



CV-22 'suspended' for countermeasures testing

By Tech Sgt. Christopher Bell
Air Force Flight Test Center Public Affairs

The CV-22, the U.S. Air Force variant of the V-22 Osprey, recently began testing its electronic countermeasures in the Benefield Anechoic Facility (BAF) at Edwards Air Force Base, Calif.

According to Lt. Col. Tom Kennedy, the CV-22 program manager at Naval Air Station Patuxent River, Md., the aircraft will spend about three months suspended from the ceiling of the facility while the CV-22 Integrated Test Team (ITT) characterizes the performance of the electronic countermeasures package, called the Suite of Integrated Radio Frequency Countermeasures, or SIRFC.

"This is the heart and soul of the aircraft's defensive countermeasures," Kennedy said. The suite includes state-of-the-art integrated threat location and jamming technology, according to Kennedy.

The CV-22 ITT consists of Electronic

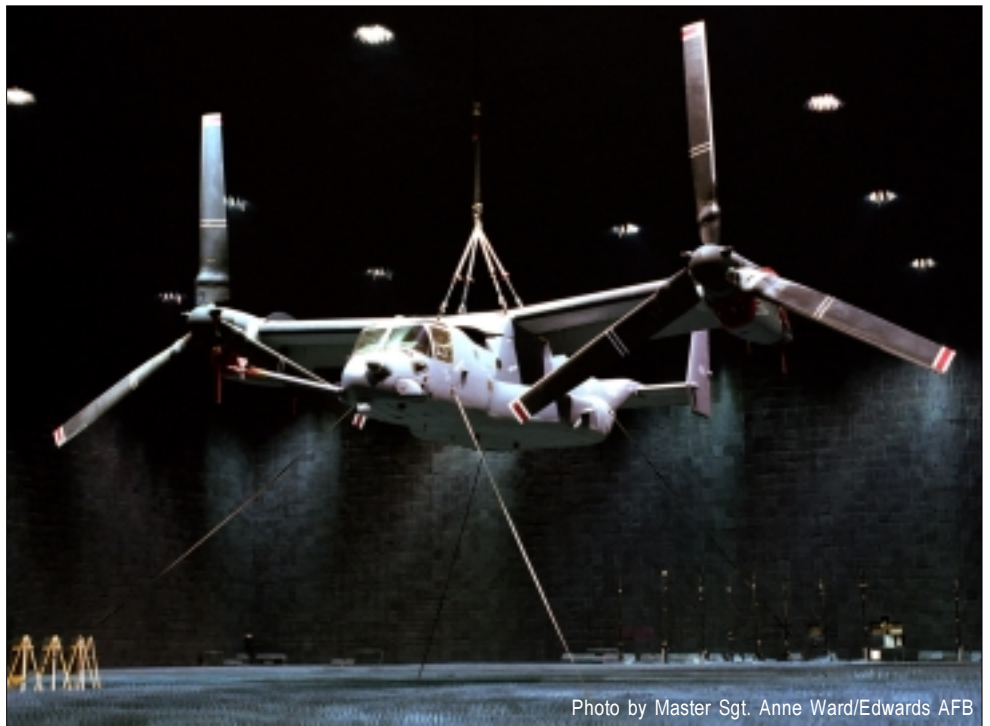


Photo by Master Sgt. Anne Ward/Edwards AFB

CV-22 Aircraft No. 9 hangs from the ceiling of the Benefield Anechoic Facility at Edwards Air Force Base, Calif. The facility's hoist is capable of suspending 80,000 pounds, or 36.4 metric tons.

BAFfled?

What is it?

The Benefield Anechoic Facility, or BAF, is the largest anechoic chamber in the world. It supports installed systems testing for avionics test programs requiring a large, shielded chamber with radio frequency (RF) absorption capability that simulates free space.

How large is it?

The BAF's RF shielded chamber measures 264 long, 250 feet wide and 70 feet high.

Where is it located?

Edwards Air Force Base, Calif.

Warfare experts from the U.S. Air Force, Bell Helicopter, Boeing, ITT Avionics, BAE and Raytheon.

The team will be engaged over the next few months to ensure that the CV-22 EW design is consistent with the analysis and ready to move into flight test next year.

Prior testing of the aircraft showed some of the antennas were not in optimal locations, Kennedy said, so the Edwards CV-22 ITT relocated the antennas, and testing in the BAF will determine how well they are placed. The chamber time also will be used to test interoperability of the SIRFC with the multi-mode radar on the plane.

"If something is emitting electrons, we have to make sure it doesn't interfere with other systems," Kennedy said.

"Interoperability is critical," said Maj.

Ernie Tavares, CV-22 development systems manager. "The CV-22 belongs to Air Force Special Operations command, and one of its intended missions is low-altitude ingress (less than 300 feet). If the SIRFC and the multi-mode radar aren't working together, it could jeopardize that mission."

