

MQ-25 Stingray Carrier Based Unmanned Aerial System (CBUAS)



Since achieving Milestone B (MS B) in August 2018, a series of programmatic and technical delays led the MQ-25 program to request fiscal reprogramming in FY23. If the reprogramming request is granted, the Navy will update the MQ-25 acquisition strategy and submit an update of the MS B Test and Evaluation Master Plan (TEMP) to DOT&E.

SYSTEM DESCRIPTION

The MQ-25 Stingray Carrier-Based Unmanned Aerial System (CBUAS) is composed of the MQ-25A Stingray air vehicle (Group 5 unmanned aircraft system (UAS)) and the MD-5 Unmanned Carrier Aviation Mission Control System (UMCS). It is intended to enhance carrier air wing (CVW) warfighting capabilities as an organic, carrier-based mission and recovery tanker with a secondary maritime intelligence, surveillance, and reconnaissance (ISR) capability. MQ-25 will assume the organic tanking mission currently performed by the F/A-18E/F. MQ-25 is intended to integrate manned and unmanned operation and mature complex sea-based command, control, communication, computers, and intelligence UAS technologies to support future UAS development to pace emerging threats.

MISSION

Commanders will utilize the MQ-25 to provide tanking and ISR capabilities to the carrier strike group, extending CVW strike range and alleviating the persistent, sea-based ISR gap, while introducing and integrating organic unmanned aviation into the CVW.

PROGRAM

The MQ-25 CBUAS is composed of the MQ-25A Stingray air vehicle, an Acquisition Category IB program;

the MD-5 UMCS, an Acquisition Category II program; and additional systems, capabilities, and facilities needed to enable operations. The MQ-25 will be the first operational, carrier-based, fixed-wing, catapult-launched UAS.

The MQ-25 MS B TEMP called for the MS C decision in FY23 to be informed by an operational assessment based on testing up to and including initial sea trials. In December 2022, based on production delays, the Navy issued an updated Acquisition Decision Memorandum which revised the MS C criteria to use information from an Early Operational Assessment (EOA) that would be based on data collected between June 2019 and December 2021 that utilized a Boeing-owned, -operated, and -funded MQ-25A Stingray prototype (pictured above).

The prototype test program was a 30-month, risk-reduction effort with ground and flight events executed at Mid-America Airport in Mascoutah, Illinois; ground events at Naval Air Station Norfolk, Virginia; and an underway (non-flight) deck-handling demonstration onboard USS *George H. W. Bush* (CVN 77) in December 2021 which concluded the program. While the prototype demonstrated in-flight refueling capability and was taxied under its own power on the flight deck, there are significant differences between the prototype and the MQ-25A Engineering Development Model design. These differences include internal structures, fuel system design, communications and

network architecture, and for later test articles, obsolescence updates for some internal hardware that need to be incorporated before production model delivery. Additionally, the prototype was flown with a Boeing ground station, not the Lockheed Martin MD-5 UMCS ground station planned for use with fleet aircraft. At the time of testing, the Navy did not intend the prototype test program to inform an EOA, and DOT&E did not observe the testing. Developmental risk reduction activities are in progress at both Boeing-owned and government-owned software and hardware integration labs.

The Navy's Operational Test and Evaluation Force sent an EOA strategy to DOT&E which it assessed as inadequate. MS C did not occur in FY23 due to delays with MQ-25A Stingray production.

As a result of the design, production, and testing delays, the MQ-25 program is currently in the process of fiscal reprogramming to extend the engineering and manufacturing development phase of the program by approximately 24 months. Once reprogramming is approved and completed, the Navy will update the acquisition strategy and submit an update of the MS B TEMP to DOT&E. As of the end of FY23, the draft financial reprogramming plan and related budget marks did not meet the program's full RDT&E funding request, which adds risk to an aggressive test schedule.

» **MAJOR CONTRACTORS**

- Boeing Defense, Space & Security – St. Louis, Missouri (MQ-25A Stingray)
- Lockheed Martin Corporation – Marietta, Georgia (MD-5 UMCS)

TEST ADEQUACY

DOT&E has not approved any operational test plans for MQ-25.

PERFORMANCE

» **EFFECTIVENESS, SUITABILITY, AND SURVIVABILITY**

Not enough data are currently available to evaluate the MQ-25 operational effectiveness, suitability, and survivability.

RECOMMENDATION

The Navy should:

1. Submit an update to the MS B TEMP for DOT&E approval upon completion of an updated acquisition strategy.