Aviation Investigation Final Report

Location:	Santa Paula, California	**Accident Number:**	WPR14FA203
Date & Time:	May 23, 2014, 10:30 Local	**Registration:**	N4081H
Aircraft:	ROBINSON HELICOPTER R22 BETA	**Aircraft Damage:**	Substantial
Defining Event:	Low altitude operation/event	**Injuries:**	1 Fatal
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

A witness who lived near the accident site saw the helicopter flying in a northeasterly direction paralleling her property. The helicopter was below the tree line on the opposite side of the riverbed and was descending. The witness stated that the helicopter sounded normal but was unusually loud because it was so close. Shortly after losing sight of the helicopter, she heard two loud "pops."

Examination of the accident site revealed that the helicopter struck three unmarked overhead distribution power lines about 80 ft above ground level while traveling in a northeasterly direction. A postaccident examination of the airframe and engine revealed no evidence of mechanical malfunctions or failures that would have precluded normal operation. It is likely that the pilot did not see the power lines as he was flying along the river at low altitude. It was unknown why the pilot was flying at such a low altitude.

Probable Cause and Findings

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

The pilot's failure to maintain clearance from power lines while flying at a low altitude.

Findings

Personnel issues	Decision making/judgment - Pilot
Personnel issues	Monitoring environment - Pilot
Environmental issues	Wire - Awareness of condition
Aircraft	Altitude - Not attained/maintained

Factual Information

History of Flight

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

On May 23, 2014, about 1030 Pacific daylight time, a Robinson R22 helicopter, N4081H, collided with overhead distribution power lines and terrain while maneuvering west of the Santa Paula Airport (SZP) Santa Paula, California. The certified commercial pilot, the sole occupant of the helicopter, was fatally injured. The helicopter was substantially damaged. The helicopter was registered to Sierra Flite, LLC, Camden, Delaware, and operated by Channel Islands Helicopters, LLC, Oxnard, California, 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 was filed. The flight originated from Oxnard Airport (OXR) Oxnard, California about 0930.

According to Channel Islands Helicopters, the pilot departed OXR after refueling, and flew in the area near the Camarillo Airport, Camarillo, California (CMA), where he then departed for SZP. The helicopter was refueled at OXR with 15.8 gallons of 100LL. The pilot was building time towards his rotorcraft commercial rating.

A witness, who lived near the accident site, saw the helicopter flying in a northeasterly direction paralleling her property. The helicopter was below the tree line on the opposite side of the riverbed and was descending. The witness stated that the helicopter sounded normal but was unusually loud because it was so close. Shortly after losing sight of the helicopter, she heard two loud "pops."

According to local law enforcement, three phase overhead distribution power lines were separated directly over the accident site. These lines were supported by two wooden H-frame pole assemblies at a distance of about 1,000 feet from each other and about 80 feet over the dry river bed. The separated power lines were found in the surrounding bamboo vegetation and trees adjacent to the riverbed. Near the northern positioned H-frame, small spot fires were reported in the surrounding vegetation.

PERSONNEL INFORMATION

The pilot, age 42, held a commercial certificate with an airplane single-engine land, single-engine sea, multi-engine land, rotorcraft, and instrument ratings. A second-class airman medical certificate was issued in March 2, 2011, with no limitations. The pilot reported on his most recent medical certificate application that he had accumulated 4,628 total flight hours and 56 hours in rotorcraft.

The pilot, received his Private-Rotorcraft rating on May 2, 2014 and the accident flight was his second flight since his rating.

According to the pilot's logbook, the pilot had received ground school and training and was endorsed to fly the R-22 under a special federal aviation regulation 73 (SFAR-73) in February of 2014. The SFAR-

73 ensures minimum levels of training and experience for students, pilots, and flight instructors for the Robinson R-22 and R-44.

AIRCRAFT INFORMATION

The two-seat, helicopter, serial number (S/N) 1927, was manufactured in 1991. A review of the maintenance logbooks indicated that the helicopter had a total airframe time of 4,322 hours at the last 100-hour inspection on March 29, 2014. The Hobbs meter read 4,375 at the accident site.

It was powered by a Lycoming O-320-B2C engine, serial number L-17962-39A, rated at 160 horsepower. Total time recorded on the engine at the 100-hour inspection on March 29, 2014 was 4,322 hours and time since major overhaul was 122 hours.

