Aviation Investigation Final Report

Location:	Klamath Falls, Oregon	**Accident Number:**	WPR18FA001
Date & Time:	October 1, 2017, 10:43 Local	**Registration:**	N6083D
Aircraft:	CIRRUS DESIGN CORP SR22	**Aircraft Damage:**	Destroyed
Defining Event:	VFR encounter with IMC	**Injuries:**	2 Fatal
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The noninstrument-rated private pilot, departed on a cross-country flight over mountainous terrain into an area of instrument meteorological conditions (IMC); IMC conditions had been forecasted earlier that morning. An acquaintance of the pilot, who was also a pilot, stated that he spoke with the accident pilot before the flight about the clouds along his intended route. The accident pilot stated that, if he needed to, he would climb above the clouds and look for a hole through which he could descend to the destination. If he could not find a hole in the clouds, then he would return to the departure airport.

About 12 minutes into the flight, and after having reached its maximum altitude of 8,700 ft msl and on a heading of 254°, radar track data revealed that the airplane had started a descending left turn. Over the next 24 seconds the airplane descends from 8,700 ft msl to 8,100 ft msl at a rate of descent of 1,500 ft per minute (fpm). About 12 seconds later the airplane climbed from 8,100 ft to 9,000 ft at an average rate of 4,500 fpm, followed next by a period of about 12 seconds when the airplane descended from 9,000 ft to 7,100 ft at an average rate of descent of 9,500 fpm and an average ground speed of 40 knots. The last radar return, which was 12 minutes 40 seconds into the flight, showed the airplane at an altitude of 7,100 ft (1,700 ft above ground level), and about 638 ft west of the accident site.

An on-duty state trooper in the area heard an airplane flying at treetop level and in the clouds just prior to the accident. The trooper then heard the airplane pass over his position with "the engine screaming," after which it entered a left turn and subsequently impacted terrain. A survey of the accident site revealed a linear debris path and damage to the airplane that was consistent with controlled flight into terrain. Examination of the airframe and engine did not reveal evidence of any mechanical anomalies that would have precluded normal operation.

An AIRMET, which was valid for an area near the accident site was issued about 2 hours before the accident, advising of ceilings below 1,000 ft, visibility below 3 statute miles, precipitation, and mist. Additionally, an Area Forecast issued earlier that morning revealed widespread instrument meteorological conditions near the area of the accident site, with terrain and mountains obscured

through late morning. It is most likely that the pilot encountered IMC en route and was maneuvering to return to visual conditions when the airplane turned left and collided with terrain.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The noninstrument rated pilot's decision to depart on a cross-country flight with en route weather conditions forecasted to be less than visual meteorological conditions and then to continue flight into instrument meteorological conditions, which resulted in controlled flight into terrain.

Findings

Personnel issues	Decision making/judgment - Pilot
Environmental issues	Below VFR minima - Decision related to condition
Environmental issues	Below VFR minima - Effect on operation
Environmental issues	Mountainous/hilly terrain - Contributed to outcome

Factual Information

History of Flight

Enroute	VFR encounter with IMC (Defining event)
Enroute	Loss of visual reference
Enroute	Controlled flight into terr/obj (CFIT)

On October 1, 2017, about 1043 Pacific daylight time, a Cirrus Design Corp SR22, N6083D, was destroyed when it impacted terrain while maneuvering at low altitude in a remote mountainous area near Klamath Falls, Oregon. The private pilot and passenger were fatally injured. The airplane was registered to Cascade Forestry Inc., Gold Hill, Oregon, and was being operated by the pilot as a Title 14 *Code of Federal Regulations* Part 91 personal flight. Instrument meteorological conditions were reported in the area at the time of the accident, and no flight plan was filed for the cross-country flight, which departed Crater Lake-Klamath Regional Airport (LMT), Klamath Falls, Oregon, about 1030, and was destined for Rouge Valley International-Medford Airport (MFR), Medford, Oregon.

An acquaintance of the accident pilot reported that he had spoken with the pilot at LMT on the morning of the accident. The acquaintance, a retired US Air Force pilot, stated that the accident pilot said that he was on his way back to MFR and that his plan was to depart under visual flight rules (VFR) then climb above the clouds and find a "hole" around MFR for a VFR descent. The pilot also stated that if he couldn't find a way to let down through the clouds, then he would return to LMT. The accident pilot stated that there was an overcast cloud layer fairly high over MFR, but underneath the clouds were VFR. The acquaintance stated that the accident pilot never mentioned trying to go below the clouds en route to MFR, which would have not been a good plan because of mountain obscuration in the area. He reported that the weather at LMT at the time he spoke with the accident pilot was VFR with light winds and scattered to broken clouds at 4,000 ft above ground level (agl).

