

C-27J

Executive Summary

- DOT&E completed a Combined Operational and Live Fire Test and Evaluation Report for the C-27J in May 2011. The Program Office completed both the LFT&E and Multi-Service Operational Test and Evaluation (MOT&E) in FY10, but has not yet made a full-rate production decision.
- The C-27J is operationally effective in conducting its primary mission of delivering time sensitive/mission critical cargo and personnel to forward units in remote locations using unimproved airfields.
- The C-27J is not operationally suitable. During operational testing, the aircraft did not achieve its required reliability or availability, although it did achieve required maintainability. However, reliability has shown improvement since the MOT&E.
- The C-27J is survivable, with limitations, when coupled with the use of appropriate tactics, techniques, and procedures against the Man-Portable Air Defense System and ballistic projectiles it could encounter when operated in Afghanistan or Iraq.
- Two C-27J aircraft deployed with Air National Guard and Army National Guard crews to Afghanistan in August 2011.

System

- The C-27J is a two-engine, six-blade turboprop tactical transport aircraft.
- The aircraft can operate from short (2,000 feet) unimproved or austere runways. It has a 2,400 nautical mile range and a maximum payload of 13,000 pounds. The C-27J is capable of self-deployment to theater.
- The C-27J can carry three standard pallets, six bundles for airdrop, 40 passengers, 26 combat-equipped paratroopers, or 18 litters for medical evacuation.
- The C-27J incorporates a fully integrated defensive systems suite consisting of the AN/AAR-47A(V)2 (missile and laser



warning system), AN/APR-39B(V)2 (radar warning receiver), and AN/ALE-47(V) (chaff and flare dispenser) onboard the aircraft.

Mission

- Air Force units equipped with the C-27J will transport time sensitive and mission-critical cargo and personnel to forward-deployed forces in remote and austere locations.
- The Air Force intends to use the C-27J to support its intra-theater airlift operations.
- Secondary missions for the C-27J include performing routine sustainment operations, medical evacuation, support of Homeland Defense, airdrop of personnel and equipment, and humanitarian assistance missions.

Major Contractor

L-3 Communications Integrated Systems, L.P. – Greenville, Texas

Activity

- DOT&E completed a Combined Operational and Live Fire Test and Evaluation Report for the C-27J in May 2011. The Program Office completed both the LFT&E and MOT&E in FY10, but the C-27J has not yet made a full-rate production decision. The Program Office conducted a successful but limited demonstration of modifications to the cargo handling system in March 2011. The program also identified or implemented corrections to suitability problems identified during the MOT&E, including improvements to the Heads-Up Display and corrections to the causes of system aborts. Any new corrections also require further operational evaluation.
- The Air Force is planning the transition from Interim Contractor Support to organic maintenance for C-27J, which will require a re-evaluation of operational suitability. The Air Force Operational Test and Evaluation Center and the Program Office held an initial test design meeting to begin planning for the 2013 FOT&E.
- Ten aircraft have been delivered (of a total planned buy of 38) and 20 crews have been trained.
- Two aircraft deployed to Afghanistan in August 2011 with both Air National Guard and Army National Guard crews.

AIR FORCE PROGRAMS

Assessment

- The C-27J is operationally effective in its primary mission of delivering time sensitive/mission critical cargo and personnel to forward units in remote locations on unimproved airfields, as well as aerial sustainment, aeromedical evacuation, and self-deployment.
- The C-27J is not operationally suitable. Shortfalls in availability and in several subsystems adversely affect safety, situational awareness, or workload.
 - Post-MOT&E data show that the system meets its reliability requirement.
 - During testing, the high cannibalization rate to maintain operational aircraft suggests inadequate spare part supplies.
- The Air Force has implemented corrections to suitability problems with the Heads-Up Display and the cargo handling system. Additional operational testing is needed to verify correction of deficiencies.
- The modifications improved the cargo handling system by reducing the pallet jamming observed in the MOT&E, but further monitoring in operational conditions is warranted.
- A planned update to the aircraft software, which includes improvements to the flight management system and integration

of take-off and landing data calculation, has been postponed indefinitely.

- The C-27J is survivable, with limitations, when operated using appropriate tactics, techniques, and procedures against the Man-Portable Air Defense System and ballistic projectiles that it could encounter during operations in Afghanistan or Iraq.

Recommendations

- Status of Previous Recommendations. The program has implemented changes to address the FY10 recommendations, but continued evaluation of suitability corrections in operational conditions is required.
- FY11 Recommendations.
 1. The Air Force should collect and track reliability and maintainability data from deployed aircraft.
 2. The program should update the Test and Evaluation Master Plan to include FOT&E, and update the reliability growth plan.