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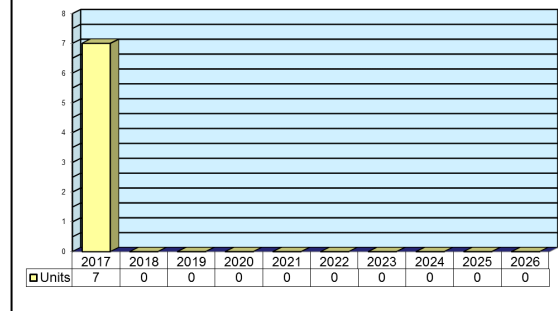
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## Bell 206

### Outlook

- Bell is terminating production of the 206L-4 LongRanger in mid-2017
- The 206 has long been a niche product; Bell's own Model 407 offers better performance and a bigger payload at only a slightly higher price

Unit Production Forecast  
2017-2026



### Orientation

**Description.** Family of single- and twin-engine, five- to seven-seat light commercial and military utility helicopters.

**Sponsor.** Bell Helicopter.

**Status.** Model 206L-4 LongRanger IV in production.

**Total Produced.** Through September 2016, Bell and its licensees delivered approximately 7,230 Model 206 helicopters, not including TwinRanger retrofits and OH-58s.

**Application.** Aerial surveillance, police and paramilitary operations, emergency medical services (EMS), pipeline and power line monitoring, media reporting, corporate and charter passenger carriage, and flight training.

**Price Range.** 206L-4 LongRanger IV, estimated at \$2.55 million.

**Bell 206**Bell 206L-IV

Source: Bell Helicopter

**Contractors****Prime**

<b>Bell Helicopter Textron Canada Ltd</b>	<a href="http://www.bellhelicopter.com">http://www.bellhelicopter.com</a> , 12 800 rue de l'Avenir, Mirabel, Quebec, Canada, Tel: + 1 (450) 437-3400, Fax: + 1 (450) 437-6010, Prime
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**Subcontractor**

<b>Aeronautical Accessories Inc, a Bell Helicopter Brand</b>	<a href="http://www.aero-access.com">http://www.aero-access.com</a> , Box 3689, Bristol, TN 37625 United States, Tel: + 1 (423) 538-5151, Fax: + 1 (423) 538-8469 (Wire Strike Protection System; Fuel Filler Tube)
<b>LP Aero Plastics Inc</b>	<a href="http://www.lpaero.com">http://www.lpaero.com</a> , 1086 Boquet Rd, Jeannette, PA 15644-4707 United States, Tel: + 1 (724) 744-4448, Fax: + 1 (724) 744-7372 (Windshields)
<b>Rockwell Collins Inc</b>	<a href="http://www.rockwellcollins.com">http://www.rockwellcollins.com</a> , 400 Collins Rd NE, Cedar Rapids, IA 52498 United States, Tel: + 1 (319) 295-1000, Fax: + 1 (319) 295-5429 (IFR Autopilot; APS-851H Digital Autopilot)
<b>Rolls-Royce Corp</b>	<a href="http://www.rolls-royce.com/northamerica/na/">http://www.rolls-royce.com/northamerica/na/</a> , 2001 S Tibbs Ave, Indianapolis, IN 46206 United States, Tel: + 1 (317) 230-2000, Fax: + 1 (317) 230-4020 (250-C30P; 250-C20J)

Contractors are invited to submit updated information to Editor, International Contractors, Forecast International, 22 Commerce Road, Newtown, CT 06470, USA; [rich.pettibone@forecast1.com](mailto:rich.pettibone@forecast1.com)

**Technical Data****(206L-4)**

**Design Features.** Single-main-rotor helicopter with twin-blade semi-rigid rotor. Engine and transmission mounted overhead just aft of passenger compartment. Conventional all-metal fuselage with single tailboom

incorporating small horizontal stabilizers. Tail unit carries twin-blade rotor on port side, with vertical and dorsal fins for lateral control. Fixed skid-type landing gear; pop-out floats available.

