

AIRCRAFT CRASH - ECUADOR

DTG 17 FEB 81, Approx. 0700 Local  
TYPE UH1H, 1973 Model  
TAIL NUMBER 73 - 21711  
CALLSIGN ARMY 711  
CREW SGFOIA3  193rd INF BDE  
193rd INF BDE  
SVC CO 7th SFG  
APPROX. LOCATION 0422 South 7911 West ( Was on flight between LOJA,  
Ecuador and VALOR, Peru )

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Reflecting the fact that Bell Helicopter Company was the largest operating division of Textron Inc, the company's name was changed to Bell Helicopter Textron on 1 January 1976.

Production at Fort Worth is concerned primarily with military and commercial single- and twin-engined versions of the turbine-powered UH-1 Iroquois, the AH-1 HueyCobra armed helicopter developed from the UH-1, and military and commercial versions of the Model 206 JetRanger. The Bell 47, in continuous production in the USA for more than 25 years, after receiving the first helicopter Approved Type Certificate from the CAA on 8 March 1946, is no longer in production by Bell.

Versions of the UH-1 are built under licence by Agusta in Italy and Fuji in Japan (which see). Bell also has licence agreements with the Republic of China, covering co-production of Model 205 general-purpose helicopters, and with the government of Australia, covering the production of Model 206B-1 Kiowas for the Australian Army. Prime contractor in Australia is the Commonwealth Aircraft Corporation (which see).

Since 1958, when Bell's Model XV-3 tilt-rotor research aircraft achieved the first full in-flight conversion by a machine of this configuration, Bell engineers have continued research in this field and have completed recent US Army/USAF/NASA contracts to investigate proprotor and folding proprotor technology. The contracts included manufacture and wind tunnel testing of examples of both types of rotor.

Towards the end of 1972, Bell and one other company received contracts from NASA and the US Army for the design of a tilt-rotor VTOL research vehicle. In May 1973 Bell announced that its Model 301 proposal had been selected for development. Two examples were ordered, with the US Army designation XV-15.

During 1972 Bell achieved a major breakthrough in the elimination of vibration in helicopters with what is known as the nodalisation concept, flight test data and analytical results suggesting that 70 to 90 per cent vibration isolation was practicable. This concept is based on the scientific fact that any beam subjected to vertical vibratory forces, such as those induced by a rotor, will develop flexing to produce a wave form. Points of no relative motion, called the nodal

relative motion, are first... rotor-induced vibration. Flight tests of a Model 206 JetRanger with its fuselage suspended from a nodalised beam were so convincing that Bell decided to utilise this 'Noda-Matic' technique on new production helicopters, beginning with the Model 206L LongRanger and Model 214.

