

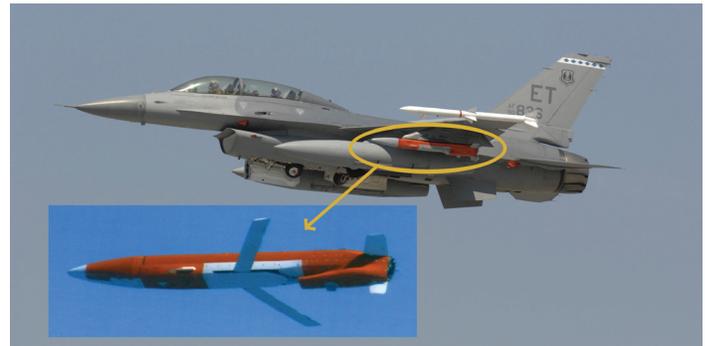
## Miniature Air-Launched Decoy (MALD) and MALD-Jammer (MALD-J)

### Executive Summary

- DOT&E's April 2011 IOT&E report assessed the Miniature Air-Launched Decoy (MALD) as operationally effective for combat, but not operationally suitable due to poor materiel reliability. In July 2011, the Air Force identified a fault with the missile's radio frequency connector that caused it to separate from the missile during long-endurance carriage flights. The Air Force has repaired the fault and conducted further reliability testing; however, MALD operational reliability of 78 percent remains below the 93 percent threshold requirement.
- The Air Force will no longer procure any MALDs, as the Program Office converted the MALD procurement line to MALD-Jammer (MALD-J).
- The Air Force demonstrated corrective actions for long-endurance carriage time failures with an additional MALD-J Engineering, Manufacturing, and Development (EMD) test mission in March 2012.
- The Air Force launched 14 MALD/MALD-J shots during FY12 without failure.
- Limited accessibility to test ranges, unavailability of threat systems, and delays in processing and evaluating data have hampered MALD and MALD-J testing. The Air Force needs to allocate sufficient range time for testing and reduce data processing turnaround times.

### System

- MALD is a small, low-cost, expendable, air-launched vehicle that replicates how fighter, attack, and bomber aircraft appear to enemy radar operators. The Air Force will no longer procure any MALDs, as the MALD procurement line was converted to MALD-J.
- The Air Force designed the MALD-J as an expendable, close-in jammer to degrade and deny an early warning or



- acquisition radar's ability to establish a track on strike aircraft while maintaining the ability to fulfill the MALD decoy mission.
- The F-16 C/D and B-52 are the lead aircraft to employ MALD and MALD-J.

### Mission

Combatant Commanders will use units equipped with:

- MALD and MALD-J to improve battlespace access for airborne strike forces by deceiving, distracting, or saturating enemy radar operators and Integrated Air Defense Systems.
- MALD to allow an airborne strike force to accomplish its mission by forcing enemy radars and air defense systems to treat MALD as a viable target.
- MALD-J to allow an airborne strike force to accomplish its mission by jamming enemy radars and air defense systems to degrade or deny detection of friendly aircraft or munitions.

### Major Contractor

Raytheon Missile Systems – Tucson, Arizona

### Activity

#### MALD

- In August 2011, the Air Force identified a fault with the missile's radio frequency connector that caused it to separate from the missile during long-endurance carriage flights. After improving the connector system, the Air Force tested MALD with six additional shots under a Reliability Assessment Program throughout FY12.
- The Air Force will no longer procure any MALDs, as the Program Office converted the MALD procurement line to MALD-J.

#### MALD-J

- In March 2012, the Air Force completed the MALD-J EMD with one additional test mission to ensure Operational Flight Software (OFS) Build-7a operated successfully and corrected all software anomalies found with the EMD.
- DOT&E approved the MALD-J IOT&E plan in May 2012.
- AFOTEC launched four MALD-Js during IOT&E in August 2012.

# AIR FORCE PROGRAMS

- The Air Force has conducted MALD-J testing to date in accordance with the DOT&E-approved Test and Evaluation Master Plan and test plan.
- The Air Force is currently working on modeling and simulation utilizing the Digital Integrated Air Defense System to evaluate MALD's ability to degrade an Integrated Air Defense System. Completion and final verification is scheduled for January 2013.

## Assessment

- Limited accessibility to test ranges, unavailability of threat systems, and delays in processing and evaluating data have hampered MALD and MALD-J testing.

### MALD

- The DOT&E assessment of MALD performance in the April 2011 MALD IOT&E Report remains unchanged. MALD performance is operationally effective for combat, but not operationally suitable due to poor materiel reliability in the intended operational environment.
- The six additional shots under the Reliability Assessment Program demonstrated no additional critical failures. However, the MALD reliability point estimate that combines free-flight and aircraft long-endurance carriage was 78 percent, which falls short of the threshold requirement of 93 percent. This reliability shortfall will increase the number of MALDs necessary to accomplish the mission.

### MALD-J

- DOT&E conclusions regarding MALD-J suitability, particularly for reliability, depend in part upon data from

MALD testing. DOT&E will use a combination of MALD and MALD-J data to evaluate whether the Air Force has resolved reliability problems. After completing MALD-J EMD, the Air Force launched 14 MALD and MALD-Js during FY12 without additional failures.

- Developing a full mission-level simulation (i.e., multiple MALD-Js versus multiple threat radars) is a technical challenge. However, the oversight of stakeholders and key leadership has helped the Air Force to continue development of the simulation capability in support of the AFOTEC MALD-J IOT&E.

## Recommendations

- Status of Previous Recommendations. The Air Force is satisfactorily addressing four of the five FY11 recommendations. However, the remaining FY11 recommendation for the Air Force to provide sufficient resources to the Nevada Test and Training Range to enable personnel to process and distribute test data in a timely manner requires continued emphasis.
- FY12 Recommendation.
  1. Future strike aviation programs should consider utilizing the Air Force Digital Integrated Air Defense System modeling and simulation capability to accurately model the operational effect of MALD/MALD-J and other future weapons systems in robust scenarios.