METEOROLOGICAL INFORMATION

A review of recorded data from the CMA automated weather observation station revealed at 0955 conditions were wind from 200 degrees at 7 knots, visibility 10 statute miles, clear sky, temperature 18° Celsius, dew point 12° Celsius, and an altimeter setting of 30.01 inches of Mercury. At 1055 conditions were wind 240 at 9 knots, visibility 10 statute miles, clear sky, temperature 19° Celsius, dew point 12° Celsius, and an altimeter setting of 30.03 inches of Mercury.

COMMUNICATIONS

A VFR flight plan was not filed and no ATC communication took place.

AIRPORT INFORMATION

The Santa Paula Airport, SZP, is a public, uncontrolled airport located in Santa Paula, California, at a surveyed elevation of 243 feet. The airport features an asphalt runway 04/22, which is 2,713 feet by 60 feet.

The SZP website reveals traffic pattern diagrams for general aviation inbound and outbound traffic for both east and west wind conditions. The Helo Ops arrival and departure routes are shown over the paralleling riverbed near the airport. Cautions and arrows are outlining the power lines over the riverbed further westward towards the accident site. The airport directory also reports in the additional remarks, "Be alert to wires crossing over river bed adjacent to ry [runway] 04/22. Locations: 1.5 miles & 3.5 miles sw [southwest] apch [approach] end ry [runway] 04. Also, 1,500 ft and 2.5 miles NE [northeast] apch [approach] end of ry [runway] 22."

WRECKAGE AND IMPACT INFORMATION

Examination of the accident site revealed that the helicopter collided with overhead distribution power lines and terrain on a heading of about 60 degrees magnetic. The wreckage debris path was oriented on an approximate heading of 58 degrees magnetic and was about 170 feet in length. A small section of power line was found about 90 feet from where the power lines would have crossed the dry river bed. About 40 feet further from the section of power line was the first identified point of contact (FIPC) with the ground. The FIPC with the ground revealed several disturbances in the sand and rocks measuring 2 to 3 feet in length and about 3-5 inches in depth. Pieces of the right navigation light lens and the right

door were found at the FIPC. A pitch change linkage and a compass instrument were found near the FIPC. Extending about 35 feet further from the FIPC with the ground was the main wreckage. The fuselage came to rest on its right side on a heading of about 65 degrees magnetic. The tailboom was partially separated and buckled near the fuselage and came to rest on a forward heading of about 335 degrees magnetic. The tail rotor assembly, vertical and horizontal stabilizers and the stinger were undamaged. The main rotors remained attached to the mast and were damaged. The forward positioned blade remained intact with leading edge and trailing edge damage. Cable strike marks were visible on the top side of the blade. The aft positioned blade was bent about 90 degrees and about 4 feet of the blade tip was missing. Cable strikes and gouging were noted on the main rotor blade. The blade also had an arc (electrical) mark on the trailing edge. The blade tip was not found during the examination of the accident site. The swash plate linkages were damaged and the mast shroud near the swash plate had cable strike marks. The engine remained attached to the fuselage and impact damage was noted on the induction box and fan shroud. The oil cooler had impact marks from the starter ring gear. The marks showed evidence of rotation of the starter ring gear during contact. The motor from the belt tensioner assembly separated and was found near the main wreckage. Both drive belts were unseated from both engine and drive sheaves. The instrument panel and the forward section of the right skid were found between the FIPC with the ground and the main wreckage. A large section of the right skid was found on the north side of the debris field. The remaining landing gear was separated from, but entangled with the fuselage. A landing gear attachment and a section of a droop stop tusk were found on the south side of the debris field. Plexiglas sections were found throughout the debris field. The battery box, battery and antenna were found further down the debris field from the main wreckage.

The cable separations were examined and a blue colored paint transfer was found on the 3rd line or most easterly positioned line.

The helicopter was recovered to Air Transport in Phoenix, Arizona for further examination.

MEDICAL AND PATHOLOGICAL INFORMATION

The County of Ventura conducted an autopsy on the pilot on May 27, 2014. The medical examiner determined that the cause of death was "Blunt Force Trauma."

