



Osprey posts successes during sea trials

By Ward Carroll, NAVAIR (V-22) PAO

MV-22 Osprey aircraft No. 10's initial approach to the USS Iwo Jima (LHD-7) demonstrated how the V-22 differs from the platforms it's designed to replace. With the nacelles fully forward, the Osprey flew up the starboard side of the ship at 220 knots before rolling left and performing a 180-degree, three-G level turn. From there, any resemblance between a fixed-wing "break" maneuver and the V-22's approach ended as test pilot Lt. Col. Kevin Gross, a Marine who logged combat hours in the AV-8B Harrier during the Gulf War, tilted the engines from airplane to helicopter mode. Seconds later, Osprey No. 10 hovered over Spot Nine and, with the LSE's signal, smoothly touched down on the non-skid.

With that, the Osprey was back at sea, the environment where the MV-22, the Marine Corps variant of the rotorcraft, will spend much of its operational life.

"It felt very good," Lt. Col. Gross said after logging his fifth landing for the day. "We didn't have any surprises. Even with a lot of wind across the deck, the airplane handled



MV-22 Osprey aircraft No. 10—the first Osprey to resume testing—awaits additional tests on the deck of the USS Iwo Jima. The V-22 Integrated Test Team will return to the sea for additional tests in 2004.

with ease."

The waters nearly 100 miles east of the Maryland coastline are not the friendliest place to conduct flight tests in January, and the V-

22 Integrated Test Team was handed their fair share of challenges from Mother Nature. High winds, rough seas, bitter cold and sudden snowstorms all forced adjustments to the plan over the five-day test period.

But in the end, the ITT's hard work paid off. Along with completing the deck landing qualification for one of the pilots, the team gathered crucial data on both H-53 and H-1 rotor downwash characteristics, quantified the effect of a hovering H-1 on the V-22 parked behind it, and collected air wake figures for the LHD-class out to 52 knots of wind over the deck.

"We accomplished nearly all of what we needed to do, which is impressive considering what we were up against," Lt. Col. Gross said. "This week is another in the series of successes we've had lately as we work to get the Osprey to the fleet."





PM Perspective: V-22 program posts unprecedented activity

By Mike Tkach
Vice President, Program Director
V-22 Program Office, Pax River, Md.

Nearly one year ago, the V-22 Blue Ribbon Panel and the Defense Department outlined their recommendations and conditions for continuing the program. Their overall resolution was simple—prove the aircraft's value in the air through rigorous and thorough testing. With five aircraft currently flying, including one at Edwards Air Force Base and four at Patuxent River, and three more scheduled to come on board in 2003, we're well on our way to meeting those requirements. The V-22 program has seen an unprecedented level of activity since my last update, both behind the scenes and in the air.

We've hosted several influential visitors at the V-22 Joint Program Office and at the Bell and Boeing manufacturing facilities. The visitors, including incoming Marine Corps Commandant Gen. Michael Hagee, Lt. Gen. Michael Hough, Lt. Gen. Edward Hanlon and Air Force Brig. Gen. Ted Bowlds, have witnessed, first hand, the progress that we've made—from the factory floor to the flight ramp. We recently briefed other high-ranking Defense Department officials, including Mr. Pete Aldridge, Undersecretary of Defense for Acquisition, Technology and Logistics, and Dr. Stephen

Cambone, Director of Program Analysis and Evaluation.

Our list of flight test accomplishments is just as impressive.

As you've read in this issue of *Osprey Facts*, we recently spent five days aboard the USS Iwo Jima, where we conducted successful sea trials and demonstrated the V-22's ability to interact with other aircraft in the vicinity of the ship deck. We plan to return to the ship for additional tests in 2004.

With the help of the U.S. Army's Airborne and Special Operations Test Directorate, MV-22 aircraft No. 21 recently completed parachute tests at Ft. Bragg, N.C. The tests, which involved dropping 22 dummies and loads up to 1,000 pounds by parachute, will help expand the envelope for aerial delivery of cargo.

