



National Transportation Safety Board Aviation Accident Final Report

Location:	Armstrong, TX	Accident Number:	DFW07FA049
Date & Time:	01/02/2007, 2035 CST	Registration:	N3940R
Aircraft:	Cessna 172H	Aircraft Damage:	Destroyed
Defining Event:		Injuries:	3 Fatal
Flight Conducted Under:	Part 91: General Aviation - Personal		

Analysis

"THIS CASE WAS MODIFIED ON 1/31/2008."

The non-instrument rated private pilot inadvertently entered clouds while attempting a night cross-country in marginal night visual meteorological conditions. While maneuvering to maintain visual flight rules, the pilot entered the clouds and consequently lost control of the airplane. The airplane impacted the ground in a right turn in a pronounced nose-low attitude. The area of the accident is sparsely populated and there were no reported eyewitnesses to the accident. A pilot flying in the vicinity of the accident pilot reported several cloud layers between 1,500 and 6,000 feet mean sea level. The airplane was configured with the flaps retracted. Examination of the wreckage did not reveal any anomalies or pre-impact defects. The pilot had no actual instrument time and was not prepared to enter instrument meteorological conditions. Toxicology testing detected ethanol and citalopram in tissue samples. The ethanol detected is most likely a result of post-mortem ethanol production. It could not be determined if the use of citalopram (a prescription antidepressant also used for certain anxiety disorders and post-traumatic stress disorder) or the undetermined condition for which it was prescribed were contributory to the accident, although the use of citalopram by pilots is considered disqualifying by the FAA.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The pilot's continued flight into adverse weather conditions resulting in a loss of control. Contributing factors were the dark night conditions, the clouds, low ceilings, and the pilot's limited night and instrument experience.

Findings

Occurrence #1: IN FLIGHT ENCOUNTER WITH WEATHER
Phase of Operation: MANEUVERING

Findings

1. WEATHER CONDITION - CLOUDS
2. VFR FLIGHT INTO IMC - INADVERTENT - PILOT IN COMMAND
3. LIGHT CONDITION - NIGHT
4. (C) FLIGHT INTO ADVERSE WEATHER - CONTINUED - PILOT IN COMMAND
5. (F) QUALIFICATION - PILOT IN COMMAND
6. USE OF INAPPROPRIATE MEDICATION/DRUG - PILOT IN COMMAND

Occurrence #2: LOSS OF CONTROL - IN FLIGHT
Phase of Operation: DESCENT - UNCONTROLLED

Findings

7. (C) AIRCRAFT CONTROL - NOT MAINTAINED - PILOT IN COMMAND

Occurrence #3: IN FLIGHT COLLISION WITH TERRAIN/WATER
Phase of Operation: DESCENT

Findings

8. TERRAIN CONDITION - GROUND

Factual Information

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HISTORY OF FLIGHT

On January 2, 2007, at 2035 central standard time, a single-engine Cessna 172H airplane, N3940R, was destroyed during a loss of control following an in-flight encounter with weather while maneuvering near Armstrong, Texas. The non-instrument rated private pilot and two passengers were fatally injured. The airplane was owned and operated by a private individual. Marginal night visual meteorological conditions prevailed in the vicinity of the accident for the personal flight conducted under 14 Code of Federal Regulations Part 91. A weather briefing was received and no flight plan was filed for the 371-nautical mile night cross-country flight. The flight originated from the Mid Valley Airport (T65), near Weslaco, Texas, at approximately 2010, with Cherokee County Airport (JKO), near Jacksonville, Texas, as the flight's intended destination. All times used in this report will be central standard time using the 24-hour clock format.

The airplane was under radar coverage of Corpus Christi Airport Traffic Control Valley North from departure until the time of the accident. The first recorded transmission from N3940R is at 2004:46 when the pilot reports his position as 5-nautical miles north of T65 and requested flight following services from ATC. The airplane was observed on radar climbing to 3,500 feet mean sea level (MSL) and is told by Valley North to maintain Visual Flight Rules while enroute to JKO. At 2019:04 the pilot informs Valley North that he intends to land at Hallettsville, Texas, in order to "pick-up some fuel." Seven minutes later, the pilot reports that he needs to descend to 2,500 feet MSL to stay below the clouds. At 2031:08, Valley North queries the status of N3940R since a descent below 1,700 feet MSL would preclude radar coverage. The pilot responds with distress that "he is in trouble." A broken radio transmission, the last recorded transmission, occurred at 2031:28. The pilot of another airplane operating in the vicinity of the accident airplane heard an additional radio transmission in which the accident pilot reported that he needed to get out of the clouds.

