

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

### Executive Summary

- The Joint Air-to-Surface Standoff Missile (JASSM) program reported a Nunn-McCurdy cost breach in February 2007. OSD elected not to certify the program until the program demonstrates improved program management and system reliability.
- OSD directed the program to change from Acquisition Category (ACAT) IC (Service oversight) to ACAT ID (OSD oversight).
- OSD approved an Air Force strategy that changes program management, identifies reliability problems, and characterizes the reliability of corrected Lot 4 production missiles. The Air Force designed this strategy to support a Nunn-McCurdy certification in time to maintain current JASSM production schedules.
- The Air Force has not met OSD-required metrics for documenting the new management and test approaches.
- The program schedule for the testing prior to a certification is high-risk.
- OSD directed the program to cease development on other JASSM variants. If OSD certifies the baseline program, the Air Force should develop all new acquisition and test strategies for JASSM Extended Range (ER), Weapon Data Link (WDL), and Maritime Interdiction (MI) variants.
- After failures in sled track and qualification testing, the Air Force stopped testing the Electronic Safe and Arm Fuze (ESAF) and revamped the LFT&E test strategy. DOT&E approved this new strategy.

### System

- Baseline JASSM is a stealthy cruise missile that flies a preplanned route from launch to a target, using Global Positioning System (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 Electronic Safe and Arm Fuze (ESAF) adds a more reliable fuze with the same capabilities as the baseline fuze. Development is ongoing.



- JASSM Extended Range (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 Weapon Data Link (WDL) is intended to add capabilities for two-way communication that support battle damage assessment and in-flight re-targeting. Development has been on hold since June 2007.
- JASSM Maritime Interdiction (MI) will build on WDL capabilities and add the capability to attack maritime targets under certain circumstances. Development has been on hold since June 2007.

### 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 from up to 200 miles away
  - Execute missions using automated preplanned or manual in-flight mission 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 WDL and MI should have added flexibility and greater retargeting capabilities in executing JASSM missions.

## Activity

### JASSM Baseline

- The JASSM program experienced a Nunn-McCurdy cost breach in February 2007.
- DOT&E participated in multiple meetings with OSD to determine the appropriate steps that could lead to certification of an updated JASSM program that meets Nunn-McCurdy certification requirements.
- The Nunn-McCurdy certification requires OSD to certify four criteria:
  - The program is essential to national security.
  - There is no alternative of equal or greater capability at less cost.
  - The new program cost estimate is reasonable.
  - Program management is adequate to manage and control program cost.
- OSD determined that the JASSM program was essential to national security with no less costly alternative. However, OSD elected not to certify the program until the Air Force demonstrates sufficient system reliability and improved program management.
- OSD changed the program from ACAT IC (Service oversight) status to ACAT ID (OSD oversight) status based on the Nunn-McCurdy reviews.
- The Air Force proposed a series of steps to implement program management changes, identify reliability problems, and characterize the reliability of corrected Lot 4 production missiles. The proposal would support a Defense Acquisition Board (assuming favorable review of management changes and demonstrated reliability) and could support an OSD certification that continues program production without interrupting the program's current production timeline.
- OSD required the Air Force to incorporate the above changes into program documentation with the developer, complete an OSD-approved System Evaluation Plan (SEP) and a DOT&E-approved Test and Evaluation Master Plan (TEMP), and conduct additional testing before OSD will certify the program to Congress.
- OSD directed periodic OSD reviews and a series of actions the Air Force must accomplish before OSD will certify the program.
- OSD directed that the Air Force cease development work on JASSM ER, WDL, and MI. OSD approved limited activities on ESAF, and F-15E integration. OSD requested that the Air Force begin new analysis of ER, WDL, and MI requirements.

### JASSM ESAF

- After failures in sled track and qualification testing, the Air Force stopped testing the ESAF. The program office revamped the LFT&E test strategy in January 2007. The new plan eliminated concurrent testing, and conducts adequate testing on the fuze in progressively challenging environments before Live Fire missile testing, flight testing, and production. Qualification testing is ongoing.

## Assessment

### JASSM Baseline

- The Air Force began screening previous system and test information to identify other deficiencies that may impact reliability. The program agreed with OSD SEP and DOT&E TEMP strategies and initial plans to stress production missiles in captive carry environments, ground test them to identify new failures, implement corrections in missiles, and flight test them as directed. The program has agreed in principle with OSD on scoring criteria and methodology for the flight testing.
- OSD, DOT&E, and a reliability advisory panel of outside experts identified the Air Force schedule as high risk. DOT&E is concerned that pressure to maintain the production schedule will reduce reliability improvement steps, not incorporate corrections as needed, and/or reduce planned adequate testing. If the Air Force does not implement program management changes and reliability improvements, the program is likely to return to the previous cycle of producing missiles with low operational reliability.

## Recommendations

- Status of Previous Recommendations. The two FY06 recommendations regarding JASSM ER were overcome by the Nunn-McCurdy certification events.
- FY07 Recommendations.
  1. The Air Force should focus on characterizing reliability, incorporating reliability and program management improvements.
  2. If OSD certifies the baseline program, the Air Force should develop all new acquisition and test strategies for JASSM ER, WDL, and MI variants. Each strategy should reflect an event-driven approach that plans appropriate testing based on operational concepts, requirements, and system capability.