Helicopters Bell 206



The <u>Bell</u> Model 206 JetRanger is one of the most successful helicopter designs in the world. The design originated in the mid-1960s as an entry in a <u>US Army</u> competition for a light observation (scout) helicopter. Although Bell lost the contract, the Model 206 "JetRanger" entered the civilian market in 1967. Although the Model 206 has been overhauled three times, the basic shape and design are unchanged since 1967. The JetRanger is popular with news media for traffic and news reporting. The <u>US Army</u>, <u>US Navy</u>, <u>Marines</u>, and <u>Coast Guard</u> use 206 variants known as the TH-57 "Sea Ranger" in the Navy and Marines and the TH-67 Creek in the Army as a trainer for helicopter students.

The Bell 206 is a two-rotor, turbine powered helicopter with a conventional, two-bladed tail rotor. The aircraft uses hydraulic flight controls. The Model **206-B3** is the "original" five-seat model, while the **206-L4** is the "stretch" seven-seat version (a.k.a., "LongRanger"). Both versions have two individual seats up front and a three seat bench in the back; the LongRanger adds two rear-facing seats in between the front and rear seats. The model 206s is typically flown by a single pilot, who sits in the front right seat.

The Model 206 design has yielded a number of derivative aircraft, including the <u>407</u> and military <u>OH-58 Kiowa</u>. The 407 and <u>OH-58D</u> use a newer, 4-bladed <u>articulated rotor system</u> that offers improved performance while reducing vibration and noise.

The ICAO designator for both the JetRanger and the LongRanger as used in flight plans is B06.

Specifications (206-B3)

General Characteristics

- Crew: 1
- Capacity: 4 (206-B3)
- Length: 39 ft 1 in (11.9 m)
- Main rotor diameter: 33 ft 4 in (10.16 m)
- Height: 2.83 m (9 ft 4in)

- Main rotor area: 872 ft² (81.1 m²)
- Empty: 1,632 lb (742 kg)
- Loaded: 3,200 lb (1,452 kg)
- Maximum takeoff: 3,350 lb (1,520 kg)
- Powerplant: 1x Allison 250-C20J, 420 shp (313 kW)

- Maximum speed: 139 mph (224 km/h)
- Range: 437 miles (704 km)
- Service ceiling: 13,500 ft (4,115 m)
- Rate of climb: 1,280 ft/min (390 m/min)
- Main rotor loading: 4 lb/ft² (18 kg/m²)
- Power/Mass: 0.26 hp/lb (0.42 kW/kg)







CHC Bell 206 JetRanger Bell 206 L4

Bell 206 B3

Universal Helicopters Bell 206

Universal Helicopters is a commercial helicopter company located in <u>Newfoundland and Labrador</u>, <u>Canada</u>. Universal Helicopters currently operates a fleet of:

- 2 <u>Bell 407</u>
- 10 Bell 206 LR
- 1 <u>Bell 206 L4</u>
- 2 Eurocopter AS350 BA
- 1 Eurocopter AS350 B

Universal Helicopters is a 100% owned Newfoundland Company. While operating primarily in <u>Newfoundland</u> and <u>Labrador</u> with operations sometimes extending into the <u>Ungava Peninsula</u> and the <u>Arctic</u>, Universal Helicopters holds an International Operating Certificate and has completed several contracts in <u>Greenland</u>.

Universal Helicopters corporate head office, main stores and accounting services are situated in Goose Bay, Labrador with other bases situated at St. John's, Pasadena and Gander. Each location has permanent base personnel and hangar support facilities for year round operations and maintenance.



Canadian Helicopters Bell 206 JetRanger







Bell 212 (C-FOKV) registered to Canadian Helicopters at Cambridge Bay Airport, Nunavut, Canada



UH-1N's lifting from a field outside Baghdad on April 10, 2003

The **Bell 212** (also known as the Twin Two-Twelve and Twin Huey) is a medium military/civilian <u>helicopter</u> that first flew in 1968. The 212 has a fifteen seat configuration, with one pilot and fourteen passengers. In cargo configuration the 212 has an internal capacity of 6.23 m³ (220 ft³). An external load of 2,268 kg (5,000 lb) can be carried by the civilian model and 1,534 kg (3,383 lb) by the <u>United</u> <u>States military</u> version.

Based on the stretched fuselage <u>205</u>, the 212 was originally developed for the <u>Canadian Armed</u> <u>Forces</u> under the designation UH-1 which later became **CH-135**. The original order for the Canadian Armed Forces was 50 with an option for a further 20. At the same time the United States military services ordered 141 212's under the designation **UH-1N**.

By 1971 the 212 had been developed for commercial applications. Amongst the earliest uses of the 212 in civil aviation was by <u>Helikopter Service AS</u> of Norway to be used in support of offshore oil rigs. Today the 212 can be found used in logging operations, maritime rescue and resupply in the Arctic on the <u>Distant Early Warning Line</u> or <u>North Warning System</u>.