According to Kennedy, the BAF is geared to simulate flight conditions, mitigating the risk of building the aircraft, flying it and having it not perform.

"This phase of testing will be the verification of the homework the government and the contractors have performed," he said.

"This is the last major hurdle," Kennedy added. "The next step would be to take it out on the range and fly it."



PM Perspective: V-22 program progresses at Pax, Edwards

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

The V-22 entered a new phase in its history when Aircraft No. 10 lifted off the flight ramp at Naval Air Station Patuxent River on May 29. The renewed sense of excitement is rivaled only by the amount of work still ahead of us.

In spite of the ongoing efforts to complete one of the most rigorous flight test programs ever developed, it is important to pause and reflect upon our accomplishments so far.

MV-22 Aircraft No. 10 has logged 15 flights and nearly 35 hours since returning to flight. The aircraft is undergoing required inspections that will verify it continues to meet our demanding expectations. It soon will resume its flight test program and focus on low airspeed system evaluation and roll-on-deck testing. MV-22 Aircraft No. 8, which will focus on high rate of descent testing, also returns to the air in September. MV-22 Aircraft No. 21 soon will have its first flight at Amarillo and will be the first of four LRIP aircraft to join the test program at Patuxent River.

CV-22 Aircraft No. 7 also will take to the skies in early September at Edwards Air Force Base. CV-22 Aircraft No. 9, also based at Edwards, will join the flight test program in mid '03 after it completes its testing in the

Benefield Anechoic Facility.

All of you involved with the V-22 program have been instrumental in the successes we have enjoyed. In addition to your continuing dedicated efforts, we're relying on even more disciplined processes to meet and monitor program commitments. These improvements reside in everything we do, from reconfiguring the nacelles to how we track, manage and report program data.

Two systems, in particular, have helped us provide reliable information for decision making and performance assessment. The weekly Earned Value Management System (EVMS) has been in use at both sites since January to measure cost, schedule and performance. Recently, with the introduction of the combined V-22 Bell-Boeing Integrated Management Information Control System (IMICS), joint EVM data is now reported on a routine basis. This enables us to make informed and timely decisions that ultimately benefit the aircraft, the program and our customers. In the past, we often waited weeks for data. Now, thanks to these systems, we're able to make decisions faster and with greater certainty.

The right people and improved processes are in place. Now, it's up to the aircraft to perform. The results of early flight tests indicate that we'll have many more accomplishments to celebrate over the next 18 months. Keep up the good work!

Nacelle redesign program underway

By Loren Cothorn
Bell Helicopter Communications

The V-22 aircraft 34 nacelle redesign program, which is to last approximately 18 months, is in full swing at Bell Helicopter Textron in Fort Worth, Texas. Structural modifications on aircraft 34's nacelles will begin Sept. 9, and nacelle primary work will begin on Oct. 8.

The Integrated Product Teams will change the electrical and hydraulic systems and improve maintenance accessibility. The redesign of the nacelles is part of the Block A upgrade, which will affect aircraft number 25 through 49. Aircraft 50 and subsequent aircraft will receive the Block A upgrade in the production line.

"Eventually, all existing aircraft will be redesigned, and future production aircraft will be built to the Block A configuration," said Bob Ellithorpe, Bell Helicopter MV-22 program manager.

"The primary purpose of the redesign is to resolve line clearance issues and customer requested improvements," said Steve Lehr, operations manager of nacelle modifications.

The redesign process is strategically located in Bell's High Bay area next to the Nacelle Modification Team, the Electrical Wiring Fabrication Department and 500 feet from the Tube Bending/Termination Shop. Having all of these departments under one roof will help the redesign program function more efficiently.

The aircraft 34 nacelle redesign modifications will occur with the support of a collocated team consisting of Manufacturing R&D, Production Control, Industrial Engineering, Scheduling, Defense Contract Management Agency, Operations Planning and Programs, Engineering Design, Manufacturing Planning, Contracts, Change Control, Manufacturing Engineering Projects, Manufacturing and Quality Assurance. The team will help guide the program through a gated decision process, focusing on contractual/program requirements.

The team helps with aligning and integrating the program requirements as well as performing functional requirements. The collocated work area leverages group dynamics and synergy.

"Everything is located right on the floor next to the product so we can make changes

— Nacelle continued, Page 3

Int'l leaders tour Pax, V-22 Osprey

By Gidge Dady
NAVAIR V-22 Public Affairs

Marine Corps commandants and Naval Infantry leaders from 30 nations recently visited the V-22 Joint Program and Integrated Test Team at Naval Air Systems Command, Patuxent River, Md., with General James L. Jones, commandant of the Marine Corps, as part of his worldwide tour of commandants' conference. The conference also included visits to Marine Corps Air Stations Beaufort, Camp Lejeune and Quantico.