In an effort to better understand the Vortex Ring State phenomenon, MV-22 aircraft No. 8 continues to press ahead with High Rate of Descent (HROD) testing. The first phase of the HROD testing soon will be complete, with Phase II beginning this spring. The early results have been very positive, and we're looking forward to exploring the outer edges of the envelope during Phase II tests.

Your tireless, dedicated efforts have made these achievements possible. Keep up the great work!

News and Notes

V-22 flight test program adds another aircraft to mix

MV-22 Osprey No. 22 has arrived at Naval Air Station, Patuxent River, Md., making it the fifth aircraft to join the flight test program and the first to feature a low-observable paint scheme. The special lightweight paint, which saves an additional 30 pounds, will help reduce its infrared radar signature.

Later this year, the aircraft will be used to test the V-22's mission effectiveness in austere environments. The arrival of aircraft No. 22 is the latest in a series of recent test achievements, including successful sea trials aboard the USS Iwo Jima (*see page 1*).

Overall, the V-22 Integrated Test Team has accumulated nearly 200 flight hours since resuming flight operations in May 2002. Three more aircraft will join the flight test program before the end of 2003.



MV-22 aircraft No. 22 stops for fuel at Wright-Patterson Air Force Base in Ohio on its flight from Bell Helicopter's tiltrotor operations center in Amarillo, Texas to NAS, Patuxent River, Md.

Lt. Gen. Hough visits Boeing

Lt. Gen. Michael J. Hough, Deputy Commandant of Marine Corps for Aviation, HQMC, visited The Boeing Company in Philadelphia on Jan. 27 for high-level V-22 program briefings and tours of the V-22's current and future assembly lines and the site's Triple Lab Tie-In configuration.





Gen. Hagee addresses the V-22 Integrated Test Team in Hangar 109 at NAS Patuxent River, Md.

Airtime: Incoming Marine Corps Commandant flies in V-22 Osprey

By Ward Carroll, NAVAIR (V-22) PAO

Gen. Michael W. Hagee, the new Commandant of the Marine Corps, entered his name into the history book of naval aviation on Jan. 8 by taking the first VIP flight in the V-22 Osprey since the aircraft's return to flight in late May of last year.

Osprey No. 21 was used for the 20-minute sortie, piloted by Lt. Col. Kevin Gross and Maj. Shawn Healy. Gy.Sgt. Dennis Oliverio served as crew chief. The flight was conducted from Naval Air Station Patuxent River, Md., home of Naval Air Systems Command (NAVAIR) and headquarters for the V-22 Integrated Test Team.

"What a blast," then-Lt. Gen. Hagee gushed after the flight. "The acceleration when we converted from vertical to horizontal flight was unbelievable."

In addition to the VIP flight, during his visit to Southern Maryland, Gen. Hagee also received a program overview from Col. Dan Schultz, V-22 program manager (PMA-275), and offered words of encouragement and praise to a gathering of engineers and technicians from the Osprey's Integrated Test Team.

"I want to congratulate the test team on all that's been accomplished in recent months," the general said. "The Marine Corps is depending on you to keep the press on in

the future."

Besides the flight crew, joining Gen. Hagee on the flight was Mr. Tom Laux, NAVAIR's Program Executive Officer for Air, Assault, ASW and Special Mission Programs.

"We're proud to show the incoming commandant a first-class operation," Mr. Laux said. "It's important that Gen. Hagee see firsthand the great work that's going on here."

Gen. Hagee assumed the duties of the Commandant of the Marine Corps on Jan. 13.



Gen. Hagee poses for a photo in front of MV-22 Osprey No. 21 before his flight.

News and Notes

V-22 program begins High Rate of Descent testing, makes plans for Phase II

By Ward Carroll, NAVAIR (V-22) PAO

The V-22 Osprey Integrated Test Team (ITT) commenced Phase I of the high rate of descent (HROD) test plan in earnest on Nov. 25, completing 13 test points over the course of two back-to-back sorties.

The ITT is using Aircraft No. 8 exclusively for the HROD testing. The aircraft has been specially instrumented and wired to provide crucial feedback to pilots and engineers during the series of flights designed to give fleet pilots the confidence to exploit the V-22's unique maneuvering capabilities.