**Bell 206**

	<u>Metric</u>	<u>U.S.</u>
<b>Dimensions</b>		
Length overall(a)	13.0 m	42.7 ft
Fuselage length(b)	10.55 m	34.6 ft
Overall height (top of rotor head)	3.1 m	10.3 ft
Main rotor diameter	11.3 m	37 ft
Tail rotor diameter	1.65 m	5.4 ft
Main rotor blade chord	0.30 m	1.0 ft
<b>Weight</b>		
Empty, standard configuration	1,091 kg	2,407 lb
Standard max gross weight	2,022 kg	4,450 lb
Useful load	927 kg	2,043 lb
External load	907 kg	2,000 lb
<b>Performance</b>		
Max cruise speed(c)	207 kmph	112 kt
Service ceiling	6,100 m	20,000 ft
Hover ceiling (ISA @4,450 lb)		
IGE	3,050 m	10,000 ft
OGE	1,984 m	6,510 ft
Range(d)	600 km	324 nm
<b>Propulsion</b>		
206L-4 LongRanger IV	(1)	Rolls-Royce 250-C30P turboshaft rated 366 kW (490 shp) at takeoff.

**Seating**

206L-4 LongRanger IV: seven seats – three rows of two, two, and three.

(a) With rotors turning.

(b) Including tailskid.

(c) At 5,000 ft (1,525 m) and 4,000-lb MTOW (1,818 kg).

(d) With max fuel and max payload at S/L.

## Variants/Upgrades

**206A JetRanger.** The original 206A was powered by an Allison 250-C18 turboshaft and entered the commercial market in 1967, prior to development of the OH-58 Kiowa. A total of 685 were produced, including 68 for military customers.

**206B JetRanger.** Bell replaced the 206A with the 206B JetRanger in 1972. Total of 1,536 produced, including 155 for military customers.

**206B-2 JetRanger II.** Introduced in 1976, the JetRanger II was the first Bell single to be powered by the Allison Model 250-C20.

**206B-3 JetRanger III.** The JetRanger III followed in August 1977, powered by the improved 250-C20B engine. Total of 2,237 units produced, including 26 for military customers. Agusta also produced approximately 309 aircraft.

**206L LongRanger.** Certificated in 1975, the initial LongRanger variant featured a lengthened (2.667-ft)

fuselage with two extra seats and large, port-side double doors offering a 5-foot-wide opening that allowed easy admission of bulky cargo or two litters if the machine was configured for EMS duty. Power was provided by the Model 250-C20B rated 420 shp. A total of 154 aircraft were produced for the civil market, plus 16 for military customers.

**206L LongRanger II.** Certificated in 1981, powered by uprated 250-C28B rated 435 shp. Changes included a new transmission, new engine cowlings, a firewall, engine mounts, and an engine deck area structure; a new free-wheel unit, input shaft, and forward tail rotor drive shaft; and a new engine oil system, oil tank, cooler, and transmission duct. A total of 509 were produced for the civil market through 1983, plus 127 for the military market.

**206L-3 LongRanger III.** Introduced in 1982, powered by an Allison Model 250-C30P rated 650 shp.

## Bell 206

Options included an inertial particle separator, an environmental control unit, a litter, and pop-out floats. Replaced by LongRanger IV at the end of 1992. Total production was 185 helicopters.

**206L-4 LongRanger IV.** Bell began deliveries of the 206L-4 in 1992, fitted with a more powerful (366-kW / 490-shp) long-life Allison Model 250-C30P. Featured an uprated transmission, permitting 300-pound increase in maximum gross weight. Offered better hot/high performance, greater payload capability, and lower overall maintenance costs.

**TH-57 SeaRanger.** Between 1968 and 1985, the U.S. Navy purchased 173 TH-57 versions of the 206A/B JetRanger for use as helicopter basic trainers.

