

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



In May 2025, the Navy received its first MQ-25 air test vehicle. The Navy is planning to transition the program to Milestone C (MS C) in FY26, and to submit a MS C TEMP to DOT&E for approval in 1QFY26. MQ-25® is a registered trademark of the Department of the Navy.

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 Unmanned Carrier Aviation Mission Control System (UMCS) MD-5 Ground Control Station (GCS). The UMCS

is the system-of-systems required for MQ-25A air vehicle and payload command and control. The MD-5 GCS, developed by the U.S. Government, is composed of Lockheed Martin's Skunk Works® Multi-Domain Combat System (MDCX™), which is the Air Vehicle Pilot operating consoles and associated computing systems, and U.S. Government-developed communications, networking, and other ancillary equipment.

The MQ-25 is intended to enhance carrier air wing (CVW) warfighting capabilities as a dedicated carrier-based tanker with a secondary maritime intelligence, surveillance, and reconnaissance (ISR) role. MQ-25A will assume the organic tanking mission currently performed by the F/A-18E/F. The MQ-25 is intended to integrate manned and unmanned operations while maturing 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, extend CVW strike range and alleviate 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. MQ-25A will be the first operational, carrier-based, fixed-wing, and catapult-launched UAS.

In the DOT&E-approved MQ-25 MS B TEMP, published in 2020, the Navy scheduled the MS C decision for FY23, and an operational assessment (OA) based on testing up to and including initial sea trials to inform their decision. However, in December 2022, based on production delays and sub-vendor quality control issues, 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. DOT&E assessed this EOA as

inadequate for a MS C decision for multiple reasons. First, there are significant differences between the prototype and the MQ-25A Engineering Development Model (EDM) design. These differences include, but are not limited to, internal structures, fuel system design, communications, and network architecture. Moreover, the prototype was flown with a Boeing ground station, not the Lockheed Martin-produced 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.

Due to an extension of the engineering and manufacturing development phase, as well as delays with production of test air vehicles, MS C did not occur in FY23. The Navy received the first MQ-25 EDM air test vehicle in May 2025 and expects to conduct the first flight test event in 1QFY26. Because production delays rendered the 2020 MS B TEMP's ground and flight test schedule obsolete, DOT&E recommended that the Navy produce an updated MS B TEMP to accurately scope and resource MQ-25 integrated test events, including outlining an adequate OA that would inform a MS C decision. In FY25, the MQ-25 Program Office developed a MS B TEMP update and submitted it to the Navy for approval, but the Navy rejected this update and directed the creation of a MS C TEMP to support a MS C decision that was then planned for 4QFY25. DOT&E assessed that insufficient data existed to inform a MS C decision because the Navy has not completed an adequate EOA or OA with production-representative air vehicles or a production-

representative ground station. In 1QFY26, the Navy submitted an adequate MS C TEMP to DOT&E for approval, and DOT&E approved the MS C TEMP in November 2025. The Navy plans to transition the program to MS C in FY26.

» MAJOR CONTRACTORS

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

TEST ADEQUACY

DOT&E has not approved any operational test plans for MQ-25. The Navy should submit to DOT&E for approval a test plan that includes an adequate OA. An adequate OA should be conducted using operationally representative air vehicles and include the MQ-25's primary operational environment: carrier-based flight operations. Therefore, the OA should use non-prototype air vehicles and incorporate all ground and flight test events up to and including the first CVN flight test period. An OA traditionally informs a MS C decision, and the Navy should use the data from this OA to inform the joint force regarding MQ-25 capabilities and limitations prior to initial operational capability (IOC).

PERFORMANCE

» EFFECTIVENESS, SUITABILITY, AND SURVIVABILITY

Insufficient data are currently available to evaluate the MQ-25

operational effectiveness,
suitability, and survivability.

RECOMMENDATION

The Navy should:

1. Conduct an adequate OA prior to MQ-25 IOC.