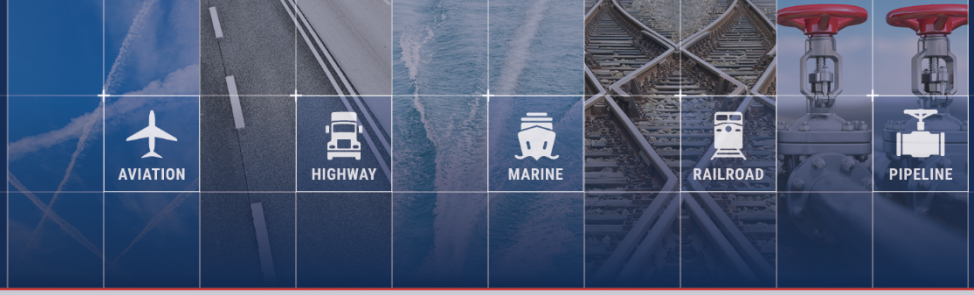

Aviation Investigation Final Report

Location:	YAMHILL, Oregon	**Accident Number:**	SEA99FA027
Date & Time:	January 6, 1999, 17:45 Local	**Registration:**	N700LF
Aircraft:	Beech 58P	**Aircraft Damage:**	Destroyed
Defining Event:		**Injuries:**	4 Fatal
Flight Conducted Under:	Part 91: General aviation		

Analysis

While the pilot was en route to his intended destination on a dark night, the weather lowered to less than visual flight rules (VFR) minimums. Approach control therefore cleared the pilot direct to the associated VOR for a VOR DME approach. Once at the VOR, the pilot said he could see the ground and was going to descend and make a visual approach. Approach control asked the pilot if he was asking for a contact approach or canceling his IFR clearance, and then explained to him that he could not be cleared for a visual approach unless he could see the airport. The pilot responded that he wanted to shoot a contact approach, and approach cleared him to do so. Soon thereafter the aircraft was seen maneuvering underneath a low ceiling, in hilly terrain, where ground fog was present. While maneuvering in the hilly terrain, the aircraft collided with a row of pine trees near the top of a hill, and continued on for about 1,000 feet before impacting a thick stand of hardwood trees.

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 hilly terrain while maneuvering below a low ceiling. Factors include a dark night, a low ceiling, fog, and hilly terrain.

Findings

Occurrence #1: IN FLIGHT COLLISION WITH OBJECT
Phase of Operation: MANEUVERING

Findings
1. (C) CLEARANCE - NOT MAINTAINED - PILOT IN COMMAND
2. (F) LIGHT CONDITION - DARK NIGHT
3. (F) WEATHER CONDITION - LOW CEILING
4. (F) WEATHER CONDITION - FOG
5. (F) TERRAIN CONDITION - MOUNTAINOUS/HILLY

Factual Information

HISTORY OF FLIGHT

On January 6, 1999, about 1745 Pacific standard time, a Beechcraft Baron 58P, N700LF, registered to and operated by Eastern Oregon Fast Freight as a 14 CFR Part 91 corporate flight, impacted a row of trees atop a hill about four miles east of Yamhill, Oregon. At the time of the accident, the pilot, who was on an IFR flight plan for the purpose of returning Eastern Oregon Fast Freight company officials to Aurora, Oregon, was in the process of executing a contact approach to Aurora State Airport. The aircraft, which departed Union County Airport, La Grande, Oregon, at 1609, was operating in an area which was reportedly experiencing low ceilings and ground fog. The aircraft was destroyed by the subsequent impact sequence and a post crash fire, and the airline transport pilot and his three passengers received fatal injuries. The flight originated approximately one hour and thirty minutes before the accident, and there was no report of an ELT activation.

