HELLFIRE Romeo

Executive Summary
- The HELLFIRE missile (AGM-114) is a family of air-to-surface, guided munitions consisting of missile body with different warhead types.
- The Air Force developed a new warhead, the HELLFIRE Romeo missile variant, to provide increased lethality against a variety of non-traditional targets.
- The Air Force will operate the HELLFIRE from MQ-1 Predator and MQ-9 Reaper unmanned aerial vehicles (UAVs). DOT&E assessed the HELLFIRE Romeo missile variant as lethal.
- The Air Force authorized fielding in December 2014, following an interim report submitted by DOT&E in November 2014. DOT&E submitted the final report on the HELLFIRE Romeo missile variant in August 2015, after the Air Force completed the HELLFIRE Romeo lethality testing against maritime targets.

System
- The AGM-114 HELLFIRE is a family of laser guided missiles for use against fixed and moving targets by both rotary and fixed-wing aircraft (including UAVs).
- The HELLFIRE Romeo missile variant:
  - Is an air-to-surface missile intended to be launched from Air Force UAV platforms. It uses a new warhead and a semi-active laser seeker to home-in on its target.
  - Will replace the HELLFIRE K2A fragmenting warhead variant and supplement the existing HELLFIRE R2 anti-armor variant currently fielded by the Air Force for air-to-surface engagements.
  - Is designed to provide improved lethality against combatants within building structures while maintaining lethality against non-armored targets.

  - Is compatible with other HELLFIRE missiles fired from other Air Force UAVs. Like other HELLFIRE variants, the HELLFIRE Romeo missile includes variable time delay fuzing options.

Mission
Commanders will employ the HELLFIRE Romeo missile variant to engage enemy combatants located within complex building and bunker structures, in non-armored vehicles, in small boats, and in the open from UAVs.

Major Contractor
Lockheed Martin Corporation, Missiles and Fire Control Division – Grand Prairie, Texas
(The missiles are manufactured in Ocala, Florida, and Troy, Alabama.)

Activity
- The Air Force successfully completed live fire testing of the HELLFIRE Romeo missile in February 2015. Testing was conducted in accordance with the DOT&E-approved live fire strategy and test plans.
- The HELLFIRE Romeo missile LFT&E program included arena tests, developmental dynamic tests against masonry targets, developmental flight tests against building and bunker targets, missile flight tests against mannequins, trucks, light armor, buildings, and bunkers, a rocket-on-a-rope test against a boat target, and a range of supporting lethality assessments using modeling and simulation.
- The Air Force approved fielding of the HELLFIRE Romeo missile variant in late 2014 following DOT&E's submission of an interim classified lethality report.
- DOT&E submitted a final classified lethality report for the HELLFIRE Romeo missile in August 2015 after the completion of the boat target testing.

Assessment
- The HELLFIRE Romeo missile demonstrated adequate lethality across a spectrum of expected targets, including small boats, light armor, technical vehicles (trucks), and personnel

both in the open and behind/under a variety of masonry structures.
- The classified lethality report identified engagement circumstances and target conditions for which HELLFIRE Romeo lethality against specific targets either is not known, or which affect lethality against a particular target.

Recommendations
- Status of Previous Recommendations. This is the first annual report for this program.
- FY15 Recommendations. The Air Force or the HELLFIRE Romeo program should:
  1. Address the three recommendations in the classified report to further quantify lethality estimates against specific targets in specific conditions and engagement circumstances.
  2. Provide the classified test results to the Joint Technical Coordinating Committee for Munitions Effectiveness (JTCG/ME) for incorporation into JTCG/ME products as indicated in the final classified DOT&E report.