C-130J Aircraft

Executive Summary
- The C-130J is in production with periodic Block Upgrades to correct deficiencies and to provide capability enhancements.
- The C-130J is effective in performing single ship airland and airdrop missions in a permissive threat environment.
- 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 C-130J is not effective for worldwide operations in a non-permissive threat environment.
- The C-130J has shortfalls in meeting user suitability requirements due to maintainability issues.
- The Air Force is correcting some initial OT&E deficiencies and adding new capabilities in the Block Upgrade 7.0. The Air Force scheduled the OT&E for 2011.

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.

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)
  - Airland 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.

Prime Contractor
- Lockheed Martin

Activity
- Air Mobility Command conducted Phases I and II of their Force Development Evaluation of Block Upgrade 6.0 in October 2007. Air Mobility Command completed the testing in accordance with a DOT&E-approved test plan.
- The Air Force completed combined developmental and operational testing of the AN/ALR-56M system on the C-130J in the second and third quarters of FY08.
- AFOTEC completed operational testing of the AN/ALR-56M radar warning system on the C-130J in 4QFY08. AFOTEC will complete a full evaluation of the effectiveness and suitability of the AN/ALR-56M in FY09.
- The Modular Airborne Fire Fighting System (MAFFS) completed system-level OT&E on a C-130H model aircraft. The Air Force Flight Test Center began testing the MAFFS on the C-130J in August 2008. The 146th Airlift Wing at Channel Islands is participating in this test with both crews and aircraft.
- The Air Force is correcting some initial OT&E deficiencies and adding new capabilities in the Block Upgrade 7.0. The Air Force scheduled the OT&E for 2011.
- The Air Force is updating the Test and Evaluation Master Plan (TEMP) to encompass the Block Upgrade 7.0 and Formation Flight System testing.

Assessment
- The C-130J with Block Upgrade 6.0 continues to be effective in performing single ship airland and airdrop missions in a permissive threat environment. Subsequent to the Force Development Evaluation, the Air Force increased

the maximum gross weight for assault landings from 115,000 pounds to 162,285 pounds.

- The Block Upgrade 6.0 did not correct the SKE anomalies previously observed during Phase II OT&E. Employing the Traffic Alert and Collision Avoidance System as an overlay to the SKE display provides the aircrew with additional situational awareness during formation flight operations. However, it does not permit aircraft formation flight operations in Instrument Meteorological Conditions.
- The C-130J with Block Upgrade 6.0 still has shortfalls in meeting user suitability requirements due to maintainability issues. The integrated diagnostics false alarm rate is high and the poor performance of the portable maintenance aid adversely impacted the ability to generate sorties. The Air Force reported more than 90 open deficiencies at the end of Phase II OT&E, only two of which are addressed by Block Upgrade 6.0.
- The C-130J is not effective for worldwide operations in a non-permissive threat environment.
  - The AAR-47 infrared missile/laser warning system is operationally effective as installed on the C-130J but has one significant classified limitation.
  - The ALR-56M completed developmental and operational testing and recently completed FOT&E. The effectiveness and suitability are currently under evaluation to determine if the system is ready for release to the fleet.

Recommendations

- Status of Previous Recommendations. The Air Force has taken adequate action on the previous recommendations.
- FY08 Recommendations. None.