The 212's main rotor is powered by a PT6T-3 Turbo Twin Pac made up of two Pratt & Whitney Canada PT6T turboshaft engines. They are capable of producing up to 1,342 kW (1,800 shp). Should one engine fail the remaining engine can deliver 671 kW (900 shp) for 30 minutes or 571 kW (765 shp) enabling the 212 to maintain cruise performance at maximum weight.

On the 6th March 1972 <u>Hendrick V. Gorick</u> of the US Navy Antarctic Development Squadron Six jumped at an altitude of 6,248 m (20,500 ft) from a UH-1N helicopter. In doing so he set a record for parachute jumping over the Antarctic continent.

In 1979, with the purchase of eight by the Civil Air Authority, the 212 became the first U.S. helicopter sold in <u>PRC</u>.

The <u>ICAO</u> designator for this aircraft as used in a <u>flight plan</u> is B212.

Specifications civil version





UH-1N on the ground at Camp Fallujah, Iraq in July of 2004

General characteristics

- Crew: 1
- Capacity: 14
- Length: overall including main rotor 17.46 m (57 ft 3 1/4 in)
- Length: fuselage 12.92 m (42 ft 4 3/4 in)
- Main rotor diameter: 14.69 m (48 ft 2 1/4 in)
- Height: 4.39 m (14 ft 4 3/4; in)
- Main rotor area: 169.5 m² (1,825 ft²)
- **Empty:** 2,517 kg (5,549 lb)
- Maximum takeoff: 5,080 kg (11,200 lb)
- Powerplant: 1x Pratt & Whitney Canada PT6T-3 Turbo Twin Pac 1,342 kW (1,800 shp)

- Maximum speed: 203 km/h (109 knots) at sea level
- Range: 439 km (237 nautical miles) at sea level with no reserves
- Service ceiling: 5,305 m (17,400 ft)
- Rate of climb: 532 m/min (1,745 ft/min)

Bell 222

A Bell 222



Bell 222U

The **Bell 222** is a <u>helicopter</u> built by <u>Bell Helicopter Textron</u>. Similar in size to the <u>UH-1 Huey</u>, it was designed for purely civilian use. It has twin <u>turboshaft engines</u>, a <u>streamlined</u> shape, and is available with a retractable <u>undercarriage</u>, though the utility-oriented **222U** features fixed skids.

Trivia

The Bell 222 was made famous by the television show <u>Airwolf</u> where the series' main character is a helicopter based on the 222 with fictional high-tech modifications such as powerful weapons and jet engines making it capable of <u>supersonic</u> speeds.

Specifications (222B)

General Characteristics

- Crew: 1-2
- Capacity: 7-8
- Length: 42 ft 2 in (12.85 m)

- Main rotor diameter: 42 ft 0 in (12.8 m)
- Height: 3.51m (11.6 ft)
- Main rotor area: 1,384 ft² (129 m²)
- Empty: 4,900 lb (2,223 kg)
- Loaded: 8,250 lb (3,742 kg)
- Maximum takeoff: 8,400 lb (3,818 kg)
- Powerplant: 2x Avco Lycoming LTS 101-650C-2, 684 shp (510 kW) each

- Maximum speed: 174 mph (279 km/h)
- Range: 333 miles (532 km)
- Service ceiling: 15,800 ft (4,815 m)
- Rate of climb: 1730 ft/min (521 m/min)
- Main rotor loading: 6 lb/ft² (29 kg/m²)
- **Power/Mass:** 0.17 hp/lb (0.27 kW/kg)

Related content

Designation sequence:

<u>210</u> - <u>212</u> - <u>214</u> - **222** - **230** - <u>407</u> - <u>412</u> - <u>427</u>

Related development:

- Bell 230
- Bell 430

Similar aircraft:

- Bell 212
- Sikorsky S-76
- <u>Agusta A109</u>
- <u>Airwolf</u>

External links:

- Airliners.net: Bell 222 & 230
- <u>RTH.info: Bell 222 in aeromedical services</u> (in english and german

Bell 407



Bell 407 at Airport Niederrhein, Germany

The **Bell Model 407** is a civil utility helicopter, a derivative of the Bell Model 206-L4 "LongRanger". The 407 uses a 4-bladed rotor system with a rigid, composite rotor hub instead of the 2-bladed conventional rotor of the Model 206. The basic systems of the 407 are nearly identical to those in the 206-L4.

