

## Javelin Close Combat Missile System – Medium

### Executive Summary

- In FY18, the Army continued development of the Spiral 3 missile and a new Light Weight Command Launch Unit (CLU). The Army intends these efforts to reduce unit cost and weight while maintaining or improving system performance.
- In FY18, the Army conducted 22 Spiral 3 static penetration tests. Two additional static tests remain. Early indications from Spiral 3 static penetration testing showed no differences between the Spiral 3 and Spiral 2 warhead (behind seeker) performance.
- DOT&E and the Army continue to plan and execute the testing required for the Spiral 3 missile and Light Weight CLU developments. The Test and Evaluation Master Plan (TEMP) and Live Fire Strategy are under development and expected to be submitted for approval in FY19.



### System

- The Javelin Close Combat Missile System – Medium is a man-portable, fire-and-forget, anti-tank guided missile.
- The Javelin system consists of a missile in a disposable launch tube assembly and a reusable CLU. The CLU mechanically engages the launch tube assembly for shoulder firing, has day and night sights for surveillance and target acquisition, and electronically interfaces with the missile for target lock-on and missile launch. An operationally ready Javelin system weighs 48.3 to 48.8 pounds, depending on the variant.
- The Javelin missile employs a tandem shaped-charged warhead to defeat vehicle armor and can be fired in direct-attack or top-attack modes.
- The Army initiated four Javelin system improvements to reduce unit cost and weight and improve lethality against non-armored targets. These improvements are referred to as Spiral 1, 2, 3, and Light Weight CLU.
  - The Spiral 1 effort replaced electronic components in the control actuator section of the missile for cost and weight savings. Production missiles are designated FGM-148E.
  - The Spiral 2 effort utilizes the legacy Precursor Warhead (PCWH), and a newly developed Multipurpose Warhead (MPWH) that uses enhanced fragmentation to improve lethality against non-armored targets and personnel in the open while maintaining lethality against armored threats. Production missiles are designated FGM-148F.

- The Spiral 3 effort develops a new launch tube assembly and battery unit, and will replace the current gas-cooled seeker with an uncooled seeker in the guidance section of the missile. Production missiles will be designated FGM-148G.
- The Light Weight CLU effort develops a new CLU that is smaller and lighter while maintaining or improving system performance.

### Mission

- Commanders use Army and Marine Corps ground maneuver units equipped with the Javelin to destroy or repel enemy assault through maneuver and firepower.
- Service members use the Javelin to destroy threat armor targets and light-skinned vehicles, and to incapacitate or kill threat personnel within fortified positions. In recent conflicts, Javelin was used against enemy bunkers, caves, urban structures, mortar positions, snipers, and personnel emplacing IEDs.

### Major Contractors

- Raytheon – Tucson, Arizona
- Lockheed Martin – Orlando, Florida

### Activity

- In FY18, the Army conducted 22 Spiral 3 static penetration tests: 18 of the static tests were Penetration Versus Standoff tests and 4 were warhead through seeker comparison tests. Two additional static tests remain.
- The Army conducted all testing in accordance with the draft LFT&E Strategy. To prevent delaying the test program, DOT&E approved the execution of the static penetration test series in accordance with the draft LFT&E Strategy.

# FY18 ARMY PROGRAMS

- In FY18, DOT&E, the Deputy Assistant Secretary of Defense for Developmental Test and Evaluation, and the Army continued test planning for the Spiral 3 missile and Light Weight CLU. A Live Fire Strategy and a combined OT&E/LFT&E Concept were developed for the Spiral 3 missile. The Javelin Program Office began a comprehensive update to the TEMP. The TEMP and Live Fire Strategy are expected to be staffed and approved in FY19.

## **Assessment**

Early indications from Spiral 3 static penetration testing showed

no differences between the Spiral 3 and Spiral 2 warhead (behind seeker) performance. Additional flight and static tests against realistic targets are planned to confirm performance for additional operational conditions.

## **Recommendations**

None.