MQ-4C Triton

In August 2023, DOT&E published a classified early fielding report (EFR) on the MQ-4C Triton to support a Navy fielding decision, also in August 2023. While the Navy conducted integrated testing of some capabilities to inform that decision, the MQ-4C Triton program did not enter IOT&E in FY23 due to immature systems that precluded operationally representative testing for the primary missions. The Navy fielded two aircraft and declared initial operational capability in July 2023, despite these immature systems.

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 signals intelligence (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 National Defense Authorization Act 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 Test and Evaluation Master Plan in January 2023. The Navy approved an updated acquisition strategy in August 2023. Operational Test and Evaluation Force (OPTEVFOR) published a classified interim report in July 2023. The Navy fielded two aircraft and declared initial operational capability in July 2023. DOT&E published a classified EFR in August 2023.

» MAJOR CONTRACTOR

- Northrop Grumman Corporation Aeronautics Sector – Rancho Bernardo, California

TEST ADEQUACY

As stated in the FY22 Annual Report, the Navy intended to enter IOT&E in January 2023. However, due to deficiencies in the SIGINT systems that precluded a stable configuration and operationally realistic testing, DOT&E did not approve the IOT&E plan in FY23. However, DOT&E did approve conduct of the GEOINT and cyber survivability portions of the test plan for integrated testing. OPTEVFOR conducted, and DOT&E observed, testing of the radar and electro-optical/infrared camera GEOINT sensors between January and June 2023 in accordance with the approved portions of the test plan.

As discussed in the FY22 Annual Report, the Navy does not have a method to extract all types of data from the Minotaur mission management system the operators use to control MQ-4C sensors, view sensor data, and build the common operating picture. OPTEVFOR was able to collect sufficient data to support a preliminary assessment of the operational effectiveness and suitability of the MQ-4C for GEOINT missions. However, immature systems prevented useful assessments of SIGINT capabilities and the Navy does not yet have a reliable method to collect SIGINT data from the Minotaur system. Also, the Navy has not yet fully implemented their tasking, collection, processing, exploitation, and dissemination plan for GEOINT and SIGINT data.

The program conducted contractor and developmental testing in the anechoic chamber at the Air Combat Environment Test and Evaluation Facility in July 2023. Analyses are in progress, including the analysis required to support the degraded or denied GPS testing discussed in the FY22 Annual Report.

OPTEVFOR has not yet conducted the approved cyber survivability assessment, which is scheduled for October 2023.

PERFORMANCE

» EFFECTIVENESS

The operational effectiveness of the MQ-4C for its primary SIGINT missions is unknown. The

system's GEOINT performance was qualitatively comparable to a previous configuration fielded as an early operational capability. Details are provided in DOT&E's classified MQ-4C EFR.

» SUITABILITY

The reliability, availability, and maintainability observed during integrated testing are not likely to sustain the planned operational tempo. Details are provided in DOT&E's classified MQ-4C EFR.

» SURVIVABILITY

The survivability of the MQ-4C in contested cyberspace is unknown; testing is planned to begin in October 2023.

RECOMMENDATIONS

The Navy should:

1. Develop a method to extract mission data from the Minotaur system, particularly for SIGINT mission data.

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.