"There were no big surprises," Steve Grohsmeyer, test co-pilot for the initial HROD events, said of the flights as he walked back to the hangar at the end of a long, but productive, day at NAS Patuxent River. "The airplane behaved very nicely."

"Overall, it was a good start," added Tom Macdonald, ITT Chief Test Pilot and test pilot for the flights. "The test team worked hard and allowed us to get a lot done today."

While the team has taken a methodical and safe approach toward the HROD plan, Grohsmeyer explained that the first flights were by no means "baby steps."

"Already we're hitting rates of descent that are well beyond where we expect fleet pilots to go," he said. "We're going to give the average tiltrotor aviator plenty of space to do what he needs to do in any operational environment."

The HROD test plan is divided into two phases: Phase I will clear the "placarded" envelope – no greater than 800 feet-per-minute rate of descent combined with a forward speed of less than 40 knots – for the fleet's return to flight in the fall of 2003. Although the test plan is driven by events and not time, Fred Madenwald, ITT Contract Flight Test Director, estimated Phase I would be complete by late February.

Phase II is designed to be the more experimental portion of the plan that will fully explore the Osprey's flight envelope, including the tiltrotor's characteristics with regard to vortex ring state, an aerodynamic phenomenon that affects all rotorcraft. Phase II is scheduled to begin this spring.

Bell Boeing team answers the call when it “wings”

By Joe Vollbracht
Bell Aerospace Services Inc.

Few people noticed the truck rolling out the main gate at Marine Corps Air Station, New River, N.C., hauling what looked like a white, rectangular shipping container. Even fewer people would have guessed that under the wrapping was the wing of a V-22 Osprey headed for Fort Worth, Texas.

As part of the V-22 Block A Wing Modification effort, Aircraft Maintenance Trainer No. 11 (AMT 11), located at MCAS New River, was chosen as the first aircraft to have its wing completely removed, modified and reinstalled in its new Block A configuration.

Planning for this high visibility evolution had been ongoing for months. Because the modified wing was needed for hands-on training at the Maintenance Training Unit (MTU) by the fourth quarter of 2004, this project had high visibility from Bell Boeing management and its the Marine Corps customer.

Plans and budgets were still being worked when one phone call changed everything and accelerated the project into high gear. Bell Boeing Manufacturing Engineering in Amarillo, Texas, which will modify the wings of the remaining Block A retrofits, asked to test its removal process and tooling on AMT 11 with one simple catch: they needed the wing the following week.

Realizing the opportunity this presented,



A 40-ton crane removes the wing of Aircraft Maintenance Trainer No. 11. The wing has been trucked to Ft. Worth, Texas, where it will be used to help test the tooling designed for the Block A modification.

the Bell Boeing Field Service team sprang into action despite the time constraints. Loaded with support equipment, tooling and containers, three trucks were dispatched and on the way from Fort Worth within three days. As the trucks rolled towards New River, Bell Boeing Field Service personnel were already removing the major components from the wing, including the proprotors, engines and gearboxes. In the meantime, engineers and

technicians from the New Product Development Center in Fort Worth and Manufacturing Engineering in Amarillo were providing the planning and preparing to travel to New River for the final phase of separating the wing from the fuselage.

By the time they arrived, the fuel, hydraulic and electrical lines were disconnected and tagged, parts were inventoried, serialized and packed, and the major components were ready for shipping. Seven days after the New River Bell Boeing Field Service team began removing components, the only task remaining was to remove the wing.

Even though the Air Station was closed because of a snowstorm, the Bell Boeing team proceeded with the removal despite the frigid temperatures and inclement weather. Moving a 40-ton crane into position, the Bell Boeing team attached the crane cable, disconnected the four remaining wing bolts, smoothly lifted the wing from the aircraft, placed it in its cradle, and began preparing the wing for transport to Fort Worth.

Because of the quick response of the entire Bell Boeing team, this wing removal evolution—projected to take one month—was completed in nine days. The outstanding coordination and team effort by all on the Bell Boeing team serves as another example of the finest field support group in the industry.



The Bell Boeing team completed the removal and delivery of the wing to Ft. Worth, Texas, within nine days, nearly three weeks ahead of the original time estimate.

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