On the evening of January 5, 1999, the pilot called McMinnville Automated Flight Service Station (AFSS) and received an outlook briefing related to a flight from Aurora State Airport to Pendleton at 0800 the next morning. At 0657 on January 6, the pilot called McMinnville AFSS to file an IFR flight plan from Aurora State to Pendleton, and to receive the Pendleton forecast and the current AIRMET's. About ten minutes after the initiation of the first call, the pilot called the AFSS again, in order to file a flight plan for the return flight from Pendleton to Aurora State. According to the pilot's "trip log," later that morning he flew a one hour flight from Aurora State to Pendleton, and then at an undetermined time later that day, flew from Pendleton to La Grande. He called McMinnville AFSS about 1500 on the day of the accident, asking that his IFR flight plan from Pendleton to Aurora State be modified for a departure from La Grande. During that contact, he asked for and received an update on the Salem forecast. About one hour later, at 1609, the flight departed La Grande. One minute after departure, the pilot contacted McMinnville Radio, whom he addressed as McMinnville Flight Watch, and advised the controller that he was VFR off of La Grande at "four oh nine" and would like to activate his IFR flight plan. McMinnville Radio advised the pilot that since he was already airborne, he should contact Seattle Center. The pilot contacted Seattle Center and advised them that he wanted to "...pick up an IFR flight plan to Aurora State." Center responded that they had a flight plan on file for N700LF showing Pendleton, Oregon, to Aurora, and asked if that was the one he wanted to use. The pilot confirmed that he wanted to use that flight plan, and then when queried by Center about his requested routing, advised them he wanted "radar vectors direct." After unsuccessfully trying to make mode c radar contact and determining that the aircraft's transponder was inoperative, Center advised the pilot that they were only picking up his primary target. He was then cleared to 16,000 feet and a heading of 250 degrees, direct to the Aurora State Airport. While en route, Seattle Center cleared the aircraft to descend first to 13,000 feet, and then to 8,000 feet. At 1715, the flight was handed off to Portland Terminal

Radar Control (Portland Approach), while descending through 12,000 feet for 8,000 feet. About one minute later, approach advised the pilot that the weather at Aurora State was, visibility nine miles, scattered clouds at 700 feet and a ceiling of 3000 feet, and asked the pilot what approach was preferred. The pilot stated "I'm going to try and make a contact approach if you can vector me down to three thousand feet for a few minutes and I can ah break out and I'll make the contact, otherwise I'll go to the, do the VOR DME". Portland Approach advised the pilot that, "...actually the weather is good enough for a visual approach." Then they advised him that he would be receiving a vector for a visual approach. The pilot was then given a heading of 240 degrees and a descent to 7,000 feet. At 1722 the pilot was given a heading change to 260, and then about one minute later was advised that the next controller would have an update on the Aurora State weather, and that the visual approach did not look likely. Then after being given a further descent to 3,000 feet, the pilot was handed off to the next controller at 1725. About one minute after the hand-off, Portland approach advised the pilot the cloud bases at Aurora State were 900 feet and to plan for the localizer DME approach at Aurora. In response, the pilot requested the VOR DME approach and asked if he could descend to 3,000 feet and be vectored into VFR conditions. Approach cleared the flight direct to the Newburg VOR and again stated that the bases were at 900 feet, and then said that they would be unable to vector the aircraft into VFR conditions "anywhere." At 1727, the controller asked the pilot if had received the Aurora State weather, and the pilot replied that he had not. At that point the controller gave the pilot the same observation he had received from the previous controller (at 1716), and was advised that the observation was 40 minutes old and that it was "... really not indicative of what it is down there."

At 1728, Portland Approach cleared the pilot for the VOR DME Alpha approach at the Aurora State Airport, and advised him to cross the VOR at 3,500 feet or above. Then about one and one-half minutes later, Portland Approach informed the pilot that he was heading "well south" of the VOR and that the VOR was at his two o'clock position at seven miles. At 1730, Portland Approach stated "baron zero lima fox, I'm gonna lose you in radar here momentarily, you gonna be able to do this approach ok without me seeing you". The pilot responded by stating "ah roger," and the controller advised him that radar service was terminated and to report Newberg VOR outbound. Approximately one minute later, the pilot reported "outbound procedure turn" at 3,500 feet. At 1732, the pilot reported having visual contact with the ground, and said that he was going to "...descend and make a visual approach." The controller responded by asking if the pilot was asking for a contact approach or if he wanted to cancel the IFR flight plan. The controller then explained to the pilot that he could not issue a visual approach clearance unless the pilot had the airport in sight. The pilot responded by saying he was going to fly a contact approach. At 1732:47, N700LF was cleared for a contact approach to the Aurora State Airport and told to call with his cancellation or his down time on the current frequency. The pilot responded to that transmission with "Seven hundred Lima Fox, roger." There was no further communication between N700LF and Portland Approach.

