Aviation Investigation Final Report

Location:	PORTLAND, Indiana	**Accident Number:**	CHI96FA095
Date & Time:	February 22, 1996, 03:20 Local	**Registration:**	N5024J
Aircraft:	Cessna 310	**Aircraft Damage:**	Destroyed
Defining Event:		**Injuries:**	1 Fatal, 1 Serious
Flight Conducted Under:	Part 135: Air taxi & commuter - Non-scheduled		

Analysis

The pilot was attempting a second NDB/GPS Runway 9 approach to the Portland Airport. Visibility was estimated at 1/8 to 1/4 mile. The airplane came to rest approximately 1/2 mile south of the airport. The commercial rated passenger remembered getting below the minimum descent altitude of 1,500 feet, and told the pilot they needed to make a missed approach. The passenger remembered 1,120 feet MSL on the altimeter at the time of the first impact.

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 an altitude adequate for terrain clearance. A factor was the weather.

Findings

Occurrence #1: IN FLIGHT COLLISION WITH OBJECT
Phase of Operation: APPROACH - IAF TO FAF/OUTER MARKER (IFR)

Findings
1. LIGHT CONDITION - DARK NIGHT
2. (F) WEATHER CONDITION - FOG
3. (F) WEATHER CONDITION - LOW CEILING

4. (C) PROPER ALTITUDE - NOT MAINTAINED - PILOT IN COMMAND
5. OBJECT - TREE(S)

Factual Information

HISTORY OF FLIGHT

On February 22, 1996, at 0320 eastern standard time (est), a Cessna 310, N5024J, piloted by an air transport rated pilot, was destroyed after it collided with trees and burned while executing the NDB/GPS runway 9 approach at the Portland Airport, Portland, Indiana. Instrument meteorological conditions prevailed at the time of the accident. The 14 CFR Part 135 cargo flight was operating on an IFR flight plan. The pilot had declared a missed approach at 0304 est, and was cleared for the second approach to Portland Airport at 0312 est. The pilot was fatally injured, the pilot rated passenger was seriously injured. The flight departed from Wheeling, Illinois, at 0145 est.

METEOROLOGICAL INFORMATION

The weather at Fort Wayne, Indiana, which is 40 miles northeast of the accident site at 0250 est was: measured ceiling 200 overcast, visibility 1.5 miles with fog, temperature 34, dewpoint 34, wind 030 at 9 knots, altimeter 30.08. A deputy sheriff, who responded to the accident was interviewed by the investigator in charge (IIC), on February 22, 1996. The deputy estimated the visibility at the time of the accident at 1/8 to 1/4 mile.

AERODROME INFORMATION

Portland Airport has runway end identifier lights (REIL) at the ends of runways 9 and 27. During the evening of February 22, 1996, at approximately 1900 est only one REIL light was operating on runway 9. A flight check of the Portland NDB approach was conducted by the Federal Aviation Administration on February 23, 1996. No abnormalities were noted, with the NDB.

WRECKAGE AND IMPACT INFORMATION

The aircraft wreckage path covered a distance of approximately 625 feet, on a magnetic heading of 130 degrees. The airplane came to rest approximately one half mile south of the airport. Numerous pieces of broken tree branches were found along the wreckage path. Both of the aircraft's wings had separated outboard of the engine nacelles. Both engines had separated from their mounts. The right engine's propeller remained attached to the right engine. The left engine's propeller separated from the left engine's crankshaft. The left engine's propeller bolts which attached the propeller to the crankshaft, were filled with material which appeared similar to the engine's crankshaft material. All propeller blades had extensive bending, and chordwise blade scratches were evident on both propellers. The left main gear strut was found in the down position. The nose gear strut, and the right main gear strut had

separated from the aircraft.

MEDICAL AND PATHOLOGICAL INFORMATION

On February 23, 1996 an autopsy was performed on the pilot at the city county building, Fort Wayne, Indiana. Toxicological testing on the pilot was performed by the Federal Aviation Administration in Oklahoma City, Oklahoma. According to the toxicological report the substances detected were "most likely administered by the hospital."

FIRE

Both tip tanks came to rest more than 200 feet away from the main wreckage, and had ruptured and burned. The terrain around the tip tanks was also charred, due to fire. Both wing tanks ruptured, and sooting due to fire was visible around the wing tank areas. The cabin area was completely destroyed by fire. The upper portion of the fuselage collapsed on top of the lower fuselage. The fuselage separated approximately 2 feet in front of the vertical fin. The right rear plexiglass window showed a slight trace of sooting on the outside. The combustion heater was inspected on February 23, 1996. The heater was damaged however, no traces of fire around the heater were found. On the wings and horizontal tail, no evidence was found of sooting streaks. Mud was found along the leading edges of the wings and horizontal. When the mud was removed immediately next to areas which were chard and sooted, no evidence of fire was found. The left propeller had a small amount of chard terrain around it. Sooting streaks on the left spinner were found in front of the propeller blades, near the front of the spinner.

TESTS AND RESEARCH

N5024J was moved to a hangar at the Portland Airport on the evening of February 22, 1996. On February 23, 1996, the airplane's control system was documented for continuity. The rudder control cables were continuous from the cockpit to the rudder. The aileron control system was continuous to the pushrods at the bellcranks on the wing. The pushrods at the aileron bellcranks showed evidence similar to a overload fracture.

The elevator control system cables were continuous from the cockpit area to the elevator. One aluminum elevator pushrod rod end located in the cockpit area separated from it attachment. The rod end showed evidence similar to melting due to high temperatures.

