



# National Transportation Safety Board Aviation Accident Final Report

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<b>Location:</b>	FLOWER MOUND, TX	<b>Accident Number:</b>	FTW95FA151
<b>Date &amp; Time:</b>	04/01/1995, 2130 CST	<b>Registration:</b>	N701EC
<b>Aircraft:</b>	BELL 206L-1	<b>Aircraft Damage:</b>	Substantial
<b>Defining Event:</b>		<b>Injuries:</b>	1 Fatal, 2 Serious, 4 Minor

**Flight Conducted Under:** Part 91: General Aviation - Personal

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## Analysis

WITH WINDS FROM THE SOUTH AT 10-15 KNOTS, THE HELICOPTER DEPARTED TO THE NORTH, AND THE PILOT HAD DIFFICULTY MAINTAINING THE HELICOPTER IN A CLIMB ATTITUDE. DURING A RIGHT TURN TO AVOID TREES AND HOUSES, THE PILOT OBSERVED WIRES, AND CLIMBED IN AN ATTEMPT TO CLEAR THE WIRES. HOWEVER, THE TOP WIRE WAS STRUCK BY THE BOTTOM AFT PORTION OF THE LEFT SKID. DURING THE NIGHT PRECAUTIONARY LANDING TO A LARGE FIELD THE PILOT DETERMINED HE HAD 'STABILIZED' THE HELICOPTER ON AN EAST HEADING AND FORWARD MOVEMENT WAS STOPPED. DURING THE TOUCHDOWN WITH LATERAL MOVEMENT, THE HELICOPTER ROLLED OVER AND CAME TO REST ON ITS RIGHT SIDE. THE HELICOPTER WAS AT AN ESTIMATED GROSS WEIGHT OF 4,120 POUNDS AT THE TIME OF THE ACCIDENT. MAXIMUM ALLOWABLE GROSS WEIGHT WAS 4,150 POUNDS. THE PILOT'S CURRENCY FOR CARRYING PASSENGERS AT NIGHT EXPIRED ON MARCH 11, 1995. A SUCCESSFUL ENGINE RUN WAS ACCOMPLISHED IN A TEST CELL AFTER THE ACCIDENT.

## Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: THE PILOT'S IMPROPER WIND EVALUATION, AND IMPROPER TOUCHDOWN PROCEDURE, RESULTING IN DYNAMIC ROLLOVER OF THE HELICOPTER. FACTORS WERE THE TAILWIND, DARK NIGHT, AND THE LACK OF RECENT EXPERIENCE AT NIGHT.

## Findings

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Occurrence #1: IN FLIGHT COLLISION WITH OBJECT

Phase of Operation: TAKEOFF - INITIAL CLIMB

### Findings

1. OBJECT - WIRE, TRANSMISSION
2. (F) WEATHER CONDITION - TAILWIND
3. (F) LIGHT CONDITION - DARK NIGHT
4. (F) LACK OF RECENT EXPERIENCE IN TYPE OPERATION - PILOT IN COMMAND
5. (C) WEATHER EVALUATION - IMPROPER - PILOT IN COMMAND

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Occurrence #2: ROLL OVER

Phase of Operation: EMERGENCY LANDING

### Findings

6. PRECAUTIONARY LANDING - ATTEMPTED - PILOT IN COMMAND
7. (C) TOUCHDOWN - IMPROPER - PILOT IN COMMAND
8. DYNAMIC ROLLOVER - INADVERTENT - PILOT IN COMMAND

## Factual Information

### HISTORY OF FLIGHT

On April 1, 1995, approximately 2120 central standard time, a Bell 206L-1 helicopter, N701EC, was substantially damaged during a precautionary landing after impacting a power line near Flower Mound, Texas. The airline transport rated pilot and three passengers received minor injuries, two passenger were seriously injured, and one passenger was fatally injured. The helicopter was being operated as a personal flight under Title 14 CFR Part 91. The flight originated earlier in the day from Dallas Love Field (DAL), Dallas, Texas. Visual meteorological conditions prevailed, and no flight plan was filed for the personal night flight.

The pilot reported the following information to the investigator-in-charge. During a hovering turn to the north the pilot noted "excellent torque above 90 percent with good temp." The helicopter took off from the Circle R Ranch to the north. During the takeoff at approximately 100 feet above ground level (AGL), torque was reduced to 85 percent for the climb. The helicopter began to descend and power (collective) was increased to arrest the descent; however, the descent continued. To avoid houses and trees, the pilot initiated a turn to the east. As the pilot continued the turn towards the south over the Farm to Market (FM) 1171, he observed wires. The pilot "pitched up" the helicopter and increased collective to clear the wires. The pilot attempted to clear the wires; but, as the helicopter continued towards the south it struck the top wire. During the attempted landing the pilot determined he had tail rotor control and "stabilized" on an east heading. The pilot "believed" he had stopped forward movement. During the "set down", the helicopter "pitched right and went over on its side." During the descent and attempted landing it appeared to the pilot as if the helicopter had "some power" and the collective was "not reacting or was weak."

The Care Flight pilots that responded to the accident reported in the enclosed statements that the winds were southerly at approximately 10-15 knots.

A witness who was located northeast of the crash site observed the helicopter over the highway. She estimated its height to be above the tree line and it appeared to be "spinning out of control." She then observed the helicopter "dip" downward as it proceeded toward the southeast. The helicopter then briefly gained altitude before going into a "sharp decline" from about halfway between the north fence line and the point of impact. She reported the helicopter's lights were on and the "engine working."

A witness whose house the helicopter flew over reported he knew it was in trouble because the engine was "surging."