When radar and radio contact was lost with the pilot, Valley North vectored the nearby airplane to perform a search in the area of the last radio transmission. The pilot of the responding airplane reported dense cloud layers in the area surrounding the accident site. There were no reported eyewitnesses to the accident. The wreckage of the airplane was located by the crew of a law enforcement helicopter within an hour of the accident. The wreckage of the airplane was found on a private ranch, approximately 46-nautical miles north of the flight's point of departure. There was no fire.

PERSONNEL INFORMATION

The pilot, age 26, held a private pilot certificate with an airplane single engine landing rating issued on August 18, 2006. A valid third-class medical certificate was issued on December 5, 2005. The pilot's log book was recovered for examination. The last entry in the log book was on August 24, 2006, when the pilot reported a total of 85.2 flight hours, all in the accident aircraft. In addition, the logbook revealed the pilot had logged 3.2-hours of night flight time, and 3.7-hours of simulated instrument time.

AIRPLANE INFORMATION

The four-seat, high wing, fixed gear airplane, serial number 172-55440, was manufactured in 1966. The airplane was powered by a single 145-horsepower Continental O-300-D12 engine driving a two-bladed McCauley propeller. Review of the maintenance records recorded an annual inspection completed on September, 1, 2006, with a recorded airframe time of 3,131.4 hours. The last recorded maintenance action was an oil change on December 29, 2006. On this date, the tachometer and engine time were both logged at 3,147.9 hours.

The airplane was not equipped with an automatic pilot.

METEOROLOGICAL INFORMATION

Prior to flight, the pilot received three weather briefing from the Fort Worth Flight Service Station (FSS). The briefing prior to flight the FSS briefer forecasted overcast ceilings 3,200 to 7,000 feet MSL with unrestricted visibility. As the pilot progress north the overcast ceilings were forecasted 7,000 to 10,000 feet MSL eventually clearly to clear below 12,000 feet MSL.

The nearest automated weather reporting facility was located at Brooks County Airport (KBKS), approximately 34-nautical miles to the northwest of the accident site. At 2025, approximately 10 minutes prior to the accident, BKS reported winds from 050 degrees at 8-knots, visibility 10-statute miles, scattered clouds at 1,600 feet, scattered clouds at 3,100 feet, and an overcast layer at 6,000 feet. The temperature was 12C, dew point 10C, and barometric pressure at 30.24 inches of Mercury. At 2045, approximately 10 minutes after the accident, BKS reflected the 2035 observation with the exception of cloud coverage. Clouds now formed a broken ceiling at 3,300 feet, and overcast at 6,000 feet.

A pilot flying in the vicinity was vectored to the last point of radar contact to locate the missing airplane. During the search, the pilot reported an overcast layer of clouds from 4,000 to 5,000 feet MSL. A broken layer of clouds existed from 1,500 feet MSL to an altitude of less than 3,500 feet MSL. The area of the accident is sparsely populated. Most of the land is area consist of mesquite and low vegetation. Visibility was reported good to the south of the clouds and the pilot reported being able to see the city lights of Harlingen, Texas, located 46-nautical miles away.

WRECKAGE AND IMPACT INFORMATION

All major components of the airplane were accounted for at the accident site. The main wreckage consisted of the fuselage. There was no evidence of an in-flight or post-impact fire. An initial impact crater eight feet long, four feet wide, and two feet deep was located with the propeller. A 100-foot trail followed a 038 magnetic heading to another impact point. Right side components of the fuels system and the right side main wheel assembly were found closest to the initial impact point. The engine and wings separated from the fuselage. Flight control continuity was found to all of the flight controls. No defects or anomalies were found within the airframe or flight controls. The wing flaps were found in the retracted position.

A representative from Teledyne Continental Motors performed the field examination of the engine. No anomalies were discovered in the engine. Bending and polishing was present on both blades of the propeller. The vacuum pump rotated freely and had no signs of damage. The heading indicator, attitude indicator, and turn-and-bank gyroscopes were found to have rotational scoring consistent with rotation at impact. The Hobbs meter was severely damaged and an accurate airframe time could not be obtained. The examination of the airframe and the engine at the accident site did not disclose any mechanical problems.

MEDICAL AND PATHOLOGICAL INFORMATION

On January 3, 2007 an autopsy was performed on the pilot by the Nueces County Medical Examiner's Office. The autopsy concluded multiple blunt force injuries as the cause of death and manner of death as accidental.