**TH-206/TH-67.** In 1993, the U.S. Army chose Bell's TH-206, a modified 206B-3, for its New Training Helicopter (NTH) requirement. The service awarded

Bell \$85 million for 102 aircraft, designated TH-67 Creeks, to replace Bell TH-1s. The contract included nine cockpit trainers and options for 55 more aircraft, 35 of which were converted to firm orders. Deliveries were completed by late 1995. The Army procured an additional 38 TH-67s with FY01-FY03 funds.

**TwinRanger.** Tridair Helicopters Inc of Costa Mesa, California, developed the Gemini ST (TwinRanger), a twin-engine version of the Bell 206L-3 LongRanger III, powered by Rolls-Royce 250-C20Rs in place of the standard single 250-C30. Supplemental Type Certificate (STC) obtained in February 1993. Through 1996, Tridair completed only three Gemini STs. Bell itself completed about a dozen TwinRangers in Mirabel, Québec, Canada, but reportedly found buyers for only four.

## Program Review

**Background.** The JetRanger/LongRanger family of single-turbine helicopters was developed by Bell in the aftermath of the company's Light Observation Helicopter loss to Hughes in 1964. Bell quickly launched development of a commercial light single directly related to its losing OH-4 candidate, the Model 206, in 1965. First flight occurred in January 1966, and first deliveries were made a year later. Meanwhile, the U.S. Navy selected the Bell 206 to fill a requirement for a primary helicopter trainer, and in 1967 it procured its first 40 units, designated TH-57A. The Navy purchased another 133 aircraft from FY81 through FY85. The U.S. Army would subsequently issue a contract to Bell in 1968 for the OH-58A advanced scout helicopter, a militarized version of the original JetRanger. Bell eventually produced a total of 2,288 OH-58s.

To expand the aircraft's export potential, Bell licensed Italy's Agusta to produce the type. Agusta began production of the AB206A in 1965. In 1971, deliveries of the improved AB206B began. In a steady progression, the 206L LongRanger was certificated in September 1976 and the JetRanger III in August 1977.

The 206L LongRanger II became available in August 1978, followed by first deliveries of the 206L-3 LongRanger III in 1982.

To prepare for large-scale production of the V-22 Osprey, Bell shifted assembly and manufacture of the 206B/L models to the Bell Helicopter Canada plant in Mirabel in 1986.

### *International Production*

Agusta delivered its first AB206A in 1967. The Italian company switched to the AB206B in 1972 and to the AB206B-3 JetRanger III in 1978. Agusta sold 140 AB206s to the Italian Army, and military export customers included Austria (13), Finland (1), Greece (1), Iran (154), Libya (6), Malta (1), Morocco (8), Oman (4), Saudi Arabia (20), Spain (1), Sweden (50), Tanzania (2), Turkey (15), Uganda (4), United Arab Emirates (6), and Zambia (5).

Commonwealth Aircraft Corp of Australia produced 44 206Bs for domestic military requirements after acquiring 12 off the Bell line.

## Timetable

<u>Month</u>	<u>Year</u>	<u>Major Development</u>
	1965	Model 206A design completed
Jan	1966	First flight of Model 206A
End	1967	Agusta begins 206A licensed program
Early	1971	Initial 206B JetRanger II deliveries
	1972	Initial Agusta-built JetRanger II deliveries
Sep	1973	206L LongRanger announced
Sep	1974	206L prototype first flight

**Bell 206**

<u>Month</u>	<u>Year</u>	<u>Major Development</u>
Sep	1975	206L certificated
Feb	1977	JetRanger III announced
Aug	1977	JetRanger III deliveries begin
Aug	1978	206L LongRanger II deliveries begin
Late	1978	Initial Agusta-built JetRanger III, 206L LongRanger deliveries
Dec	1981	Certification of LongRanger III
	1986	206B/L production transferred to Canada
Dec	1992	LongRanger 206L-4 deliveries begin
Early	1994	Model 407 enters flight testing
	2010	Production of 206B model terminated
	2016	Continued production of the LongRanger
Mid	2017	Planned termination of production