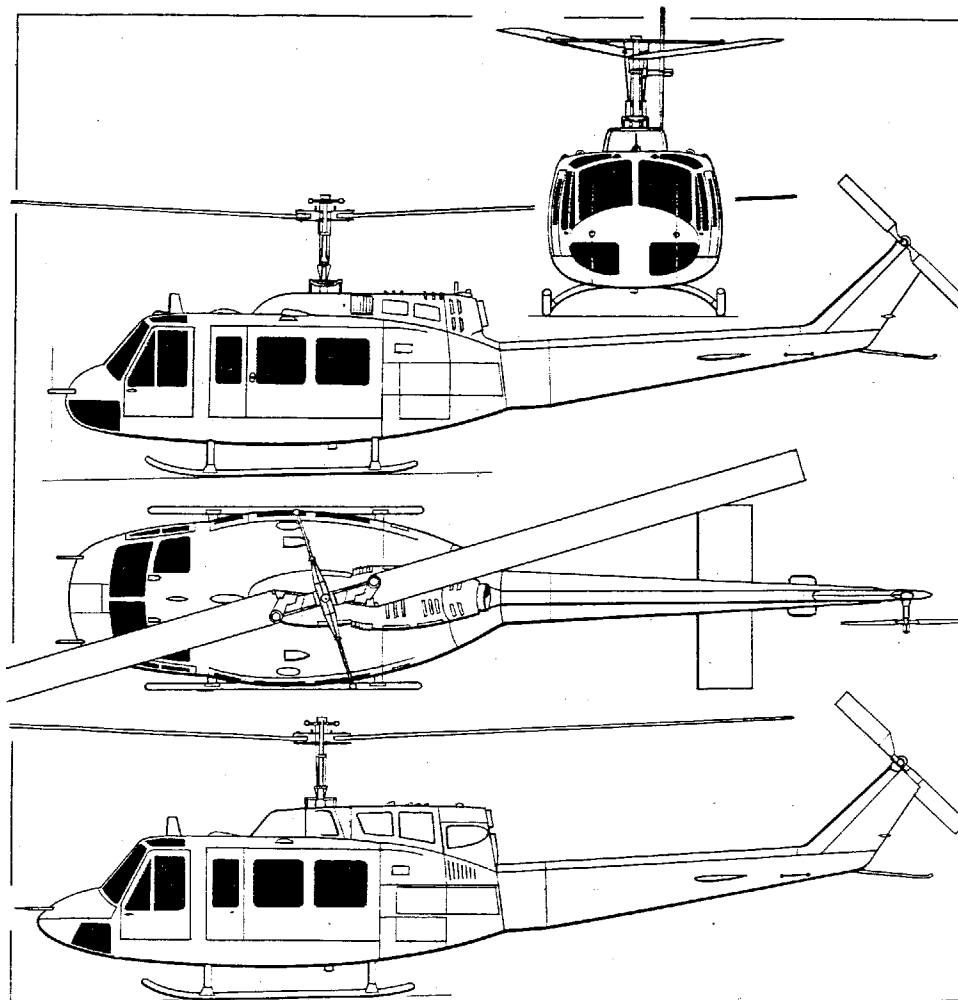
Bell Helicopter Textron is responsible for management of Bell Operations Corporation, newly formed to cooperate with the government of Iran in establishing a helicopter manufacturing industry in that country. Further details of this programme can be found under the entry for Iran.

Approximately 9,000 people were employed by Bell at the beginning of 1977. The company has produced more than 22,000 helicopters.

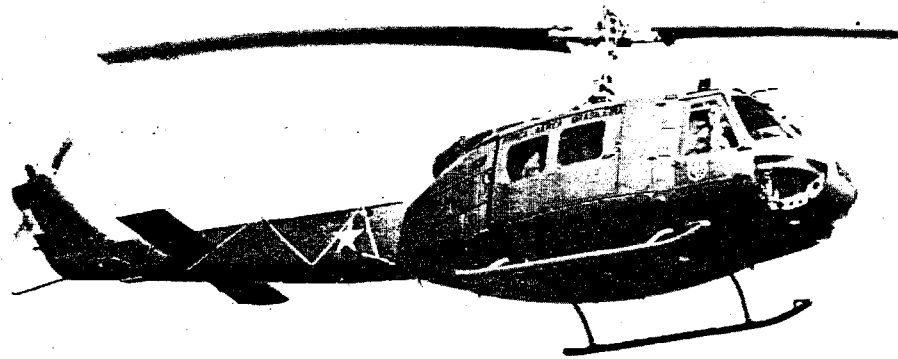
Canadian military designation: UH-1H Iroquois

Although basically similar to the earlier Model 204 (see 1971-72 *Jane's*), the Model 205 introduced a longer fuselage, increased cabin space to accommodate a much larger number of passengers, and other changes. The following military versions have been built:

**UH-1D.** This US Army version of the Model 205 Iroquois has an 820 kW (1,100 shp) Lycoming T53-L-11 turboshaft, 14.63 m (48 ft) rotor, normal fuel capacity of 832 litres (220 US gallons) and overload capacity of 1,968 litres (520 US gallons). Relocation of the fuel cells increases cabin space to 6.23 m<sup>3</sup> (220 cu ft), providing sufficient room for a pilot and twelve troops, or six litters and a medical attendant, or 1,815 kg (4,000 lb) of freight. First YUH-1D flew on 16 August 1961 and delivery to US



Bell UH-1H Iroquois, with additional side view of UH-1N (bottom) (Pilot Press)



Bell UH-1H Iroquois of the Brazilian Air Force (Ronaldo S. Olive)

