

C-130J

Executive Summary

- The C-130J is in production with periodic Block Upgrades to correct deficiencies and to provide capability enhancements.
- The C-130J is not effective in performing formation airdrop missions in instrument meteorological conditions where the use of Station Keeping Equipment (SKE) is required. The SKE software enhancement corrected previously observed anomalies for formations comprised only of C-130J aircraft (“J-only mode”), but SKE reliability problems during FOT&E prevented the achievement of the required formation flight success rate.
- The Air Force is correcting some deficiencies and adding new capabilities in the Block Upgrade 7.0. Delivery of the 7.0 upgrade has been delayed approximately one year, with a Force Development Evaluation (FDE) scheduled for early FY13.

System

- The C-130J is a medium-sized four-engine turboprop tactical transport aircraft.
- Compared to previous models, the cockpit crew requirement is reduced from four to two on the J model; loadmaster requirements vary (one or two), depending on mission need.
- Compared to legacy models, the C-130J has approximately 70 percent new development. Enhancements unique to the C-130J include a glass cockpit and digital avionics, advanced integrated diagnostics, a new propulsion system, improved defensive systems, and an enhanced cargo handling system.
- The C-130J has two different lengths denoted as a long and a short body. The long body carries eight standard pallets; the short carries six.

Activity

- The Air Force is correcting deficiencies found in both developmental and operational testing and adding new capabilities in the Block Upgrade 7.0. Block Upgrade 7.0 has experienced approximately one year of schedule delays; the FDE is now expected to occur in 1QFY13.
- DOT&E approved the C-130J Test and Evaluation Master Plan (TEMP) in November 2010, which encompasses the Block Upgrade 7.0 and SKE software enhancement testing.
- The Air Force conducted FOT&E of the SKE software enhancement in February and March 2011 in accordance with the DOT&E-approved test plan. DOT&E is releasing a report on the SKE FOT&E in FY12.
- The Air Force completed developmental test and evaluation (DT&E) of the Data Transfer and Diagnostics System (DTADS) in April 2011. DTADS will replace the current



Mission

- Combatant commanders use the C-130J within a theater of operations for combat delivery missions which include:
 - Airdrop of paratroopers and cargo (palletized, containerized, bulk, and heavy equipment)
 - Airlift delivery of passengers, troops, and cargo
 - Emergency aeromedical evacuations
- Combat Delivery units operate in all weather conditions, use night-vision lighting systems, and may be required to operate globally in civil-controlled airspace.

Major Contractor

Lockheed Martin Aeronautics Corporation – Bethesda, Maryland

- computerized maintenance system (the integrated diagnostics system interface and Portable Maintenance Aid) that had suitability shortfalls during IOT&E. FOT&E began in October 2011.
- The Air Force completed DT&E of the Large Aircraft Infrared Countermeasures (LAIRCM) system in April 2011 and conducted an FDE in July 2011. Reliability data collection for LAIRCM is ongoing.
- Due to diminishing manufacturing sources, the current STAR VII mission computer hardware is being replaced in FY12 by STAR IX hardware with a new operating system.

Assessment

- The SKE software enhancement corrected previously observed anomalies for formations comprised only of C-130J aircraft

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(“J-only mode”). However, reliability problems with the SKE systems under test prevented the achievement of the required formation flight success rate. Consequently, the C-130J is still not certified for formation flight in instrument meteorological conditions and is therefore only partially mission capable for the airdrop mission.

- The new STAR IX mission computer hardware requires installation of a new version of the operational flight program to run on the new operating system. This could create

configuration management problems in both hardware and software. This requires future operational test and evaluation.

Recommendations

- Status of Previous Recommendations. There are no previous recommendations.
- FY11 Recommendation.
 1. The Air Force should correct deficiencies related to formation flight and verify fixes during FOT&E.