

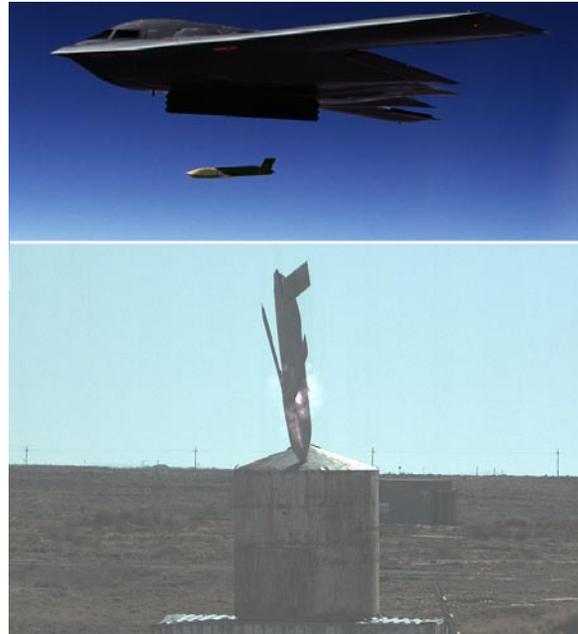
Joint Air-to-Surface Standoff Missile (JASSM)

Executive Summary

- The Air Force initiated a series of steps to implement program management changes, identify reliability drivers, and characterize the reliability of Lot 5 production missiles. Six of 10 missile firings were successful.
- The Air Force executed one Joint Air-to-Surface Standoff Missile (JASSM)-Extended Range (ER) live fire shot on August 18, 2009. The weapon employment was at a nominal JASSM-ER range; the missile accurately pinpointed and subsequently destroyed the target.
- After incorporation of fixes on Lot 5 missiles, the Air Force executed a production Reliability Acceptance Program on 17 Lot 7 missiles, 15 of which were successful. The Lot 8 production contract hinges on a successful Lot 7 test.
- The Air Force should renew the pursuit of the Electronic Safe and Arm Fuze (ESAF), ensuring the availability of a second fuzing option.

System

- Baseline JASSM is a stealthy cruise missile that flies a preplanned route from launch to a target, using GPS satellite information and an internal navigation system. JASSM:
 - Has a 1,000-pound penetrating warhead
 - Has an imaging infrared seeker that can be used for greater accuracy and precision; the seeker uses image templates planned by a rear echelon intelligence unit
 - Can be launched by B-1, B-2, B-52, and F-16 aircraft
 - Includes a container that protects the weapon in storage and aids ground crews in moving, loading, and checking the missile
 - Uses the same Air Force mission planning systems used for aircraft and other weapons
- JASSM ESAF is intended to be a more reliable fuze with the same capabilities as the baseline fuze. Continued development is unfunded.
- JASSM-ER is intended to fly longer ranges using a more efficient engine, larger capacity fuel tanks, and other modified components (all within the same outer shape).
- JASSM Anti-Surface Warfare (ASuW) adds the capability to attack maritime targets using two way data-link for in-flight retargeting. Requirements development is ongoing. This effort is unfunded.



Mission

- Operational units equipped with JASSM intend to employ the weapon from multiple aircraft platforms against high value or highly defended targets from outside the lethal range of many threats. Units equipped with JASSM intend to use it to:
 - Destroy targets with minimal risk to flight crews and support air dominance in the theater
 - Strike a variety of targets greater than 200 miles away
 - Execute missions using automated preplanned or manual pre-launch retargeting planning
 - Attack a wide-range of targets including soft, medium, or very hard (not deeply buried) targets
- Units with JASSM-ER intend to support the same missions with a range more than twice the baseline JASSM.
- Units with JASSM ASuW should have added flexibility and greater retargeting capabilities in executing JASSM missions.

Prime Contractor

- Lockheed Martin, Missile and Fire Control, Orlando, Florida

Activity

JASSM Baseline

- As a by-product of the Nunn-McCurdy certification, the Air Force continued screening previous system and test information to identify deficiencies affecting reliability. The

program adopted the OSD Systems Engineering Plan and DOT&E Test and Evaluation Master Plan (TEMP) strategies to stress production missiles in captive carry environments and ground tests in order to identify failure modes.

AIR FORCE PROGRAMS

- The Air Force implemented corrections in Lot 5 missiles; however, the results from flight testing did not meet requirements, with only six of 10 successful missile firings, and a 0.60 reliability point estimate.
- Due to the less than satisfactory results in Lot 5 testing, OSD mandated a 16-shot Lot 7 reliability acceptance test late in FY09, a necessary condition for the Lot 8 production contract award. Fifteen of 17 missile test launches were successful. One missile failed to detonate and another was not released due to a malfunction within the launch B-1 aircraft.

JASSM ESAF

- The Air Force executed an instrumented sled test on February 18, 2009, to gather data on the fuze structural environment. The Air Force halted the program to re-assess ESAF requirements and program strategy.

JASSM-ER

- The Air Force executed one JASSM-ER live fire shot on August 18, 2009, in accordance with the DOT&E-approved JASSM-ER TEMP; the missile accurately pinpointed and subsequently destroyed the target at a nominal JASSM-ER range.

Assessment

- Despite improvements in workmanship and production processes, Lot 5 testing resulted in a 0.60 reliability point estimate, well below the 0.80 requirement. After further missile modifications, the Lot 7 testing resulted in

15 of 17 missiles successfully employed; one missile failure resulting in a 0.94 missile reliability (80 percent confidence level) and one mission failure for an overall mission reliability of 0.88.

- DOT&E is concerned with the Air Force's decision to halt the ESAF program. The ESAF program will replace the current electromechanical fuze, which relies on moving parts prone to reliability issues. Four of the 26 missiles launched in FY09 experienced fuze reliability issues indicating the need for a more reliable fuze.
- The August 18, 2009, JASSM-ER shot indicates that the JASSM-ER is meeting early requirements. However, more test flights are necessary to adequately characterize system performance.

Recommendations

- Status of Previous Recommendations. The Air Force is addressing the two FY08 recommendations on reliability and program management.
- FY09 Recommendations. The Air Force should:
 1. Continue to characterize the reliability of baseline missile production lots, incorporating reliability and program management improvements.
 2. Renew the pursuit of the ESAF, ensuring the availability of a second fuzing option, pursuing technological advancement in fuzing, and increasing reliability in the JASSM program.