



Updated August 12, 2026

MQ-25 Stingray: Background and Issues for Congress

Introduction

The U.S. Navy is developing a carrier-based uncrewed aircraft system (UAS) to perform aerial refueling and intelligence, surveillance, and reconnaissance (ISR) missions. The MQ-25 Stingray, if the system is fielded as planned, would be the U.S. Department of Defense's (DOD's) first uncrewed tanker and the Navy's first carrier-based uncrewed aerial vehicle (UAV, or drone). (DOD is "using a secondary Department of War designation," under [Executive Order](#) 14347 dated September 5, 2025.) Congress has expressed an interest in the Navy's efforts to develop a carrier-based drone and in the future structure of the carrier air wing.

[According](#) to the Navy's FY2027 budget submission to Congress, by providing the carrier air wing with a dedicated aerial tanker, the MQ-25 would extend the effective operating range of crewed fighter aircraft and reduce the strain on fighter aircraft modified to provide mid-air refueling capabilities. In congressional testimony, Navy officials have further [described](#) the Stingray as a "pathfinder" to what they [describe](#) as the "air wing of the future"—one in which UAVs could potentially conduct various missions.

[For FY2027](#), the Navy requested \$1.75 billion in discretionary procurement and research, development, test, and evaluation (RDT&E) funding for the MQ-25. If approved by Congress, the Navy's FY2027 request would fund the procurement of three MQ-25 aircraft and represent the second year of low-rate initial production (LRIP) of the aircraft. The MQ-25 program of record currently [estimates](#) a total of 76 aircraft, including 67 operational aircraft and nine test and developmental aircraft.

Background

In 1999, the Navy and the U.S. Defense Advanced Research Projects Agency (DARPA) [began](#) to develop a multi-mission, carrier-based uncrewed combat aerial vehicle (UCAV), a goal Congress supported in the Floyd D. Spence National Defense Authorization Act for Fiscal Year 2001 ([P.L. 106-398](#), §220). Over the following decade, the Navy, DOD, and Congress considered various possible configurations of a carrier-based combat UAV. These initiatives resulted in the Unmanned Carrier Launched Surveillance and Strike ([UCLASS](#)) program, the requirements for which DOD initially approved in 2011.

In 2016, the Navy shifted the focus of the development of a carrier-based UAV from combat missions to refueling missions. [According to the Navy](#), the new aircraft would relieve the Navy F/A-18E/F Super Hornet fighters of having to conduct air-to-air refueling missions, allowing the Super Hornet fighters to focus on combat missions.

The Navy selected Boeing to produce the Stingray aircraft in 2018 and [awarded](#) the company a fixed-price contract for the engineering and manufacturing development phase of the program. A Boeing-owned Stingray demonstrator, the "T1," conducted its first flight in 2019 and its first mid-air [refueling](#) of another aircraft in 2021, though it lacked features of the developmental and production aircraft.

Boeing finished assembling the first developmental MQ-25 aircraft in mid-2025. The Navy [conducted](#) the first flight of a developmental MQ-25 in April 2026 (see [Figure 1](#)). Following the flight, in May 2026, the Navy [approved](#) the start of LRIP. The Navy has [estimated](#) that it will continue flight tests of the MQ-25 until the end of FY2029, later than initially planned (for more information, see "[Schedule](#)").

Figure 1. MQ-25A Stingray



Source: Jamie Cosgrove, Naval Air Warfare Center.

MQ-25 Stingray

Design

The primary elements of the MQ-25 Stingray program are the air vehicle and the mission control system and software, the prime contractors for which are Boeing and Lockheed Martin, respectively. The Navy is responsible for integrating these components together and with the ship. The Navy's [objective](#) for the MQ-25 air vehicle is for the drone to deliver at least 14,000 pounds of fuel at a distance of 500 nautical miles (575 miles)—approximately the capacity of the F/A-18E/F fighters, though less than that of previous Navy tankers.

Boeing [said](#) in 2021 that it would build the MQ-25 at MidAmerica St. Louis Airport in Mascoutah, IL, and in 2024 the company [opened](#) a \$200-million production factory there. Boeing [selected](#) the Rolls-Royce AE 3007N turbofan engine, produced in Indianapolis, IN, to power the MQ-25. The Stingray will reportedly use the [Cobham](#)

Aerial Refueling Store, the same equipment used by tanker-configured F/A-18E/F fighters, for mid-air refueling.

