

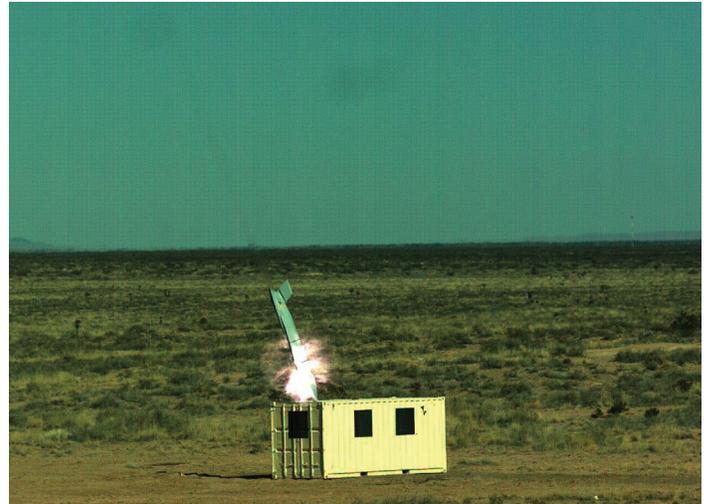
## Joint Air-to-Surface Standoff Missile (JASSM)

### Executive Summary

- The Air Force executed five Joint Air-to-Surface Standoff Missile (JASSM)-Extended Range (JASSM-ER) live fire shots in FY11. All five prosecuted their targets successfully.
- The Air Force, in conjunction with the prime contractor Lockheed Martin, is in the process of re-examining preliminary design and engineering development of the Electronic Safe and Arm Fuze (ESAF).
- There was one Lot 6 Reliability Assessment Program (RAP) shot in FY11, the result of which was a failure.
- The Air Force should continue to characterize the reliability of baseline missile production lots, incorporating reliability and program management improvements.

### System

- Baseline JASSM is a stealthy cruise missile that flies a preplanned route from launch to a target, using GPS guidance 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 prepared 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 takes advantage of advances in fuze technology and is intended to be a more reliable fuze with the same capabilities as the baseline mechanical fuze. The ESAF would be used in JASSM baseline and ER variants.
- 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 adds the capability to attack maritime targets using two-way datalink 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 preplanning or manual pre-launch retargeting planning
  - Attack a wide range of targets including soft, medium, and 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 Anti-Surface Warfare would add the capability to attack maritime targets and would add expanded retargeting capabilities in executing JASSM missions.

### Major Contractor

Lockheed Martin, Missile and Fire Control – Orlando, Florida

### Activity

- All testing was conducted in accordance with the DOT&E approved Test and Evaluation Master Plan and test plan.

#### JASSM Baseline

- The Air Force is certifying JASSM for carriage and employment on the F-15E Strike Eagle; jettison and separation tests continued into FY11. The Air Force also successfully tested the missile operational flight profile to be incorporated into Lot 8 missiles onboard B-52 aircraft.

- There was one production Lot 6 RAP test flight in FY11 using a retrofitted Lot 6 missile. The December 2010 missile shot was a failure, as the missile departed controlled flight soon after launch from the B-2 bomber launch platform. The Lot 6 RAP test plan calls for an equal mix of re-worked early production Lot 6 missiles and current

# AIR FORCE PROGRAMS

configuration Lot 6 missiles, ensuring adequate and equal testing of both variants.

## **JASSM ESAF**

- The ESAF program remains unfunded; however, the Air Force continues to express technical interest in the program. The Air Force, in conjunction with the major contractor, is in the process of re-examining preliminary design and engineering development of ESAF and is pursuing the availability of a second fuzing option, technological advancements in fuzing, and increased JASSM reliability.

## **JASSM-ER**

- The Air Force executed five JASSM-ER live fire shots in FY11. Two of these missile firings (IT-7 and IT-10) were part of the integrated test program conducted under the auspices of the JASSM program office. The remaining three were Air Force Operational Test and Evaluation Center-administered IOT&E firings. All five JASSM-ER missiles accurately pinpointed and subsequently destroyed their targets at both nominal and maximum JASSM-ER ranges.

## **Assessment**

### **JASSM Baseline**

- Despite improvements in workmanship and production processes, there is still a need to evaluate the inherent reliability of production lot missiles to ensure that the reliability growth plan is successful.

### **JASSM ESAF**

- DOT&E is concerned with the Air Force's current decision not to fund the ESAF program, which has the

potential to increase the overall reliability of the JASSM variants. The ESAF program would replace the current electro-mechanical fuze, which relies on moving parts prone to reliability failures. In addition, the ESAF has more built-in test capability than the current electro-mechanical FMU-156/B fuze. LFT&E requirements (sled and flight tests) will need to be re-examined for data completeness should the Air Force choose to reinitiate the ESAF program.

## **JASSM-ER**

- The five JASSM-ER shots indicate that the JASSM-ER may meet requirements. However, full characterization of the weapon requires completion of the entire 21-shot IOT&E test program.

## **Recommendations**

- Status of Previous Recommendations. Due to the continued battery problems in the telemetry kits, the Air Force could not adequately address the FY09 recommendation on reliability characterization. The Air Force has addressed all other previous recommendations.
- FY11 Recommendations.
  1. The Air Force should continue to characterize the reliability of baseline missile production lots (including completion of the Lot 6 RAP), incorporating reliability and program management improvements.
  2. The Air Force, in conjunction with the contractor, should continue the preliminary design and development of the ESAF.