

## Miniature Air Launched Decoy (MALD), including MALD-Jammer (MALD-J)

### Executive Summary

- The Air Force separated the Miniature Air Launched Decoy (MALD) and MALD-J (including jammer) programs in February 2008 in order to provide easier visibility and clearer tracking of each program's progress and documentation.
- The Air Force conducted an Operational Assessment (OA) assessing MALD progress towards operational mission capabilities in support of a June 2008 low-rate initial production (LRIP) Milestone C decision.
- The Air Force assessed MALD is making satisfactory progress toward meeting effectiveness and suitability requirements.
- DOT&E approved a Test and Evaluation Master Plan (TEMP) for MALD to support the Milestone C decision. A separate MALD-J TEMP will be required to support a Milestone B decision in FY09.
- The Air Force approved a Capability Production Document for MALD in May 2008.

### System

- MALD is a small, low-cost, expendable, air-launched vehicle that replicates what fighter, attack, and bomber aircraft look like to enemy radar operators.
- MALD-J is an expendable close-in jammer designed to degrade and deny threat early warning or acquisition radar ability to establish a track on strike aircraft while maintaining the ability to fulfill the decoy mission.
- The Air Force plans to procure the first 150 of 1,500 production MALD in FY08 to support testing and an Initial Operational Capability in 2010.
- The F-16 C/D and B-52 are the lead aircraft to employ MALD and MALD-J. In the future, the Air Force plans to employ



both versions of these decoys on F-15C/E, B-1B, A/OA-10, B-2, F-22, and F-35 aircraft.

### Mission

Combatant commanders use the MALD to allow a strike force to accomplish its mission by forcing enemy radars and air defense systems to treat MALD as a viable target. MALD-equipped forces should have improved battle space access for airborne strike forces by deceiving, distracting, or saturating enemy radar operators and Integrated Air Defense Systems. Airborne strike leaders will use MALD-J to degrade or deny early warning and acquisition radar detection of friendly aircraft or munitions.

### Prime Contractor

- Raytheon

### Activity

- The Air Force Operational Test and Evaluation Center (AFOTEC) conducted an OA to assess MALD progress toward meeting operational mission capabilities in support of the June 18, 2008, LRIP Milestone C decision. The Air Force assessed MALD to be progressing to meet effectiveness and suitability requirements.
- MALD ground tests included: aircraft integration tests of hardware and electromagnetic compatibility with host aircraft; payload integration to ensure the mission plan could be uploaded into the MALD; and sortie generation data collection such as time to load and Built-in-Test (BIT) to check the MALD.
- MALD open-air range tests included captive carry, jettison tests, and full-up flight test vehicle missions. Captive carry

tests quantified aerodynamic, electrical, temperature, and vibration environments. Jettison tests included fit checks, aircraft compatibility, and safe separation tests. Flight test vehicle missions assessed in-flight payload performance, navigation accuracy, and maneuverability.

- MALD-J completed risk reduction Phase I with captive carry flights supporting the sub-system critical design review in February 2008.
- MALD-J entered a risk reduction Phase II that will support entry into System Development and Demonstration Phase with a Milestone B decision in FY10.

## Assessment

- MALD testing and performance are progressing. Although reliability did not meet requirements, the trend was positive with no critical failures during the last six developmental test flights.
- The Air Force's primary open air electronic warfare range, the Nevada Test and Training Range, is extremely limited in overland flight profiles available for MALD, and does not authorize simultaneous flights of multiple MALD. Additionally, the Air Force has not developed a mature modeling and simulation plan or other mitigating ground testing for full MALD assessment. These limitations challenge the Air Force's ability to adequately assess MALD in a realistic mission environment.
- Evaluation of MALD reliability and performance in a dense threat environment will rely heavily on modeling and simulation, which will require a proactive and disciplined validation, verification, and accreditation process.
- The Air Force needs to update the MALD/MALD-J Concept of Operations based on lessons learned during testing.
- Both MALD and MALD-J are designed to work in concert with coalition forces as part of the Airborne Electronic

Attack system-of-systems architecture. To ensure successful operations, the Air Force must develop a clear mission planning concept of employment to ensure MALD/MALD-J mission planning products capture the Master Air Attack Plan objectives produced at the Air Operations Center.

## Recommendations

- Status of Previous Recommendations. The Air Force has taken effective action on previous recommendations with the exception of the improved test methodology and range resources recommendation.
- FY08 Recommendations. The Air Force should:
  1. Submit and gain DOT&E approval of the MALD-J TEMP.
  2. Complete a mission-planning concept of employment and a modeling and simulation plan to support the operational test and evaluation plan.
  3. Submit and gain DOT&E approval of the MALD operational test concept and operational test plan.