V-22 Osprey Joint Advanced Vertical Lift Aircraft

Executive Summary
- The Defense Acquisition Executive authorized full-rate production on September 28, 2005.
- DOT&E's September 2005 report (see page 297) on Operational and Live Fire Test and Evaluation found:
  - Testing was adequate.
  - The V-22 is operationally effective.
  - The V-22 is operationally suitable.
  - The V-22 is survivable in a medium threat environment.

System
- The MV-22 is the replacement for aging medium-lift CH-46E and CH-53D helicopters.
- It is a tilt-rotor aircraft capable of conventional wing borne flight and vertical takeoff and landing.
- It operates from shipboard or shore bases.
- It can carry 24 combat-ready Marines 279 nautical miles (nm) and return.
- It can carry 10,000-lb external load 115 nm and return.
- The V-22 can self-deploy 2,600 nm with one aerial refueling.
- The CV-22 variant will augment Air Force Special Operations MC-130 aircraft. It has terrain-following, terrain avoidance radar.

Mission
- Squadrons equipped with the MV-22 will provide medium lift of Marines and equipment in support of:
  - Ship to Objective Maneuver
  - Sustained Operations Ashore
  - Tactical recovery of aircraft and personnel
  - Self-deployment
  - Amphibious evacuation
- Air Force squadrons equipped with the CV-22 will provide high-speed, long-range transport of special operations forces.

Activity

The following testing was performed in accordance with the Test and Evaluation Master Plan and test plans approved by DOT&E:
- OT-IIF, an operational assessment, from May 18 through July 9, 2004
- OT-IIG, or Operational Evaluation Phase II, from March 28 through June 29, 2005

DOT&E issued a second report on Operational and Live Fire Test and Evaluation in September 2005.

Assessment
- Testing was adequate. The operational test squadron, VMX-22, conducted OT-IIG at several locations throughout the U.S. and onboard USS *Bataan*. An eight-aircraft detachment flew 751 flight hours for 204 flight events and 13 ground events, performing five mission types (12 different profiles).
- The V-22 is operationally effective. Range, speed, payload, and aircrew situational awareness are improved over the helicopters being replaced. The ability to self-deploy to distant theaters reduces strategic airlift support requirements. Future block upgrades are planned to include a personnel hoist, a defensive weapon system, and weather radar.
- The V-22 is operationally suitable. All important reliability, maintainability, and operational availability requirements were met. Major safety concerns noted five years ago have been corrected.
- The V-22 is survivable in a medium threat environment. The electronic combat equipment reduces susceptibility to threats and ballistic tolerance demonstrated in LFT&E enhances aircraft and personnel survivability.
- OPEVAL II identified deficiencies with seats, environmental control system, and APR-39 electronic combat system.

Recommendations
1. The V-22 program should execute planned block upgrades and conduct testing outlined in DOT&E's report on operational and LFT&E.
2. Future block upgrades should address deficiencies identified with cabin seats, the environmental control system, and the APR-39 electronic combat system.