About 12 minutes after the last communication, a witness momentarily observed the fuselage of the aircraft pass over a barn he had just walked out of and impact a stand of hardwood trees to the west of the barn. According to that individual, the aircraft cleared the barn by less

than 20 feet. It was later determined that prior to passing over the barn, the aircraft had collided with pine trees about 700 feet to the east of the barn, at which time a significant portion of both wings had been sheared off.

Although communication with 700LF ended after the aforementioned transmission, a number of witnesses reported seeing an aircraft maneuvering at low altitude in the vicinity of Newberg in the time period between the last transmission and the impact. One witness, who was driving South on Highway 99 toward Newberg about 1740, said that he saw a large low-flying aircraft come out of the fog near Rex Hills. He said that it was heading south over the highway, and that it reentered the fog about ten seconds after it came out. He further stated that although he could not determine the aircraft's altitude, "The plane seemed lower than the hillside to the East of the road..." He also observed that "...the visibility that night was very bad."

Another witness, who was in his car at a bank in Newberg at 1740, reported that he saw a twin-engine aircraft westbound over Newburg at what he estimated to be 500 to 800 feet above the ground (AGL). The aircraft continued to the west, and eventually went out of sight. In a later discussion with his wife, he told her what he saw, and she told him that at the time it had been "very foggy" along Bell Road in the area of Chehalem Mountain. According to this individual, the engines were "functioning normally," and at the time the aircraft passed overhead, it was not raining.

A third witness, who was in the parking lot of a fast-food restaurant near Newberg approximately 1745, said that he heard an aircraft fly over at a "very low altitude," headed due west. After flying over his location, it continued in a direction that took it over downtown Newberg, where it made a slight course change to the right. According to this individual, the aircraft was flying level between 500 and 800 feet AGL. He also reported that it was cloudy and rainy at his location, and that he could tell the aircraft was a "twin" by the sound of its engines.

Another witness, who was driving south on Highway 99 near Shorewood around 1730, reported seeing an aircraft "...flying very low and circling the town." After circling the town, the aircraft continued on toward Newberg. This individual said that when he saw the aircraft, he was "...quite alarmed, as the bottom of the cloud deck was very low and foggy."

Another witness, who saw a twin-engine aircraft fly over his house at about 400 feet AGL sometime around 1700, reported that the weather was "...light drizzle, dark, cloudy with about two miles visibility." He stated that the aircraft was flying straight and level, that the engines were producing power, and that he did not hear any unusual sounds.

PERSONNEL INFORMATION

At the time of the accident, the pilot held an airline transport pilot certificate for multi-engine land airplanes. His logbook indicated a total flight time of approximately 4,460 hours, with about 760 hours in multi-engine airplanes. He recorded 7.4 hours of simulated (hood) instrument time in the last year, but no actual instrument time was logged. Of the 7.4 hours,

6.2 hours had been logged in the last three months. There were 12 instrument approaches logged in the same three-month period. There were no entries indicating that the pilot had acquired the recent instrument experience defined by FAR Part 61.57c in the six months prior to logging the aforementioned 6.2 hours and 12 approaches. Neither was there any entry to indicate that the pilot had completed an instrument proficiency check as defined in FAR Part 61.57d any time in the last year.