The left engine was documented on February 23, 1996. The spark plugs were all grey in color except for one spark plug from the number six cylinder, which was oil soaked. The fuel control unit was found in the full rich position, with the throttle at maximum power. The screens in the fuel control unit and in the fuel manifold, were both clean and free from debris. The fuel manifold had a small quantity of fuel inside, when opened. The throttle, mixture and propeller cables were all continuous from the cockpit to their rod ends. Compression was found on all cylinders, and the valves moved on all cylinders when the crankshaft was rotated. Continuity

was established throughout the accessory gears, when the crankshaft was rotated. Both magnetos produced spark when checked. The vacuum pump produced vacuum when rotated by hand.

The right engine was also documented on February 23, 1996. The spark plugs were all slightly sooted and black. The fuel control unit was found in the full rich position, with the throttle at maximum power. The screens in the fuel control unit and in the fuel manifold were both clean and free from debris. The fuel manifold had a small quantity of fuel inside, when opened. The throttle, mixture and propeller cables were all continuous from the cockpit to their rod ends. Compression was found on all cylinders, and the valves moved on all cylinders when the crankshaft was rotated. Continuity was established throughout the accessory gears, when the crankshaft was rotated. Both magnetos produced spark when checked. The vacuum pump produced vacuum when rotated by hand.

ADDITIONAL INFORMATION

The right seat passenger was a commercial rated pilot. The passenger was contacted by telephone, by the IIC on February 29, 1996. The passenger said that at approximately 7 miles out from the airport, on the second approach the landing gear had been extended. At 6 miles out from the airport, the passenger said the aircraft was established at 1,500 feet above mean sea level (MSL). The passenger recalled the pilot having some difficulty staying established on the inbound course. The passenger said he remembered seeing 1,320 feet MSL on the altimeter, and said he told the pilot they were getting low and needed to go missed. The passenger said he remembered 1,120 feet MSL on the altimeter at the time of the first impact. The minimum descent altitude for the approach was 1,500 feet MSL. The passenger said there was no fire, before the first impact.

N5024J was attempting to deliver a component to a local manufacturer in Portland, Indiana. The component had been flown in from Japan, and was picked up at the O'Hare International Airport, by the pilot on the evening of February 21, 1996. This component had kept the production line down at the manufacturing plant in Portland, for two days before the accident.

Parties to the investigation were the Federal Aviation Administration, Cessna Aircraft Corporation, and Miller Aviation.

Pilot Information

Certificate:	Airline transport; Flight instructor	**Age:**	30,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:**	Yes
Instructor Rating(s):	Airplane multi-engine; Airplane single-engine; Instrument airplane	**Toxicology Performed:**	Yes
Medical Certification:	Class 1 Valid Medical--no waivers/lim.	**Last FAA Medical Exam:**	August 9, 1995
Occupational Pilot:	Yes	**Last Flight Review or Equivalent:**	
Flight Time:	4360 hours (Total, all aircraft), 500 hours (Total, this make and model), 2500 hours (Pilot In Command, all aircraft), 200 hours (Last 90 days, all aircraft), 30 hours (Last 30 days, all aircraft), 3 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Cessna	**Registration:**	N5024J
Model/Series:	310 310	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	310R0144
Landing Gear Type:	Retractable - Tricycle	**Seats:**	6
Date/Type of Last Inspection:	February 12, 1996 Annual	**Certified Max Gross Wt.:**	5500 lbs
Time Since Last Inspection:	7 Hrs	**Engines:**	2 Reciprocating
Airframe Total Time:	6400 Hrs	**Engine Manufacturer:**	Continental
ELT:	Installed, activated, did not aid in locating accident	**Engine Model/Series:**	IO-520
Registered Owner:	MILLER AVIATION	**Rated Power:**	285 Horsepower
Operator:		**Operating Certificate(s) Held:**	On-demand air taxi (135)
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:	FWA ,815 ft msl	**Distance from Accident Site:**	40 Nautical Miles
Observation Time:	02:50 Local	**Direction from Accident Site:**	346°
Lowest Cloud Condition:	Unknown	**Visibility**	1.5 miles
Lowest Ceiling:	Overcast / 200 ft AGL	**Visibility (RVR):**	
Wind Speed/Gusts:	9 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	30°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	30 inches Hg	**Temperature/Dew Point:**	1°C / 1°C
Precipitation and Obscuration:	N/A - None - Fog		
Departure Point:	WHEELING , IL (PWK)	**Type of Flight Plan Filed:**	IFR
Destination:	(PLD)	**Type of Clearance:**	IFR
Departure Time:	12:45 Local	**Type of Airspace:**	Class E

Airport Information

Airport:	PORTLAND PLD	**Runway Surface Type:**	
Airport Elevation:	926 ft msl	**Runway Surface Condition:**	
Runway Used:	0	**IFR Approach:**	ADF/NDB
Runway Length/Width:		**VFR Approach/Landing:**	None

Wreckage and Impact Information

Crew Injuries:	1 Fatal	**Aircraft Damage:**	Destroyed
Passenger Injuries:	1 Serious	**Aircraft Fire:**	On-ground
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	1 Fatal, 1 Serious	**Latitude, Longitude:**	40.430492,-84.980682(est)

Administrative Information

Investigator In Charge (IIC):	Boldenow, David
Additional Participating Persons:	DOUG TATE; INDIANAPOLIS , IN RANDY VANDERHALL; WHICHITA , KS BARRY MILLER; PORTLAND , IN
Original Publish Date:	September 19, 1996
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=10073