MQ-4C Triton

The MQ-4C Triton program has not entered IOT&E. Immature systems that prevented IOT&E in FY23 persist in precluding operationally representative testing for the primary missions. The Navy has continued to field new MQ-4C configurations in FY25 without operational testing. In May 2025, DOT&E published a classified early fielding report (EFR) for MQ-4C Triton Integrated Functional Capability (IFC) 4.2.1. Integrated testing indicates that signals intelligence (SIGINT) deficiencies continue to challenge the execution of operationally realistic testing.

SYSTEM DESCRIPTION

The MQ-4C Triton is a high-altitude, long-endurance, intelligence, surveillance, and reconnaissance (ISR) unmanned aircraft intended to support global naval and joint operations by collecting, processing, and distributing geospatial intelligence (GEOINT), including imagery and track data, and SIGINT data to tactical and information operations centers.

MISSION

Commanders will employ the MQ-4C to provide persistent, broad-area ISR to detect, classify, identify, track, and assess maritime and littoral targets in support of surface warfare, intelligence operations, strike warfare, maritime interdiction, amphibious warfare, homeland defense, and search and rescue missions.

PROGRAM

The MQ-4C Triton is an Acquisition Category IC program and a critical component, along with the P-8A

Poseidon, of the Navy's maritime ISR transition plan to retire the EP-3E Aries II. Section 112 of the FY11 NDAA prohibits the Navy from retiring or preparing to retire the EP-3E until it fields one or more platforms that, in the aggregate, provide an equivalent or superior capability.

The program is following an incremental development approach after restructuring in 2021. The first increment is designed for the Navy to deliver SIGINT capabilities sufficient to support the MQ-4C's portion of the maritime ISR transition plan. DOT&E approved Revision E of the TEMP in January 2023. The Navy declared initial operational capability with the IFC 4.1.2.3 configuration in July 2023. As previously reported, DOT&E published a classified EFR regarding that configuration in August 2023. Since then, the Navy has not started IOT&E, but has fielded the IFC 4.1.2.4, IFC 4.1.2.6, IFC 4.2, IFC 4.2.1, and Flight Release (FR) 5.0 configurations. DOT&E published an unclassified early fielding report regarding IFC 4.1.2.6 in January 2024, addressing only test adequacy, and another, classified EFR in May 2025 regarding IFC 4.1.2.6 through 4.2.1. DOT&E deferred publishing the latter EFR from December 2024, as reported in the FY24 Annual Report, to incorporate observations from additional testing.

» MAJOR CONTRACTOR

- Northrop Grumman Corporation Aeronautics Sector – Rancho Bernardo, California

TEST ADEQUACY

The Navy has not started IOT&E. As stated in previous annual reports, the Navy intended to enter IOT&E in January 2023. DOT&E did not approve the IOT&E plan because SIGINT system deficiencies prevented operationally realistic testing. DOT&E did approve conduct of the GEOINT and cyber survivability portions of the test plan for integrated testing. DOT&E subsequently approved conduct of the electronic intelligence and communications intelligence portions of the IOT&E plan for integrated testing in December 2024.

The MQ-4C integrated test team conducted three dedicated SIGINT flights in December 2024 at the Atlantic Test Range, with a system in the IFC 4.2.1 configuration, to assess the performance of the SIGINT systems. These flights were conducted in accordance with a DOT&E-approved test plan, and DOT&E observed these events. The test team also conducted integrated testing with systems in Test Release 5.0 configurations as part of large force exercises in April and August 2025.

The Navy has not conducted any operational testing of the effectiveness or suitability of the fielded IFC 4.1.2.4, 4.1.2.6, 4.2, 4.2.1, or FR 5.0 configurations.

As previously reported, the Navy has not yet demonstrated a reliable method to collect MQ-4C SIGINT data and has not yet fully implemented their tasking, collection, processing, exploitation, and dissemination plan for MQ-4C mission data.

PERFORMANCE

» EFFECTIVENESS

As stated in previous annual reports, GEOINT performance of the IFC 4.1.2.3 configuration was qualitatively comparable to the IFC 3 configuration the Navy fielded as an early operational capability. Any effects of the changes in IFC 4.1.2.4, IFC 4.1.2.6, IFC 4.2, IFC 4.2.1, and FR 5.0 on the operational effectiveness of the MQ-4C in the GEOINT mission are not known.

The operational effectiveness of the MQ-4C for its primary SIGINT missions remains unknown. An initial assessment of the operational effectiveness of the Joint Signal Processor (JSP) capability and an update on SIGINT systems are provided in the May 2025 classified EFR. Integrated testing in FY25 indicates that SIGINT deficiencies continue to challenge the execution of operationally realistic testing.

» SUITABILITY

As stated in previous Annual Reports, the reliability, availability, and maintainability of the IFC 4.1.2.3 configuration are not likely to sustain the planned operational tempo. The only data that could be collected for a suitability assessment occurred during JSP testing. An update of the operational suitability of the MQ-4C in the IFC 4.2 configuration is provided in the May 2025 classified EFR.

» SURVIVABILITY

An initial assessment of the survivability of the MQ-4C in

contested cyberspace is provided in the May 2025 classified EFR.

RECOMMENDATIONS

As recommended in EFRs and previous annual reports, the Navy should:

1. Develop and demonstrate a method to extract SIGINT mission data from the MQ-4C system.
2. Complete the integrated test program and correct major deficiencies prior to proceeding into IOT&E.
3. Complete IOT&E to evaluate the operational effectiveness, suitability, and survivability of the system.
4. Complete development and implementation of the tasking, collection, processing, exploitation, and dissemination plan for MQ-4C mission data.