



V-22 flies high altitude tests in Arizona

NAVAL AIR STATION PATUXENT RIVER, Md. — V-22 number 8, one of the four Engineering and Manufacturing Development (EMD) aircraft currently undergoing developmental testing by the US Marine Corps, arrived Sept. 17 at Libby Army Air Field, Fort Huachuca, Ariz., and began a series of high altitude tests. The V-22 was flown from its test facility at the Naval Air Warfare Center Aircraft Division here and is conducting about 35 hours of testing from the air field through Oct. 16.

Flying at 250 knots true airspeed at altitudes up to 16,500 ft., the 1,880 mile journey to Ft. Huachuca was the longest distance any V-22 has flown in one day. Developmental test pilots USMC Maj. Chris Seymour, Marty Shubert, Bill Leonard, and Bill Norton made the cross-country flights. The V-22 and its B-200 King Air escort plane made one of its two refueling stops at the Amarillo airport near the site of Bell's recently announced Tiltrotor Technology Center for V-22 final assembly and flight operations. The airplane was greeted in Amarillo by a group of residents and news media representatives who were gathered at the airport to get a first hand look at the Osprey.

Ft. Huachuca was selected for high altitude testing because of its desert climate, quiet environment, and flat terrain. These factors and its airfield, which is 4,600 feet above sea level, make this an ideal site to test engine and rotor efficiency at high density altitudes, according to program officials. During the month of testing, a cadre of about 70 government and contractor personnel from the Naval Air Warfare Center's V-22 Integrated Test team will be conducting several envelope expansion tests. They will focus on testing the aircraft's hover performance in a high density altitude environment.

For these tests, the V-22, while in the hover mode, will pull against a cable attached to a 20,000 pound block which is buried and cemented in the ground. Engineers will be able to measure, through instrumentation, the strain on the cable and determine how much power the aircraft is producing when it pulls to its limits. The testing to the limits of the aircraft's engines and rotors will demonstrate that the V-22 can meet its required specifications. "These tests are going well and the V-22 is performing to expectations," explained Seymour.

Two other flight test profiles are scheduled while at Ft. Huachuca. The first will analyze the aircraft's acoustics/noise levels through an array of microphone sensors installed on the ground. During a series of flying patterns, these sensors will record noise levels at prescribed altitudes and distances from the array. The second series of tests called Critical Azimuth, will analyze how fast the aircraft can fly sideways or backwards at high density altitudes. To date, the V-22 flight test program has accumulated more than 1,950 hours -- about 770 EMD flight hours. (See data box below).

Air Force Chief of Staff flies V-22 at Patuxent River

NAVAL AIR STATION PATUXENT RIVER, Md. (AFNS) — Gen. Michael E. Ryan, Air Force chief of staff, made his first flight Sept. 1 in the MV-22 Osprey.

Ryan, who has more than 3,400 flight hours in various fixed-wing aircraft such as the F-4, F-16, C-20 and Mirage III, piloted the MV-22 for about one hour to gain firsthand knowledge of the aircraft's performance and capabilities and its future role in modernizing medium-lift helicopters.

The chief of staff was welcomed after his flight by program officials from the Air Force Special Operations Command, Hurlburt Field, Fla., Naval Air Systems Command V-22 Program Office, Air Force pilots and maintainers from the Multi-service Operational Test Team and other members of the V-22 Integrated Test Team at Patuxent River.

As he disembarked from the V-22, Ryan said, "This is a great flying machine, and I had an excellent flight."

Even though his flight time has been in fixed wing aircraft, the general said, "For an old fighter pilot, hovering is supposed to be difficult, but it wasn't. And that's a tribute to the aircraft's stability."

Ryan later said the V-22's versatility is a key factor for the Air Force, which plans to buy the aircraft to support special operations forces.

"It gives a whole new dimension to how we operate in special operations forces because of the depth it can go," he said. "It can get in where it needs to be and has the hover capability to drop off or pick up what we want it to and get back out."

He said the message to pass on about the V-22 is that it is capable of hover flight and fixed-wing flight, and the transition between the two is almost seamless.

V-22 EMD Flight Test Status (As of Oct. 9, 1998)

A/C #	Total EMD Hours	Total EMD Flights
7	215	117
8	219	127
9	180	81
10	157	69
Totals	771	394

Total V-22 Flight Time	1,950 hrs
Maximum Airspeed Attained	342 kt
Maximum Altitude Attained	25,000 ft
Max Take-Off Gross Weight	60,500 lb
Maximum Load Factor	3.9 Gs

Flying with Ryan was the V-22's Chief Test Pilot, Tom Macdonald, who said, "The flight was perfect, and the general had a great time."

Macdonald said that after the initial take off Ryan took command of the aircraft and flew the remainder of the flight, which included hover and vertical work and an overhead break entry into the airfield.

Ryan flew V-22 aircraft No. 8, one of the engineering and manufacturing development aircraft undergoing developmental testing at the Naval Air Warfare Center, Patuxent River. In preparation for his flight, Ryan attended ground school instruction at Patuxent, which included a briefing on the V-22 systems and procedures and then training in the manned flight simulator.

The V-22 Osprey combines the vertical flight capabilities of a helicopter with the forward flight speed and range capabilities of a fixed-wing turboprop aircraft. Its multimission capabilities will serve both the Air Force and Marine Corps.

The Air Force variant, CV-22 will replace the MH-53J helicopter and augment the MC-130 fleet in Special Operations Command missions. The Air Force plans to buy 50 CV-22s over the life of the program. Initial operational capability will be in 2004.

See photo collage next 2 pages

V-22 stories, photos listed since July 1998

(Author shown if by-line published with article)

Naval Aviation News, July-Aug. 1998 – *The Osprey Takes Off* by Rick Burgess

Aerospace Daily, Aug. 20, 1998 – *V-22 achieves early testing goals of external load-carrying ability*

Armed Forces Journal International, Sept. 1998 – *Waterworld: USMC Rethinks Operations Ashore & May Stay at Sea* by Roman Schweizer

Helicopter International, Sept. 1998 – *V-22 enters operational testing*

Flight International, Sept. 8, 1998 – *V-22 carries record load at high speeds during trials*

Flight Daily News (Farnborough), Sept. 8, 1998 – *Osprey touted for military competitions* by Karen Walker

Flight Daily News (Farnborough), Sept. 9, 1998 – *Osprey basks in the glow of attention* by Paul Derby

Aviation International News, Sept. 10, 1998 (Farnborough) – *Fuselage Shipped to Bell* by Randall Padfield

Aviation Week's Show News, (Farnborough) Sept. 10, 1998 – *First production V-22 fuselage delivered*

Proceedings, Oct. 1998 – *MV-22 Osprey Hooks up External Load* (photo only)

Time, Oct. 5, 1998 – *The Generals Go Shopping* (photo only)

Air & Space Smithsonian, Oct.-Nov. 1998 – *Osprey Alert -- Extreme Machines* (Partly reprinted this page.)

Defense Daily, Oct. 8, 1998 -- *Comer says future AF will get rid of helos altogether* by David Atkinson.

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Operational testing (OT-IID) continues while the V-22 is in production at Bell and Boeing plants



