Joint Direct Attack Munition (JDAM)

SUMMARY

- Operational testing confirmed that Joint Direct Attack Munition (JDAM) reliability and mission planning now meet requirements.
- The 1,000-pound JDAM variant is effective and suitable when delivered by the F/A-18.
- Delivery of the 1,000-pound variant from the F/A-22 is still necessary to complete multi-Service operational test and evaluation (MOT&E) of the 1,000-pound JDAM.
- Initial operational testing of the 500-pound JDAM variant will include the evaluation of a redesigned JDAM container.
- Operational testing through FY04 of the 500-pound JDAM indicates performance meets requirements.
- Operational testing through FY04 of the JDAM with the FMU-152 fuze also indicates performance meets requirements.
- DOT&E approved the Test and Evaluation Master Plan, covering testing of the 500-pound JDAM variant, in March 2004.

Operational testing of the 500-pound JDAM variant through FY04 on both the F/A-18 and B-2 indicates performance meets requirements.

SYSTEM DESCRIPTION AND MISSION

The JDAM, produced by The Boeing Company, is a low cost, autonomously controlled, adverse weather, accurate guidance kit for the Air Force/Navy 2,000-pound Mk-84 and BLU-109 general-purpose bomb, the 1,000-pound Mk-83 and BLU-110 general-purpose bomb, and the Mk-82 500-pound bomb. There are no planned design changes to the bombs. However, the existing inventory of weapons will be configured with JDAM guidance kits and wind strake assemblies. An inertial navigation system provides primary guidance of the JDAM. Enhanced accuracy of the JDAM is provided by augmentation of the inertial navigation system by signals received from the Global Positioning System (GPS).

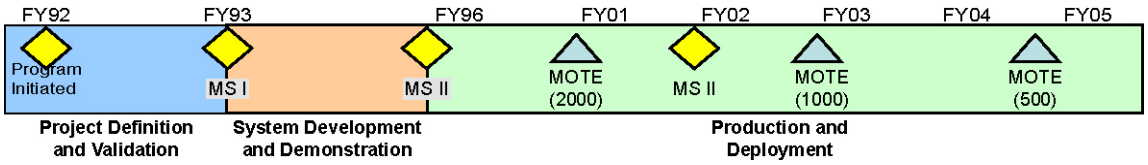
The JDAM kit is required to yield a delivery accuracy of less than 13 meters when GPS is available and less than 30 meters when GPS is absent or jammed after release. A variety of fighter/attack and bomber aircraft employ JDAM, allowing precision engagement from all altitudes under adverse environmental conditions. The primary aircraft for integration and operational testing of the 2,000-pound JDAM were the B-52H and the F/A-18C/D. The F-16, F-14B/D, F-15E, F/A-18E/F, B-1, and B-2 are also operational users of the 2,000-pound JDAM. The 1,000-pound JDAM is integrated on the F/A-18C/D and the AV-8B. Integration of the 1,000-pound JDAM variant will also occur in the F/A-22. The 500-pound JDAM will be tested and integrated initially on the F/A-18C/D and B-2.

JDAM completed operational test of the 2,000-pound variant in August 2000. Operational tests were adequate to evaluate the operational effectiveness and suitability of the 2,000-pound variant. Test results demonstrated the 2,000-pound variant is operationally effective, but not operationally suitable. However, the high degree of effectiveness and substantial increase in targeting and weapon delivery flexibility were sufficient to justify fielding the 2,000-pound variant. The “not suitable” assessment resulted from shortfalls in container durability, system reliability, and a failure to

meet mission-planning timelines. While operational testing of the 1,000-pound variant in FY03 confirmed system reliability and mission planning met requirements, container reliability will be re-evaluated during operational testing of the 500-pound variant beginning in FY04.

Testing determined JDAM is operationally effective only in combination with existing fuzes, specifically the FMU-139 and FMU-143. Testing is required with the FMU-152 Joint Programmable Fuze. Operational testing of JDAM with the FMU-152 is planned during initial operational test of the 500-pound JDAM variant beginning in FY04. DOT&E approved the Test and Evaluation Master Plan in March 2004, which covers testing of the 500-pound JDAM variant.

TEST AND EVALUATION ACTIVITY



Operational testing of the 500-pound JDAM variant began in March 2004 on the B-2. Air Force operational testing with the B-2 included both simulated and actual weapon release events. During operational test, the B-2 released a total of 182 weapons, with a ripple-release of 80 weapons on a single attack. Air Force operational testing with the 500-pound variant also included weapon releases from the F-16.

Delivery from the Navy threshold aircraft, the F/A-18C/D, began in July 2004. Plans call for a total of 29 weapons from the F-18, to include a ripple-release of eight weapons on a single attack. However, a ripple of eight weapons requires use of the BRU-55 weapons rack, which remains in development. DOT&E approved a Navy request to defer operational testing of the 500-pound JDAM variant from the BRU-55 until FY05.

Operational testing of the 500-pound JDAM variant should conclude in FY05.

TEST AND EVALUATION ASSESSMENT

MOT&E of the 1,000-pound JDAM variant delivered during the F/A-18 phase of operational testing confirmed operational effectiveness and suitability of the 1,000-pound JDAM when delivered from this aircraft. Operational testing confirmed that JDAM reliability and mission planning now meet requirements. However, a redesigned JDAM container was not ready for evaluation during FY03 operational testing. Initial operational testing of the 500-pound JDAM variant will include the evaluation of a redesigned JDAM container. Delivery of the 1,000-pound variant from the F/A-22 is still necessary to complete MOT&E of the 1,000-pound JDAM.

Operational testing through FY04 of the 500-pound JDAM indicates performance meets requirements. Operational testing through FY04 of the JDAM with the FMU-152 also indicates performance meets requirements.