

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

Executive Summary

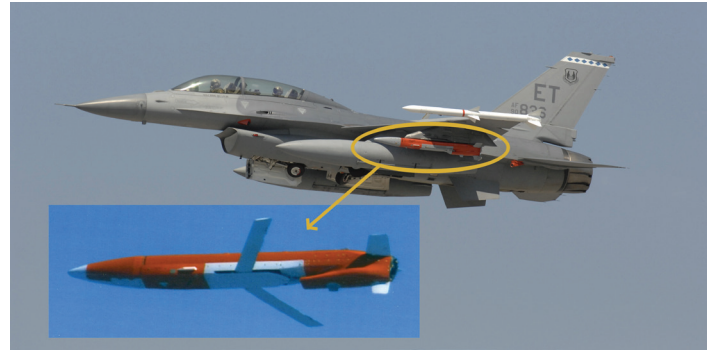
- The Air Force Operational Test and Evaluation Center (AFOTEC) completed full mission-level simulation testing for the Miniature Air-Launched Decoy – Jammer (MALD-J) in February 2014.
- In FY14, the Air Force launched 3 MALD-J and 2 MALD vehicles in operational environments.
- Preliminary analysis of the Force Development Evaluation (FDE) indicates persistent problems exist with MALD-J navigational accuracy. The MALD-J Program Office has incorporated software upgrades to improve navigational accuracy, but the changes thus far have focused on improving the missile's altitude hold capability and have improved navigation accuracy only slightly.
- The 28th Test and Evaluation Squadron is currently executing an FDE, in conjunction with a MALD-J Reliability Assessment Program mission, to evaluate MALD-J's improvement to navigational accuracy due to software upgrades.
- Preliminary results of MALD and MALD-J IOT&E indicate the Air Force's corrective actions on MALD-J have improved the materiel reliability.

System

- The 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 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.
- In FY12, the Program Office converted the MALD procurement line to MALD-J. The Air Force will no longer procure any MALDs without the jammer.

Activity

- AFOTEC completed full mission-level simulation testing in February 2014 in accordance with the DOT&E-approved test plan.
- In April 2014, the Program Office completed a MALD-J Reliability Assessment Program that launched a single MALD vehicle to test and verify the software updates for navigation accuracy.
- The 28th Test and Evaluation Squadron is currently executing an FDE, in conjunction with a MALD-J Reliability Assessment Program mission, to evaluate MALD-J's



- The F-16C/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 deceiving enemy radars and forcing 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

- improvement to navigational accuracy due to software upgrades. The test squadron has accomplished all six of the planned MALD-J missile launches.
- AFOTEC published an operational test report on MALD-J in February 2014. DOT&E is waiting to publish its IOT&E report until after MALD/MALD-J navigational improvements have been tested; the report is expected to be released in 2QFY15.
- In FY14, the Air Force launched 3 MALD-J and 2 MALD vehicles in operational environments.

Assessment

- DOT&E's April 2011 IOT&E report evaluated MALD as operationally effective for combat, but not operationally suitable due to poor materiel reliability. AFOTEC's MALD IOT&E report, published in January 2012, determined MALD to be operationally effective and suitable with identified mission planning and reliability shortfalls. DOT&E is using a combination of MALD and MALD-J IOT&E data to evaluate whether the Air Force has mitigated vehicle reliability problems. Since no failures in the MALD-J payload to date have occurred, and the missile bodies, flight control surfaces, and navigational systems are identical to MALD, combining these data is appropriate.
- Corrective actions appear to have improved the poor materiel reliability in the intended operational environment.
- Preliminary analysis of the FDE indicates persistent problems exist with MALD-J navigational accuracy. Although some corrections have demonstrated minor navigational accuracy improvements to date, overall navigational accuracy problems in most operational environments persist.
- The Air Force will fully implement and test navigational accuracy upgrades in FOT&E in FY15.

- Full mission-level planning and testing events for the MALD-J program indicate the time needed to plan a full load of MALD-J vehicles is excessive. Typically, planning time required for an F-16 is just over 2 hours for a full mission, but typical planning time for a B-52 can reach over 12 hours.

Recommendations

- Status of Previous Recommendations. The Air Force satisfactorily addressed one of three FY13 recommendations by addressing the validation and accreditation issues involved with the Digital Integrated Air Defense model. The Air Force is currently testing to address the remaining recommendations to improve navigational accuracy in operational environments and mission-planning capabilities for the MALD-J program to reduce the time needed to plan a full load of MALD-J vehicles.
- FY14 Recommendations. The Air Force should:
 1. Complete FDE testing to evaluate the MALD-J navigation system improvements due to software upgrades.
 2. Continue to develop a plan to fully test navigation system upgrades in FOT&E.