



## Osprey tagged as transformational at Paris Air Show

Although an actual V-22 Osprey did not make an appearance at this year's Paris Air Show, the aircraft remained popular among showgoers and members of the media. Gen. James L. Jones, Commandant of the U.S. Marine Corps, addressed a group of news media, trade journalists and mainstream and international aerospace reporters about the V-22 Osprey during a press conference on June 18.

Jones recalled the aircraft's recent history, including the two mishaps, the V-22 independent review panel's program recommendations and the ongoing efforts to understand and incorporate them. He also detailed the potential impact of tiltrotor technology on all military branches, calling the Osprey a "transformation" in military technology.

"When something (the V-22) goes twice as fast, much farther and carries a greater payload and is more survivable...that's not evolutionary; that's not modernization; that's transformation," said Jones.

He further explained his involvement in the formation of two independent review panels—the V-22 independent review panel that conducted a high level review of the V-22



Gen. James L. Jones, Commandant of the U.S. Marine Corps, addresses a group of reporters about the V-22 Osprey during the official V-22 press conference on June 18.



(left to right) Jim Butt, project engineer, V-22 new business, explains the nuances of the V-22 Osprey desktop simulator and cockpit to an international journalist at the Paris Air Show. The simulator gave the media a chance to "fly" the V-22 through a series of fictional scenarios. (See related story on page 3.)

program and a separate investigation team at Marine Corps Air Station, New River, N.C.

"I was very pleased by the panel's report," said Jones, who added that the future of the Osprey should be event-driven rather than timeline-driven. "And with a strong partnership between us and industry, which is an ongoing evolution as we speak, and our acquisition executives, I believe that we are now on the way towards finding the right path to correcting the deficiencies that have to be corrected and to begin to answer that second question with regard to robustness for operational use in the fleet in the near future."

The Commandant closed by explaining the importance of moving forward and focusing on the future.

"I think the future is very bright," he said. "I hope that the next time we're in Paris, we'll be able to show you a wonderful piece of technology in operation."

In addition to Jones' press conference,

members of the media experienced the new V-22 Osprey desktop simulator and had the opportunity to "fly" the aircraft through several simulated scenarios, including an amphibious assault.



(l. to r.) Discovery Channel producer Peter Chapman directs Col. Dan Schultz, V-22 Program Manager, and Lt. Col. Barney Wick, V-22 Coordinator HQMC (Aviation), during an interview.



Photo by Kurt Lengfield

Col. Nolan D. Schmidt (at podium), outgoing V-22 program manager, reflects on his four-year tour with the V-22 program before introducing the incoming program manager, Col. Dan Schultz (seated on right). Rear Adm. Steve Enewold (seated on left), program executive officer for Air, Assault, ASW and Special Mission Programs, presented Schmidt with the Legion of Merit.

## Schmidt steps down as V-22 program manager

By Gidge Dady  
NAVAIR V-22 Public Affairs

After nearly 29 years in the U.S. Marine Corps and four years as the V-22 program manager, Col. Nolan D. Schmidt was joined by over 250 guests on June 14 at the Naval Air Systems Command headquarters, Patuxent River, Md., for his retirement and change of command.

The guest speaker, Lt. Gen. Fred McCorkle, deputy commandant for Marine Corps Aviation, touted the virtues of the V-22 aircraft and acknowledged the contributions that Schmidt made to getting the aircraft closer to being in the fleet. McCorkle said Schmidt laid a solid foundation for this program, presented it well and worked it to the edge as far as money was concerned.

"I have never seen anyone who was more dedicated to a job or cared more about his team—I could always count on him to come up with a sound answer," said McCorkle.

Schmidt's farewell remarks touched on three important areas under his leadership—where the program has been, the truth and the way forward—and revealed the feelings of a leader who had the daunting task of managing a program that has been under intense public and congressional scrutiny after two

fatal mishaps in less than one year.

Schmidt selected the poignant words of Theodore Roosevelt, who spoke at the Sorbonne, Paris, in April 1910, to exemplify his message about people who face difficult situations and whether the outcome of their efforts is success or failure, their triumph is in the achievement.

"It is not the critic who counts; not the man who points out how the strong man stumbles, or where the doer of the deeds could have done them better," Schmidt recited. "The credit belongs to the man who is actually in the arena whose face is marred by dust, sweat and blood; who strives valiantly; who errs, who comes up short, because there is no effort without error and shortcoming; but who does actually strive to do the deeds, who knows great enthusiasms and devotions; who spends himself in a worthy cause." (*excerpts from Roosevelt's speech*).

Schmidt said the V-22 program and individuals associated with it have been publicly maligned and impugned in an atmosphere similar to war.

"Let the record show that the Marines who died were our friends and comrades, and that we suppressed no truth about this aircraft," he said.