Purposes which bell 407 helicopters are frequently used for are for example:

- Tasks of police helicopters
- Duties in EMS services as aeromedical helicopter
- Sightseeing flights for tourists etc.
- Movie filming

Specifications

General Characteristics



Bell 407 at Hamburg / harbour temporary heliport, Germany

- Crew: one pilot
- Capacity: six passengers
- Length (with main rotor): 41 ft 8 in (12.70 m)
- Main rotor diameter: 35 ft 0 in (10.67 m)
- Height: 11 ft 8 in (3.56 m)
- Main rotor area: 962 ft² (89 m²)
- Empty: 2,598 lb (1,178 kg)
- Loaded: 2268kg (5000lb)
- Maximum takeoff: 5,000 lb (2,495 kg)

• Powerplant: 1x Allison 250-C47 turboshaft, 520 kW (700 shp)

Performance

- Maximum speed at Sea Level: 237km/h (128kt)
- Maximum speed at 4,000 feet: 243km/h (131kt)
- Range: 360 miles (577 km)
- Service ceiling: 18,690 ft (5,698 m)
- Rate of climb: ft/min (m/min)
- Main rotor loading: lb/ft² (kg/m²)
- Power/Mass: hp/lb (kW/kg)

External link

Bell 407 on manufacturer's site

Related development: Bell 206

Comparable aircraft:

Designation sequence: <u>309</u> - <u>400</u> - <u>406</u> - **407** - <u>409</u> - <u>412</u> - <u>427</u>



Bell 412 (VH-NSP) of <u>Fire and Emergency Services Authority of Western Australia</u> operated by <u>CHC</u> <u>Helicopter</u>



Norwegian Bell 412SP helicopters taking part in the NATO exercise Strong Resolve 2000

Bell 412

The **Bell 412** is an utility helicopter manufactured by <u>Bell Helicopter Textron</u>. It is a further development of the <u>Bell 212</u> model, the major difference being the composite four-blade main rotor.

The development began in the late 1970s and a converted Bell 212 flew first time in August 1979. The initial model was certified in January 1981 with the deliveries commencing in the same month. It was followed by the **412SP** (Special Performance) version featuring larger fuel capacity, higher takeoff weight and more optional seating arrangement. In 1991 **412HP** (High Performance) variant with improved transmission replaced the former version. The current production version, **412EP** (Enhanced Performance), is equipped with a dual digital automatic flight control system.

Specifications (412HP)

General Characteristics

- Crew: 1
- Capacity: 14
- Length: 12.7 m (41 ft 9 in)
- Main rotor diameter: 14.02 m (46 ft 0 in)
- Height: 4.57 m (15 ft 0in)
- Main rotor area: 154.4 m² (1662 ft²)
- Empty: 3,066 kg (6,759 lb)
- Loaded: kg (lb)
- Maximum Take-Off Weight: 5,397 kg (11,900 lb)
- **Powerplant:** 1x Pratt & Whitney Canada PT6T3BE Turbo Twin-Pac, 1,342 kW (1,800 shp)

Performance

- Maximum speed: 241 km/h (150 mph)
- **Range:** 745 km (463 miles)
- Service ceiling: m (ft)
- Rate of climb: m/min (ft/min)
- Main rotor loading: kg/m² (lb/ft²)
- Power/Mass: kW/kg (hp/lb)

Bell 427

The **Bell Model 427** is a twin-engine civil utility <u>helicopter</u>, a derivative of the Bell <u>Model 206-L4</u> "LongRanger" and <u>Model 407</u>. Like the 407, the 427 uses a 4-bladed rotor system with a rigid, composite rotor hub instead of the 2-bladed conventional rotor of the Model 206. The major difference between the 427 and 407 is the twin engine configuration, versus the single engine of the 407. The 427 offers 8-place seating (two individual seats in the front and a two 3-place bench seats in a club configuration in back) and has systems nearly identical to the 407.

The 427 was replaced by the improved 429

Specifications

General Characteristics

- Crew: one pilot
- Capacity: seven passengers
- Length (with main rotor): 42 ft 6 in (13.0 m)
- Main rotor diameter: 37 ft 0 in (12.1 m)
- Height: 10 ft 8 in (3.26 m)
- Main rotor area: 962 ft² (89 m²)
- Empty: 3,875 lb (1,758 kg)
- Loaded: lb (kg)
- Maximum takeoff: 6,500 lb (2,971 kg)
- Powerplant: 2x Pratt & Whitney Canada PW207 D turboshafts, 550 shp (410 kW) (MCP)

- Maximum speed: 136 mph (251 km/h)
- Range: 387 miles (716 km)
- Service ceiling: 10,000 ft (3,048 m) ISA
- Rate of climb: ft/min (m/min)
- Main rotor loading: lb/ft² (kg/m²)
- Power/Mass: hp/lb (kW/kg)

External link

Bell 427 on manufacturer's site

Related development: Bell 206 - Bell 407 - Bell 429

Comparable aircraft:

Designation sequence: <u>407</u> - <u>409</u> - <u>412</u> - <u>427</u> - <u>429</u> - <u>430</u> - <u>533</u>