# Distributed Aperture Infrared Countermeasure System (DAIRCM)

## Executive Summary

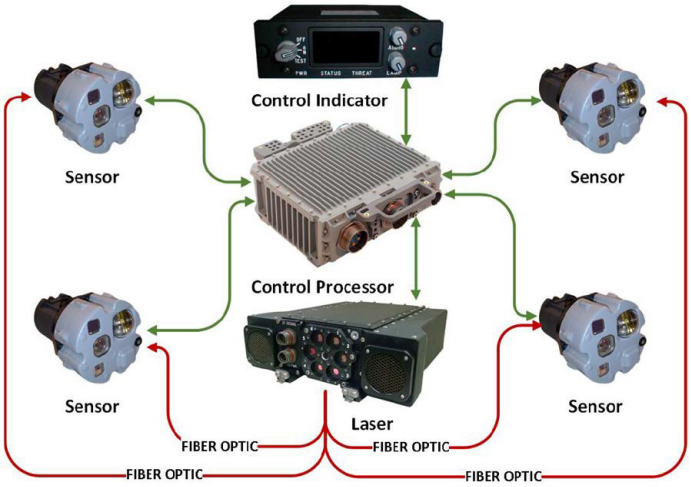
Preliminary results from Navy testing indicate the Distributed Aperture Infrared Countermeasures (DAIRCM) system as installed on the MH-60S and AH-1Z helicopters has the capability to defeat vehicle-launched infrared-guided missiles and man-portable air-defense systems (MANPADS). The DAIRCM system has the capability to detect laser-guided threats and hostile fire near the MH-60S and AH-1Z helicopters.

## System

- The DAIRCM system is an integrated suite of missile warning, laser warning, hostile fire indicator, and infrared countermeasure components designed to protect rotary-wing aircraft from the threat posed by infrared missiles.
- The system uses a single, centrally installed laser that can feed all of the beam directors. The threat warning sensor sends raw video and digital data information to the processor, which analyzes the data for an incoming Missile, Laser, or Hostile Fire threat. If the processor detects a threat, it notifies the aircrew through the control interface unit and initiates the laser to direct jamming energy at the incoming missile, if applicable.
- The Navy's Program Office for Advanced Tactical Aircraft Protection Systems, PMA-272, is the lead for developing the DAIRCM system.

## Mission

- Commanders employ rotorcraft equipped with the DAIRCM system to conduct medium lift logistical support, medical evacuation, search and rescue, armed escort, and attack operations.
- During missions, the DAIRCM system is intended to provide automatic protection for rotary-wing aircraft against shoulder-fired, vehicle-launched, and other infrared-guided missiles.




## Major Contractors

- Leonardo Digital/Retrieval Systems (DRS) Infrared Sensors and Systems – Dallas, Texas
- Leonardo DRS Daylight Solutions – San Diego, California

## Activity

- The Navy completed laser warning and hostile fire testing using a surrogate target at the Naval Air Warfare Center's Weapons Survivability Laboratory located in China Lake, California, from August to September 2019 to support the Navy's Quick Reaction Assessment (QRA).
- The Navy completed the first phase of missile warning testing using the MH-60S and the AH-1Z helicopters at Hot Springs, Virginia, in August 2019 to support the Navy's QRA.
- The Navy began conducting the second phase of missile warning testing in September 2019 using the MH-60S and AH-1Z helicopters at Eglin AFB, Florida, to support the Navy's QRA.
- The Navy completed VMX-1 Maintainer and Operator Training in Yuma, Arizona, from April to May 2019.
- The Navy plans to incorporate data from the DAIRCM digital system model to expand the set of performance data for system performance evaluations.

## Assessment

Preliminary results indicate the DAIRCM system as installed on the MH-60S and AH-1Z helicopters has the capability to defeat:

- Vehicle-launched, infrared-guided missiles and MANPADS
- Laser-guided threats and hostile fire

## Recommendation

1. The Navy should complete the verification and validation of the missile warning digital system model.