

Bell Helicopter **TEXTRON**

Bell Helicopter Textron Inc.
A Subsidiary of Textron Inc.

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OPERATIONS SAFETY NOTICE

17 JULY 1984

OSN 206-84-12

OSN **206L-84-9**

TO: ALL MODEL 206A/B, 206B-JRIII, 206B-1, 206L/L-1/L-3
AND TH-57A/B/C

SUBJECT: DUAL CONTROL-QUICK DISCONNECT KIT, P/N 206-706-127
(ALL DASH NUMBERS) SERVICE INSTRUCTIONS 206-67 AND
206-2024

INVESTIGATION OF A RECENT MODEL 206 HELICOPTER ACCIDENT, WHICH
RESULTED IN A FATALITY, REVEALED THAT LATERAL CYCLIC CONTROL
WAS LOST AS A RESULT OF AN IMPROPERLY INSTALLED COPILOT'S
QUICK-DISCONNECT CYCLIC STICK.

FLIGHT CREWS ARE CAUTIONED TO ASSURE QUICK REMOVAL FLIGHT
CONTROLS ARE PROPERLY INSTALLED PRIOR TO OPERATING THE
HELICOPTER.

THE INVESTIGATION IS CONTINUING. IF FURTHER PRECAUTIONS OR
MODIFICATIONS ARE CONSIDERED APPROPRIATE, YOU WILL BE ADVISED.



AVIATION



HIGHWAY



MARINE



RAILROAD



PIPELINE

Aviation Investigation Final Report

Location:	ENGLEWOOD, Colorado	Accident Number:	DEN84FA207
Date & Time:	July 2, 1984, 17:14 Local	Registration:	N3173L
Aircraft:	BELL 206B	Aircraft Damage:	Destroyed
Defining Event:		Injuries:	2 Fatal
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

WITNESSES STATED THE HELICOPTER ENTERED A 'HARD LEFT TURN' INTO A NEAR INVERTED POSITION BEFORE 'IT WENT DOWN HARD AND FAST.' INSPECTION DISCLOSED THE METAL CONNECTION FOR THE LEFT CYCLIC STICK WAS BROKEN IN HALF. (PLT WAS FLYING FROM LEFT SEAT.) EXAM OF THE CYCLIC STICK QUICK DISCONNECT LOCKING NUT REVEALED IT WAS HELD IN PLACE ON THE CONNECTOR BY 1 THREAD. PROPERLY INSTALLED, THE LOCKING NUT TIGHTENS DOWN OVER 6 THREADS ON THE CONNECTOR. WHEN BACKED OUT TO 1 THREAD, MOVEMENT OF THE CYCLIC WILL NOT NOT PRODUCE A CORRESPONDING CHANGE IN THE LATERAL CONTROL HYDRAULIC SERVOS. THE CYCLIC WAS LAST REMOVED APRX 80 HRS PRIOR TO THE ACCIDENT DURING MAINTENANCE. ON 7/17/84, BELL ISSUED OPERATIONS SAFETY NOTICE WHICH IN PART READ, 'FLIGHT CREWS ARE CAUTIONED TO ASSURE QUICK REMOVAL FLIGHT CONTROLS ARE PROPERLY INSTALLED PRIOR TO OPERATING THE HELICOPTER.' PRIOR TO THIS NOTICE, NO REQUIREMENTS EXISTED TO DO SO.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be:

Findings

Occurrence #1: AIRFRAME/COMPONENT/SYSTEM FAILURE/MALFUNCTION
Phase of Operation: APPROACH - VFR PATTERN - FINAL APPROACH

Findings

1. (C) ROTORCRAFT FLIGHT CONTROL, CYCLIC CONTROL - DISCONNECTED
2. (C) MAINTENANCE, INSTALLATION - IMPROPER - COMPANY MAINTENANCE PERSONNEL
3. (F) CHECKLIST - INADEQUATE - MANUFACTURER
4. (F) AIRCRAFT PREFLIGHT - INADEQUATE - PILOT IN COMMAND

