



# Aviation Investigation Final Report

<b>Location:</b>	LARCHWOOD, Iowa	<b>Accident Number:</b>	CHI97FA067
<b>Date &amp; Time:</b>	February 6, 1997, 18:00 Local	<b>Registration:</b>	N714EE
<b>Aircraft:</b>	Cessna 150	<b>Aircraft Damage:</b>	Destroyed
<b>Defining Event:</b>		<b>Injuries:</b>	1 Fatal
<b>Flight Conducted Under:</b>	Part 91: General aviation - Personal		

## Analysis

The weather reported at Sioux Falls, South Dakota, fifteen miles from the takeoff airport was IFR with freezing fog with 1/4 mile visibility and 100 feet vertical visibility, with the temperature at -8 degrees and the dew point at -8 degrees. A witness who lived at the departure airport reported she saw the aircraft start its takeoff roll. She reported that she could not believe the airplane was actually departing because of the dense fog. The airplane impacted the ground about one half mile east from the departure end of runway 18. The flight controls and engine exhibited continuity. All cylinders had compression. The propeller exhibited rotational scoring and twisting. The pilot did not have an instrument rating.

## Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: the noninstrument-rated pilot's takeoff into instrument meteorological conditions. The weather was a factor.

## Findings

Occurrence #1: IN FLIGHT COLLISION WITH TERRAIN/WATER  
Phase of Operation: TAKEOFF - INITIAL CLIMB

### Findings

1. LIGHT CONDITION - DUSK
2. (F) WEATHER CONDITION - LOW CEILING

3. (F) WEATHER CONDITION - FOG
4. (F) WEATHER CONDITION - OBSCURATION
5. (C) VFR FLIGHT INTO IMC - INITIATED - PILOT IN COMMAND
6. LACK OF CERTIFICATION - PILOT IN COMMAND

## Factual Information

### History of Flight

On February 6, 1997, at 1800 central standard time (CST), a Cessna 150, N714EE, was destroyed during takeoff when the airplane impacted the ground about one half mile from the runway at Larchwood Airport, Larchwood, Iowa. The private pilot received fatal injuries. The 14 CFR 91 flight was departing Larchwood Airport en route to Luverne, Minnesota. Instrument meteorological conditions prevailed and no flight plan was filed.

Witnesses reported that the pilot had planned to fly the airplane to Luverne, Minnesota, which was about 13 nautical miles to the northeast, in order for the airplane to get an annual maintenance inspection. Although the weather at Larchwood consisted of instrument conditions with fog and ice, the pilot decided to takeoff.

A witness who lived at the departure airport reported that she saw the aircraft lights at the north end of runway 18. She reported that she could not believe the aircraft was departing considering the dense fog. She heard the pilot add power and commence the takeoff run to the south. She did not see the aircraft become airborne due to the snow banks and visibility.

A farmer who lived about one half mile to the east of the airport reported that he heard the airplane crash about 1800 CST.

No one saw the airplane depart the airport. The airplane impacted the ground about one half mile east of the departure end of runway 18.

A search was commenced by local authorities. Members of the search teams reported that the visibility during the search was restricted to about 50 feet, and ice was forming on their glasses and snowmobile windshields. The aircraft was located about 1915 CST. No ice was found on the aircraft.

### Personnel Information

The pilot was a 41 year old, male private pilot with single engine airplane and helicopter ratings. The pilot's logbook was not located. Federal Aviation Administration (FAA) records indicated the pilot had a total of about 360 flight hours. The pilot co-owned the accident aircraft. The aircraft had been flown about 8 hours in the last 14 months. The pilot did not have an instrument rating.

### Aircraft Information

The airplane was a Cessna 150M with a Continental O-200-A engine which produced 100 horsepower. It was owned by the pilot and his father who lived in Texas. The airplane had been hangared at the Larchwood Airport, Larchwood, Iowa. The last annual inspection was performed on October 21, 1995. The total airframe hours on the aircraft at the time of the accident was 1,469. It had been flown 8 hours since the last annual inspection.

