Aviation Investigation Final Report

Location:	Ashland, Oregon	**Accident Number:**	WPR19LA071
Date & Time:	January 23, 2019, 11:43 Local	**Registration:**	N8227J
Aircraft:	Bell 206	**Aircraft Damage:**	Substantial
Defining Event:	Low altitude operation/event	**Injuries:**	1 Fatal
Flight Conducted Under:	Part 91: General aviation - Other work use		

Analysis

The purpose of the flight was for the pilot to accrue flight-time to fulfill annual flight-time insurance requirements. Radar data indicate that, after departure, the pilot flew the helicopter generally to the south of the departure airport, where the helicopter made various low-level maneuvers and then began to follow a highway northward. The helicopter made several turns during the final two minutes of recorded radar data before the last recorded data point, which was near to the accident site. Examination of the wreckage found no evidence of any engine or airframe anomalies that may have contributed to the accident.

At the time of the accident, weather forecasts and advisories for the accident area predicted areas of instrument meteorological conditions (IMC) and mountain obscuration and various cameras in the area captured images of low ceilings, fog, and obscuration. There was no record the pilot obtained a preflight weather briefing on the day of the accident. Had he obtained such a briefing, he likely would have been aware of the possibility of encountering below minimum weather conditions for helicopter operations.

The circumstances of the accident are consistent with the pilot encountering IMC, subsequently becoming spatially disoriented, and losing control of the helicopter.

Probable Cause and Findings

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

The pilot's decision to continue visual flight into deteriorating weather, which resulted in an encounter with instrument meteorological conditions and spatial disorientation leading to a loss of control.

Findings

Personnel issues	Decision making/judgment - Pilot
Personnel issues	Spatial disorientation - Pilot
Personnel issues	Aircraft control - Pilot
Environmental issues	Clouds - Effect on personnel
Environmental issues	Fog - Decision related to condition

Factual Information

History of Flight

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

On January 23, 2019, at 1143 Pacific standard time, a Bell 206L-3, N8227J, was substantially damaged when it was involved in an accident near Ashland, Oregon. The pilot was fatally injured. The helicopter was operated as a Title 14 *Code of Federal Regulations* (CFR) Part 91 flight.

The pilot was operating out of Medford Airport (MFR), Medford, Oregon, with the purpose of amassing flight-time to fulfill the operator's annual flight-time requirements. On the day prior, he had flown the accident helicopter on two different flights totaling five hours of flight time.

A review of the preliminary radar data provided by the Federal Aviation Administration disclosed that in the 1.5 hours following departure, the helicopter maneuvered in the local area west of Ashland making numerous turns. Thereafter the helicopter continued south over the Siskiyou Summit and after making various low-level maneuvers, followed Interstate 5 (I-5) toward Hilt, Oregon. Around 1120 the helicopter began to head north and made several turns and slow maneuvers. At 1141, the helicopter continued north and adjoined the I-5 for about 1.5 minutes. At 1142:50 the radar track showed that the helicopter then made several turns until heading east. The last radar return at 1143:30 was located in the immediate vicinity of the accident site and oriented about 600 ft east of the interstate at an elevation of about 4,100 ft.

Pilot Information

Certificate:	Airline transport	**Age:**	69,Male
Airplane Rating(s):	None	**Seat Occupied:**	Right
Other Aircraft Rating(s):	Helicopter	**Restraint Used:**	4-point
Instrument Rating(s):	Helicopter	**Second Pilot Present:**	No
Instructor Rating(s):	None	**Toxicology Performed:**	Yes
Medical Certification:	Class 2 With waivers/limitations	**Last FAA Medical Exam:**	February 28, 2018
Occupational Pilot:	Yes	**Last Flight Review or Equivalent:**	
Flight Time:	18011 hours (Total, all aircraft), 4458 hours (Total, this make and model), 13897 hours (Pilot In Command, all aircraft), 29 hours (Last 90 days, all aircraft), 15 hours (Last 30 days, all aircraft), 5 hours (Last 24 hours, all aircraft)		

According to the operator, the pilot had amassed about 84 hours in the year proceeding the accident during 39 flights. During that time, 55.6 hours were in the accident helicopter (20 flights).

Aircraft and Owner/Operator Information

Aircraft Make:	Bell	**Registration:**	N8227J
Model/Series:	206 L3	**Aircraft Category:**	Helicopter
Year of Manufacture:	1989	**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	51313
Landing Gear Type:	Skid	**Seats:**	7
Date/Type of Last Inspection:	July 14, 2018 100 hour	**Certified Max Gross Wt.:**	3914 lbs
Time Since Last Inspection:	6 Hrs	**Engines:**	1 Turbo shaft
Airframe Total Time:	5088 Hrs at time of accident	**Engine Manufacturer:**	Rolls Royce
ELT:	Installed, activated, did not aid in locating accident	**Engine Model/Series:**	M250-C30P
Registered Owner:	HeliFleet LLC	**Rated Power:**	650 Horsepower
Operator:	Erickson Helicopters Inc	**Operating Certificate(s) Held:**	Rotorcraft external load (133), On-demand air taxi (135)

