



National Transportation Safety Board Aviation Accident Final Report

Location:	Wayne, NE	Accident Number:	CEN16FA073
Date & Time:	01/03/2016, 1840 CST	Registration:	N5104D
Aircraft:	CESSNA 172N	Aircraft Damage:	Substantial
Defining Event:	VFR encounter with IMC	Injuries:	1 Fatal
Flight Conducted Under:	Part 91: General Aviation - Personal		

Analysis

The noninstrument-rated pilot planned to conduct a cross-country flight. Before departure on the second leg of the flight, the pilot obtained a weather briefing, which noted areas of instrument flight rules (IFR) conditions along his route of flight, including his destination airport. During the briefing, the pilot indicated that his vehicle and work was at his destination. The briefer and pilot discussed flying visual flight rules (VFR) over the cloud layer and possible alternate destination airports. The briefer suggested maintaining VFR flight and making an intermediary stop to again check the weather. The pilot elected to fly direct to his destination. During the flight, the pilot flew above the cloud layer and received VFR flight-following from ATC. The controller advised him that his preferred destination airport was currently under IFR conditions, but another airport was reporting VFR. The pilot elected to continue to the alternate destination airport. The pilot notified the controller he did not have visual contact with the ground and continued his descent. Shortly thereafter, the controller lost radar and radio communication with the pilot. About the time of the accident, a person in the area reported the weather conditions as, "clouds on the ground," with low ceilings, and freezing fog and added that the visibility had changed from about 6 miles to less than 1/4 mile in seconds. The airplane wreckage was located about 8 miles from the airport. Examination of the wreckage did not reveal any anomalies that would have precluded normal operations. A review of the pilot's logbook revealed he had a total of about 111 flight hours. The accident is consistent with controlled flight into terrain in instrument meteorological conditions as the pilot continued the descent without the ground in sight.

Probable Cause and Findings

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

The noninstrument-rated pilot's improper decision to continue visual flight into instrument meteorological conditions, which resulted in a collision with terrain.

Findings

Personnel issues	Flight planning/navigation - Pilot (Cause) Decision making/judgment - Pilot (Cause)
Environmental issues	Below VFR minima - Decision related to condition (Cause) Below VFR minima - Effect on operation (Cause)

Factual Information

History of Flight

Enroute-cruise	Other weather encounter
Enroute-descent	VFR encounter with IMC (Defining event)
Approach	Collision with terr/obj (non-CFIT)

On January 3, 2016, about 1840 central standard time, a Cessna 172N airplane, N5104D, impacted terrain near Wayne, Nebraska. The airplane sustained substantial damage and the private rated pilot was fatally injured. The airplane was registered to and operated by a private individual under the provisions of 14 Code of Federal Regulations Part 91 as a personal flight. Instrument meteorological conditions prevailed at the destination airport and the airplane was not on a flight plan. The flight originated from the Columbia Regional Airport (KCOU), Columbia, Missouri about 1540 and was en route to Sioux Gateway Airport/Col. Bud Day Field (SUX), Sioux City, Iowa.

The pilot had flown from the McKellar-Sipes Regional Airport (KMKL) Jackson, Tennessee, to KCOU. According to KCOU personnel, the pilot requested the airplane be "topped off" and the airplane was fueled with about 26 gallons of fuel. While there, the pilot contacted Flight Service Station (FSS) via telephone, for a weather briefing. The pilot stated that he wanted to conduct a visual flight rules (VFR) flight from KCOU to KSUX. He indicated that his vehicle and work was there in Sioux City. During the conversation with the briefer, the pilot was informed that the weather at KSUX was instrument flight rules (IFR) conditions and was expected to remain that way. The conversation continued with alternatives, such as flying VFR over the cloud layer, and then descending into the Wayne Municipal Airport (LCG) Wayne, Nebraska, and renting an automobile. The cloud tops en route were reported as 2,500 to 4,500 ft. above ground level (agl). The briefing also noted general areas where weather conditions were IFR and VFR.

As the pilot neared Sioux City, the air traffic controller reported IFR conditions at the Sioux City airport. The reported weather conditions at KLCG were 10 miles visibility with scattered clouds at 200 ft. agl, so the pilot decided to land at KLCG. Shortly after the pilot started his descent to KLCG, radar and radio communications were lost with the pilot.

A search located the airplane wreckage in a field, about eight miles east of KLCG.

PERSONNEL INFORMATION

The pilot held a private pilot certificate with rating for airplane single-engine land; there was no record of him holding an instrument rating. The pilot was issued a third class medical certificate and student pilot certificate on August 13, 2014.

A review of the pilot's logbook revealed the last entry was dated November 11, 2015, and he had accumulated 111.7 total flight hours, with 109.2 in the accident airplane.

