

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



United States Navy declared Initial Operational Capability (IOC) in December 2021 based on the Service's assessment of the CMV-22B's operational effectiveness, suitability, and survivability demonstrated in FOT&E period OT-D1. Operational Test and Evaluation Force is drafting the FOT&E OT-D2 test plan in collaboration with DOT&E. The data collected during this test, combined with integrated test (IT) data qualified for operational test (OT), will be used to support an initial fielding decision for the CMV-22B Communications Upgrades Suite by the V-22 Program Office (PMA-275) in late-FY23.

## SYSTEM DESCRIPTION

---

The CMV-22B Osprey is a tiltrotor vertical/short takeoff and landing aircraft the Navy intends to replace the C-2A Greyhound, the legacy 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 radio, and cabin and cargo lighting. The CMV-22B must be capable of conducting operations in a permissive threat environment, day and night, in all weather conditions. The CMV-22B is assigned to Navy Fleet Logistics Multi-Mission Squadrons (VRMs). Each VRM will deploy detachments of aircraft to forward logistics sites located within their theater of operations. A detachment of three CMV-22B aircraft will operate from each forward logistics site to support a Carrier Strike Group.

## MISSION

---

Fleet Logistics Multi-Mission Squadrons (VRM 30/40) detachments equipped with CMV-22B perform the primary mission of airborne resupply/logistics for seabasing. Secondary missions include: vertical onboard delivery; vertical replenishment; medical evacuation; Naval Special Warfare support; missions of state; and search and rescue support.

The CMV-22B fills the Joint Force Maritime Component Commander time-critical logistics air connector requirements by

transporting personnel, mail, and priority cargo from advance bases to the Seabase.

## 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 achieved IOC in December 2021 and will reach 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. The FOT&E OT-D2 test plan is in development and expected to be approved by DOT&E in early-FY23. Additional fuel cell survivability testing is expected in mid-FY23 with final survivability analysis completed by the end of FY23.

### » MAJOR CONTRACTOR

---

- Bell-Boeing Joint Project Office – Amarillo, Texas

## TEST ADEQUACY

---

Air Test and Evaluation Squadron 21 (HX-21) conducted IT on the CMV-22B communications upgrades suite from August 2021 to June 2022. The in-scope communications upgrades are a federated communication system designed to provide Link 16 and Satellite Phone capabilities to meet CMV-22B interoperability requirements and Federal Aviation

Administration/International Civil Aviation Organization/military Air Traffic Control requirements. The system will require permanent installation of components into the existing CMV-22B airframe.

Operational testers from Air Test and Evaluation Squadron 1 (VX-1) participated in the IT events. HX-21 flew 18.7 flight hours over seven IT events. Data collected during the IT test events will support the Operational Test Readiness Review to certify CMV-22B to enter OT-D2 in 1QFY23. DOT&E witnessed the IT events, and will witness FOT&E OT-D2 and LFT&E events in FY23.

Operational Test and Evaluation Force is drafting the OT-D2 test plan in collaboration with DOT&E. The primary purpose of this test is to evaluate the effectiveness, suitability, and cyber survivability of the CMV-22B aircraft with communications upgrades performing roles of logistics, search and rescue support, and mobility as part of the Carrier Strike Group. The data collected during this test, combined with IT data qualified for OT, will be used to support an initial fielding decision for the CMV-22B communications upgrades by the V-22 Program Office (PMA-275) in late-FY23.

OT-D2 will verify corrections of deficiencies that were discovered during OT-D1 in FY21, as well as provide an initial evaluation for previously untested training syllabi and simulators for pilots, aircrew, and maintainers. It will include a cybersecurity cooperative vulnerability penetration assessment and an adversarial assessment.

## PERFORMANCE

### » EFFECTIVENESS

United States Navy declared IOC in December 2021 based on the Service's assessment of the CMV-22B's operational effectiveness demonstrated in OT-D1. DOT&E's assessment of the CMV-22B's effectiveness is described in detail in the OT-D1 report published in June 2022. At the OT-D2 Operational Test Readiness Review, scheduled for 1QFY23, it is expected that OTRR Air Test and Evaluation Squadron One (VX-1) and Air Test and Evaluation Squadron Two One (HX-21) will recommend that CMV-22B proceed into OT-D2 based on communications upgrades performance during IT.

### SUITABILITY

United States Navy declared IOC in December 2021 based on the Service's assessment of the CMV-22B's operational suitability demonstrated in OT-D1. DOT&E's assessment of the CMV-22B's suitability is described in detail in the OT-D1 report. At the OT-D2 Operational Test Readiness Review, scheduled for 1QFY23, it is expected that VX-1 and HX-21 will recommend that CMV-22B proceed into OT-D2 based on communications upgrades performance during IT.

### SURVIVABILITY

United States Navy declared IOC in December 2021 based on the

Service's assessment of the CMV-22B's survivability demonstrated in OT-D1. DOT&E's assessment of the CMV-22B's survivability is described in detail in the classified OT-D1 report annex. At the OT-D2 Operational Test Readiness Review, scheduled for 1QFY23, it is expected that VX-1 and HX-21 will recommend that CMV-22B proceed into OT-D2 based on CU performance during IT. Additional live fire testing of the wing auxiliary fuel tanks will take place in mid-FY23. The final survivability analysis is expected to be completed by the end of FY23, following the completion of all live fire tests.

## RECOMMENDATIONS

The Navy should:

1. Continue to implement the recommendations in DOT&E's OT-D1 report and classified annex.
2. Continue to plan and conduct OT-D2 to provide a determination of effectiveness, suitability, and survivability of the CU suite prior to fleet introduction.



*CMV-22B Osprey operational test on USS Carl Vinson (CVN 70), December 2021*