

ALR-69A Radar Warning Receiver (RWR)

The Air Force first deployed the ALR-69 in the early 1970s. It has served as the radar warning receiver for multiple aircraft types since then. The Air Force established a modification program to improve reliability and maintainability as well as the system's performance in geo-locating threat emitters and in specific emitter identification. The resulting system will be designated the ALR-69A. As required by the Operational Requirements Document, only minor changes to the aircraft installation provisions will be necessary.

The development of the ALR-69A is to be a spiral development. The first phase of the development, the Core program, addresses the issue of obsolescent parts and incorporates digital receiver technology. This effort will reduce the number of line replaceable unit types in the system from nine to five, and the total number of line replaceable units from twelve to eight.

The second phase, known as the Increment, incorporates software algorithms that improve the resolution of time and angle measurements. These improved resolutions will lead to an improved direction finding capability and, in turn, a geo-location capability. The Increment also provides the capability for specific emitter identification. Development of the Increment capability is under contract.

The program suffered from technical difficulties that have resulted in a slip of approximately one year and a growth of development costs from \$36.5M to \$63M. Development of the Core system for the C-130 aircraft is proceeding, and development for the F-16 has begun. Contracts for aircraft integration have yet to be established.

TEST & EVALUATION ACTIVITY

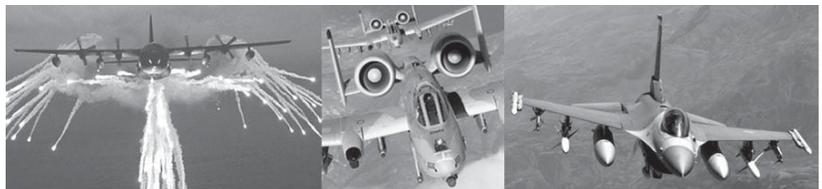
DOT&E will use the DoD Electronic Warfare test process to evaluate performance of the ALR-69A. This will include hardware-in-the-loop testing, on-aircraft ground testing in an integrated systems test facility, and flight tests at an open-air range.

Tests of the Core system for the C-130 will begin early in FY04. The Air Force will conduct an operational assessment (OA) mid-FY04 to support a low-rate initial production (LRIP) decision. The Air Force Operational Test and Evaluation Center (AFOTEC) plans to report results of the OA when it has sufficient information to evaluate ALR-69A capability to meet performance requirements. This may or may not include the results of developmental flight tests. The program office has operational testing scheduled in FY05, followed by a Milestone III decision for the C-130 installation in early FY06.

The F-16 configuration begins testing in mid-FY05 and leads to a production decision in early FY07. The Increment (the upgraded precision location capability) for the C-130 begins testing early in FY05 and will run through late FY06. The program office has not established a schedule for testing the Increment on the F-16.

TEST & EVALUATION ASSESSMENT

An initial draft Test and Evaluation Master Plan (TEMP) for the ALR-69A is in review within the Air Force, but it only addresses testing of the Core system on the C-130. An adequate TEMP will need to address C-130 Core and F-16 Increment I. DOT&E has numerous issues with the timing of the test strategy.



Digital RWR Replaces Obsolete ALR-69 LRU's With 3rd Generation Broadband Digital Receiver Technology



The ALR-69A is a spiral development upgrade to the existing ARL-69.

AIR FORCE PROGRAMS

DOT&E also has concerns with the plan to use an OA that may not be based on flight tests and the increased risk that the system will enter LRIP with significant performance flaws. The program office can mitigate this risk by keeping the number of LRIP units small.

The program plans to use a favorable Milestone III decision as clearance to buy all units with only minimal testing to verify each installation. It is DOT&E's position that the ALR-69A should be tested on each individual aircraft prior to the acquisition decision maker approving the acquisition of those units. The basis for resolving this issue will be review and approval of the TEMP.