In the ninety days preceding the accident, the pilot's logbook indicated a total of three separate flights during which he logged hours at night. For one of the flights (.4 of an hour) the pilot logged night time only. On the other two flights (one for .4 and one for 2.0), the pilot logged only one-tenth of an hour of night time on each flight. The logbook did not indicate the number of night landings accomplished during any of these flights.

The pilot's flight log indicated that his first flight as pilot-in-command of a Beechcraft Baron 58P was on October 24, 1998. On that day, he made four separate flights with an instructor, all of which he logged in the Dual Instruction Received column in his log. On October 25 he flew four more times with the same instructor. After the fourth flight on October 25, the instructor entered "Satisfactory Operation" in the pilot's log. During the instructional flights, the pilot accomplished VFR maneuvers and single engine operations. The last multiengine entry prior to the instructional flights on October 24 and 25 was in May of 1990. The logbook indicated that he had not flown in actual or simulated instrument conditions in the accident aircraft make and model.

There was an entry in the logbook that indicated the pilot completed a "Satisfactory Biennial Flight Review" in a single-engine Beechcraft on an unspecified date in 1998. Although the entry in the date column gave only the year ("1998"), the entry was after a flight logged on March 30, 1998 and before a flight entered on April 6, 1998.

METEOROLOGICAL INFORMATION

At 0657:11 Pacific standard time, on the morning of the accident, the pilot contacted McMinnville Automated Flight Service Station, (AFSS) by telephone and requested an "IFR to Pendleton" and asked the Weather Specialist for the Salem and Pendleton weather. The specialist advised the pilot of an AIRMET (potentially hazardous weather advisory) for IFR conditions, mountain obscuration and icing conditions along his route of flight. The specialist asked the pilot if he needed details on the AIRMETS. The pilot responded by asking what the cloud tops were reported as, and asked "...what is Pendleton advertising." The specialist reported the Pendleton weather and asked the pilot if he wanted a standard briefing or any other items. The pilot responded by stating "...that's all I need".

At 0707:55, approximately ten minutes after the initial phone call, the pilot contacted McMinnville AFSS again, filed his return flight plan, and requested the afternoon forecast for Aurora State. The specialist responded with "Forecast for Salem this afternoon, wind one six zero at five, visibility four, mist, eight hundred scattered, two thousand five hundred scattered,

ceiling five thousand overcast."

At 1459:55, prior to the return flight to Aurora, the pilot contacted McMinnville AFSS from La Grande, filed a flight plan, and asked what the weather was going to be at Portland and Salem around six o'clock that evening. The specialist told him that the forecast was "...probably not as good as what you were told earlier today." He advised him that "IFR has hung on there," and that a westerly flow had brought in some light rain and drizzle. He reported the forecasted weather at Salem as wind two one zero degrees at seven knots, visibility more than six miles, 1,500 scattered, ceiling 3,500 feet broken and 5,000 feet overcast, with occasional ceilings of 1,500 feet broken, occasionally, five miles visibility with light drizzle and mist, 800 feet scattered, ceiling 2,500 feet broken, and 3,500 feet overcast. He then gave him the Portland forecast, which was wind two one zero at nine, visibility more than six, ceiling 3,500 broken, 5,000 overcast, occasionally five miles in light drizzle and mist, 800 scattered, ceiling 2,500 broken, 3,500 overcast. He then advised the pilot that there was an airmet for IFR conditions in the Portland area and northwestwards.

Before terminating the phone call the pilot asked the specialist to confirm that he had said the Salem forecast was 1,500 scattered, 3,500 overcast. The specialist confirmed that was correct, and then reminded the pilot that the forecast also included occasional ceilings of 1,500 broken.

The aviation surface weather observation (METAR) taken at Salem at 1756, about 10 minutes after the accident, showed a wind at 170 degrees and 10 knots, visibility nine statute miles, ceiling 700 feet broken, with another broken layer at 4,700 feet, and an overcast at 7,000 feet. The temperature was 45 degrees Fahrenheit, and the dewpoint was 43 degrees.