An Oregon state trooper, who was conducting fish and wildlife surveillance in the area at the time of the accident with a second state trooper, reported that he heard a low-flying aircraft headed generally from the southeast to the northwest. The trooper stated that, at the time, he could not see the aircraft because the cloud cover was at treetop level. He heard the aircraft turn sharply to the left and stated that the engine was "screaming" like it was operating at full power. The trooper reported that he exited his vehicle to try to locate the aircraft, but he could not see it; the engine noise returned to normal as the aircraft headed in a southerly direction and away from him. The trooper stated that when he got back in his vehicle, the engine started to "rev up and scream again," as if it was in a hard turn. As he was getting ready to exit his vehicle again, he heard a loud pop and then complete silence. The trooper stated that the sky was clear when they left Klamath Falls that morning, but as they got closer to their decoy location, they "…hit a wall of clouds that were spitting snow all morning."

According to radar data obtained from the Federal Aviation Administration (FAA), the accident airplane was first identified by the Seattle Air Route Traffic Control Center radar system using transponder code 1200 at 1030:55, about 0.6 nautical mile (nm) northwest of the departure end of runway 32 at LMT, climbing through 4,800 ft mean sea level (msl). At 1033:07, the airplane leveled off at 6,300 ft msl

about 5 nm west of LMT on a heading about 256°. At 1036:53, the airplane turned right to a heading of 280° and at 1039:04, started a climb from 6,200 ft msl. At 1041:52, after reaching its maximum altitude of 8,700 ft msl on a heading of 254°, the airplane started a descending left turn. From 1041:52 to 1042:16, the airplane descended from 8,700 ft msl to 8,100 ft msl at a rate of descent of 1,500 ft per minute (fpm). From 1042:16 to 1042:28, the airplane climbed from 8,100 to 9,000 ft at an average rate of 4,500 fpm. From 1042:28 to 1042:40, the airplane descended from 9,000 to 7,100 ft at an average rate of descent of 9,500 fpm and an average ground speed of 40 knots. The last radar return was at 1042:40 at an altitude of 7,100 ft (1,700 ft agl), and about 638 ft west of the accident site.

Pilot Information

Certificate:	Private	**Age:**	54,Male
Airplane Rating(s):	Single-engine land	**Seat Occupied:**	Left
Other Aircraft Rating(s):	None	**Restraint Used:**	4-point
Instrument Rating(s):	None	**Second Pilot Present:**	No
Instructor Rating(s):	None	**Toxicology Performed:**	No
Medical Certification:	Class 3 With waivers/limitations	**Last FAA Medical Exam:**	October 5, 2016
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	
Flight Time:	170 hours (Total, all aircraft), 16 hours (Total, this make and model), 52 hours (Pilot In Command, all aircraft), 23 hours (Last 90 days, all aircraft), 23 hours (Last 30 days, all aircraft), 1 hours (Last 24 hours, all aircraft)		

The pilot held a private pilot certificate with a rating for airplane single-engine land and did not possess an instrument rating. He was issued a third-class Federal Aviation Administration (FAA) airman medical certificate on October 5, 2016, with a limitation that stated, "must have available glasses for near vision."

A review of the pilot's logbook revealed that he had accumulated 170 total hours of flight experience, of which 52 hours were as pilot-in-command and 16 hours in the accident airplane make and model, of which 10 hours were logged as pilot-in-command. The pilot had accumulated a total of 3 hours of simulated instrument flight time. In the preceding 90 days, 30 days and 24 hours, the pilot had flown 23 hours, 16 hours, and 1 hour, respectively.

Aircraft and Owner/Operator Information

Aircraft Make:	CIRRUS DESIGN CORP	**Registration:**	N6083D
Model/Series:	SR22 NO SERIES	**Aircraft Category:**	Airplane
Year of Manufacture:	2003	**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	0612
Landing Gear Type:	Tricycle	**Seats:**	4
Date/Type of Last Inspection:	December 13, 2016 Annual	**Certified Max Gross Wt.:**	3400 lbs
Time Since Last Inspection:	23 Hrs	**Engines:**	1 Reciprocating
Airframe Total Time:	1439.7 Hrs as of last inspection	**Engine Manufacturer:**	CONT MOTOR
ELT:	Installed, not activated	**Engine Model/Series:**	IO-550 SERIES
Registered Owner:	On file	**Rated Power:**	310 Horsepower
Operator:	On file	**Operating Certificate(s) Held:**	None

The four-seat, low-wing, fixed-gear airplane, serial number 0612, was manufactured in 2003. It was powered by a Continental-IO-550-N7B engine, rated at 310 horsepower, which drove a Hartzell constant-speed propeller. A review of maintenance logbooks revealed that the most recent annual inspection was completed on September 25, 2017, at an airframe total time of 1,436.7 hours. The airplane had accrued 23.3 hours since a 100-hour inspection on December 1, 2016.

