# MH-139A Grey Wolf



In February 2024, the MH-139A program completed government-led developmental testing (DT) and is progressing toward IOT&E. However, the program still needs to complete crucial maintenance and training objectives to meet IOT&E entrance criteria. IOT&E is currently scheduled to begin in 2QFY25.

## SYSTEM DESCRIPTION

The MH-139A Grey Wolf is a dual-

piloted, twin-engine helicopter, based on the commercial AW139, with added military capabilities in communication, navigation, identification, and survivability.

### MISSION

The Air Force intends for the MH-139A to replace the UH-1N to provide rapid transport capability for two primary commands:

- Air Force Global Strike Command will use the MH-139A to support nuclear security missions by providing emergency security response and convoy escort at Minot AFB, North Dakota; Malmstrom AFB, Montana; and Francis E. Warren AFB, Wyoming.
- Air Force District of Washington will use the MH-139A to provide contingency response, continuity of operations, and executive transport for senior government officials in the National Capital Region.

In addition, the Air Force Reserve Command will provide formal flight training at Maxwell AFB, Alabama. All commands will perform search and rescue via the National Search and Rescue Plan and Defense Support of Civil Authorities.

## PROGRAM

MH-139A is an Acquisition Category IB program. DOT&E approved the Alternative LFT&E Strategy in May 2019 and the Milestone C TEMP in January 2023. In February 2023, DOT&E published an observation report to inform the Milestone C decision, which the Air Force executed in March 2023.

In FY24, the Air Force reduced the planned aircraft procurement and no longer intends to support the Air Force Materiel Command at Eglin AFB, Florida, and the Air Education and Training Command at Fairchild AFB, Washington, with MH-139A.

The MH-139A acquisition strategy relies on contractor flight testing to obtain a series of civil Supplemental Type Certificate (STC) approvals to expand MH-139A capabilities and support the military flight releases (MFR) required for government-led DT and operational testing. The number of STCs has grown over the course of the program. To date, six of nine STCs have been approved. Due to further delays in the remaining STC approvals, the Air Force obtained approval of two MFRs in October 2024 to support aircrew training and operational testing. IOT&E is currently scheduled to begin in 2QFY25. DOT&E will provide a full assessment of operational effectiveness, suitability, and survivability following the completion of IOT&E.

#### » MAJOR CONTRACTOR

 Boeing Defense, Space & Security – Ridley Park, Pennsylvania

# **TEST ADEQUACY**

The Air Force completed the planned government-led DT in February 2024. This FY24 testing included the SkyFlight mission planning system; flare effectiveness; M240 weapon system effects; and heavy weight, high-density-altitude testing. The Air Force is completing the DT reports and has provided preliminary data to support the program's entrance into IOT&E. The Air Force is conducting two additional areas of DT to resolve early problem discovery. First, integration testing is required for an additional radio required for Air Force Global Strike Command missions. Second, early testing of austere landings showed that dust and debris from the ground may be ingested into engine air intakes and degrade engine performance. The Air Force is evaluating the need to conduct additional testing to determine the effect of austere landings on performance and maintenance of the engines.

Despite the completion of government-led DT, the MH-139A program has not met several IOT&E entrance criteria. First, the program is behind schedule on integrating contractor maintenance data into the Air Force Integrated Maintenance Data System. These maintenance data are required to support both IOT&E and normal operations with fielded aircraft. The remaining entrance criteria are the delivery of operationally representative aircraft; complete flight and maintenance technical orders with the new radio and environmental control system; and fully trained flight crews and maintenance personnel.

With DOT&E approval, the Air Force Operational Test and Evaluation Center conducted the first phase of cyber testing on the MH-139A in July and September 2024 in accordance with their submitted test plan and observed by DOT&E.

The Air Force completed live fire testing of the flight controls, vertical tail rotor drive, and fuel systems per DOT&E-approved test plans and observed by DOT&E. Low-energy laser, ballistic vulnerability, occupant casualty, and integrated survivability analyses are in progress.

As reported in previous years, the Air Force has not yet conducted the approved testing of the MH-139A against electromagnetic pulse (EMP), as required by the Alternative LFT&E Strategy. In lieu of the approved testing, the Air Force proposed to conduct an analysis of flight-critical systems to determine if MH-139A meets the EMP survivability requirement in the Capability Production Document. The program office submitted its EMP flight-critical analysis for DOT&E review in October 2024.

## PERFORMANCE

#### » EFFECTIVENESS

The Air Force continues to make progress addressing previously reported deficiencies, but performance concerns remain that present a risk to MH-139A meeting operational effectiveness requirements.

To address previously reported concerns about the M240 weapon system malfunctions, the program developed changes in the spent-brass catch bag and the ammunition feed system. A gun mount redesign is in development but will not be completed prior to IOT&E. The MH-139A intercommunication system in the cabin is expected to require a redesign, which will not be completed prior to IOT&E.

#### » SUITABILITY

The program needs to address several challenges for the MH-139A to be operationally suitable. As discussed above, engine ingestion of dust and debris may cause long-term maintenance issues if not resolved. This is in addition to previously reported concerns about engine maintenance caused by expansion of the aircraft flight envelope and higher power requirements. Moreover, carbon buildup has been identified in several parts of the aircraft's engine including the engine fuel nozzles.

Previously reported concerns regarding cabin seating constraints and the commercial-derivative mission planning software requiring stand-alone computer installations are not yet resolved.

#### » SURVIVABILITY

The program office needs to address challenges for the MH-139A to be survivable against anticipated threats. The original contractor-proposed fuel cell design did not meet the required self-sealing military requirements for vendor material qualification against the specified projectile threat. Subsequent testing focused on the design's ability to inhibit sustained dry bay fires.

## RECOMMENDATIONS

The Air Force should:

- Develop corrective action plans for deficiencies that affect operational requirements, including the intercommunication system, M240 weapon system, austere landings, and cabin configuration, as recommended in the FY22 and FY23 Annual Reports.
- 2. Ensure that sufficient aircraft in an operationally representative configuration, with trained flight crews, maintenance support, and all associated support equipment, consistent with approved concepts of operations, are available for the start of IOT&E.