Max level and cruising speed	110 knots (204 km/h; 127 mph)
Econ cruising speed at 1,735 m (5,700 ft)	110 knots (204 km/h; 127 mph)
Max rate of climb at S/L	488 m (1,600 ft)/min
Service ceiling	3,840 m (12,600 ft)
Hovering ceiling in ground effect	4,145 m (13,600 ft)
Hovering ceiling out of ground effect	335 m (1,100 ft)
Range with max fuel, no allowances, no reserves, at S/L	276 nm (511 km; 318 miles)

#### BELL MODEL 205A-1

The Model 205A-1 is a fifteen-seat commercial utility helicopter developed from the UH-1H, with 1,044 kW (1,400 shp) Lycoming T5313A turboshaft, derated to 932 kW (1,250 shp) for take-off. It is designed for rapid conversion for alternative air freight, flying crane, ambulance, rescue and executive roles. Total cargo capacity is 7.02 m<sup>3</sup> (248 cu ft) including baggage space in tailboom, with 2.34 m (7 ft 8 in) by 1.24 m (4 ft 1 in) door openings on each side of the cabin to facilitate loading of bulky freight. External load capacity in flying crane role is 2,268 kg (5,000 lb). The ambulance version can accommodate six litter patients and one or two medical attendants.

Normal fuel capacity is 814 litres (215 US gallons); optional capacity is 1,495 litres (395 US gallons).

The description of the Bell UH-1H applies also to the Model 205A-1, except for the following details:

**TYPE:** Fifteen-seat commercial utility helicopter.

**ELECTRONICS AND EQUIPMENT:** Standard equipment includes vertical gyro system, 5 in gyro attitude indicator, gyro compass, master caution panel, bleed air heater, force trim hydraulic boost controls, soundproof headliner, dual windshield wipers, cabin and engine fire extinguishers, and a first aid kit.

#### WEIGHTS:

Weight empty, equipped	2,370 kg (5,226 lb)
Normal T-O weight	4,309 kg (9,500 lb)
Max T-O weight, external load	4,763 kg (10,500 lb)

#### PERFORMANCE (at normal T-O weight):

Max level speed from S/L to 915 m (3,000 ft)	110 knots (204 km/h; 127 mph)
Max cruising speed at S/L	110 knots (204 km/h; 127 mph)
Max cruising speed at 2,440 m (8,000 ft)	96 knots (179 km/h; 111 mph)
Max rate of climb at S/L	512 m (1,680 ft)/min
Max vertical rate of climb at S/L	259 m (850 ft)/min
Service ceiling	4,480 m (14,700 ft)
Hovering ceiling in ground effect	3,170 m (10,400 ft)
Hovering ceiling out of ground effect	1,830 m (6,000 ft)
Range at S/L, at max cruising speed	270 nm (500 km; 311 miles)
Range at 2,440 m (8,000 ft) at max cruising speed, no reserves	298 nm (553 km; 344 miles)

#### BELL MODEL 206B JETRANGER II

In the Spring of 1971, Bell began delivery of the Model 206B JetRanger II, which subsequently replaced in production the lower-powered Model 206A JetRanger, of which 660 were delivered. Military 206B-1 Kiowas assembled in Australia are to Model 206B standard.

Power plant of the Model 206B JetRanger II is the Allison 250-C20 turboshaft, which Bell was able to install with minimal modification of the original airframe to meet requests for higher performance under hot-day/high-altitude conditions. This enabled Bell to offer modification kits to convert Model 206As to JetRanger II standard, simultaneously with production of new aircraft.

The uprated power plant increases power-limited air-

field units began on 9 August 1963. The UH-1D superseded in production for the US Army by the UH-1H, but 352 UH-1Ds were built subsequently under license in Germany for the German Army and Air Force. The contractor was Dornier.

