

# Directory: military rotorcraft

AH-1Zs in May, but the upgraded SuperCobra is still expected to be a contender in the country's re-opened competition for 50 off-the-shelf attack helicopters.

The UH-1Y may also be marketed internationally. Otherwise Bell offers the Huey II upgrade of the single-turbine UH-1H, and has launched a remanufactured, civil-certificated version of the helicopter, the Model 210. Costing around \$3 million, the 210 offers higher useful load and lower operating cost than the UH-1H, and is Bell's offering for the US Army's 322-aircraft light utility helicopter requirement. The company favours offering a derivative of its commercial Model 407 light single to meet the US Army's planned 368-aircraft light armed reconnaissance helicopter requirement.

The USMC has tasked Bell with the conceptual design of an armed derivative of the BA609 civil tiltrotor, under development by the Bell/Agusta Aerospace

joint venture, which would have the speed and range to escort the V-22 Osprey. The BA609 first flew in March 2003, and is scheduled for civil certification in 2007. Mating the proprotors and wing of the BA609 to a new tandem-seat fuselage and weapon system would produce an armed rotorcraft with 450kt speed and 1,110km radius, which could be available after 2012-15.

Bell is continuing design work on its Quad Tilt Rotor (QTR) design, a heavy-lift rotorcraft capable of carrying a 20t payload at speeds exceeding 260kt over ranges greater than 1,600km. The four-proprotor aircraft is being aimed at an emerging US Department of Defense requirement for a C-130-sized vertical lift aircraft. After windtunnel tests late last year, flow-control work is under way to reduce drag and increase payload by reducing download. Additional windtunnel tests are planned.

## BELL BOEING [www.bellhelicopter.com](http://www.bellhelicopter.com), [www.boeing.com](http://www.boeing.com)

<b>V-22 Osprey</b>	21,546/27,443*	17.48	-/275	-/14,200	2/24	2 x R-R T406-400	6,150	*VTO/STO
	15,032	11.58	954/3,892*	26,000	-			*Assault/deploy

The V-22 Osprey programme is gathering pace, after avoiding cancellation following two fatal crashes that led to a halt in flying in December 2000. The US Marine Corps' MV-22 tiltrotor transport returned to flight in May 2002, and has since completed critical high rate of descent tests and five of six at-sea ship-board suitability testing periods leading up to operational evaluation, scheduled for January-May next year.

A decision on moving from low-rate production of 11 aircraft a year to full-rate production, ramping up to 48 V-22s a year in 2011, is scheduled for September 2005.

Flight testing of the US Air Force's CV-22 special-operations variant

resumed in September 2002, but by early 2004 was running six months behind schedule. CV-22 initial operational capability is planned for the fourth quarter of 2009. Both versions are undergoing block upgrades to correct deficiencies. MV-22 Block A returns the Osprey to safe operation; Block B improves effectiveness and Block C includes mission enhancements. CV-22 Block 0 is the baseline variant, while Block 10 enhances mission capability with the addition of directional infrared countermeasures.

The USMC plans to buy 360 MV-22s and the USAF 50 CV-22s. The US Navy plans to buy an additional 48 MV-22s. Bell and Boeing are under pressure to reduce the unit cost of the Osprey from \$74 million to \$58 million by 2010.

## BOEING [www.boeing.com](http://www.boeing.com)

<b>AH-64D Apache Longbow</b>	7,270/-	17.73	-/147	14,650/10,520	2/0	2 x GE T700-701C	1,890	
<b>CH-47F Chinook</b>	22,680	30.18	-/143		2/33	2 x Honeywell T55-714A	4,900	
	10,615	18.29	425					

With cancellation of the Boeing Sikorsky RAH-66 Comanche, the US Army plans to rely on a further upgraded, Block 3, version of Boeing's AH-64D Apache Longbow for reconnaissance and attack missions. Boeing remanufactured 284 AH-64As to Block 1 AH-64Ds and will complete delivery of further 217 aircraft remanufactured to Block 2 standard in August 2006. Beginning in late 2007, the US Army plans to begin upgrading all of its AH-64Ds to a common Block 3 configuration. The army also plans to rebuild 218 Reserve and National Guard AH-64As as D models.