AIRCRAFT INFORMATION

The Cessna 172 is a high-wing, single-engine airplane, with fixed landing gear, powered by a reciprocating Lycoming four-cylinder O-320 engine and a fixed pitch propeller. A review of the airplane's maintenance records revealed the last annual inspection was completed on January 1, 2015, with an airplane total time of 11,925.8 hours, an engine total time of 7,868.2 hours, and 1,487.7 hours since overhaul. The panel Hobbs meter read 1,251.3 hours. A review of Federal Aviation Administration (FAA) records revealed the pilot purchased the airplane on August 25, 2014; however, he had not updated the airplane's registration.

METEOROLOGICAL INFORMATION

At 1815, the automated weather observing system (AWOS) located at KLCG, about 7 miles northwest of the accident site recorded; wind calm, 10 miles visibility, a clear sky below 12,000 ft., temperature 9 degrees Fahrenheit (F), dew point 7 degrees F, and a barometric pressure of 30.42 inches of mercury.

At 1855 the station recorded wind from 010 degrees at 4 knots, 10 miles visibility an overcast sky at 200 ft, the temperature 10 degrees (F), and the dew point 9 degrees F.

No Significant Meteorological Information (SIGMET or Center Weather Advisories (CWA) were valid for the accident site at the accident time.

Airmen's Meteorological Information (AIRMET Sierra issued at 1445 was valid at the accident time. The AIRMET Sierra forecasted IFR conditions with a ceiling below 1,000 ft. agl and visibility below 3 miles in mist. Conditions were forecast to continue through 2100 to 0300 the following day.

A pilot rated witness to the weather conditions about the time of the accident was located about one half mile west of the accident location. He stated that the temperature was 15 degrees F and the fog was freezing. The clouds appeared to be of the cumulus variation and were on the ground as he drove through them. The visibility quickly reduced from more than 6 statute miles to less than 1/4 statute miles.

The pilot received a weather briefing from FSS. The briefing advised the pilot of IFR conditions, near his destination airport, along with forecast for IFR conditions. The opportunity to fly VFR over the cloud layer was discussed, along with monitoring weather en route.

A Weather Study Report was prepared for this investigation; the Group Chairman's factual report is located in the docket for this accident.

COMMUNICATIONS

A review of air traffic control communications with the pilot revealed that shortly after departing KCOU, the pilot requested and received VFR flight following. As the flight neared his destination the pilot was in contact with the Sioux City approach controller. The conversation, over several minutes, between the controller and pilot:

Controller: How are your flight conditions?

Pilot: Flight conditions are clear above the clouds, I have, probably have easily 15 to 10 miles visibility above the clouds

Controller: Roger, let me know when you get ground contact

Pilot: Will do

Pilot: What are the actual ceilings of this cloud coverage?

Controller: We're showing both at Wayne and Norfolk that they are VFR with extended clear, and Sioux City IFR, right now 700 ft. overcast.

Pilot: Thank you

Pilot: I have good line of sight on appears to be West Point

Controller: Roger, just let me know when you get ground contact

Pilot: Will do, sir

Controller: I'm showing you losing altitude; do you see the ground yet?

Pilot: Descending towards the south. Not yet, I'm sure getting fairly close

There was a conversation between the pilot and controller, about runways at the Wayne airport.

Pilot: ok, sounds good, I'll do the 36, and can't see the ground yet, but will let you know, just as soon as I do

Controller: Roger

Pilot: "At 2,000 ft. and have not identified the ground yet"

Controller: Roger, We're now showing a scattered layer at Wayne, at 200 ft.

Pilot: You're not saying the ceiling is at 200 ft. are you?

Controller: No, it's a scattered layer at 200, that was as of 10 minutes ago.

Pilot: Okay

Controller: I'm starting to lose you on radar, what's your current altitude?

Pilot: current altitude is 1,800; no ground in sight

Controller: Roger, maintain VFR

Controller: Radar contact lost

Pilot: Roger, on radar contact lost

About a half a minute later, the controller asked if the pilot was still on frequency. The pilot did not respond to the controller, and there were no additional communications with the pilot.

AIRPORT INFORMATION

The Wayne Municipal Airport / Stan Morris Field (KLCG), is a public-use, non-towered airport, located 2 miles east of Wayne, Nebraska. Pilots are to use the Common Traffic Advisory Frequency (CTAF) for communications. The airport featured a concrete runway 5/23, 3,406 ft. by 60 ft. asphalt runway 18/36, 4,201 ft. by 75 ft., and a turf runway. The airport is at an elevation of 1431.7 ft. and has an AWOS located on the field.

WRECKAGE AND IMPACT INFORMATION

The on-site examination of the wreckage revealed the airplane's right wing impacted an open area of a snow covered, harvested, corn field. From the initial impact point, the wreckage path consisted of a large crater, then several small fragments of airplane. The wreckage path then continued to the main fuselage. The wreckage came to rest inverted, facing the direction of the wreckage path. Both wings had heavy leading edge damage; the main cabin was severely crushed; the empennage sustained minimal damage, and was nearly severed just aft of the baggage area. The engine and front cowling also had heavy impact damage; the two-bladed propeller remained attached to the engine. There was not a post-crash fire.

