

Common Infrared Countermeasures (CIRCM) System

Executive Summary

The Army accomplished operational flights, free flight live missile tests, a logistics demonstration, laboratory test, flight tests, and cybersecurity tests as part of IOT&E that concluded in November 2019. DOT&E will provide the Army a classified IOT&E report of the Common Infrared Countermeasure (CIRCM) system to inform the Army Acquisition Program Baseline Objective date for the Full-Rate Production decision in June 2020.

System

- The CIRCM system is a defensive system for aircraft, which is designed to defend against surface-to-air infrared missile threats.
- The system combines the Army's legacy Common Missile Warning System (CMWS) consisting of ultraviolet missile warning sensors and an electronics control unit with the CIRCM system consisting of two lasers, two pointer/trackers, and a system processor unit.
- If CMWS detects a probable threat to the aircraft, it passes the tracking information for that possible threat to the CIRCM processor, which directs the pointer/trackers to slew to and jam the threat with laser energy. Simultaneously, the CMWS processor continues to evaluate the possible threat to determine if it is a real threat or a false alarm. If CMWS declares the detection to be an actual threat, it notifies the aircrew through audio alerts and a visual display on the aircraft Multi-function Display in the cockpit, while also releasing flares as a secondary countermeasure.

Mission

- Commanders employ Army rotorcraft equipped with the CIRCM system to conduct air assaults, air movements,

Activity

- The Army accomplished the following testing to support IOT&E of the CIRCM system:
 - Closed-loop hardware-in-the-loop simulations to show the effects of the CIRCM system on actual threat missile system hardware at the Guided Weapons Evaluation Facility, Eglin AFB, Florida, from April 1 through September 13, 2019.
 - CIRCM laser and jam code performance evaluations at various geometric missile engagements for selected missile threats at the Threat Signal Processor-in-the-Loop, Naval Air Station China Lake, California, from March 20 through September 13, 2019.

Electronics Control Unit



Electro-optical Sensors

System Processor Unit



Pointer/Trackers

Common Missile Warning System (CMWS)

Common Infrared Countermeasures (CIRCM)

- casualty evacuation, attack, armed escort, reconnaissance, and security operations. Commanders employ Army fixed-wing aircraft equipped with the CIRCM system to conduct personnel transport, electronic warfare, and logistic support.
- During Army missions, the CIRCM system is intended to provide automatic protection for fixed- and rotary-wing aircraft against shoulder-fired, vehicle-launched, and other infrared missiles.

Major Contractor

Northrop Grumman, Electronic Systems, Defensive Systems Division – Rolling Meadows, Illinois

FY19 ARMY PROGRAMS

suitability data including workload surveys from an operational unit.

- Regression flight testing in and around Redstone Arsenal, Alabama, from August 15 to September 10, 2019.
- A logistics demonstration including maintenance performed in chemical protective gear at Redstone Arsenal, Alabama, from June 25 – 27, 2019.
- The Army completed deferred testing from the Operational Assessment comprising littoral and snow clutter environmental testing in February and March 2019.
- The Army conducted a cybersecurity Cooperative Vulnerability and Penetration Assessment in June 2019 and conducted an Adversarial Assessment in September 2019.
- The Army conducted testing in accordance with DOT&E-approved plans, including a test deviation memorandum, and the TEMP.

Assessment

- The Army discovered compatibility problems during developmental testing that may require hardware changes to correct.
- DOT&E will provide the Army a classified IOT&E report of the CIRCM system to inform the Army Full-Rate Production decision in June 2020.

Recommendation

1. The Army should resolve the compatibility problems that occurred during post-Milestone C developmental testing.