

CMV-22B Joint Services Advanced Vertical Lift Aircraft – Osprey – Carrier Onboard Delivery

The Navy will declare CMV-22B initial operational capability in 1QFY22 based on the CMV-22B FOT&E conducted by the Air Test and Evaluation Squadron (VX-1) from January 11, 2021 to July 16, 2021 under the auspices of Navy Commander, Operational Test and Evaluation Force (COMOPTEVFOR). Not enough data are yet available to provide a preliminary survivability assessment of the CMV-22B in a contested environment.



System Description

The CMV-22B Osprey is a tiltrotor vertical/short takeoff and landing aircraft intended to replace C-2A Greyhound, the carrier onboard delivery aircraft. The CMV-22B is based on the MV-22B design equipped with increased fuel capacity, fuel jettison, integrated public address system, high-frequency (HF) radio, and cabin and cargo lighting. The Navy Fleet Logistics Multi-Mission Squadrons (VRM-30 and VRM-40) intend to use the CMV-22B to conduct the airborne resupply/logistics for seabasing missions, vertical onboard delivery, vertical replenishment, medical evacuation, Naval Special Warfare support, missions of State, and search and rescue support.

Program

The CMV-22B, as part of the overall V-22 Program of Record, is an Acquisition Category IC program, which entered full-rate production in 2005. The CMV-22B has been incorporated with the current V-22 production line and deployed to the fleet. It will achieve initial operational capability in FY22 and full operational capability in FY23. DOT&E approved the CMV-22B Test and Evaluation Master Plan and the Alternative LFT&E plan in March, 2020.

Major Contractors

Bell-Boeing Joint Venture: Bell Helicopter – Amarillo, Texas. The Boeing Company – Ridley Township, Pennsylvania.

Test Adequacy

The Air Test and Evaluation Squadron (VX-1) conducted FOT&E OT-D1 from January 11, 2021 to July 16, 2021 under the auspices of COMOPTEVFOR. VX-1 conducted OT-D1 during the Composite Training Unit Exercise (COMPTUEX) using VRM-30 aircraft and personnel. Testing was adequate to support an assessment of CMV-22B operational effectiveness, suitability, and survivability and conducted in accordance with the DOT&E-approved test plan.

COMOPTEVFOR conducted the CMV-22B Cooperative Vulnerability and Penetration Assessment and Adversarial Assessment from July 5 – 16, 2021. Testing was adequate and conducted in accordance with the DOT&E-approved test plan.

The Navy conducted live fire testing of the CMV-22B 4-ply wing auxiliary tank fuel cells, hydraulic lines, and enhanced fire suppression powder panels at China Lake, California from October through December, 2020. Testing was adequate and conducted in accordance with the DOT&E-approved live fire test plan. Qualification testing of the improved 2-ply fuel cells is ongoing. Live fire testing of the 2-ply fuel cells is scheduled for early to mid FY23.

Performance

Effectiveness and Suitability

In accordance with the CMV-22B Security Classification Guide, the operational effectiveness

and suitability of the CMV-22 is detailed in the Controlled Unclassified Information edition of this report. The report assesses the ability of the CMV-22 to execute carrier onboard delivery, medical evacuation, Naval Special Warfare support, and search and rescue missions. It details the over-the-horizon communications to support “Blue-water” operations beyond range of land. The report also assesses the suitability requirements and training and their effects on the mission.

Survivability

Not enough data are yet available to provide a preliminary survivability assessment of the CMV-22B in a contested environment. Preliminary results against kinetic threats are detailed in the Controlled Unclassified Information edition of this report. Data analysis is ongoing to evaluate the CMV-22B survivability in a cyber-contested environment.

Recommendation

1. The Navy should address the recommendations detailed in the Controlled Unclassified Information edition of this report.