTS), a derivative of the AAQ-8(V), for export sales. The MIRTS self-protection IR jamming system reportedly makes use of company-developed IR technology, including a sapphire-based lamp as the IR source. The unit was originally designed for internal installation on helicopters and fixed-wing aircraft. A pod configuration was developed, however, to meet export

requirements. This pod version of MIRTS was repackaged to fit into the AAQ-8(V) pod. The MIRTS modular design supports customized packaging for various aircraft applications while using common core components. Wing tips, engine nacelles, undercarriage, tail cone, and compact fuselage slipper pods are examples of MIRTS installations. Aircraft applications include the BAe 125, Falcon 20, Fokker 27, and custom installations for the 707 and 747.

Program Review

Background. The AAQ-4 was used extensively during the Vietnam War. The system was developed by Hallicrafters Co, Rolling Meadows, IL, which was taken over by Northrop (now Northrop Grumman) in the early 1970s. Hallicrafters Co received US\$3.5 million in production contracts for the system in 1969. Northrop received a

US\$2.5 million contract for the system in November 1974 for use on the RF-4C aircraft. The AAQ-8 was initially used in Southeast Asia on F-4 and A-7 aircraft and is currently deployed on Air Force C-130s. During 1985 the system underwent trials fitted to a British Aerospace Buccaneer operated by the Royal Air Force Establishment.

Funding

No recent funding details have been identified.

Recent Contracts

<u>Contractor</u>	<u>Award (\$ millions)</u>	<u>Date/Description</u>
Northrop	5.2	Feb 1992 — FVI to a CPFF contract for supply services required for logistics support of multiple Quick Reaction Capability (QRC) systems. (F09603-89-C-0392, P00026).
Northrop	5.2	Sept 1992 — FVI to a CPFF contract for supply services required for logistics support of multiple Quick Reaction Capability (QRC) systems. (F09603-89-C-0392, P00033).

Timetable

	1969	AAQ-4 entered production
early	1970s	AAQ-8 entered development
	1972	AAQ-8 entered service

Worldwide Distribution

The US Air Force is the primary user of the AAQ-4 and AAQ-8 IR countermeasures systems. There have been some export sales, but the identities of these users remain unknown.

Forecast Rationale

Developed during the Vietnam War, the AAQ-4(V) and the AAQ-8(V) remain in US service, equipping selected helicopters and fixed-wing transport aircraft. Yet surprisingly, little information has ever been published about the system, and contract award notices remain elusive as far back as the early 1970s. This has continued to be the case through this reporting period. While the USAF continues to support the system, newer IR jammers have come into service, such as the Lockheed Sanders ALQ-144 and Loral ALQ-157, which were designed specifically for helicopter applications.

MIRTS has been developed as a stand-alone IR jammer for military and commercial transports, an area that has

steadily been receiving attention since the late 1980s due to the availability of portable heat-seeking missiles on the world arms market. The recent relief mission to Somalia and ongoing peace-enforcement mission in Bosnia-Herzegovina underscore the real threat such weapons pose to large, unarmed transports, and the consequent need for protection afforded by such systems as the AAQ-8, or its replacement.

While some export sales of the AAQ-8 as well as spares support are expected to continue, this activity will likely be limited due to the availability of newer equipment. An accurate estimation of this activity cannot be made, however, due to the lack of published contract history.

Ten-Year Outlook

Given the probability that production of this system is, for the most part, complete, coupled with the lack of published information, the forecast chart has been omitted. The entire report may will be dropped from the binder next year.

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