Osprey’s Readiness Struggles: 4 Out of 10 MV-22s Aren’t Available for Combat – But Initiatives Are Underway to Improve the Unique Aircraft’s Dependability

MV-22Bs line up to take off from the flight deck of the amphibious assault ship USS Bataan in July. “The Osprey is our most in-demand and deployed aircraft,” a Marine spokesman says, but the tilt-rotor’s mission-capable rate remains low – even as several initiatives are underway to try to improve the readiness of the aircraft. U.S. Navy/Mass Communication Specialist Seaman Levi Decker

Ever since the V-22 Osprey entered service for the first time in 2007 – nearly two decades after its first flight – the tilt-rotor aircraft has been in heavy use by the U.S. Marine Corps and has seen action in Iraq, Afghanistan, Libya and Kuwait. But there is one stubborn problem that continues to plague the program: readiness.

The aircraft was long delayed in reaching the field due in no small part to deadly accidents during its development and a hefty price tag, but when it finally did arrive, the V-22 gave the Marines the versatility the service craved – an aircraft that could land on the deck of an amphibious assault ship like a helicopter but speed off like a fixed-wing aircraft when

necessary. While the battles over development and procurement are long over,
the Pentagon continues to struggle with a stubbornly low availability rate for
an aircraft that serves not just the Marines but also the U.S. Navy and the U.S
Air Force.

https://www.youtube.com/watch?v=hUNJTAybCQQ
Currently, four out of 10 of its Ospreys are unavailable
for combat, according to the Marine Corps, which means the program is a long
way from the goal of 80% overall readiness set by former Defense Secretary Jim
Mattis. Several media outlets reported earlier this year that the overall
readiness rate of the aircraft was even more dismal — 52%.

The question of why readiness is so low is complicated,
but the uniqueness of the aircraft may be a large factor.

Richard Aboulafia, vice president of analysis at the Teal
Group, said that the limited number of users of the V-22 makes it tough to have
an adequate stock of V-22 spares available.

“Normally, a pool of users — services and countries — can
share costs and inventories, but the Marines are the only sizeable user, and
the [Air Force] CV-22 community probably focuses on its own systems and
missions,” Aboulafia said. Even when the Navy gets [Carrier Onboard Delivery]
V-22s, the Marines will still oversee budgeting. Adequate provisioning is
further complicated by the shipborne nature of the platform.”

Marines board an Osprey in Bowen, Australia, on July 23 during

Talisman Sabre, an exercise between U.S. and Australian forces. U.S. Marine Corps/Lance Cpl. Dylan Hess

But the Marine Corps says that while the overall availability rate may be low, training and deployed squadrons have higher overall readiness levels. The service also says it's taking significant steps to improve the aircraft's overall readiness.

Better Readiness With Block C

Capt. Christopher Harrison, a Marine Corps spokesman, said that while the availability of the Marine MV-22 fleet is currently at around 60%, he also noted that training squadrons and deployed aircraft, which have a common Block C configuration, regularly report an 80% mission-capable rate.

The Marine Corps is trying to improve availability with the V-22 Readiness Program (VRP), which Harrison described as a "top priority" of the service, Harrison said.

"VRP takes a holistic approach to readiness recovery by providing contract maintenance support, increased engineering support and improved training for our maintainers and increased component supply depth and breadth," he said in an email response to questions from *Seapower*.

"VRP also consists of two major aircraft modification plans: The Common Configuration-Readiness and Modernization [CC-RAM] initiative and nacelle improvements."

A Marine aboard an MV-22B participates in daily landing qualifications training with the USS Kearsarge in the Mediterranean Sea on June 28. U.S. Marine Corps/Cpl. Margaret

Gale
CC-RAM aims to improve on availability rates by modernizing older Block B aircraft with upgraded avionics and components to produce the Block C, which are in production now. In addition to having “readiness enhancements,” making more of the fleet in the Block C configuration streamlines maintenance and sustainment, Harrison said.

Meanwhile, the nacelle improvement initiative includes improving wiring harnesses and making the nacelle easier to maintain, he said. “We believe we’ll see an additive positive effect on readiness by introducing more reliable systems, streamlined procedures and improved maintainability.”

Analytics in Use to Improve MCR

In addition to those two initiatives, the Marines are using analytics to reduce scheduled maintenance and spot emerging trouble areas, which could improve mission-capable rates by as much as 15%, he claimed.

CC-RAM started in January 2018 and four aircraft are currently undergoing modifications.

“The Osprey is our most in-demand and deployed aircraft,” Harrison said. “At any given moment, five to seven VMMs are forward-deployed.
The MV-22 transformed the way the Marine Corps conducts assault support.
Capable of self-deploying, the Osprey’s speed, range and lift allows it to sustain and move the MAGTF [Marine Air-Ground Task Force] anywhere in the world, and it is routinely at center stage for humanitarian

assistance operations.”

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>
> *Capt. Christopher Harrison, a Marine Corps spokesman*

Boeing – which produces the aircraft jointly with Bell – said in a statement that fleet enhancements and upgrades that are funded through the Defense Department budget outyears include an improved engine inlet separation system; a cockpit engine health indicator; component reliability and safety improvements for swashplate, rudder, conversion actuators, O2N2 concentrator and shaft-driven compressor; and rotor blade time-on-wing improvements.

Bell Boeing received a performance-based logistics and engineering (PBL&E) contract in January that includes other initiatives meant to boost the reliability of the aircraft. “Bell Boeing have the flexibility to incorporate data analytics into maintenance efforts, yielding innovative approaches such as predictive and condition-based maintenance to improve aircraft availability and readiness,” their statement reads.

The company supports three customers: the MV-22 for the Marine Corps, the CV-22 for Air Force Special Operations Command, and the CMV-22 for the Navy. In all, more than 350 aircraft are scheduled to be built,

Boeing said.

“Bell Boeing is also executing a supply chain contract, which includes the purchase, repair, stocking and delivery for more than 200 part numbers,” the statement notes.

A total of 129 Block B Ospreys will get the CC-RAM upgrade, Boeing said. The last of those aircraft was built in 2011. “Boeing expects to see a marked improvement in the mission-capable rate of Ospreys that go through CC-RAM,” according to the company.

The company also expects to see “marked improvement” in availability rates through the nacelle improvement initiative.

Other investments are being made to address the problem of the mission-capable rate. Boeing reportedly spent $115 million and two years transforming a 350,000-square-foot facility near Philadelphia into a fuselage factory for V-22s. The facility will be home to the CC-RAM program, making it a key part of the push to improve readiness.