Occurrence #2: LOSS OF CONTROL - IN FLIGHT

Phase of Operation: APPROACH - VFR PATTERN - FINAL APPROACH

Findings

5. DIRECTIONAL CONTROL - NOT POSSIBLE - PILOT IN COMMAND

Occurrence #3: IN FLIGHT COLLISION WITH TERRAIN/WATER

Phase of Operation: DESCENT - UNCONTROLLED

Factual Information

Pilot Information

Certificate:	Airline transport	Age:	39, Male
Airplane Rating(s):	Single-engine land; Multi-engine land	Seat Occupied:	Left
Other Aircraft Rating(s):	Helicopter	Restraint Used:	
Instrument Rating(s):	Airplane	Second Pilot Present:	No
Instructor Rating(s):	None	Toxicology Performed:	Yes
Medical Certification:	Class 2 Valid Medical—no waivers/lim.	Last FAA Medical Exam:	October 12, 1983
Occupational Pilot:	Yes	Last Flight Review or Equivalent:	
Flight Time:	5000 hours (Total, all aircraft), 101 hours (Last 90 days, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	BELL	Registration:	N3173L
Model/Series:	206B 206B	Aircraft Category:	Helicopter
Year of Manufacture:		Amateur Built:	
Airworthiness Certificate:	Normal	Serial Number:	3677
Landing Gear Type:	Skid	Seats:	5
Date/Type of Last Inspection:	September 20, 1983 Annual	Certified Max Gross Wt.:	3200 lbs
Time Since Last Inspection:	805 Hrs	Engines:	1 Turbo shaft
Airframe Total Time:	2770 Hrs	Engine Manufacturer:	ALLISON
ELT:	Installed, not activated	Engine Model/Series:	250-C20J
Registered Owner:		Rated Power:	317 Horsepower
Operator:		Operating Certificate(s) Held:	On-demand air taxi (135)
Operator Does Business As:		Operator Designator Code:	

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	Condition of Light:	Day
Observation Facility, Elevation:	APA ,5872 ft msl	Distance from Accident Site:	1 Nautical Miles
Observation Time:	17:25 Local	Direction from Accident Site:	360°
Lowest Cloud Condition:	Scattered / 8000 ft AGL	Visibility	40 miles
Lowest Ceiling:	None	Visibility (RVR):	
Wind Speed/Gusts:	12 knots /	Turbulence Type Forecast/Actual:	/
Wind Direction:	90°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	30 inches Hg	Temperature/Dew Point:	29°C / 8°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	ENGLEWOOD , CO	Type of Flight Plan Filed:	None
Destination:		Type of Clearance:	Traffic advisory
Departure Time:	17:13 Local	Type of Airspace:	Class D;Class E

Airport Information

Airport:	ARAPAHOE COUNTY APA	Runway Surface Type:	
Airport Elevation:		Runway Surface Condition:	
Runway Used:	0	IFR Approach:	None
Runway Length/Width:		VFR Approach/Landing:	Traffic pattern

Wreckage and Impact Information

Crew Injuries:	1 Fatal	Aircraft Damage:	Destroyed
Passenger Injuries:	1 Fatal	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	2 Fatal	Latitude, Longitude:	39.610183,-104.879997(est)

Administrative Information

Investigator In Charge (IIC): Mucho, R

Additional Participating Persons: GEORGE PECHAR; BROOMFIELD, CO
JACK SUTTLE; FORT WORTH, TX
JAMES T MENDENHALL; AURORA, CO
JOHN T KENT;

Original Publish Date:

Note:

Investigation Docket: <https://data.nts.gov/Docket?ProjectID=16226>

The National Transportation Safety Board (NTSB), established in 1967, is an independent federal agency mandated by Congress through the Independent Safety Board Act of 1974 to investigate transportation accidents, determine the probable causes of the accidents, issue safety recommendations, study transportation safety issues, and evaluate the safety effectiveness of government agencies involved in transportation. The NTSB makes public its actions and decisions through accident reports, safety studies, special investigation reports, safety recommendations, and statistical reviews.

The Independent Safety Board Act, as codified at 49 U.S.C. Section 1154(b), precludes the admission into evidence or use of any part of an NTSB report related to an incident or accident in a civil action for damages resulting from a matter mentioned in the report. A factual report that may be admissible under 49 U.S.C. § 1154(b) is available [here](#).