Aviation Investigation Final Report

Location:	Caballo, New Mexico	**Accident Number:**	CEN13FA517
Date & Time:	August 31, 2013, 11:45 Local	**Registration:**	N3156U
Aircraft:	Robinson R44 II	**Aircraft Damage:**	Substantial
Defining Event:	Low altitude operation/event	**Injuries:**	3 Fatal
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

Three witnesses saw the helicopter hovering and the rotor wash stirring up dust. One of those witnesses and another witness observed the helicopter turn, start to fly away, collide with two power lines, and subsequently hit the ground and bounce. The dust likely obscured the pilot's visibility while he was maneuvering the helicopter near the ground and led to his failure to see and avoid the power lines.

Probable Cause and Findings

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

The pilot's failure to see and avoid power lines while maneuvering near the ground because dust stirred up by the rotor wash obscured his visibility.

Findings

Environmental issues	Wire - Awareness of condition
Environmental issues	Debris/dirt/foreign object - Effect on personnel
Personnel issues	Decision making/judgment - Pilot

Factual Information

History of Flight

Maneuvering-low-alt flying	Low altitude operation/event (Defining event)
Uncontrolled descent	Collision with terr/obj (non-CFIT)

On August 31, 2013, about 1145 mountain daylight time, a Robinson R44 II, N3156U, collided with power lines and crashed next to a residence in Caballo, New Mexico 87931. The pilot and two passengers were fatally injured. The helicopter was substantially damaged. The helicopter was registered to and operated by a private individual under the provisions of 14 Code of Federal Regulations Part 91 as a personal flight. Visual meteorological conditions prevailed for the flight, and no flight plan had been filed. The flight originated from Truth or Consequences (TCS) Airport, New Mexico, about 1130.

According to the operator, the pilot was taking the two passengers on a short sightseeing flight over Elephant Butte Reservoir. They also plan to fly over the home of one of the passengers. Two witnesses who lived across the street saw the helicopter hovering in front of the passenger's home. They said dust was being stirred up by the rotor wash. The helicopter turned and started to fly away but collided with two service power lines. Another witness, who lived next door to the two previous witnesses, saw the helicopter fly underneath and collide with the power lines, severing the tail boom. The helicopter struck the ground and bounced. Another witness saw the helicopter flying "extremely low." He said the helicopter cleared the power lines, circled back, and then the tail boom struck the power lines. The impact pulled two power poles out of the ground and the helicopter hit the ground and bounced.

Pilot Information

Certificate:	Commercial	**Age:**	34
Airplane Rating(s):	None	**Seat Occupied:**	Right
Other Aircraft Rating(s):	Helicopter	**Restraint Used:**	3-point
Instrument Rating(s):	Helicopter	**Second Pilot Present:**	No
Instructor Rating(s):	Helicopter; Instrument helicopter	**Toxicology Performed:**	Yes
Medical Certification:	Class 2 Without waivers/limitations	**Last FAA Medical Exam:**	May 1, 2013
Occupational Pilot:	Yes	**Last Flight Review or Equivalent:**	
Flight Time:	(Estimated) 1153 hours (Total, all aircraft), 857 hours (Total, this make and model), 1090 hours (Pilot In Command, all aircraft), 6 hours (Last 90 days, all aircraft), 4 hours (Last 24 hours, all aircraft)		

The pilot, age 34, held a commercial pilot certificate with rotorcraft-helicopter and instrument-helicopter ratings. He also held a flight instructor certificate with rotorcraft-helicopter and instrument-helicopter ratings. His second class airman medical certificate, dated May 1, 2013, contained no restrictions or

limitations.

According to the operator, the pilot had accrued 1,153 total flight hours, all in rotorcraft-helicopters, of which 1,090 hours were as pilot-in-command and 85.7 hours were flown in a Robinson R44.