Aileron continuity was established at each of the wing bellcranks; however, the cables were bound by the amount of damage to the airframe. Control continuity for the elevators and rudders was established to their respective control surfaces. The flap actuator was measured at

1.25 inches extended, which corresponded to a flaps retracted position. The carburetor was broken from its mount, but remained attached by the controls. Residual fuel was found in the carburetor and gascolator; the fuel appeared clear of any contaminants. The gascolator screen was also clear of debris and contaminants.

The instrument panel had heavy impact damage. The attitude indicator was partially crushed; the unit was disassembled and scoring was noted on the gyro and its housing.

The Hobbs meter on scene read 1,311.5 hours.

The airplane was recovered to a salvage yard; an examination of the engine conducted by the NTSB, along with technical representatives from the engine and airframe manufacturers.

The engine, firewall, and part of the instrument panel had been separated from the airframe for recovery. The firewall, panel, and baffling were removed to facilitate the examination. The engine was rotated by hand; continuity was established to the accessory section of the engine and through the crankshaft and valve train. Pieces of the dual magneto were recovered; however, impact damage prevented a complete examination.

The top spark plugs exhibited light colored combustion deposits and the electrodes exhibited worn out – normal signatures, in accordance with the Champion aviation check-a-plug chart. The oil pump screen was clear. The carburetor, which had separated from the engine during the accident was disassembled. The carburetor's floats had signatures, consistent with hydraulic compression. The fuel filter screen was absent debris and contamination.

No pre-impact abnormalities were noted during the airframe or engine examinations.

Pilot Information

Certificate:	Private	Age:	31
Airplane Rating(s):	Single-engine Land	Seat Occupied:	Left
Other Aircraft Rating(s):	None	Restraint Used:	Unknown
Instrument Rating(s):	None	Second Pilot Present:	No
Instructor Rating(s):	None	Toxicology Performed:	Yes
Medical Certification:	Class 3 Without Waivers/Limitations	Last Medical Exam:	08/13/2014
Occupational Pilot:	No	Last Flight Review or Equivalent:	
Flight Time:	111.7 hours (Total, all aircraft), 109.2 hours (Total, this make and model)		

Aircraft and Owner/Operator Information

Aircraft Manufacturer:	CESSNA	Registration:	N5104D
Model/Series:	172N	Aircraft Category:	Airplane
Year of Manufacture:	1979	Amateur Built:	No
Airworthiness Certificate:	Normal	Serial Number:	17272424
Landing Gear Type:	Tricycle	Seats:	
Date/Type of Last Inspection:	01/01/2015, Annual	Certified Max Gross Wt.:	2299 lbs
Time Since Last Inspection:		Engines:	1 Reciprocating
Airframe Total Time:	11925.8 Hours	Engine Manufacturer:	LYCOMING
ELT:	C91A installed, activated, aided in locating accident	Engine Model/Series:	0-320 SERIES
Registered Owner:	LYONS KENNETH L	Rated Power:	160 hp
Operator:	On file	Air Carrier Operating Certificate:	None

Meteorological Information and Flight Plan

Observation Facility, Elevation:	KLCG	Observation Time:	1835 CST
Distance from Accident Site:	8 Nautical Miles	Condition of Light:	Not Reported
Direction from Accident Site:		Conditions at Accident Site:	
Lowest Cloud Condition:	Scattered / 200 ft agl	Temperature/Dew Point:	-14° C / -15° C
Lowest Ceiling:	Unknown	Visibility	10 Miles
Wind Speed/Gusts, Direction:	3 knots, 30°	Visibility (RVR):	
Altimeter Setting:	30.43 inches Hg	Visibility (RVV):	
Precipitation and Obscuration:			
Departure Point:	Columbia, MO (KCOU)	Type of Flight Plan Filed:	None
Destination:	Sioux City, IA (KSUX)	Type of Clearance:	VFR Flight Following
Departure Time:	1540 CST	Type of Airspace:	

Wreckage and Impact Information

Crew Injuries:	1 Fatal	Aircraft Damage:	Substantial
Passenger Injuries:	N/A	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	1 Fatal		

Medical And Pathological Information

The Pathology Medical Services of Siouxland, PC, Sioux City, Iowa conducted an autopsy on the pilot. The cause of death was determined to be, "multiple acute blunt force traumatic injuries".

The FAA Bioaeronautical Sciences Research Laboratory, Oklahoma City, Oklahoma, conducted toxicological testing on the pilot. The specimens were not tested for cyanide. The test was negative for carbon monoxide and tested drugs.

Administrative Information

Investigator In Charge (IIC):	Craig Hatch	Adopted Date:	10/24/2016
Additional Participating Persons:	Darin Divis; FAA FSDO; Lincoln, NE Jonathon Hirsch; Textron Aviaton; Wichita, KS Troy Helgeson; Lycoming Aircraft engines; Williamsport, PA		
Publish Date:	10/24/2016		
Note:	The NTSB traveled to the scene of this accident.		
Investigation Docket:	http://dms.nts.gov/pubdms/search/dockList.cfm?mKey=92512		

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