**Worldwide Distribution/Inventories****Military Only (as of April 2017)**

<b>Operator</b>	<b>Designation</b>	<b>Quantity</b>
Albania Air Force	AB206A	5
Argentina Army	206L IV	5
Australia Army	206B	31
Bangladesh Air Force	206L	6
Brazil Air Force	206B	1
Brazil Navy	206B	16
Brunei Air Force	206B	3
Bulgaria Air Force	206B	4
Bulgaria Air Force	206B III	3
Cameroon Air Force	206B/L III	3
Canada CS	206B III	12
Chile Air Force	206B	4
Chile Navy	206B	3
Colombia Air Force	206B III	12
Colombia Air Force	TH-67	10
Croatia Air Force	206B	8
Ecuador Air Force	TH-57	7
Ecuador Navy	206B	1
Ecuador Navy	TH-57	4
Greece Army	AB206B	11
Guatemala Air Force	206L	1
Guyana Air Force	206B	2
Iran Air Force	AB206A	2
Iran Army	AB206A	3
Iraq Army	206B	2

**Bell 206**

Operator	Designation	Quantity
Iraq Army	206B III	5
Iraq Army	AB206B	3
Israel Air Force	206B	1
Italy Army	AB206BIII	33
Jamaica Air Force	206B III	2
Japan Coast Guard/Maritime Safety Agency	206B III	3
Korea Republic of (South) Navy	206B	2
Lesotho Defense Force	206	1
Macedonia Air Force	205B III	4
Mexico Air Force	206B III	21
Mexico Air Force	206L IV	11
Morocco Air Force	AB206A	8
Morocco Air Force	AB206B	14
Myanmar Air Force	206B III	2
Nepal Army Air Wing	206L II	2
Nicaragua Air Force	206B III	1
Nigeria Navy	206L	1
Oman Air Force	AB206A	4
Pakistan Army	206	19
Peru Navy	206B	2
Senegal Air Force	206B II	2
Slovenia Army	206B	4
Sri Lanka Air Force	206A	2
Sri Lanka Air Force	206B	2
Taiwan Army	TH-67	29
Thailand Army	206B	20
Turkey Army	AB206A	22
Uganda Air Force	206B	4
United States Army	TH-67	165
United States Navy	TH-57B	44
United States Navy	TH-57C	68
Venezuela Army	206B	3
Venezuela National Guard	206B	9
Venezuela National Guard	206L	1
Venezuela Navy	206B	1
Venezuela Navy	TH-57	1
Yemen Air Force	AB206B	1

## Forecast Rationale

Bell Helicopter plans to terminate production of the 206L-4 LongRanger during the first half of 2017. The seven-seat LongRanger remained in production long after production of its smaller sibling, the iconic five-seat Bell 206B, ended in 2010, but sales have been declining for years.

The LongRanger complements the more powerful seven-seat Model 407 in Bell's product line. The cabin dimensions of the two models are nearly identical, but the Model 407 is a newer design that offers a higher payload and speed, albeit at a higher cost. Operators are willing to pay a premium for higher performance, and the 407 has long outsold the older LongRanger.

In recent years the primary market for the LongRanger has been existing fleet operators looking to replace

aircraft or to expand their inventory of the type. For example, Air Medical Group Holdings (AMGH) has continued to order LongRangers as part of its fleet upgrade program. The company was an existing operator of a fleet of 100 LongRangers for its Missouri-based Air Evac Lifeteam subsidiary. AMGH signed a contract for 20 more aircraft in January 2014, then ordered four more in March 2015. It added another eight the following October.

Bell's decision to terminate production as existing orders are filled makes sense. Between the 407 and Bell's new 505 entry-level single, the manufacturer has the single-engine turbine segment well covered.

## Ten-Year Outlook

ESTIMATED CALENDAR YEAR UNIT PRODUCTION												
Designation or Program	Thru 2016	High Confidence				Good Confidence			Speculative			Total
		2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	
<b>Bell Helicopter Textron Canada Ltd</b>												
<b>206 L III/L IV &lt;=&gt; 250 -C 30P</b>												
	891	7	0	0	0	0	0	0	0	0	0	7
<b>Total</b>	891	7	0	0	0	0	0	0	0	0	0	7