The Block 3 upgrade is expected to include an uprated transmission, more-durable GE T700-701D engines, longer-life composite main-rotor blades, fly-by-wire flight controls, assisted target recognition, digital network connectivity and unmanned air-vehicle control. Other Comanche technologies may be added. The Block 3 AH-64D will have increased mission weight, higher payload and improved performance.

Block 2 deliveries began in February 2002. The upgraded aircraft features improved avionics and communications and Lockheed Martin's Arrowhead modernised target acquisition/designation and pilot night-vision system, which will be fielded beginning in June 2005. A main rotor blade-fold kit has been developed to make the AH-64D more easily deployable by air.

The AH-64D is competing against the Bell AH-1Z for a 30-aircraft Taiwanese requirement, and is a contender for Turkey's re-opened competition for 50 off-the-shelf attack helicopters. Greece ordered 12 AH-64Ds, plus four options, in 2003 and Kuwait has ordered 16 for delivery from 2005, when Israel will begin receiving 13 Apache Longbows. Japan's plan is to acquire 55 Fuji-assembled

AH-64Ds beginning in 2006 is under review. AgustaWestland delivered the last of 67 Apache AH1s (Rolls-Royce Turbomeca RTM322-powered AH-64Ds) to the British Army in July.

Boeing delivered the first production CH-47F Chinook to the US Army in July, having begun flight testing the first of two development prototypes in June 2001. The US Army plans to upgrade more than 300 CH-47Ds to F standard and buy additional new-build helicopters. The CH-47F has reduced vibration, integrated avionics and uprated, digitally controlled engines that improve performance and reduce operating costs. Initial aircraft are being remanufactured, but new-build airframes will be used beginning in 2006.

Delivery of additional new-production CH-47Fs to the US Army will begin in April 2006, against an order for an initial seven of up to 50 new Chinooks. Also beginning in 2006, CH-47Fs will be delivered with a version of the Rockwell Collins Common Aviation Architecture System glass cockpit developed for the US Army's special-operations MH-47G – the first of which was delivered in May. The US Army plans to upgrade around 70 MH-47Ds and Es, and CH-47Ds, to MH-47G standard.

Boeing and MD Helicopters (MDHI) have agreed to jointly offer the MH-6 Mission Enhanced Little Bird (MELB) for the US army's planned 368-aircraft light armed reconnaissance helicopter programme. MDHI acquired the MD 500 line, on which the MH-6 is based, from Boeing in the early 1990s. Some 50 US Army special-operations A/MH-6J Little Birds are being upgraded to MH-6M MELB configuration with six-blade main rotor, four-blade tail rotor and glass cockpit, among other improvements.

## EUROCOPTER [www.eurocopter.com](http://www.eurocopter.com)

<b>EC120B Colibri</b>	1,715/1,800	11.52	150/120	9,250/7,600	1/4	1 x TM Arrius 2F	504	
	965	10	710	17,000	750*			
<b>AS550C3 Fennec</b>	2,250/2,800	12.94	155/134	12,710/10,560	1/5	1 x TM Arriel 2B	847	
	1,230	10.69	645	15,590	1,020*			
<b>EC130B4 Fennec</b>	2,400/2,800	12.64	155/127	10,720/8,740	1/6-7	1 x TM Arriel 2B1	847	
	1,369	10.69	-	16,500	1,031*			
<b>AS555AN Fennec</b>	2,600	12.94	150/118	6,560/2,460	1/5	2 x TM Arrius 1A	520	
	1,476	10.69	695	12,470	1,124*			
<b>EC635</b>	2,835/2,900	12.19	140/138	10,000/7,200	1-2/6-7	2 x P&WC PW206B2	621	