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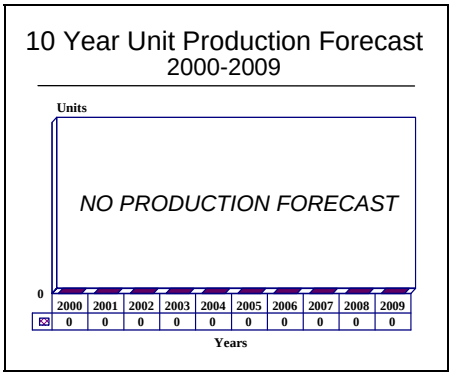
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ALQ-78(V) - Archive 03/2001

Outlook

- This airborne electronic surveillance receiver is in service, with ongoing logistics support
- Technology advances creating potential for new systems/platforms
- **Barring further activity this report will be archived in the near future**



Orientation

Description. Airborne electronic surveillance receiver.

Sponsor
US Navy
Naval Air Systems Command
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Contractors
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USA
Tel: +1 301 897 6711
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Licensee
Mitsubishi Heavy Industries Co Ltd
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Tokyo 100
Japan
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Status. In service, limited production in Japan, ongoing logistics support.

Total Produced. An estimated 436 units have been produced in the US and Japan.

Application. P-3C (Export), EP-3E (Australia and Canada), CP-140 (Canadian designation for P-3).

Price Range. Approximately US$170,000.

Technical Data

Design Features. The ALQ-78(V) is carried on a pylon under a P-3C wing fairing. It uses a high-speed rotating antenna and rapid-scan receiver for omni-directional coverage to intercept submarine radar signals. The system processes received pulse signals and determines signal characteristics and transmitter bearing. Onboard computers analyze the received signals and present them for display in digital format on operator consoles.

A typical system consists of a power unit, a data controller/analyzer, a video-local oscillator, a radio frequency converter, a test antenna, a pedestal antenna, and a control indicator.

Operational Characteristics. The ALQ-78(V) detects and locates submarine radars. The system operates in a near-automatic search mode until a signal is detected. At that point, the system initiates a direction-finding routine. Received signals are analyzed for characteristics and direction, and the results presented to system operators and stored.

Variants/Upgrades

All US in-service units were upgraded with a variety of hardware and software enhancements along with major changes in the signal processing system.

Program Review

Background. Loral began production of the ALQ-78(V) in 1969 and manufactured more than 200 units for US Navy and FMS P-3Cs during the 1970s. Modifications and upgrades that would let the ALQ-78(V) operate effectively in a multiple signal environment were performed in FY82. The enhancements modified the system's logic for multiple signal operation, upgraded circuitry to use fine frequency information as a multiple signal sorting parameter, and added a pulse train separation circuit.

Production of US ALQ-78(V)s has been completed. Mitsubishi Electronics bought license-production rights from Loral in 1981 and produced about 107 of the systems for Japanese-built P-3Cs. The Japanese Defense Force is planning to begin upgrading its fleet of P-3s by the end of the century. Budget constraints will impact this plan.

The Japanese Navy has embarked on plans to develop technologies for a replacement maritime surveillance aircraft. The Japanese Defense Agency 1998 budget request contained ¥1.8 billion (US$14.8 million) for the domestic development effort. The project will develop component technologies that could go into a new airplane, not necessarily a new airplane itself. A production decision would, if everything goes as planned, be made around 2010.

Funding

There has been limited Operations and Maintenance funding to support operational equipment.

Recent Contracts

No recent contracts have been identified.

Timetable

Year	Major Development
1969	Initial production
1981	Japanese production licensed
1983	System upgrade initiated
1985	US production complete
1994	Japanese production continued
1999	End of Japanese production

Worldwide Distribution

Australia. P-3C
Canada. CP-140
Japan. P-3C
The Netherlands. P-3C
Norway. P-3C
United States. P-3C

Forecast Rationale

US ALQ-78(V)s were replaced by the ALR-66(V)3 as part of the P-3C Update III avionics suite. While the P-3C Update III retained the ability to utilize the ALQ-78(V), both systems cannot be installed at the same time. Choice of the system is mission-dependent. As a cost-reduction measure, active-duty P-3Cs carry the ALR-66(V), while some older aircraft assigned to reserve squadrons retain the ALQ-78(V). All ALQ-78(V)s will eventually be replaced by the APG-66(V)3.

The ALR-66(V) might replace the ALQ-78(V) on some foreign patrol aircraft, limiting the level of spares activity for the ALQ-78(V) as units are phased out.

A limited spare and repair parts support effort will continue as long as units are operational in the P-3 fleet. At some point UAV platforms might replace the P-3 for some signals intelligence (SIGINT) and electronic intelligence (ELINT) missions. The Global Hawk is being specifically looked at for this. Its long flight range and on-station time make it a viable candidate for many missions.

Ten-Year Outlook

No further production expected. **Barring further activity this report will be archived in the near future.**

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