During their visit, the V-22 Program Manager, Col. Dan Schultz, gave the military leaders a top level briefing highlighting the Osprey's capabilities and an opportunity to tour the V-22 aircraft facility and talk with pilots, maintainers and other program officials.

After the briefing, members of the V-22 team were available around an Osprey on static display to give an overview about key areas such as aerial refueling, forward looking infrared, engineering changes made within the nacelle and improvements to the flight control software system. The purpose of the tour was to build relationships and discuss issues of mutual concern.

Flight Test squadron 'stands up' for MV-22

By Gidge Dady
NAVAIR V-22 Public Affairs

Detachment 2 of the 18th Flight Test Squadron, Naval Air Systems Command, Patuxent River, Md., officially stood up July 31 and Air Force Maj. Gary "Chainsaw" McCollum took the helm as its first commanding officer in ceremonies at the MV-22 Integrated Test Team facility.

"I'm thrilled to be granted the opportunity to be part of the outstanding team the Air Force and Marine Corps have created to conduct operational test of the MV-22," said McCollum. "Our focus is and will remain viewing the V-22 through the eyes of the future generations of Marines and Special Operations Force (SOF) warriors who will take the Osprey into harm's way in support of our national objectives. We owe it to them never to lose sight of the fact the V-22 is a combat aircraft, and to do everything we can to de-

Nacelle cont. from Page 2

rapidly," said Lehr.

The aircraft 34 nacelle redesign program will include improved propotor/gearbox line routing, engine water wash relocation, nacelle drain improvements and inlet production improvements.

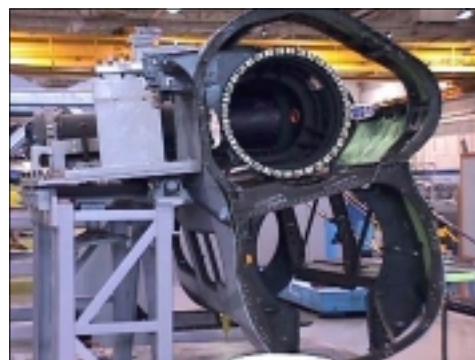
The modification program will proceed as follows: receiving and inspecting the nacelles, disassembling, structural modification, inspect and shakedown, primary installation, final inspection and shipping. Currently, the program has disassembled the nacelles and catalogued and stocked all parts that have been removed.

The original nacelle tooling concept had limited access for maintenance and too many handling and storage details in the assembly process. The redesign of the nacelle has a different tooling concept that applies lessons learned in the process of building tiltrotors such as the 609. It also has easier accessibility. Also, removable tool details are replaced with sliding-locating features.

Not all nacelles will be redesigned and built in Fort Worth. Aircraft 34 is the first production article and will be built in Fort Worth because the Air Vehicle Integrated Product Teams are there. Subsequent nacelles will be built in Amarillo. Bell also will be doing the Block A wing modifications in Amarillo.

Boeing will do Block A fuselage modifications in Amarillo as well.

"The customer asked us to make some changes and we're doing it. It should be very beneficial," said Lehr.



Structure modifications have begun on the nacelles of V-22 Aircraft No. 34. The work, which is being done at Bell Helicopter's facilities in Ft. Worth, Texas, will last approximately 18 months.



Photo by Randy Teufel

Members of the newly established Detachment 2 of the 18th Flight Test Squadron are ready to go to work supporting the MV-22 Integrated Test Team based in Patuxent River, Md. Detachment 2 is the Air Force portion of the Multiservice Operational Test Team and will be charged with operational test of the MV-22 Osprey from a special operations perspective. Standing (from left): SSgt. Michael S. Smith, TSgt. Steven P. Hersom, TSgt. Vinence M. Robinson, Maj. Gary "Chainsaw" L. McCollum (commanding officer), SMSgt. Craig S. England and SSgt. Joseph C. Schmidley. Kneeling (from left): MSgt. Cameron R. Haak, MSgt. Raymond S. Marston, TSgt. Brandon L. Troyer and TSgt. Jason D. Hersom.

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The aircraft in the BAF, called Ship 9, is one of two Ospreys at Edwards. The other craft, Ship 7, will be resuming flight testing sometime in late summer, according to Kennedy.

He said the electronics testing and the return to flight are two major hurdles in the CV-22 program.

“The fact that Ship 9 is going into the BAF is no small achievement,” Kennedy remarked. “The CV-22 ITT had to do all the return to flight modifications and the SIRFC antenna mods. At one time it looked like it

would be late, but the maintainers got it back on schedule. They even had it ready early.”

Since January, the CV-22 ITT has had 704 maintenance events, or tasks, that had to be completed. One of the major tasks was an almost entire rebuild of the vertical stabilizers.