### Meteorological Conditions

The closest weather reporting station was at Sioux Falls, South Dakota, about 15 nautical miles to the northwest. The weather at Sioux Falls at 1756 CST was reported as:

"Winds 270 degrees at 7 knots, 1/4 mile visibility in freezing fog, 100 feet vertical visibility, temperature -8 degrees, dew point -8 degrees."

The weather at Sioux Falls at 1856 CST was reported as:

"Winds 260 degrees at 4 knots, 1/2 mile visibility in freezing fog, 100 feet vertical visibility, temperature -8 degrees, dew point -9 degrees, altimeter 30.25 degrees."

### Wreckage and Impact Information

The impact marks at the accident site indicated that the airplane impacted slightly rising terrain. Red lens pieces were found near the first impact marks. A skid mark about 24 feet long and heading 095 degrees led to the area where the aircraft's engine and propeller hit the ground. The left wing tip had crush damage. The bottom side of the left wing's leading edge had crush damage indicating about a 60 degrees nose down attitude with the left wing lower than the right wing. Two small craters were created in the encrusted snow. The left crater was deeper than the right crater. The approximate heading of the aircraft during impact was to the north, northeast.

The aircraft skidded on the frozen ground for about 125 feet on a heading of 072 degrees. Aircraft parts were shed from the aircraft along the wreckage path. The aircraft came to rest right side up on a northerly heading.

The aircraft was inspected at the accident site. Both fuel tanks were intact and contained about 10 gallons each of automobile fuel. The aircraft had placards which indicated that the airplane had a Supplemental Type Certificate to use automobile fuel. The fuel lines from the wing tanks were leaking fuel. The carburetor had broken from its engine mount during impact, but was otherwise intact.

Control continuity was checked to all flight control surfaces. All controls and cables were examined and they indicated that the flight controls had continuity.

The pilot's seat belt and shoulder harness were examined. The pilot's seat belt and shoulder

harness were buckled together, but the inboard strap of the seat belt was not secured to the floorboard fitting. Rescue personnel had reported that they had not cut the straps, and were uncertain if the pilot had been secured in the seat belt and shoulder strap.

The engine was examined. The spark plugs had normal coloring and wear. The left magneto had crash damage and could not produce spark, but the impulse coupling was operable. The right magneto produced spark on all four towers. The engine had continuity and compression on all cylinders. The propeller and spinner had rotational scoring. The #1 propeller blade had impact gouges along its leading edge and rotational scoring and blade twist. The #2 blade was bent back with no twist.

The gyros from the artificial horizon, directional heading indicator, and the turn and bank indicator were examined. No scoring was evident on the artificial horizon or directional heading indicator gyros. Three small gouge and smudge marks were found on the turn and bank gyro.

#### Medical and Pathological Information

An autopsy was performed on the pilot at LCM Pathologists, P.C., in Souix Falls, South Dakota.

A Forensic Toxicology Fatal Accident Report was prepared by the FAA's Civil Aeromedical Institute. The results of the examination included the following:

No Carboxyhemoglobin detected in blood. No Cyanide detected in blood. No Ethanol detected in blood. No drugs detected in blood.

#### Additional Information

Parties to the investigation included the Federal Aviation Administration and the Cessna Aircraft Company.

The aircraft wreckage was released to the Lyon County Sheriff on February 7, 1997.

## Pilot Information

<b>Certificate:</b>	Private	<b>Age:</b>	41, Male
<b>Airplane Rating(s):</b>	Single-engine land	<b>Seat Occupied:</b>	Left
<b>Other Aircraft Rating(s):</b>	Helicopter	<b>Restraint Used:</b>	
<b>Instrument Rating(s):</b>	None	<b>Second Pilot Present:</b>	No
<b>Instructor Rating(s):</b>	None	<b>Toxicology Performed:</b>	Yes
<b>Medical Certification:</b>	Class 3 Valid Medical--no waivers/lim.	<b>Last FAA Medical Exam:</b>	June 10, 1993
<b>Occupational Pilot:</b>	No	<b>Last Flight Review or Equivalent:</b>	
<b>Flight Time:</b>	360 hours (Total, all aircraft)		