The METAR taken at Portland at the same time indicated winds from 210 degrees at 9 knots, visibility seven miles, light rain, a broken ceiling at 1,100, and an overcast at 1,600. Temperature was 46 degrees and the dewpoint was 45.

Individuals who lived near the accident site reported that there were low clouds and patches of fog in the area. They said that although the visibility was good underneath the clouds, many of the valleys had areas of dense fog and heavy mist, and that the overcast was touching the top of many of the hills.

WRECKAGE AND IMPACT INFORMATION

The wreckage was scattered over hilly terrain for a distance of approximately 1,000 feet. The wreckage distribution path was approximately 250 degrees magnetic. The approximate terrain elevation was 540 feet above mean sea level. The terrain consisted of a sloping pasture with a dense stand of hardwood trees on its western border. The aircraft's initial impact point was near the top of a row of pine trees just to the east of the pasture. Three of the trees, which were approximately 80 feet in height, showed impact scars, and the top 20 feet of one of the trees was sheared off. There were no significant ground scars between the initial impact point

and the location where the fuselage collided with the hardwood trees about 800 feet to the west of the pines.

A large portion of the aircraft's right wing and its associated aileron were located approximately 50 feet from the initial impact point, and 17 feet right of the wreckage track center line. Much of the left wing and its associated aileron was located 70 feet from the initial impact point, and 55 feet right of the wreckage distribution path. Both wing sections were separated outboard of the engine nacelles.

The aircraft's main cabin was located about 200 feet from where it collided with a number of trees on the eastern edge of the hardwood stand. The main cabin was found right side up with massive fire and impact damage. The instrument panel had been destroyed and most of the aircraft's instruments had been thrown from the wreckage.

The aircraft's engines, both of which had separated from their respective wings, had sustained massive impact damage.

The horizontal stabilizer, elevator, vertical stabilizer, flaps and rudder were extensively damaged and found in the area of the main wreckage.

The right main gear, left main gear and nose gear were separated from the aircraft and found in the area of the main wreckage.

The spark plugs were removed from the right engine and normal operating signatures were noted. Both magnetos turned freely and produced spark. The vacuum pump vanes and rotor were intact and there was no evidence of excess wear. The fuel manifold was disassembled and there was an indication of fuel. The diaphragm and spring were intact. Disassembly and examination of the right engine's internal components disclosed no evidence of unusual operating signatures.

The propeller blades for the right engine were attached at the hub and the crankshaft was intact. Aft bending, chordwise scratches and leading edge gouges were noted.

Significant impact damage was noted to the left engine. The spark plugs were removed and normal operating signatures were noted. The vacuum pump vanes and rotor were intact and there was no evidence of excess wear. The fuel manifold was disassembled and there was an indication of fuel. The diaphragm and spring were intact. Disassembly and examination of the left engine's internal components disclosed no evidence of unusual operating signatures.

The propeller blades for the left engine were attached at the hub and the crankshaft was intact. Aft bending, chordwise scratches and leading edge gouges were noted on these blades also.

MEDICAL AND PATHOLOGICAL INFORMATION

An autopsy was performed on the pilot by Nikolas J. Harthstone, MD, Oregon State Medical Examiner's Office at Portland, Oregon. The cause of death was reported as blunt impact injuries of the head and trunk secondary to the accident.

Toxicological samples from the pilot were sent to the Federal Aviation Administration Civil Aeronautical Institute, Oklahoma City, Oklahoma, for analysis. The results of the analysis were reported as negative for all screened substances.

ADDITIONAL DATA AND INFORMATION

Prior to departing La Grande, the pilot of 700LF talked with two other pilots who were also preparing to depart La Grande on their respective flights. After the accident, the NTSB contacted these individuals and asked about the interaction they had with the pilot of 700LF. According to these pilots, the pilot of the Baron was nervous and concerned about arriving back at Aurora State after dark in bad weather. According to one of the pilots, the accident pilot said that "...he would rather find a hole and descend, instead of flying an approach."