“It’s pretty much a brand new tail,” said Staff Sgt. Anthony Achimasi, a CV-22 ITT avionics craftsman. “We took the old tail, tore it apart and added structure to beef up the support for the SIRFC antennas.”

Both the send and receive antennas were relocated to the aft section of the tail because their previous locations encountered interference with the tail structure.

Other tasks included adding radar absorbent material near other antennas to reduce reflections, rerouting wires and replacing the original 16-foot fixed refueling probe with an 18-foot retractable one that sits flush with the nose when not being used.

According to Staff Sgt. Erik Halverson, a CV-22 ITT crew chief, the original probe had to be removed from the aircraft during the shipboard operational testing to get the plane to the flight deck.

“The new probe will save a lot of man hours,” Halverson said. He added that the

Marine Corps is adopting the retractable probe for their version of the Osprey, the MV-22.

The maintainers agreed that, although there have been some difficulties working with the aircraft, they have all enjoyed the challenge.

“It’s been a long stretch,” said Master Sgt. Carlos Somoza, production supervisor for the CV-22s. “We did the SIRFC mods, which took quite a effort, but the guys did a great job. Tech. Sgt. Coons did an awesome job with the composites, especially the antenna fairings. The engineers were really impressed.”

Achimasi said he thinks the Osprey will make it with all the work that has been done. “This is definitely the future of special ops,” he said. “Nothing can beat it!”

**“This is definitely the future of special ops. Nothing can beat it!” —
Staff Sgt. Anthony Achimasi**

Squadron cont. from Page 3

velop and take advantage of its unique capabilities in support of their mission.”

Prior to assuming command of Detachment 2, McCollum served as a V-22 initial cadre instructor pilot when he joined VMMT-204, the MV-22’s first training squadron, in 1999. He will now lead a newly formed detachment, which is the Air Force part of the V-22 Multiservice Operational Test Team (MOTT). The MOTT is currently comprised of the 11 Air Force members in Detachment 2, one Air Force Operational Test Evaluation Center director and 18 Marine operators and maintainers.

McCollum said Detachment 2 aircrew and maintainers are now working with the V-22 Integrated Test Team to make observations that will help them with assessments and evaluations during the dedicated operations test periods which could begin next summer. At that time, they will make initial assessments of the first MV-22 “Block A” upgrade low rate initial production aircraft scheduled to arrive here then. Block A MV-22 aircraft will have a redesigned nacelle and software upgrades and will be used by the fleet.

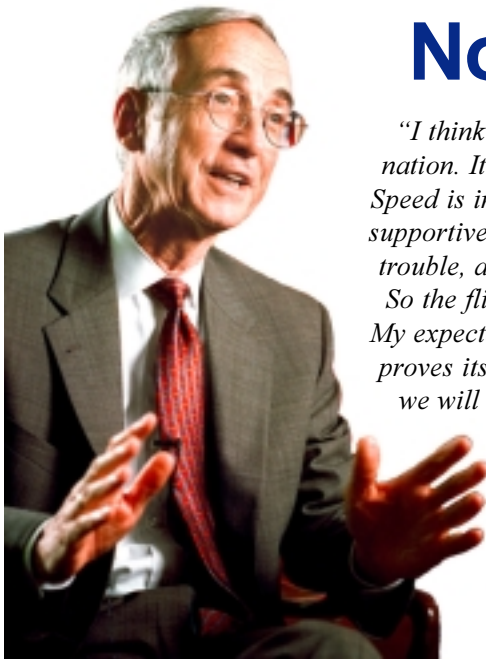
“We will operate and maintain our aircraft in an operationally representative environment,” said McCollum. “We’ll fly and maintain the V-22 in conditions that are as close as we can reasonably make them to what an operational squadron would encounter on a day-to-day basis. Our flights will be based on representative Marine and SOF missions.”

Later on, the larger version of the MOTT, which includes Detachment 2, will conduct the second phase of the V-22’s operational evaluation using MV-22 Block A production aircraft from various ship and shore locations throughout the U.S.

The 18th Flight Test Squadron is based in Hurlburt Field, Fla., and functions as the operational agency for the Air Force Special Operations Command.

Detachment 2 was created to operationally test the MV-22 from the special operations perspective and to assess the value of it as a baseline variant for the CV-22—the Special Operations Force version.

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Notable Quote

“I think the V-22 has a terrific capability for the nation. It does things you can’t do with helicopters. Speed is important. A lot of review teams are all very supportive, but there are also skeptics because of past trouble, and that breeds skepticism, which it should. So the flight test program will have to prove itself. My expectation is the program will continue, and if it proves itself, we’ll continue production. If it doesn’t, we will stop the program, which will not be nearly as good for the Marines or special forces. The alternative is to go back to helicopters. That certainly is not a step forward.”—The Honorable Gordon R. England, Secretary of the U.S. Navy during a recent media interview