

Joint Standoff Weapon (JSOW) Baseline Variant and Unitary Warhead Variant

Executive Summary

- The Navy completed operational testing of the Block II Unitary variant of the Joint Standoff Weapon (JSOW). Testing included live weapon testing in a realistic threat environment to assess survivability. Analysis and assessment of testing is in progress.
- The Air Force and Navy completed formal test reporting on FY07 operational testing of both the Baseline and Unitary variant of JSOW with new Operational Flight Program (OFP) Version 10.3 software in support of decisions to field the upgraded weapon software.
 - The Air Force fielding decision for the JSOW Baseline with OFP Version 10.3 software was limited for the B-2 platform due to capability mismatch between the software and B-2 displays.
 - The Air Force plans additional testing in FY09 on B-2 platforms with upgraded capabilities in support of a desired unrestricted fielding decision.
- The Air Force Weapon System Evaluation Program (WSEP) conducted testing of the JSOW Baseline with the fielded OFP Version 10.3 software. Testing did not resolve JSOW Baseline submunitions pattern placement inconsistencies observed in previous JSOW Baseline testing.

System

- JSOW is a family of 1,000-pound class, air-to-surface glide bombs intended to provide low observable, standoff precision engagement with launch and leave capability. JSOW employs a tightly coupled GPS/Inertial Navigation System.
- The JSOW Baseline payload consists of 145 BLU-97/B combined effects submunitions.
- JSOW Unitary utilizes an imaging infrared seeker and its payload consists of an augmenting charge and a follow through bomb that can be set to detonate both warheads simultaneously or sequentially.



Mission

- Combatant commanders use JSOW Baseline to conduct pre-planned attacks on soft point or area targets such as air defense sites, parked aircraft, airfield and port facilities, command and control antennas, stationary light vehicles, trucks, artillery, and refinery components.
- Combatant commanders use JSOW Unitary to conduct pre-planned attacks on point targets vulnerable to blast and fragmentation effects and point targets vulnerable to penetration such as industrial facilities, logistical systems, and hardened facilities.

Prime Contractor

- Raytheon

Activity

- The Navy conducted operational testing in accordance with the DOT&E-approved Test and Evaluation Master Plan for the JSOW Unitary variant throughout FY08. The Air Force conducted operational testing through WSEP for the operationally-fielded JSOW Baseline variant using OFP Version 10.3 software in May 2008.
- FY08 test activity included the execution of the Navy IOT&E of the JSOW Unitary Block II weapon, including live weapon testing in a realistic threat environment to assess survivability. Formal test reporting is still in progress.
- The Navy and the Air Force completed formal test reporting of both the Baseline and Unitary JSOW with OFP Version 10.3 software.

Assessment

- JSOW Unitary successfully completed Block II operational testing. This testing addressed needs identified in DOT&E's 2004 Beyond Low-Rate Initial Production Report on IOT&E and FOT&E of JSOW Unitary to adequately address weapon

survivability in realistic threat environments. Analysis and assessment of JSOW Block II FY08 testing is in progress.

- FY07 JSOW OFP 10.3 testing supported Navy and Air Force decisions in FY08 to field the upgraded weapon software. The Air Force fielding decision for JSOW Baseline was limited for the B-2 platform due to a capability mismatch between the software and B-2 displays. The Air Force will conduct additional operational testing in FY09 on upgraded B-2 platforms in support of a desired unrestricted fielding decision.
- FY05 test results indicated JSOW Baseline weapons did not achieve consistent target area payload placement in the presence of winds in the target area. OFP 10.3 incorporated software changes to mitigate weapons guidance factors that contribute to submunitions pattern accuracy inconsistency. At the end of FY07 OFP 10.3 testing, aggregate results for Navy and Air Force testing showed JSOW Baseline accuracy was within Operational Requirements Document threshold specifications, but anomalies in submunitions pattern accuracy continued during this testing and the FY08 WSEP testing. Current Air Force programs have no additional weapon buys and Navy deferred Baseline purchases until FY16.
- JSOW Baseline submunitions pattern placement inconsistencies remain largely unexplained in testing. Potential factors that affect pattern placement relative to the desired aim point include differences in weapon release ranges

relative to the target, target elevation, wind effects, and/or inherent limitations in JSOW Baseline guidance capabilities. Predictable JSOW Baseline submunitions pattern placement is critical to weapon effectiveness and determines the number of weapons needed to ensure success against a given target. Operational units may compensate for pattern placement variation by employing multiple weapons with combinations of overlapping and offsetting patterns and/or vary the weapon attack axis to ensure target area weapons saturation. Force planners will need to consider this to achieve combat success with JSOW Baseline.

Recommendations

- Status of Previous Recommendations. The Navy and Air Force satisfactorily addressed all previous recommendations from FY05-FY07.
- FY08 Recommendation.
 1. DOT&E recommends continued monitoring of Baseline submunition dispersal for factors causing dispersal inconsistencies. As OFP Version 10.3 did not resolve submunitions inconsistencies, operational users should balance submunitions dispersal with additional munitions on target for desired weapon effects.