

Marines parachute into V-22 history



Marine jumpers from the 2nd Reconnaissance Battalion II MEF out of Camp Lejeune, N.C. became the first to deploy from a MV-22 in a free fall from 10,000 feet. (Navy photo by Vernon Pugh.)

By Gidge Dady
NAVAIR V-22 Public Affairs

NAVAL AIR STATION PATUXENT RIVER, Md. (Feb 1, 2000) — Marine jumpers and the V-22 Osprey teamed up in January for the first ever parachute operations from a tiltrotor aircraft.

Marines from the 2nd Reconnaissance Battalion II MEF, Camp Lejeune NC, jumped into the history books of V-22 developmental testing as the first personnel to deploy from an MV-22 in free fall from 10,000 feet.

These Marines, who are experienced static line and free fall jumpers, made 24 jumps from engineering, manufacturing and development aircraft #10.

“We flew at 120 knots in the conversion

mode (engine nacelles tilted only slightly forward from horizontal, partly in airplane mode, partly in helicopter mode) and it was a pretty spectacular site to see these parachute operations,” said Bill Leonard, one of the V-22 developmental test pilots who flew these tests. “The aircraft handled well and with the inertial navigation system the jumpers were able to assess the dynamics of leaving the aircraft and returning to the same drop zone on another jump.

“The jumpers also were pleased with the V-22’s ability to get them into the desired zone and the access to getting on and off the aircraft,” said Leonard.

The V-22 integrated government/contractor test team here conducted these developmental flight tests to determine whether the

Osprey is a suitable platform for the personnel parachute operations mission. Under the supervision of senior jumpmasters from the U.S. Army Operational Test Command and the Marine Corps Systems Command, 24 successful jumps were recorded to qualify the V-22 for parachute service, according to Lieutenant Col. M.G. Mannella, V-22 government flight test director.

The jumpers landed in a surveyed drop zone at Fort AP Hill, Va., a nearby Army base. “This site was selected because of its size and proximity to Patuxent River. Also, for military jump operations, the drop zone must be surveyed and safety certified; there are no drop zones here or at Webster Field that meet this criteria,” said Mac Brown, senior V-22 Integrated Test Team (ITT) engineer.

The Army is the designated proponent agency for personnel parachute operations from new aircraft and envelope expansion of existing aircraft. They are now in the process of issuing a clearance for free fall operations from the V-22.

Prior to deploying jumpers, the V-22 ITT had to collect a series of buildup points to ensure that the V-22 was ready to conduct these tests. According to Brown, the aircraft was evaluated for operations off the cargo ramp, ability to safely and accurately “spot” the drop zone, and other aircraft characteristics such as cabin size, seating, and internal communications.

“This was a real team effort involving the Marines, Navy and Army. The V-22 Osprey team thanks everyone for accommodating our test schedule and for participating with such tremendous flexibility and can-do spirit. We not only accomplished our goals but got to observe 2nd Reconnaissance Marines record a flight test “first” in the process,” said Mannella.

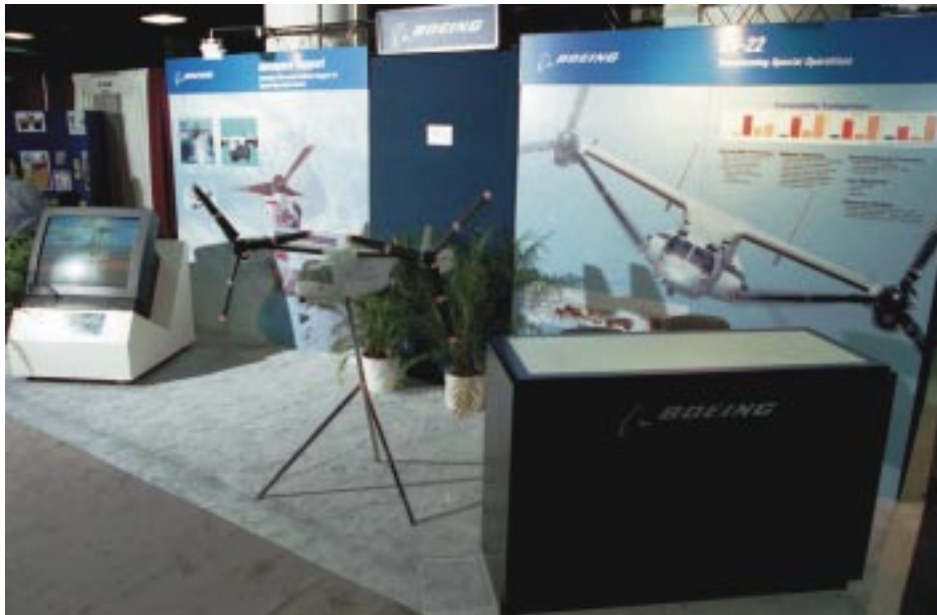
SOLIC conference highlights tiltrotor applications

By Norb Josten
Business Development

The Bell Boeing CV-22 was well represented at the recent National Defense Industrial Association's 11th annual Special Operations/ Low Intensity Conflict Symposium and Exhibition held at the Hyatt Crystal City in Arlington, Va., Feb. 1-3.

