Joint Direct Attack Munition (JDAM)

The Joint Direct Attack Munition (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 Mark 84 and BLU-109 general-purpose bomb and the 1,000-pound Mark 83 and BLU-110 general-purpose bomb. The JDAM tail kit and wind strake assemblies are also to be adapted to the Mark 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. Guidance is accomplished via an Inertial Navigation System aided by 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. JDAM is employed by a variety of fighter/attack and bomber aircraft, 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, F-14D, 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 to be tested and integrated initially on the F/A-18C/D, AV-8B, and F/A-22. The 500-pound JDAM is to be tested and integrated initially on the F/A-18C/D and B-2.

Low-rate initial production of the 2,000-pound variant was approved in April 1997. However, due to numerous problems with the design, the Under Secretary of Defense (Acquisition and Technology) approved the delay of Milestone III to 3QFY99. A total of four low-rate initial production decisions were rendered before a Milestone III approval in March 2001.

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.

DOT&E determined JDAM to be 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, but has not been completed due to numerous arming failures and subsequent decertification of FMU-152/JDAM combinations for both Air Force and Navy use. The Air Force will conduct operational testing of JDAM with the FMU-152 during initial operational test of the 500-pound JDAM variant in FY04 provided the FMU-152 completes developmental test and evaluation and production-representative fuzes are available.

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 Joint Direct Attack Munition when delivered from this aircraft.

TEST & EVALUATION ACTIVITY

The F/A-18 phase of the 1,000-pound variant multi-Service operational test and evaluation (MOT&E) concluded in January 2003. The F/A-22 phase of the 1,000-pound variant MOT&E is planned to begin in FY05.

Developmental flight test of the 500-pound variant began in FY02 and concluded in FY03. Testing consisted of separation tests and guided weapon release tests from both the F/A-18 and B-2 aircraft. MOT&E is planned for FY04 with the F/A-18C/D and the B-2.

TEST & 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. Evaluation of a redesigned JDAM container will be conducted during initial operational test of the 500-pound JDAM variant. 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.

Developmental tests of the 500-pound variant of the JDAM indicate performance that is comparable to the 2,000-pound and 1,000-pound variants.