Meteorological Information and Flight Plan

Conditions at Accident Site:	Instrument (IMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	KMFR,1329 ft msl	**Distance from Accident Site:**	23 Nautical Miles
Observation Time:	11:53 Local	**Direction from Accident Site:**	327°
Lowest Cloud Condition:	Unknown	**Visibility**	4 miles
Lowest Ceiling:	Overcast / 900 ft AGL	**Visibility (RVR):**	
Wind Speed/Gusts:	/	**Turbulence Type Forecast/Actual:**	None / None
Wind Direction:		**Turbulence Severity Forecast/Actual:**	N/A / N/A
Altimeter Setting:	30.5 inches Hg	**Temperature/Dew Point:**	7°C / 4°C
Precipitation and Obscuration:	Moderate - None - Haze		
Departure Point:	Medford, OR (OR99)	**Type of Flight Plan Filed:**	Company VFR
Destination:	Medford, OR (OR99)	**Type of Clearance:**	None
Departure Time:	09:20 Local	**Type of Airspace:**	

The pilot completed a risk assessment form prior to the flight and determined it to be “low risk.” He marked the following on the form: visibility greater than 1 mile during the day, which was in the “low risk” category; icing was forecast but that the current weather indicates that conditions changed, which was a “medium risk” category; and that the ceiling was forecast and currently greater than 500 ft, which was the “low risk” category. Investigation found no evidence that the pilot obtained a weather briefing. The pilot’s papers on his kneeboard contained written notes consistent with the Medford Meteorological Terminal Air Report (METAR) issued at 0853. It was consistent with noting the freezing level at 7,000 to 11,000 ft, and broken cloud layers at 1,200 and 2,100 ft with an overcast layer at 5,000 ft.

An employee of the operator who responded to the accident, stated that at 1400 he drove south on I-5 toward the accident (between mile marker #5 and #6). He reported that the fog was dense starting at mile marker #2 with less than 50 yards visibility. He additionally observed that the clouds/fog were coming over the summit at what seemed to be a very fast pace with the summit completely obscured.

A ski resort located approximately 5.5 nm west of the accident site had several webcams installed that captured the weather conditions immediately surrounding the time of the accident. The webcam images depicted snow covering the surface with obscured sky conditions with fog.

The accident site was located south of the cold front in the warm air side of the front and immediately north of the high-pressure ridge in an area with a weak pressure gradient.

The surrounding station models on the surface analysis chart depicted calm to light southwesterly winds of 10 knots or less, overcast cloud cover, with temperatures in the upper 30’s to low 40’s degrees Fahrenheit (F), with temperature-dew point spreads of 4º F or less. Several stations northwest of the accident site over the western Cascades reported light continuous snow and rain.

The 12-hour Low-Level Significant Weather Prognostic Chart that depicted the expected general flight categories: cloud conditions, freezing level, and turbulence that was current at the time of the accident and valid until 1600. The chart depicted an area of instrument flight rule (IFR) conditions over northern California, western Oregon and Washington. The freezing level was depicted at approximately 8,000 ft over the Ashland area and implied the potential for icing in-clouds above that level.

Graphic Forecast for Aviation (GFA) and AIRMETs forecasts indicated that mountain obscuration and IFR conditions were expected over the area. The GFA "aviation surface forecast" image depicted visibility restrictions less than a mile during the period with AIRMET Sierra for IFR conditions over the area from 1000 and expanding at 1300 over the accident area. The GFA "cloud cover forecast" also expected overcast clouds with bases at 3,500 ft lowering to 3,000 ft msl during the period with tops from 12,000 ft to 8,000 ft over the area, with AIRMET Sierra current for mountain obscuration conditions.

Airport Information

Airport:	Rogue Valley Medical Center OR99	**Runway Surface Type:**	
Airport Elevation:	1475 ft msl	**Runway Surface Condition:**	
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:		**Aircraft Explosion:**	None
Total Injuries:	1 Fatal	**Latitude, Longitude:**	42.066665,-122.596389

The accident site was located in the dense trees about 9 nautical miles (nm) southeast of Ashland, Oregon. In character, the terrain was composed of mature Douglas-Fir and Ponderosa Pines trees between 100-150 feet in height. The wreckage was found distributed over a 100 ft distance with no discernable flight path direction. The main rotor blades were both attached to the hub and the hub was attached to the mast. Both blades were severed chordwise approximately 5-7 feet outboard of the hub. Both tail rotor blades exhibited chordwise bending consistent with impact forces. Postaccident engine and airframe examinations revealed no mechanical failures or malfunctions that would have precluded normal operation.

Medical and Pathological Information

Toxicology testing performed at the FAA Forensic Sciences Laboratory identified Acetaminophen, Salicylate and Pramoxine in urine samples. An autopsy of the pilot was performed by the Jackson County Office of the State Medical Examiner, Central Point, Oregon. The cause of death was listed as severe blunt trauma due to a helicopter crash.

Administrative Information

Investigator In Charge (IIC):	Keliher, Zoe
Additional Participating Persons:	Erik Ramsayer; Federal Aviation Administration ; Hillsboro, OR Mark Stuntzner; Bell Helicopters; Fort Worth, TX Nicholas Shepler; Rolls Royce; Indianapolis, IN Ray Touzeau; Erickson Helicopters Inc; Medford, OR
Original Publish Date:	May 19, 2022
Last Revision Date:	
Investigation Class:	Class 3
Note:	The NTSB did not travel to the scene of this accident.
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=98851