The FAA provided a printout of the recorded primary beacon radar track data from N700LF. The data blocks listed on that printout, which were plotted on a DeLorme Street Atlas USA map (see attachment), show that after crossing the Cascade Range, the aircraft descended on a southwesterly bearing to a point about four miles southeast of Newburg and about seven miles west of Aurora State Airport. The next radar data point, which was the last of the sequence (at 1733:26), shows the aircraft approximately eight miles southeast of Newburg and about three miles southwest of the airport.

Custody of the aircraft wreckage was transferred to H.L.M. Air service, Independence, Oregon, a representative of the insurance carrier, on January 07, 1999.

Pilot Information

Certificate:	Airline transport; Commercial; Flight engineer; Flight instructor	**Age:**	58,Male
Airplane Rating(s):	Single-engine land; Multi-engine land	**Seat Occupied:**	Left
Other Aircraft Rating(s):	None	**Restraint Used:**	
Instrument Rating(s):	Airplane	**Second Pilot Present:**	No
Instructor Rating(s):	Airplane multi-engine; Airplane single-engine; Instrument airplane	**Toxicology Performed:**	Yes
Medical Certification:	Class 2 Valid Medical--w/ waivers/lim	**Last FAA Medical Exam:**	October 16, 1998
Occupational Pilot:	Yes	**Last Flight Review or Equivalent:**	
Flight Time:	4581 hours (Total, all aircraft), 9 hours (Total, this make and model), 4 hours (Last 90 days, all aircraft), 1 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Beech	**Registration:**	N700LF
Model/Series:	58P 58P	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	TJ-123
Landing Gear Type:	Retractable - Tricycle	**Seats:**	6
Date/Type of Last Inspection:	April 20, 1998 Annual	**Certified Max Gross Wt.:**	6100 lbs
Time Since Last Inspection:		**Engines:**	2 Reciprocating
Airframe Total Time:		**Engine Manufacturer:**	Continental
ELT:	Installed, not activated	**Engine Model/Series:**	TSIO-520-L
Registered Owner:	EASTERN OREGON FAST FREIGHT	**Rated Power:**	310 Horsepower
Operator:		**Operating Certificate(s) Held:**	None
Operator Does Business As:		**Operator Designator Code:**	

Meteorological Information and Flight Plan

Conditions at Accident Site:	Instrument (IMC)	**Condition of Light:**	Night/dark
Observation Facility, Elevation:	KSL ,210 ft msl	**Distance from Accident Site:**	25 Nautical Miles
Observation Time:	17:56 Local	**Direction from Accident Site:**	140°
Lowest Cloud Condition:	Unknown	**Visibility**	9 miles
Lowest Ceiling:	Broken / 700 ft AGL	**Visibility (RVR):**	
Wind Speed/Gusts:	10 knots / None	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	170°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	30 inches Hg	**Temperature/Dew Point:**	7°C / 6°C
Precipitation and Obscuration:	N/A - None - Fog		
Departure Point:	LA GRANDE (LGD)	**Type of Flight Plan Filed:**	IFR
Destination:	AURORA (UAO)	**Type of Clearance:**	IFR
Departure Time:	16:10 Local	**Type of Airspace:**	Class G

Airport Information

Airport:		**Runway Surface Type:**	
Airport Elevation:		**Runway Surface Condition:**	
Runway Used:	0	**IFR Approach:**	Contact
Runway Length/Width:		**VFR Approach/Landing:**	

Wreckage and Impact Information

Crew Injuries:	1 Fatal	**Aircraft Damage:**	Destroyed
Passenger Injuries:	3 Fatal	**Aircraft Fire:**	On-ground
Ground Injuries:	N/A	**Aircraft Explosion:**	On-ground
Total Injuries:	4 Fatal	**Latitude, Longitude:**	45.190731,-123.240745(est)

Administrative Information

Investigator In Charge (IIC):	Anderson, Orrin
Additional Participating Persons:	JIM REED; PORTLAND , OR DON KNUTSON; WICHITA , KS SCOTT BOYLE; ARVADA , CO
Original Publish Date:	June 23, 2000
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=45627