Featured speakers included the Assistant Secretary of Defense for SOLIC, the Honorable Brian Sheridan; the U.S. Special Operations Commander-in-Chief, General Pete Schoomaker; Deputy USSOCOM CINC, Lieutenant Gen. Nortie Schwartz; as well as each of the SOCOM component commanders and a host of other distinguished guests and special operators.

The symposium agenda covered missions and status of current special operations forces and provided a clear look at likely future missions and requirements along with the development and sustainment of the force structure necessary to support them. The CV-22 SOF-variant of the Osprey was specifically identified by many of the speakers as a key enabler of future SOF capability and a *must have* for SOCOM to fulfill its future long range missions.



The CV-22 was featured prominently at the Boeing exhibit during the National Defense Industry Association's annual Special Operations Low-intensity Conflict Symposium in Washington, DC, Feb. 1-3. David Galen photo.

US Army Special Operations Commander, Lieutenant Gen. William Tagney, noted that "Our people are looking forward to the CV-22's entry into service and its ability to support us in our missions.

"We are also looking ahead to future requirements for a growth version of the V-22 - a survivable, long range VTOL-capable transport that can carry the HUMVEE and the standard (463L) pallet, key elements of

many of our current and future mission plans," he said.

Several other USAF, Army and DoD personnel touched on the emerging requirement for a VTOL-capable C-130 sized transport. Bell and Boeing are working both jointly and separately on a range of tiltrotor technology concepts that might satisfy the anticipated requirement.

V-22 Osprey program bids for Air Force combat search and rescue mission

The V-22 program submitted a response to a Request for Information from the U.S. Air Force on Feb. 3. This RFI is to support an Analysis of Alternatives for the Combat Search and Rescue replacement aircraft program.

"In responding to this RFI, we were able to draw upon much work done in the past in support of the USAF's Rescue Technical Planning Integrated Product Team," said Norb Josten, Boeing CV-22 Business Development Manager. The TPIPT has solicited CSAR concept submittals from industry over the past several years to identify and rank likely material solutions to the CSAR mission area's top-ranked deficiencies. These include reaction time, range, survivability, payload, battlespace aware-

ness and operational availability.

"The CV-22 addresses all the current mission area deficiencies and has consistently ranked highest of the Non-Developmental full system concept submittals." The Osprey is considered a leading contender due to its speed, range, payload and combat survivability.

The Air Force currently uses 105 Sikorsky HH-60G helicopters in active reserve and Air National Guard units to provide CSAR capability for all U.S. forces. The HH-60s will begin to reach their service life in 2003. Therefore, the Air Force wants the initial operating capability for a replacement system in 2007. This AoA will be conducted over the next year to determine the most cost and operationally effective alternative to

replace the existing CSAR fleet.

"The Air Force AoA Team has some very talented people on it," explained Josten, "but their analysis task is formidable. It's always challenging to analyze the capabilities of a 'leap-ahead' system like the CV-22 in comparison to legacy technology alternatives."

A case in point is the impact of the CV-22 alternative on CSAR force structure. The RFI is focused on replacing just the current helicopter assets, with the more expensive C-130 refueller portion of the Rescue Force modernization requirement out of the equation.

"The CV-22 would replace helicopters at substantially less than a one-for-one ratio and it would reduce the need for C-130 refuellers, roughly by half," he said.

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V-22 answers USAF request for information

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There is also the extra-mission capability that the Osprey brings such as logistics, force protection, base reconstitution, medical evacuation, aerial refueling, and weapons of mass destruction consequence management. This impact is significant for the



USAF in terms of the potential contribution of CV-22 to the developing Air Expeditionary Force Doctrine. It is a real challenge to model, analyze and assess all this so that the AoA product really serves the USAF's decision-making process in CSAR and beyond.

"We're hoping the ACC study team takes advantage of the extensive body of previous V-22 Cost and Operational Effectiveness Analyses that have been done and the expertise that was developed in supporting those studies," said Josten.

Other contenders being considered in this competitive procurement process are new HH-60s, the S-90, H-53, NH-90 and the EH-101. The AoA will be completed in March 2001 and the Air Force plans to begin procurement of the replacement aircraft in 2004.