**UH-1H.** Following replacement of the original T53-L-11 turboshaft by the 1,044 kW (1,400 shp) T53-L-13, the improved version of the Model 205 produced by Bell for the US Army was re-designated UH-1H. Deliveries of an initial series of 19 aircraft for the US Army began in November 1968. Subsequent orders included 300 more for the US Army in January 1971, and nine for the RNZAF. Final orders for a total of 560 UH-1Hs were placed in 1971-73. A add-on contract for 54 more UH-1Hs, valued at \$11.9 million, was awarded in September 1974, representing the final order for the US Army, and deliveries were completed in 1976. Production of the UH-1H continued in 1977 to satisfy export orders.

Under a licensing agreement concluded in 1969, the Republic of China produced 118 UH-1Hs for the Nationalist Chinese Army, with much of the manufacturing and assembly process being carried out at Taichung, Taiwan.

**UH-118.** Similar to UH-1H, for Mobile Command, Indian Armed Forces. First ten delivered on 6 March 1971. Originally designated CUH-1H.

**UH-1H.** It was announced on 4 November 1970 that a contract had been received from the USAF for 30 HH-1Hs (generally similar to the UH-1H) for use as local rescue helicopters. Deliveries were completed during

commercial Model 205A-1 is described separately. The following details refer specifically to the military UH-1H.

**TYPE:** Single-rotor general-purpose helicopter.

**ROTOR SYSTEM:** Two-blade all-metal semi-rigid main rotor with interchangeable blades, built up of extruded aluminium spars and laminates. Stabilising bar above rotor hub at right angles to main rotor blades. Underslung tail rotor with hub. Two-blade all-metal tail rotor of composite construction. Blades do not fold.

**DRIVE:** Shaft-drive to both main and tail rotors. Transmission rating 820 kW (1,100 shp). Main rotor rpm 294-320.

**STRUCTURE:** Conventional all-metal semi-monocoque structure.

**CONTROL SURFACE:** Small synchronised elevator on rear fuselage connected to the cyclic control to increase allowable CG travel.

**LANDING GEAR:** Tubular skid type. Lock-on ground handwheels and inflated nylon float-bags available.

**POWER PLANT:** One 1,044 kW (1,400 shp) Lycoming T53-L-13 turboshaft mounted aft of the transmission atop of the fuselage and enclosed in cowlings. Five interconnected rubber fuel cells, total capacity 832 litres (218 US gallons). Overload fuel capacity of 520 US gallons obtained by installation of kit comprising two 150 US gallon internal auxiliary fuel tanks interconnected with the basic fuel system.

**CAPACITY:** Cabin space of 6.23 m<sup>3</sup> (220 cu ft) plus sufficient room for pilot and 11-14 troops, or six stretcher and a medical attendant, or 1,759 kg (3,880 lb) of cargo. Crew doors open forward and are jettisonable.



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Referral Review by  
NIMA/DoD

C H I N C H I P E

LEYENDA

- PARROQUIAS O CASERIOS
- CABECERAS CANTONALES
- CAPITAL DE PROVINCIA
-  CAPITAL DE LA REPUBLICA
-  ESTACIONES DE RADIO
- LIMITE PROVINCIAL
- +++++ LIMITE INTERNACIONAL
- SISTEMA DE COMUICACIONES HF-BLI
- SISTEMA VHF

<b>E.R.T.T.E.</b>			
IX-1963	RED DE LAS COMUNICACIONES TELEGRAFICAS TELEFONICAS Y DE RADIO DEL ECUADOR		
ESC:1:1000000			
<u>REVISIONES</u>			
	Leonidas Carrera DIBUJADO POR	Alfonso Zabala DIRECTOR TECNICO	Capitan de Fragata Gabriel Jarrin DIRECTOR GENERAL

# Bell's 214ST:

the powerful new  
super transport  
getting ready to  
join the Bell  
Air Mobile team

A new, super transport helicopter, with more horsepower, increased troop carrying capacity, and able to deliver heavier loads faster and higher than ever... even on the hottest days... Bell's 214ST twin adds a whole new operational capability to military forces.

Now in test, the 19-place 214ST is being hailed as the advanced manpower, ordnance and logistics mover needed for the 1980s.

Joined with the 206 for reconnaissance and command and control, the AH-1 Cobra for fire support, and the UH-1H and 214B medium transports, this newest, most powerful Bell super transport presents an unequalled air mobile team for total force deployment in any weather, in any environment.