### PERSONNEL INFORMATION

A review of the pilot's log book and helicopter's flight log revealed the pilot's last night flight was December 11, 1994. Federal Aviation Regulation (FAR) 61.57d states no person may act as pilot in command of an aircraft carrying passengers during the period beginning 1 hour after sunset and ending 1 hour before sunrise (as published in the American Air Almanac) unless, within the preceding 90 days, that person has made at least three takeoffs and three landings to a full stop during that period in the category and class of aircraft to be used. See the enclosed copies of the pilot log book and helicopter flight log.

### AIRCRAFT INFORMATION

A review of the airframe and engine records did not reveal any anomalies or uncorrected maintenance defects. Weight and balance calculations were performed using data provided by the manufacturer. An estimate of the weight of 4,120 pounds at the time of the accident places the helicopter below its maximum gross weight of 4,150 pounds.

#### WRECKAGE AND IMPACT INFORMATION

The initial ground scar was on a measured magnetic heading of 100 degrees, 15 feet from the main wreckage. A second ground scar was on a measured magnetic heading of 070 degrees at the main wreckage. The helicopter came to rest on it's right side, on a measured magnetic heading of 050 degrees.

The main transmission and roof support beam was torn from the helicopter. The tailboom was separated in two places and the engine remained partially attached by cables and oil/fuel/air lines.

A power line was found down 154 yards from the initial ground scar. The wire was surveyed at 30 feet above the ground. Scratch marks were found on 18 inches of the bottom aft portion of the left skid.

Examination of the aircraft did not disclose any mechanical anomalies. A successful engine run was accomplished in a test cell. The power turbine governor was replaced for the engine run because of the impact damage it sustained. See the enclosed wreckage diagram for wreckage distribution details.

#### ADDITIONAL DATA

The helicopter wreckage was released to the owner's representative.

#### Pilot Information

<b>Certificate:</b>	Airline Transport; Flight Instructor; Commercial	<b>Age:</b>	52, Male
<b>Airplane Rating(s):</b>	Multi-engine Land; Single-engine Land	<b>Seat Occupied:</b>	Right
<b>Other Aircraft Rating(s):</b>	Helicopter	<b>Restraint Used:</b>	Seatbelt, Shoulder harness
<b>Instrument Rating(s):</b>	Airplane	<b>Second Pilot Present:</b>	No
<b>Instructor Rating(s):</b>	Airplane Multi-engine; Airplane Single-engine	<b>Toxicology Performed:</b>	No
<b>Medical Certification:</b>	Class 2 Valid Medical--no waivers/lim.	<b>Last FAA Medical Exam:</b>	07/05/1994
<b>Occupational Pilot:</b>	<b>Last Flight Review or Equivalent:</b>		
<b>Flight Time:</b>	6139 hours (Total, all aircraft), 629 hours (Total, this make and model), 6009 hours (Pilot In Command, all aircraft), 11 hours (Last 90 days, all aircraft), 9 hours (Last 30 days, all aircraft), 2 hours (Last 24 hours, all aircraft)		

## Aircraft and Owner/Operator Information

Aircraft Make:	BELL	Registration:	N701EC
Model/Series:	206L-1 206L-1	Aircraft Category:	Helicopter
Year of Manufacture:		Amateur Built:	No
Airworthiness Certificate:	Normal	Serial Number:	45396
Landing Gear Type:	High Skid	Seats:	7
Date/Type of Last Inspection:	03/06/1995, 100 Hour	Certified Max Gross Wt.:	4150 lbs
Time Since Last Inspection:	16 Hours	Engines:	1 Turbo Shaft
Airframe Total Time:	4307 Hours	Engine Manufacturer:	ALLISON
ELT:	Not installed	Engine Model/Series:	205-C28
Registered Owner:	RIMMER, ROY T.	Rated Power:	500 hp
Operator:	RIMMER, ROY T.	Operating Certificate(s) Held:	None

## Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual Conditions	Condition of Light:	Night/Dark
Observation Facility, Elevation:	DFW, 603 ft msl	Distance from Accident Site:	9 Nautical Miles
Observation Time:	2053 CST	Direction from Accident Site:	335°
Lowest Cloud Condition:	Clear / 0 ft agl	Visibility	15 Miles
Lowest Ceiling:	None / 0 ft agl	Visibility (RVR):	0 ft
Wind Speed/Gusts:	10 knots /	Turbulence Type Forecast/Actual:	/
Wind Direction:	210°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	30 inches Hg	Temperature/Dew Point:	16° C / 6° C
Precipitation and Obscuration:			
Departure Point:		Type of Flight Plan Filed:	None
Destination:	DALLAS, TX (DAL)	Type of Clearance:	None
Departure Time:	2130 CST	Type of Airspace:	Class G

## Wreckage and Impact Information

Crew Injuries:	1 Minor	Aircraft Damage:	Substantial
Passenger Injuries:	1 Fatal, 2 Serious, 3 Minor	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	1 Fatal, 2 Serious, 4 Minor	Latitude, Longitude:	

## Administrative Information

**Investigator In Charge (IIC):** DOUGLAS D WIGINGTON **Report Date:** 10/19/1995

**Additional Participating Persons:** EDWARD L HINCH; FORT WORTH, TX

**Publish Date:**

**Investigation Docket:** NTSB accident and incident dockets serve as permanent archival information for the NTSB's investigations. Dockets released prior to June 1, 2009 are publicly available from the NTSB's Record Management Division at [pubinq@ntsb.gov](mailto:pubinq@ntsb.gov), or at 800-877-6799. Dockets released after this date are available at <http://dms.nts.gov/pubdms/>.

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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](#).