The Unmanned Carrier Aviation Mission Control System (UMCS, or MD-5) is the planned ground control station for the MQ-25 Stingray, as well as potentially for future UAVs that the Navy could integrate into the carrier air wing. According to the Navy's FY2027 budget submission, the UMCS is to consist of the hardware, software, and networks that allow pilots to plan and conduct flight missions, including the consoles, beyond line-of-sight communications, and the Lockheed Martin-developed Multi Domain Control Capability (MDCX) software. The Navy is procuring both ship-installed (MD-5C) and shore-based (MD-5D) versions of the UMCS, as well as a mobile version (MD-5E) for carriers that do not have the full control station installed. In 2024, the Navy installed its first UMCS on the USS *George H.W. Bush* (CVN 77); in 2026, the USS *Theodore Roosevelt* (CVN 71) became the first fully operational aircraft carrier compatible with the MQ-25.

Schedule

The DOD Office of Inspector General (DODIG), in a 2023 audit of the MQ-25 program, highlighted the potential risks associated with the Navy's development and production schedule. One risk the DODIG identified was the Navy's plan to begin LRIP before the service had completed its developmental and operational tests of the production-representative MQ-25 aircraft. The DODIG recommended that the Navy either delay its decision to start LRIP "until the Program Office conducts sufficient tests and evaluations," or update its risk management documentation for the program. In response, Navy officials said that the program office had updated its risk assessment and delayed program milestone decisions.

In 2024, the Navy adopted a new schedule and program baseline for the MQ-25 that extended the development phase of the program and postponed key milestones. For example, under the revised schedule, the Navy postponed the first flight of the developmental aircraft from 2021 to 2025. (The first flight occurred in April 2026.) According to DOD's April 2026 Modernized Selected Acquisition Report (MSAR) for the MQ-25, the program may face additional delays; DOD estimated that the MQ-25 could reach an initial operational capability (IOC) in 2029, four years after the date initially planned and two years after that in the revised baseline. The MSAR attributed the delays to multiple factors, including "production challenges due to technical risk," changes to the production schedule, and a labor strike.

Cost

In the 2026 MSAR for the MQ-25, DOD estimated the total acquisition cost of the program—including procurement, RDT&E, and military construction—at \$19.4 billion and the acquisition unit cost at \$255.8 million per aircraft. In the 2026 SAR, DOD estimated that life-cycle operations and sustainment costs would be greater than previously reported, due in part to revised manpower and fuel cost calculations, higher maintenance and sustainment costs, and future RDT&E costs.

The Government Accountability Office (GAO), in its 2026 *Weapon Systems Annual Assessment*, estimated the total program cost—excluding military construction—at \$16.6 billion and the acquisition unit cost at \$218 million, a 4% increase from GAO's 2025 estimate. GAO attributed cost increases in part to Navy efforts to mitigate and replace obsolete components. The 2026 GAO report identified the Navy's plan to begin LRIP before it completed testing the production-representative aircraft as a potential risk for future "cost increases and further delays." GAO also reported that the Navy had lacked "data showing the actual costs of building the aircraft" due to the nature of the fixed-price contract for development of the aircraft and that the program office was "working to obtain better cost data."

FY2026-Enacted Budget

The Department of Defense Appropriations Act, 2026 (Division A of P.L. 119-75), provided a total of \$1.03 billion in procurement and RDT&E funding for the MQ-25 program, \$10 million less than requested. Additionally, in the FY2025 reconciliation law, sometimes known as the One Big Beautiful Bill Act (P.L. 119-21), Congress provided \$100 million in FY2025 mandatory funding to "accelerate production of MQ-25 aircraft."

FY2027 Budget Request

The Navy requested \$1.75 billion in discretionary FY2027 procurement and RDT&E funding for the MQ-25 program. DOD did not request that Congress use the reconciliation process in 2026 to provide mandatory funding for the MQ-25. To date, proposed defense authorization and appropriations legislation in the House and Senate (H.R. 8800, S. 4784; H.R. 9495) would, if enacted, authorize and provide the amount of funding requested for the program.

Issues for Congress

Congress may, as part of its oversight of Navy programs, consider the following issues:

- Whether the Navy has provided Congress with sufficient information regarding the costs of the MQ-25 program, as well as unit costs relative to lower-cost alternatives.
- The Navy's plan for conducting cybersecurity tests of the software for the air vehicle and for the ground control station.
- Whether the Navy's plan to begin LRIP before it completes the test and evaluation period might result in additional delays and, if so, the Navy's plan for managing the risk of schedule delays.
- The Navy's plan for managing the impact of potential technical issues identified during its testing of the test and developmental aircraft on its production schedule.
- What lessons, if any, the Navy plans to apply from the MQ-25 program to the development of other, carrier-based UAVs, and whether recent armed conflicts have affected Navy plans for carrier-based UAV missions.

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