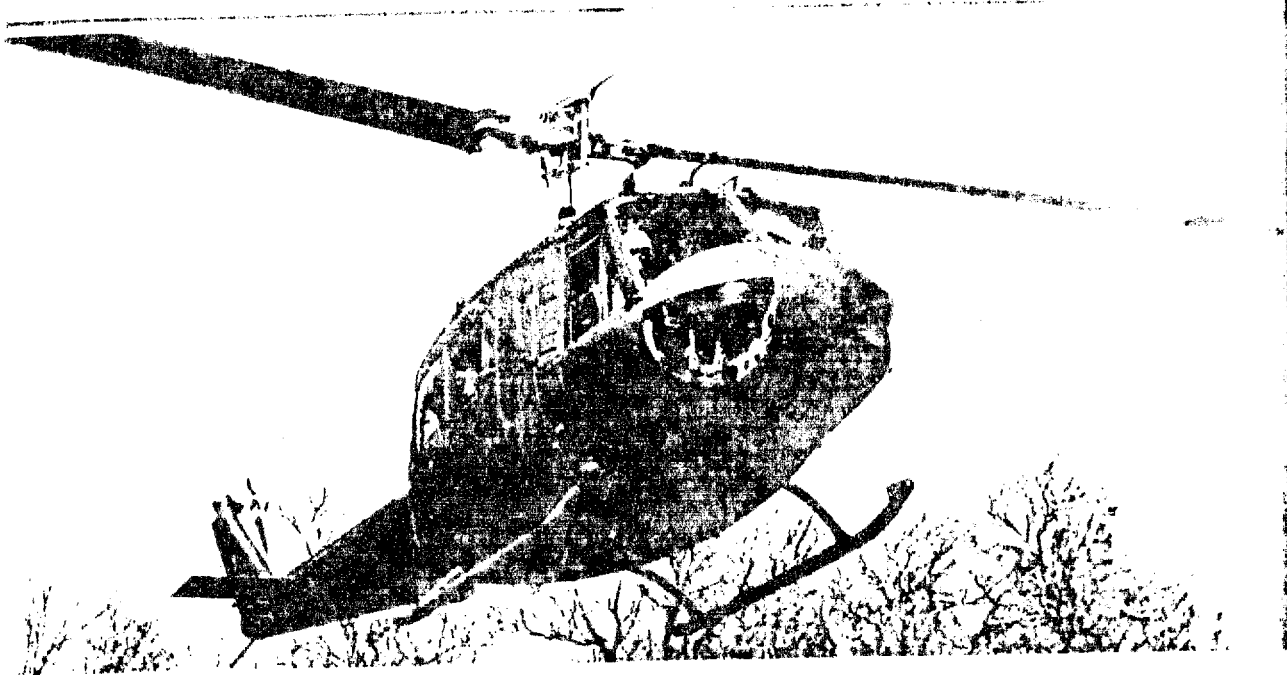


peacekeepers  
the world over  
depend on **Bell**  
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UH-1H (1973) TAIL\* 73-21711

17 FEB 81 @ 0700 LOCAL TIME

CREW:



SGFOIA3



First town to be visited:

1. Las Aradas

04 degrees, 21 minutes, 45 seconds South

79 degrees, 23 minutes, 50 seconds West

• Closer to the center of greatest interest:

2. La Laja

04 degrees, 26 minutes, 05 seconds South (4)

79 degrees 27 minutes, 30 seconds West

3. The four corners of the area to be searched:

✓ 1. 04 degrees, 27 minutes, 30 seconds South (2)  
79 degrees, 26 minutes, 25 seconds West

✓ 2. 04 degrees, 27 minutes, 30 seconds South (3)  
79 degrees, 24 minutes, 50 seconds West

✓ 3. 04 degrees, 30 minutes, 00 seconds South  
79 degrees, 24 minutes, 50 seconds West

✓ 4. 04 degrees, 30 minutes, 00 seconds South  
79 degrees, 26 minutes, 25 seconds West

4. Center of the area of greatest interest

1. 04 degrees, 28 minutes, 30 seconds South (1)  
79 degrees, 25 minutes, 40 seconds West