

# ARCHIVED REPORT

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## ALQ-133 (Quick Look II) - Archived 5/96

### Orientation

**Description.** Airborne electronic surveillance system, Electronic Intelligence (ELINT) system.

Electronics & Space Corp  
St. Louis, MO

**Sponsor**

US Army  
Communications Electronics Command  
Fort Monmouth, NJ

**Status.** In production, ongoing logistics support.

**Total Produced.** Estimated production has been 36 systems.

**Contractors**

United Technology Laboratories Inc  
Dallas, TX

**Application.** RV-1D, RC-12K.

**Price Range.** Estimated cost per unit is \$725,000.

### Technical Data

**Dimensions**

Weight:

**Metric**

454 kg

**US**

1000 lb

**Characteristics**

Frequency range:

400 MHz to 18 GHz

Angle of Arrival

Measurement:

90°/120°

Accuracy:

0.5° at 90° AOA

Data Link range:

231-259 km

125-140 nm

**Design Features.** The ALQ-133 system is contained in two pods, one on the wing and the other within the fuselage. The wing-mounted pod contains a number of broad-band antennas and the receivers. The data processing and recording equipment is mounted in the fuselage. The system consists of two QR-140 intercept receiver groups and one OK-270 control group.

This system conducts a pre-flight diagnostic check-out of the ALQ-133 and provides facilities to input the mission software programs into the airborne computers and to store the flight data which were not dispatched via the

data link during the flight. The system can be remotely controlled with the USQ-61 digital data link.

Airborne data processors control the system's receivers and analyze inputs based on an established software-controlled plan. As required, these analyses are transmitted to the ground system via data link for detailed analysis.

The ground equipment supplies facilities to prepare the mission software programs before flight, to receive emitter data by means of the data link, and to process the threat during or after the mission. Received signal characteristics are compared to a file of known para-

meters. A mobile input/output terminal for the airborne mission computer is also part of the system.

**Operational Characteristics.** The system detects, locates, and identifies enemy radars and similar emitters. It provides tactical field commanders with timely data on enemy missile, artillery and anti-aircraft weapons. The

ALQ-133 is capable of detecting radar emissions covering most ground-based surface-to-air weapon systems.

As part of a passive battlefield non-communications surveillance network, six QUICK LOOK II-equipped RV-1Ds are typically deployed with each forward area aviation company. In the future, twelve RC-12K aircraft will be deployed.

## Variants/Upgrades

**Advanced Quick Look.** This is an ALQ-133 variant which will be carried by the Army's RC-12K Special Electronic Mission Aircraft (SEMA) non-communications emitter

detector. It will be part of the Guardrail Common Sensor SIGINT asset.

## Program Review

**Background.** Manufacture of the ALQ-133 began in the early 1970s, when the Army decided to upgrade the APQ-142. The service procured six ALQ-133s for the OV-1 program in 1974. UTL received a contract in December 1975 for ALQ-133 systems and USQ-64 digital data links.

In early FY82, UTL received a contract for a cockpit control product improvement program (PIP) for the QUICK LOOK II. In July 1982 UTL was awarded a contract to produce one Advanced QUICK LOOK system.

In FY83, the Army initiated a product improvement program called Exotic Signal Recognition. This effort would enable the ALQ-133 to identify two new emitters. Hardware improvements under this program included the CM-447 Signal Comparator, the C-9537 Monitor Control, and cables in the Intercept Receiver Pod.

**Army Modernization Plan.** In January 1993, the Army released its *Modernization Plan*, a seventeen volume document which lays out the Army's plan for re-shaping and re-equipping its forces for the future battlefield. Annex I highlighted the Army's plan for Intelligence and Electronic Warfare (IEW) and how it will support the Army's five modernization objectives and the Vision of LAND FORCE DOMINANCE. The IEW Annex outlined the details and rationale for the major programs that are key to achieving the Modernization Vision. These efforts will support:

- Winning the Information War
- Protecting the Force
- Conducting Precision Strikes

### Dominating the Maneuver Battle

Based on lessons learned in Operation Desert Shield/Desert Storm, the Army found that its current IEW force lacks versatility and balance. Processing and communications capabilities are inadequate, and deployability is limited. Sensor technology is 15 to 25 years old and does not have the frequency range, precise targeting capability, and cannot exploit modern modulation techniques. The platforms are also very support/maintenance intensive. This is expected to characterize the situation through FY95.

The major improvement in EW/SIGINT capability is envisioned for the FY96 through FY99 time frame. Systems being developed will have an open architecture and modular design. Precision and capability will be significantly improved; as will mobility, deployability, balance, and supportability. Keys to this will be fielding the Guardrail Common Sensor, Advanced Quick Fix, and Ground Based Common Sensors.

In the long term, FY00 and beyond, the Army plans to have design advances outpacing threat development. Technology and processing will be state-of-the-art, and mobility/deployability will have been further improved. The airborne collection fleet will have been replaced and common ground systems will anchor the battlefield capability.

In addition to the development and fielding of new systems, the Army will establish a parallel track improvements in IEW training, to include new training and simulation hardware. There will also be an on-going effort to investigate R&D possibilities for on-going technology advances.

## Funding

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Funding for the system has been from Operations and Maintenance budget lines.

**Analysis.** Over the next decade, military forces worldwide will be improving their combat capabilities. Acquisition of advanced weapons and communications equipment is increasing, with an emphasis on quality, not just quantity.

The increased interconnectivity of assets and the ability to interface with other developing information systems coming to the battlefield will be important to insuring that the Army has an electronic warfare capability suitable to future combat. Planners are concentrating on completely

revamping the concept of battlefield operations, and thus battlefield electronic warfare and SIGINT.

Remotely Piloted Vehicles have generated significant interest as future EW assets; but they will not replace tactical assets. They will, however, supplement current and future tactical capabilities. By the end of the reporting period, RPVs will be routinely teaming up with sensors such as QUICK FIX in combat operations.

## Recent Contracts

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No recent DoD contracts over \$5 million recorded.

## Timetable

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Late	1960s	QUICK LOOK concept developed
Late	1977	first production of ALQ-133
	1981	QUICK LOOK II production completed
Sep	1982	Design/develop Advanced QUICK LOOK
	1988	Advanced QUICK LOOK low-rate production contract, Advanced QUICK LOOK integrated as part of GUARDRAIL Common Sensor system RV-12K
	1995	Planned RV-12D QUICK LOOK retirement
Sep	1994	Completion of contracted production (AQL)
	FY95	Begin planned upgrades to Guardrail Common Sensor
	FY02	Completion of Guardrail Common Sensor upgrade program

## Worldwide Distribution

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This is a US only program.

## Forecast Rationale

Procurement of ALQ-133 QUICK LOOK II is complete, and units will be retired as Guardrail and other future systems are fielded. Operationally, their mission will continue. Other state-of-the-art equipment such as an Interim Commander's Tactical Terminal (to disseminate ELINT in real time) and a cockpit display to provide in-flight review of data collected was planned as part of the QUICK LOOK II (RV-1D) improvement program. Reports indicate that with plans for beginning to retire the RV-1D in 1995/96 as Guardrail and other systems enter service, the upgrade program was terminated.

Other than spares and repair components, there has been no other recent contracting activity. There is no indication of an upturn in activity.

## Ten-Year Outlook

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Production complete, with no further planned.

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