

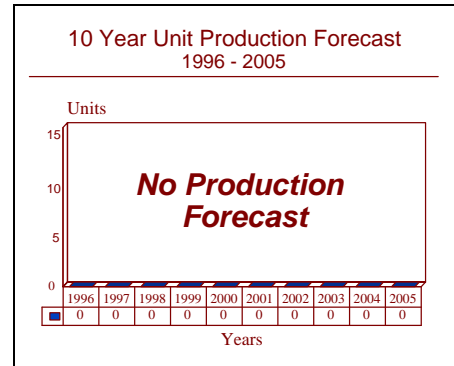
ARCHIVED REPORT

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ALQ-119(V) - Archived 4/97

Outlook

- In service; on-going logistics support
- No further unit production forecast



Orientation

Description. Airborne noise deception/jamming pod.

Sponsor

US Air Force
Warner Robins Air Logistics Center
Robins AFB, Georgia (GA) 31098
USA
Tel: +1 912 468 1001

Contractors

Westinghouse Electronic Systems Group
P.O. Box 17319
Baltimore, Maryland (MD) 21203-7319
USA
Tel: +1 410 765 1000
Fax: +1 410 993 8771
(Being purchased by Northrop Grumman)

Status. In service, ongoing logistics support.

Total Produced. Through the early 1980s, over 1,600 pods had been produced. Nearly 950 pods have been converted to the ALQ-184.

Application. Carried by tactical aircraft: A-7D, A-10A, F-4E/G, F-15B/D, F-16A/B, F-111, and RF-4C.

Price Range. Estimated cost per pod is US\$500,000.

Technical Data

| Dimensions | Metric | US |
|------------------------|------------------|--------|
| Length: | 394 cm | 155 in |
| Height: | 67.5 cm | 12 in |
| Width: | 32.5 cm | 13 in |
| Weight: | 286 kg | 630 lb |
| Characteristics | | |
| Frequency Range: | 2 to 10 GHz | |
| In 3 bands: | 2 to 4 GHz | |
| | 4 to 8 GHz | |
| | 8 to 10 GHz | |
| Modes: | Noise & repeater | |

Design Features. The ALQ-119(V) is a noise and deception jamming pod with a single driver and dual outputs to provide dual-mode noise and repeater jamming outputs. It was designed to be a "full-capability" self-protection system operating against Vietnam-era Soviet-designed threats.

The pod features dual-mode TWT emitters and analog technology which uses more than 200 factory-set potentiometers to establish operational characteristics. It

has gone through several upgrades to improve and update performance.

Operational Characteristics. The ALQ-119 was the first jamming pod to incorporate modular construction, flightline programmability, and dual mode Traveling Wave Tubes (TWT) into its production. It served as a test bed for components and subsystem developments later used in the ALQ-131 which was to become, for a time, the USAF's standard jamming pod.

Variants/Upgrades

There were 17 variants of the basic ALQ-119 system. Most of the changes were in the packaging and mounting of equipment to improve reliability, maintainability, and operational capability.

ALQ-119(V)15 Standard version.

ALQ-119(V)17 A physically smaller version of the standard pod.

GAF Mod Kits Reports indicate that the German Air Force has developed and is producing modifications kits which

will increase the frequency coverage and improve the jamming techniques the ALQ-119 can produce. The pods will be jamming technique software programmable

ALQ-184. In the late 1970s, Raytheon developed an upgrade program for the ALQ-119 that featured digital technology to increase performance and reliability. By 1982, the modified pod went into production as the ALQ-184 (see separate report). The modification to produce an ALQ-184 from an ALQ-119 replaces 80 of the pod's 93 circuit boards.

Program Review

Background. The ALQ-119 ECM pod evolved from the Vietnam-era QRC-522 program and eventually replaced the ALQ-101(V)-10 used in South East Asia. In 1970, the pod's frequency range was extended to cover three frequency bands and its modulation capabilities were enhanced. The Air Force designated the system ALQ-119. It became the primary tactical jammer carried by the F-4 Phantom and was first used in combat in 1972.

The ALQ-119 introduced a new generation of ECM system and was the first large-scale use of a dual mode, noise or deception jammer. It was an electrically powered

version of the ALQ-147. An ALQ-119/ ALR-46 combination was called COMPASS TIE.

In 1982, a new pod was designated the ALQ-184. Raytheon was awarded the initial contract for five pre-production ALQ-184s (to carry out reliability and flight tests) and modification kits for 70 more pods. Rework of the ALQ-119 into ALQ-184 pods has continued since. Along with the ALQ-131, it has become the USAF front-line jamming pod.

A limited number of ALQ-119 pods remain in US service today as backup equipment pending conversion to the

ALQ-184. Many are still in active use with international customers.

ALQ-119 pods saw combat use during the Persian Gulf war. About 250 were carried to supplement newer jamming pods. They were used by international operators and some US F-16As and other aircraft on missions with less demanding self-protection requirements.

The US operators found that the pods performed adequately in less demanding threat environments; but some aircraft carrying the pod were hit by missiles. The aircraft were damaged, but no losses were attributed to pod failure. Maintenance of the pods in the dust and heat proved to be a challenge to support personnel.

Funding

Recent O&M funding supports pods not converted into ALQ-184. This funding has been from Operations and Maintenance accounts.

Analysis. The ALQ-119 has been an effective performer and popular with the USAF and international customers. But it is dated technology. The maintenance and reliability problems during the Persian Gulf War were attributed to heat and dust and the system's analog components. Digital technology and advanced software techniques have made conversion to state-of-the-art equipment a necessity if a force is to meet today's reliability and operational capability requirements.

Replacement by the ALQ-184 has reduced US support for the ALQ-119 to minimal levels (except for some common components which are procured under ALQ-119/184 contracts), leaving support of the international inventory as the only market remaining. Export of the ALQ-184 will be limited, so the FMS spare parts and repair market should remain viable through the latter half of the 1990s.

Recent Contracts

No recent DoD contracts over US\$5 million recorded.

Timetable

| | | |
|------|-------|---|
| | 1970 | First production contract awarded for ALQ-119 |
| Late | 1970s | Raytheon proposed an upgrade of ALQ-119 |
| | 1982 | New pod designated ALQ-184, first production |
| Aug | 1988 | ALQ-184 achieved initial operating capability (IOC) |
| | 1995 | Estimated last conversion into the ALQ-184 |

Worldwide Distribution

Egypt carries the pod on its F-4E and F-16 aircraft.

Israel also used to pods on its F-4E and F-16s.

Japan Carries the pod on some F-4Js.

Morocco acquired six systems for installation of Mirage F-1s.

Norway carries the ALQ-119 on F-16s.

Turkey uses the pod on its F-4E and RF-4Es.

Germany carries the pod on some of its F-4E attack aircraft.

Forecast Rationale

Production of the ALQ-119 has been completed for some time, although a limited components and spares market continues to support equipment in service around the

world. Future ALQ-119 procurement will provide parts for the diminishing US inventory and existing systems in service with international forces.

Ten-Year Outlook

There will be no further unit production.