Aircraft and Owner/Operator Information

Aircraft Make:	Robinson	**Registration:**	N3156U
Model/Series:	R44 II	**Aircraft Category:**	Helicopter
Year of Manufacture:	2006	**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	11486
Landing Gear Type:	None	**Seats:**	4
Date/Type of Last Inspection:	July 26, 2013 Annual	**Certified Max Gross Wt.:**	2500 lbs
Time Since Last Inspection:	38 Hrs	**Engines:**	1 Reciprocating
Airframe Total Time:	709 Hrs as of last inspection	**Engine Manufacturer:**	Lycoming
ELT:	C91 installed, not activated	**Engine Model/Series:**	IO-540-AE1A5
Registered Owner:	Kendall S. Livingston	**Rated Power:**	300 Horsepower
Operator:	Kendall S. Livingston	**Operating Certificate(s) Held:**	None

N3156U, serial number 11486, a model R44 II Raven, was manufactured by the Robinson Helicopter Company in 2006. It was powered by a Textron-Lycoming IO-540-AE1A5 engine (serial number L-31554-48A), rated at 235 shaft horsepower.

According to the Federal Aviation Administration (FAA) inspector who examined the aircraft maintenance records, the last annual inspection was accomplished on July 26, 2013, at a Hobbs meter time of 708.6 hours. At the time of the accident, the Hobbs meter read 728.6 hours.

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	KTCC,4853 ft msl	**Distance from Accident Site:**	12 Nautical Miles
Observation Time:	11:53 Local	**Direction from Accident Site:**	350°
Lowest Cloud Condition:	Clear	**Visibility**	10 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	11 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	190°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	30.03 inches Hg	**Temperature/Dew Point:**	37°C / 9°C
Precipitation and Obscuration:			
Departure Point:	Truth or Conseq, NM (KTCC)	**Type of Flight Plan Filed:**	None
Destination:	Truth or Conseq, NM (KTCC)	**Type of Clearance:**	None
Departure Time:	11:40 Local	**Type of Airspace:**	Class G

The following pertinent weather observations were recorded by the TCS Automated Surface Observing Systems (ASOS), located about 14 miles north of the accident site:

TCS (1053): Variable wind at 3 knots; sky condition, clear; temperature, 20 degrees Celsius (C.); dew point, 13 degrees C; altimeter setting, 30.15 inches of mercury.

TCS (1153): Wind, 090 degrees at 5 knots; sky condition, clear; temperature, 30 degrees C.; dew point, 10 degrees C; altimeter setting, 30.13 inches of mercury.

Wreckage and Impact Information

Crew Injuries:	1 Fatal	**Aircraft Damage:**	Substantial
Passenger Injuries:	2 Fatal	**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	3 Fatal	**Latitude, Longitude:**	33.037776,-107.308334

The wreckage was located in a field, south of a private residence, and on the east side of State Route 187 at mile post 31.

The helicopter rested on its right side. One main rotor blade remained attached to the hub. The other rotor blade was found in several pieces. The tail boom had been severed from the fuselage, and the tail

rotor assembly was separated from the tail boom. The front of the cockpit was open, exposing the instrument panel and seats. Power train and flight control continuity were established. Two broken power poles, one holding a power transformer, lay nearby. Two downed power lines, uncoiled in some places, were also noted.

Medical and Pathological Information

According to FAA's Civil Aerospace Medical Institute (CAMI) toxicology report, no carbon monoxide, ethanol, or drugs were detected in the pilot's blood. Cyanide tests were not performed. According to the New Mexico Office of the Medical Investigator autopsy report, the pilot's death was attributed to "blunt trauma."

Tests and Research

According to a Sierra Electric Cooperative Power Company spokesman, two single phase lines were struck by the helicopter, and the impact broke two wooden power poles. He described the lines as being No. 4 ACSR (aluminum conduit, steel reinforced) 7/1 power lines that each carried 14,400 volts. He further stated that the power company did not have monitoring devices to detect power interruptions, but they received the first service call at 1209. FAA's Southwest Regional Operations Center received the accident call at 1153.

Administrative Information

Investigator In Charge (IIC):	Scott, Arnold
Additional Participating Persons:	Vernon R Rockett; FAA Flight Standards District Office; Albuquerque, NM John DeWitt; FAA Flight Standards District Office; Albuquerque, NM
Original Publish Date:	May 8, 2014
Last Revision Date:	
Investigation Class:	Class
Note:	The NTSB traveled to the scene of this accident.
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=87927