Boeing photos by Kevin Flynn

CV-22 and MV-22 program budget requests outlined

The U.S. Air Force and U.S. Special Operations Command (SOCOM) have requested procurement funding of \$371.5 million for the first four CV-22s. About \$8.5 million of this represents SOCOM's portion.

In its justification for the funds, the service points out the procurement of the first four CV-22s in FY2001 will support the urgent need to replace aging SOCOM helicopters and increase its capability to deploy and retrieve Special Operations Forces worldwide. Because the Navy capped funding for development of the CV-22 variant, some additional requirements were programmed for a SOCOM-funded P3I program.

In the case of the Marine Corps' MV-22 procurement, the FY2001 budget request is for \$1,208.5 million along with Research, Development, Test & Evaluation funding of \$148.2 million for the Engineering and Manufacturing Development program.

The Marines are seeking earlier, additional deliveries of the MV-22s to help support overall stability and optimal deployment goals. A minimum of two additional

aircraft are required in FY2001 to enhance training and ensure combat ready deployments of initial squadrons.

The V-22 attracted a sizeable crowd outside the Pentagon last summer during its visit for tiltrotor technology demonstration day. Note the Washington Monument visible in the background.



V-22 Multi-Mission Applications for the UK Study explained

By Rich Meanor
Business Operations

As reported in this publication last September, Bell-Boeing commissioned the Defence Evaluation and Research Agency (DERA) and TRW, Inc. to evaluate the V-22 in a UK context. This team compared V-22 and three notional medium-lift helicopters in three representative scenarios.

In the first scenario, the Royal Marines (RM) conduct an amphibious assault on the Mussandem Peninsula, in the Strait of Hormuz. The assault is launched from well offshore to minimize exposure to anti-ship threats.

Preliminary analysis eliminated two of the helicopter alternatives in this scenario. The number of small capacity

helicopters needed to execute the landing plan exceed the capacity of the amphibious ships. Discussions with RM officers revealed that using large troop capacity helicopters, risks loss of an unacceptable portion of the landing force should one of these aircraft be shot down.

The study compared the time required to deliver key elements of the landing force. Even when its external load speed is limited to that of the helicopter, the V-22 delivers 41 percent more combat

power in the initial six hours of the assault than the helicopter. The V-22's performance advantage becomes more pronounced as mission radius and threat level are increased.

Since amphibious operations are conducted to seize objectives that are of value to the enemy, the study also examined ground combat subsequent to the landing.

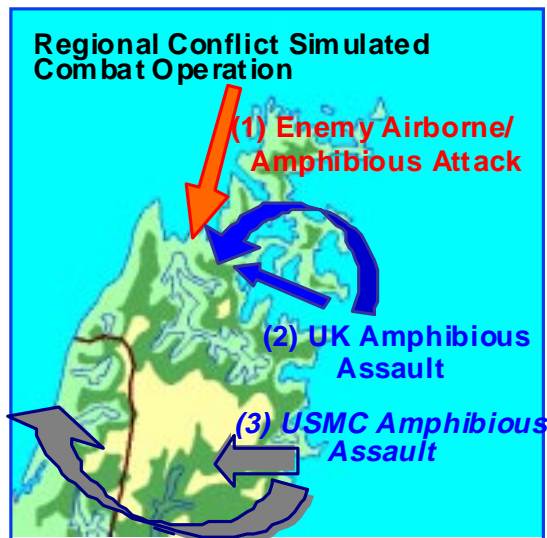
An enemy counterattack is initiated 4.5 hours after the landings and RM reinforcements are rushed ashore. Although the landing force defeats this threat in

both cases, the timing of the arrival of the reinforcements has a dramatic effect on the outcome of the battle.

In the helicopter case, few of the reinforcements arrive in time. RM units under attack suffer 32 percent casualties and are dislodged from key terrain. In the V-22 case,

all of the reinforcements are landed and participate in the battle. RM losses are about 12 percent and the landing force is well positioned to exploit its successes.

The two key factors in this decision were (1) the aviation facilities of the available ships – which could not physically accommodate enough of the smaller capacity helicopters to complete the mission and (2) the operational risk associated with losing a large capacity helicopter loaded with troops.



Computer simulation used a scenario set in the Strait of Hormuz.

V-22 EMD Flight Test Status as of February 15, 2000

A/C #	Total EMD Hours	Total EMD Flights
7	367	177
8	457	258
9	318	140
10	386	171
Totals	1,528	746

Total V-22 Flight Time	2,712 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

V-22 related news clips cited

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