As to the way ahead, Schmidt said, "the

V-22 team has a strategy and action plan that will move the program forward to fix all the problems and produce a better and more mature product for the fleet. I am proud of the team approach to solving problems and overcoming obstacles and having led the best team in NAVAIR. I believe this aircraft will save thousands of Marine and Air Force Special Operations warfighters' lives during its service use."

Schmidt led the V-22 program for four years through its Engineering and Manufacturing Development phase, Operational Evaluation and into Low Rate Initial Production. In recognition of his meritorious service while serving as the V-22 program manager from June 1997 to June 2001, he was presented the Legion of Merit (his second).

The award cited his extraordinary command of Department of Defense development and acquisition processes that skillfully guided the V-22 program through its final stages of technical and operational test. "To produce the best possible aircraft on a timetable that would meet the needs of the fleet, and remain within budgetary constraints, Col. Schmidt set about establishing a solid, viable program that could be defended and supported during future program and budgetary reviews."

The award further stated that "his adept management of increasingly scarce resources led to Cost Reduction Affordability Team initiatives that have, to date, resulted in over \$100 million in cost avoidance, with plans in place that will realize an additional \$600 million in total cost avoidance in the coming year. The Power by the Hour contract for the \$4.4 billion T406/AE1107C Engine Program is recognized as one of the Department of Defense's premier leaders in championing the tenants of acquisition reform."

The award also acknowledged Schmidt's significant contributions to Naval Aviation

— Schultz, Continued on Page 4



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[www.boeing.com/rotorcraft/military/v22/tiltimes.htm](http://www.boeing.com/rotorcraft/military/v22/tiltimes.htm)

# Inside the V-22 Osprey: cockpit, desktop simulator

When the V-22 cockpit was designed, designers took into consideration both the advanced design techniques available to digital aircraft and the unique capabilities of the tiltrotor. As a result, the V-22 boasts one of the most advanced cockpit designs available—completely integrated with hardware and software to match the pilot's capabilities.

The V-22 cockpit is the aircraft's most sophisticated crew station. It is comprised of four tightly integrated elements, including:

1. The physical elements (e.g. seats, instrument consoles, furnishings and equipment)
2. Mechanical flight controls (Vehicle Management System interfaces)
3. Cockpit management system hardware (avionics and systems interfaces)
4. Informational interface (software driven control and display functions)

The controls and displays used primarily by the aircrew for aircraft situational and tactical awareness are located in the forward console and include multifunction displays (MFDs), Control Display Unit/Engine Instrument Crew Alerting System Display (CDU/EICAS) and Keyboard, Standby Flight Display, Flight Director Panel, track handle and Remote Frequency Indicator Selector.

The Cockpit Management System (CMS) is the primary interface between the flight crew, the aircraft flight control systems and the avionics equipment suite. The CMS is a redundant design using dual components and data busses to provide system operation in the event of a failure.

The cockpit makes use of overlays through the merging of multiple types of information into one composite image. Overlays enable the pilot to quickly and accurately view most aircraft status information on a single display, which reduces scan time and improves situational awareness.

For example, several types of information can be overlaid onto a moving digital map, including navigation symbols and a series of "way points" that show the pilots where they've been and where they're going. Similarly, flight displays in various formats can be overlaid on an image from the Forward Looking Infrared (FLIR) sensor.

The primary displays are a set of four (two per side) 6-inch square color active matrix liquid crystal display (AMLCD) MFDs.



*The V-22 Osprey's state-of-the-art cockpit offers completely integrated hardware and software that reduce pilot workload, and constitutes one of the most advanced cockpit designs available.*

The display symbology is sized appropriately, providing a clearly visible and sunlight-readable display when viewed from a wide angle.

A single, full-time display surface is provided for the engine instrument and crew alerting system. It is comprised of a center-mounted 6 by 8 inch color AMLCD that utilizes preprogrammed messages and two keypad entry units that are used to enter mission or flight control data and control aircraft systems parameters.

This display also incorporates the control display unit functions for managing mission and flight data through the mission computers. The CDU design on the V-22 replaces most of the individual system control panels found in conventional cockpits.

The V-22 Osprey's cockpit features and displays are specifically designed to accommodate the aircraft's wide range of missions, such as the ones presented in the desktop simulator.

## V-22 Desktop Simulator

The V-22 desktop simulator is a portable, Silicon Graphics-based system that features accurate cockpit displays linked to simulate flight profiles preflight in a high fidelity simulator. It allows the user to view and interact with the V-22's cockpit and multifunctional displays in different modes of flight and mission phases.

A prototype today, the simulator is expected to become a low-cost, portable rehearsal system to support pilot mission preparation and provide familiarity with on-board system functions as they would appear dur-

ing an actual mission. The simulator features four, scripted scenarios, including:

**1. Shipboard Traffic Pattern:** This mission demonstrates basic cockpit displays, takeoff and approach to a ship and the use of FLIR.