Forensic toxicology was performed on specimens from the pilot by the FAA Bioaeronautical Sciences Research Laboratory, Oklahoma City, Oklahoma. The toxicology report stated 10 mg/dl of ethanol was detected in the muscle, but no the liver. Citalopram was detected in the liver and kidney.

The pilot had not reported the use of citalopram or any psychiatric diagnoses on his most recent application for airman medical certificate dated December 5, 2005.

The 2006 FAA Guide to FAA Medical Examiners notes that antidepressant drugs are disqualifying for aeromedical certification purposes.

ADDITIONAL INFORMATION

Citalopram is a anti-depressant that is used to treat a variety of conditions. A caution related to the drug states "This drug may make you dizzy or drowsy. Use caution while driving, using machinery, or doing any other activity that requires alertness."

According to FAA advisory circular (AC) 60-4A "Pilot's Spatial Disorientation," "Surface references and the natural horizon may at times become obscured, although visibility may be above visual flight rule minimums. Lack of natural horizon or surface reference is common on over-water flights, at night, and especially at night in extremely sparsely populated areas or in low visibility conditions. A sloping cloud formation, an obscured horizon, a dark scene spread with ground lights and stars, and certain geometric patterns of ground lights can provide inaccurate visual information for aligning the airplane correctly with the actual horizon. The disoriented pilot may place the airplane in a dangerous attitude."

Pilot Information

Certificate:	Private	Age:	26, Male
Airplane Rating(s):	Single-engine Land	Seat Occupied:	Left
Other Aircraft Rating(s):	None	Restraint Used:	Seatbelt, Shoulder harness
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:	12/01/2005
Occupational Pilot:		Last Flight Review or Equivalent:	08/01/2006
Flight Time:	85 hours (Total, all aircraft), 85 hours (Total, this make and model), 3 hours (Last 90 days, all aircraft), 3 hours (Last 30 days, all aircraft), 3 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Manufacturer:	Cessna	Registration:	N3940R
Model/Series:	172H	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	No
Airworthiness Certificate:	Normal; Utility	Serial Number:	17255440
Landing Gear Type:	Tricycle	Seats:	4
Date/Type of Last Inspection:	09/01/2006, Annual	Certified Max Gross Wt.:	2300 lbs
Time Since Last Inspection:		Engines:	1 Reciprocating
Airframe Total Time:	3131.4 Hours	Engine Manufacturer:	Teledyne Continental
ELT:	Installed, not activated	Engine Model/Series:	O-300-D12
Registered Owner:	Joe Smith Farms Inc.	Rated Power:	145 hp
Operator:	Joe Smith Farms Inc.	Air Carrier Operating Certificate:	None

Meteorological Information and Flight Plan

Observation Facility, Elevation:	KBKS, 112 ft msl	Observation Time:	2025 CST
Distance from Accident Site:	34 Nautical Miles	Condition of Light:	Night/Dark
Direction from Accident Site:	310°	Conditions at Accident Site:	Instrument Conditions
Lowest Cloud Condition:	Scattered / 1600 ft agl	Temperature/Dew Point:	12° C / 10° C
Lowest Ceiling:	Broken / 6000 ft agl	Visibility	10 Miles
Wind Speed/Gusts, Direction:	8 knots, 50°	Visibility (RVR):	
Altimeter Setting:	30.24 inches Hg	Visibility (RVV):	
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Weslaco, TX (T65)	Type of Flight Plan Filed:	None
Destination:	Jacksonville, TX (JSO)	Type of Clearance:	VFR Flight Following
Departure Time:	2010 CST	Type of Airspace:	

Airport Information

Airport:		Runway Surface Type:	
Airport Elevation:		Runway Surface Condition:	
Runway Used:	NA	IFR Approach:	None
Runway Length/Width:		VFR Approach/Landing:	None

Wreckage and Impact Information

Crew Injuries:	1 Fatal	Aircraft Damage:	Destroyed
Passenger Injuries:	2 Fatal	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	3 Fatal		

Administrative Information

Investigator In Charge (IIC): William H Gamble **Adopted Date:** 01/31/2008

Additional Participating Persons: John Bures; FAA FSDO; San Antonio, TX
Henry J Soderlund; Cessna; Wichita, KS
Josh Cawthra; Teledyne Continental Motors; Mobile, AL

Publish Date:

Investigation Docket: NTSB accident and incident dockets serve as permanent archival information for the NTSB's investigations. Dockets released prior to June 1, 2009 are publicly available from the NTSB's Record Management Division at pubinq@ntsb.gov, or at 800-877-6799. Dockets released after this date are available at <http://dms.nts.gov/pubdms/>.

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