Meteorological Information and Flight Plan

Conditions at Accident Site:	Instrument (IMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	LMT,4095 ft msl	**Distance from Accident Site:**	24 Nautical Miles
Observation Time:	10:53 Local	**Direction from Accident Site:**	110°
Lowest Cloud Condition:		**Visibility**	10 miles
Lowest Ceiling:		**Visibility (RVR):**	
Wind Speed/Gusts:	9 knots / 16 knots	**Turbulence Type Forecast/Actual:**	None / None
Wind Direction:	310°	**Turbulence Severity Forecast/Actual:**	N/A / N/A
Altimeter Setting:	30.13 inches Hg	**Temperature/Dew Point:**	11°C / -1°C
Precipitation and Obscuration:	Light - None - Mist		
Departure Point:	Klamath Falls, OR (LMT)	**Type of Flight Plan Filed:**	None
Destination:	Medford, OR (MFR)	**Type of Clearance:**	None
Departure Time:	10:30 Local	**Type of Airspace:**	Class G

At 1053, the weather reporting facility at LMT, located about 24 nm east-southeast of the accident site, reported wind from 310° at 9 knots (kts), gusts to 16 kts, 10 miles visibility, overcast clouds at 4,500 ft, temperature 11°C, dew point -1°C, and an altimeter setting of 30.14 inches of mercury.

At 1053, the weather reporting facility at MFR, located about 27 nm west-southwest of the accident site, reported calm wind, 10 miles visibility, scattered clouds at 3,400 ft, broken clouds at 6,000 ft, temperature 14°C, dew point 6°C, and an altimeter setting of 30.19 inches of mercury.

An AIRMET advisory was issued at 0745 by the National Weather Service (NWS) Aviation Weather Center (AWC) for mountain obscuration and was active for the accident location at the time of the event. Additionally, at 0745, AIRMET SIERRA was issued for instrument flight rules (IFR) conditions for a region very close to the accident location and advised of ceilings below 1,000 ft, visibility below 3 statute miles, precipitation, and mist. For additional information, refer to the NTSB Weather Study, which is appended to the docket for this report.

An Area Forecast, which was issued in Medford, Oregon at 0832 by the NWS, revealed that satellite imagery showed widespread instrument meteorological conditions near the area of the accident site, with terrain and mountains obscured through late morning.

Geostationary Operational Environmental Satellite (GOES)-15 visible data revealed cloudy conditions at the accident site and over the accident region. Minimum infrared cloud-top temperatures in the area immediately surrounding the accident location were -4°C, which, according to the HRRR model sounding, corresponded to cloud top heights of about 9,000 ft.

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:**	42.253612,-122.265556

A survey of the accident site revealed that the airplane initially impacted a tree about 25 ft above the ground on a northeast heading, then impacted the base of a second tree and continued northeast before coming to rest about 100 ft from the initial impact point. The airplane was highly fragmented. The vertical stabilizer and attached rudder, the horizontal stabilizer, and the left and right elevators were located along the wreckage path, which was about 160 ft long and about 45 ft wide.

The nose landing gear was located just south of the main impact crater. The separated propeller, with two blades attached to their respective hubs, was located at the northeast side of the main impact crater. The third propeller blade and the left main landing gear and tire were found within the crater.

The left wing, which was destroyed by impact forces, was located just left of the second impact point. The right wing, which was also destroyed by impact forces, was located about halfway between the second tree impact point and the main wreckage. The aft fuselage, engine, wing spar, and forward section of the fuselage/cabin and cockpit were located at the main wreckage site. The engine was crushed aft into the cockpit/cabin area, and the empennage was destroyed.

The Avidyne multi-functional display (MFD) and primary functional display were both observed in the debris field; each had been destroyed by impact forces. The MFD compact flash memory card was sent to the NTSB Vehicle Recorder Laboratory for examination and download of non-volatile data; however, the memory card was damaged in the accident and the data could not be downloaded.

The Cirrus Airframe Parachute System was expelled from the aircraft by impact forces. The parachute was unfurled and located about 40 ft northeast of the main wreckage.

The engine was found with the main wreckage, partially attached to the firewall and instrument panel, and exhibited impact damage to the crankcase and cylinders. The magnetos, starter and alternator were broken from their mounts and located in the wreckage path between the initial impact crater and the main wreckage. The propeller governor was fractured from the engine and not observed on scene. The oil sump was torn from the bottom of the crankcase. The oil pump housing exhibited impact damage. The induction manifold and tubes were torn from the engine and located in the debris field. The fuel pump remained partially attached to the engine and exhibited impact damage. The fuel manifold valve had separated from the engine and was located within the debris field and was damaged. The exhaust system was mostly separated from the engine and exhibited impact damage, crushing and bending. Some of the exhaust risers remained attached to the cylinders and were crushed upward into the cylinders.

Examination revealed no mechanical anomalies of the airframe or engine that would have precluded

normal operation. A full report of the examination is contained within the public docket for this accident.

Medical and Pathological Information

The Oregon State Medical Examiner, Clackamas, Oregon, conducted an autopsy on the pilot. The cause of death was determined to be "massive blunt trauma." There was no record of toxicological testing performed on the pilot.

Administrative Information

Investigator In Charge (IIC):	Little, Thomas
Additional Participating Persons:	Richard Chagnon; Federal Aviation Administration; Hillsboro, OR Chris Lang; Continental Motors; Mobile, AL Brannon Mayer; Cirrus Aircraft; Duluth, MN
Original Publish Date:	November 6, 2019
Last Revision Date:	
Investigation Class:	Class
Note:	The NTSB traveled to the scene of this accident.
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=96127