## Aircraft and Owner/Operator Information

<b>Aircraft Make:</b>	Cessna	<b>Registration:</b>	N714EE
<b>Model/Series:</b>	150 150	<b>Aircraft Category:</b>	Airplane
<b>Year of Manufacture:</b>		<b>Amateur Built:</b>	
<b>Airworthiness Certificate:</b>	Utility	<b>Serial Number:</b>	15079113
<b>Landing Gear Type:</b>	Tricycle	<b>Seats:</b>	2
<b>Date/Type of Last Inspection:</b>	October 21, 1995 Annual	<b>Certified Max Gross Wt.:</b>	1600 lbs
<b>Time Since Last Inspection:</b>	8 Hrs	<b>Engines:</b>	1 Reciprocating
<b>Airframe Total Time:</b>	1469 Hrs	<b>Engine Manufacturer:</b>	Continental
<b>ELT:</b>	Installed, not activated	<b>Engine Model/Series:</b>	O-200-A
<b>Registered Owner:</b>	BILLY J. FOREHAND	<b>Rated Power:</b>	100 Horsepower
<b>Operator:</b>		<b>Operating Certificate(s) Held:</b>	None
<b>Operator Does Business As:</b>		<b>Operator Designator Code:</b>	

## Meteorological Information and Flight Plan

<b>Conditions at Accident Site:</b>	Instrument (IMC)	<b>Condition of Light:</b>	Dusk
<b>Observation Facility, Elevation:</b>	FSD ,1429 ft msl	<b>Distance from Accident Site:</b>	15 Nautical Miles
<b>Observation Time:</b>	17:56 Local	<b>Direction from Accident Site:</b>	300°
<b>Lowest Cloud Condition:</b>	Unknown	<b>Visibility</b>	0.25 miles
<b>Lowest Ceiling:</b>	100 ft AGL	<b>Visibility (RVR):</b>	
<b>Wind Speed/Gusts:</b>	7 knots /	<b>Turbulence Type Forecast/Actual:</b>	/
<b>Wind Direction:</b>	270°	<b>Turbulence Severity Forecast/Actual:</b>	/
<b>Altimeter Setting:</b>	30 inches Hg	<b>Temperature/Dew Point:</b>	-22°C / -18°C
<b>Precipitation and Obscuration:</b>	N/A - None - Fog		
<b>Departure Point:</b>		<b>Type of Flight Plan Filed:</b>	None
<b>Destination:</b>	LUVERNE , MN (D19 )	<b>Type of Clearance:</b>	None
<b>Departure Time:</b>	18:00 Local	<b>Type of Airspace:</b>	Class E

## Airport Information

<b>Airport:</b>		<b>Runway Surface Type:</b>	
<b>Airport Elevation:</b>		<b>Runway Surface Condition:</b>	
<b>Runway Used:</b>	0	<b>IFR Approach:</b>	
<b>Runway Length/Width:</b>		<b>VFR Approach/Landing:</b>	

## Wreckage and Impact Information

<b>Crew Injuries:</b>	1 Fatal	<b>Aircraft Damage:</b>	Destroyed
<b>Passenger Injuries:</b>		<b>Aircraft Fire:</b>	None
<b>Ground Injuries:</b>	N/A	<b>Aircraft Explosion:</b>	None
<b>Total Injuries:</b>	1 Fatal	<b>Latitude, Longitude:</b>	43.449779,-96.429771(est)

## Administrative Information

<b>Investigator In Charge (IIC):</b>	Silliman, Jim
<b>Additional Participating Persons:</b>	BOB HILLOCK; DES MOINES , IA ANDREW HALL; WICHITA , KS
<b>Original Publish Date:</b>	April 10, 1998
<b>Last Revision Date:</b>	
<b>Investigation Class:</b>	<a href="#">Class</a>
<b>Note:</b>	
<b>Investigation Docket:</b>	<a href="https://data.nts.gov/Docket?ProjectID=10418">https://data.nts.gov/Docket?ProjectID=10418</a>

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