The FAA's Civil Aeromedical Institute (CAMI) in Oklahoma City, Oklahoma, performed toxicology tests on the pilot. According to CAMI's report, carbon monoxide, cyanide, volatiles, and drugs were tested, and had negative results.

FIRE

According to the local fire department, small spot fires were ignited by the downed wires in the surrounding vegetation near the northern positioned H-frame pole assembly and were quickly extinguished.

FOLLOWUP EXAMINATION

Examination of the recovered wreckage was conducted on June 5, 2014, at the facilities of Air Transport, Phoenix, Arizona, by a representative from the Robinson Helicopter Company, under the supervision of the National Transportation Safety Board (NTSB) investigator-in-charge (IIC). The

examination did not reveal any evidence of any preexisting mechanical malfunction which would have precluded normal operation.

ADDITIONAL INFORMATION

On July 3, 2011, about 2021 Pacific daylight time, a Cessna 180D, N6451X, was substantially damaged when it struck a telephone line supported from the two wooden H-frame pole assemblies. The airplane departed SZP and was flying southwest over the riverbed before colliding with the telephone line.

Pilot Information

Certificate:	Commercial; Private	**Age:**	42
Airplane Rating(s):	Single-engine land; Single-engine sea; Multi-engine land	**Seat Occupied:**	Left
Other Aircraft Rating(s):	Helicopter	**Restraint Used:**	3-point
Instrument Rating(s):	Airplane	**Second Pilot Present:**	No
Instructor Rating(s):	None	**Toxicology Performed:**	Yes
Medical Certification:	Class 2 Without waivers/limitations	**Last FAA Medical Exam:**	March 31, 2011
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	
Flight Time:	4628 hours (Total, all aircraft), 56 hours (Total, this make and model)		

Aircraft and Owner/Operator Information

Aircraft Make:	ROBINSON HELICOPTER	**Registration:**	N4081H
Model/Series:	R22 BETA	**Aircraft Category:**	Helicopter
Year of Manufacture:	1991	**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	1927
Landing Gear Type:	N/A; Skid	**Seats:**	2
Date/Type of Last Inspection:	March 29, 2014 100 hour	**Certified Max Gross Wt.:**	1369 lbs
Time Since Last Inspection:	52 Hrs	**Engines:**	1 Reciprocating
Airframe Total Time:	4323 Hrs as of last inspection	**Engine Manufacturer:**	LYCOMING
ELT:	Not installed	**Engine Model/Series:**	O-320 SERIES
Registered Owner:	SIERRA FLITE LLC	**Rated Power:**	160 Horsepower
Operator:	Channel Islands Helicopters	**Operating Certificate(s) Held:**	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	KCMA,65 ft msl	**Distance from Accident Site:**	7 Nautical Miles
Observation Time:	16:55 Local	**Direction from Accident Site:**	181°
Lowest Cloud Condition:	Clear	**Visibility**	10 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	7 knots /	**Turbulence Type Forecast/Actual:**	/ None
Wind Direction:	200°	**Turbulence Severity Forecast/Actual:**	/ N/A
Altimeter Setting:	30.01 inches Hg	**Temperature/Dew Point:**	18°C / 12°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	OXNARD, CA (OXR)	**Type of Flight Plan Filed:**	None
Destination:	OXNARD, CA (OXR)	**Type of Clearance:**	None
Departure Time:	09:30 Local	**Type of Airspace:**	Class G

Airport Information

Airport:	SANTA PAULA SZP	**Runway Surface Type:**	
Airport Elevation:	243 ft msl	**Runway Surface Condition:**	Unknown
Runway Used:		**IFR Approach:**	None
Runway Length/Width:		**VFR Approach/Landing:**	Unknown

Wreckage and Impact Information

Crew Injuries:	1 Fatal	**Aircraft Damage:**	Substantial
Passenger Injuries:		**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	1 Fatal	**Latitude, Longitude:**	34.326946,-119.080001

Administrative Information

Investigator In Charge (IIC):	Swick, Andrew
Additional Participating Persons:	Jerry Badillo; FAA-FSDO; Van Nuys, CA Thomas Webster; Robinson Helicopter Company; Torrance, CA Mark Platt; Lycoming Engines; Phoenix, AZ
Original Publish Date:	February 29, 2016
Last Revision Date:	
Investigation Class:	Class
Note:	The NTSB traveled to the scene of this accident.
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=89258