**2. Amphibious Assault:** This mission demonstrates takeoff from a ship and coupled navigation to a shore landing. It also demonstrates the use of the Digital Map, landing zone "imagery" and crew communications.

**3. Combat Search and Rescue:** This mission demonstrates sensor symbology, Terrain Following/Terrain Avoidance radar, Search and Rescue operations and internal communications.

**4. Non-Combatant Evacuation:** This mission demonstrates coupled flight director modes for a simulated landing into an urban environment.

These scenarios are not representative of any current U.S. military operational capability, but are only structured to illustrate inherent capabilities of the V-22 in flight.

## Sample Screen



## Schultz takes reigns

——— *Schultz, Continued on Page 4*

which, under his leadership, resulted in seven V-22 program awards, of which six were for engineering and acquisition excellence.

In addition to the Legion of Merit, Schmidt was recognized in a personal letter from the Commandant of the Marine Corps, Gen. James Jones, for his devotion to the Corps and for his tremendous contributions over three decades of service. Jones said, "You are part of the Corps' legacy of caring leadership that has made a difference in Marine lives." The Commandant also recognized Schmidt's wife, Jan, for her steadfast support year after year and called her one of the unsung heroes for the great sacrifices she made as a military spouse.

*"I believe this aircraft will save thousands of Marine and Air Force Special Operations warfighters' lives during its service use."* — **Col. Nolan D. Schmidt, former V-22 Osprey program manager, during the change of command ceremony at Naval Air Systems Command HQ, June 14**

Schmidt is succeeded by Col. Dan Schultz, who becomes the sixth program manager since the program began in December 1982. Prior to this new assignment, Schultz had a tour of duty in the Office of the Deputy Assistant Secretary of the Navy for air programs.

Schultz opened his remarks by recognizing Schmidt's invaluable contributions to the V-22 program and said it is difficult business taking a program forward when not everyone on the outside believes in it. As an underscore to the solid foundation for the V-22 program that exists due to Schmidt's tireless efforts, Schultz said, "I feel like the luckiest guy in the world. I have in place a good NAVAIR team to show us the way forward in a methodical and purposeful way that's going to produce an aircraft that we can all be proud of."

In closing, he said, "I have a dynamic program that is desperately needed by the Marine Corps and the Air Force. I've got the funding to take it forward, the right people to do the job and an industry that is committed to getting it done. I'm ready to go to work."

## Marine sounds off on V-22 Osprey editorial

By Capt. Landon R. Hutchens II, USMC  
This Letter to the Editor appeared in the St. Louis Post-Dispatch on June 4, 2001

A May 24 editorial asserted that the Department of Defense decision to continue the V-22 Osprey program was based on political rather than military reasons. As a former assistant operations officer of a Marine expeditionary unit, I am well informed on the Osprey program and would like to set the record straight.

The V-22 has survived because the Marines and their Special Operations Forces counterparts need it. Its strongest supporters are those of us in uniform. We can no longer meet the complex challenges of the 21st century with 1960s technology helicopters.

The world has changed. Expanding international trade and humanitarian efforts have more Americans living abroad. Protecting their lives and our national security in an increasingly dangerous world is a serious challenge.

The V-22 flies twice as fast as a helicopter and has a range of 2,100 nautical miles with one in-flight refueling. The V-22 gives us the capability to get Marines to a crisis zone quickly. Nine embassy reinforcement and evacuation operations have been conducted by Marines in the last decade. Ask the more than 6,000 civilians rescued about the importance of speed and range in these op-

erations. In 1991, Marines arrived just as the rebels were scaling the walls of the U.S. Embassy in Mogadishu, Somalia.

Testifying before a recent Senate hearing, the Defense Department's V-22 Independent Review Panel recommended fixing the aircraft's problems and proceeding with production. The panel called the V-22 a "national asset."

Maj. Karsten Heckl, a V-22 pilot, also testified regarding his confidence in the aircraft—an aircraft that has made nonstop transcontinental flights from California to the North Carolina coast in eight hours.

The V-22 has had two crashes of low-rate production model aircraft in the past year. One mishap was due to human error. The other was due to a hydraulic line rupture compounded by a software anomaly.

These causes were not unique to tiltrotor technology. By comparison: the CH-46 helicopter that the V-22 is replacing crashed 44 times in its first five years and the F-117 (sic) stealth fighter crashed six times.

Developing new technology aircraft involves risk. However, taking those risks allow us to keep our technological advantage in war.

Fortunately for those of us in uniform, the secretary of defense has the wisdom not to cancel an aircraft every time a newspaper writes a bad editorial.

### Notable Quote

*"The advent of tiltrotor technology provides us an opportunity to accomplish a mission such as that (Desert One), and accomplish it in one period of darkness. And that, to me, is the strength of what tiltrotor technology brings to the forefront of Special Operations."* — **Charles R. Holland, commander-in-chief, Special Operations Command, during the Center for Security Policy's V-22 roundtable event in Washington, D.C., May 22.**

