



National Transportation Safety Board Aviation Accident Final Report

Location:	Walthourville, GA	Accident Number:	MIA08FA001
Date & Time:	10/03/2007, 1959 EDT	Registration:	N96HA
Aircraft:	Piper PA-28-181	Aircraft Damage:	Destroyed
Defining Event:		Injuries:	2 Fatal
Flight Conducted Under:	Part 91: General Aviation - Personal		

Analysis

The non-instrument rated pilot landed at an intermediate airport before departing to his destination airport in night marginal VFR flight conditions. Prior to departure a passenger called a person at their destination and told them they were aware of the weather, and would arrive in about 2 hours. The pilot received an initial weather briefing before departing on his initial leg of the flight. The briefer encouraged the pilot to obtain an updated weather briefing due to changing weather conditions for both of his planned flight legs. There is no record that the pilot obtained an updated weather briefing. The pilot departed on the accident flight and was in cruise flight at 3,500 feet, using flight following services from approach control. As he neared the airport the controller informed the pilot that the airport was at his 12 o'clock position, 5 miles, and flight following was terminated. The pilot reported the airport was in sight, and initiated a right descending turn instead of continuing direct to the airport. There was no other radio communication with the pilot. The weather observation for the airport had overcast clouds at 2, 200 feet, broken clouds at 1,000 feet, scattered clouds at 500 feet, and few clouds at 200 feet. Review of radar data revealed the airplane made several descending turns, with the last radar contact at 300 feet. The airplane collided with trees about 1 mile from the airport. Because of the clouds that had moved into the area, the pilot likely could not distinguish ground cues that would have helped him determine the airplane's attitude. Without an instrument rating, the pilot was unable to use his flight instruments to help him successfully orient and land the airplane. No anomalies were noted with the airframe, flight controls, flight instruments, engine assembly and accessories.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The non-instrument rated pilot's loss of control at night in marginal night VFR operations due to spatial disorientation. A factor in the accident was the pilot's improper decision to continue the flight.

Findings

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

Findings

1. LIGHT CONDITION - DARK NIGHT
2. WEATHER CONDITION - CLOUDS

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

Findings

3. (F) IN-FLIGHT PLANNING/DECISION - IMPROPER - PILOT IN COMMAND
4. (C) SPATIAL DISORIENTATION - PILOT IN COMMAND
5. (F) UPDATING OF RECORDED WEATHER INFORMATION - NOT OBTAINED - PILOT IN COMMAND

Factual Information

HISTORY OF FLIGHT

On October 3, 2007, at 1959 eastern daylight time, (unless otherwise noted, all times are based on a 24 hour clock) a Piper PA-28-181, N96HA, registered to Stick and Rudder Inc, and operated by a non-instrument rated private pilot collided with trees and the ground while maneuvering in the vicinity of Walthourville, Georgia. The personal flight was operated under the provisions of Title 14 Code of Federal Regulations (CFR) Part 91 with no flight plan filed. Marginal visual meteorological conditions prevailed. The non-instrument rated pilot and one passenger were fatally injured, and the airplane was destroyed. The flight originated from Anderson Regional Airport, Anderson, South Carolina, at 1830 on October 3, 2007.

According to Savannah Approach Control, the flight was handed off from Jacksonville Center at 1941. The pilot was advised no traffic or airport information was available for his destination airport. The pilot was provided the Savannah altimeter and informed the taxi way lights were out of service. The pilot was vectored around a restricted area and issued a VFR descent at pilot's discretion. At 1953, the controller pointed out the airport at 12 O'clock, 5 miles, and radar service was terminated. The pilot acknowledged the transmission and there was no further contact with the pilot. Review of Savannah radar data revealed the airplane was at 3,500 feet at 1954:02. The airplane turned to the right and was at 2,500 feet at 1956:23. The airplane continued in a left turn and descended down to 2,100. At 1957:19, the airplane was in a right turn and descended down to 1,500 feet at 1957:38. The airplane was at 1,400 feet at 1957:56, and descended down to 1,000 feet in a left turn at 1958:20. At 1958:27, the airplane starts at right turn at 1,000 feet. The last radar contact was at 1958:47, and the airplane was at 300 feet.

The son of the deceased pilot stated his mother called his home, and spoke to his wife at 1800. His mother stated they were aware of the weather and that they would arrive in Hinesville, Georgia, in about two hours. The son stated he went to the airport to pick up his parents, "it was a very gloomy night, very dark, and cloudy with a drizzling rain." A lady arrived at the airport, asked him if he was waiting for someone, and informed him that an airplane had crashed.

A ground search was initiated for the missing airplane by the Long County Sheriff's Office, after the 911 Emergency Operators were informed of the airplane accident at 2000. The Sheriff's Office requested a helicopter to assist in the search from the Georgia State Police. The initial request was denied due to weather. Rescue personnel on the ground reported encountering rain, overcast skies, fog, and no visible horizon. The Georgia State Police attempted an aerial search at 0031 and terminated the search at 0120 due to weather. The search resumed at 0700 and the State Police Helicopter located the wreckage at 1100.

PERSONNEL INFORMATION

The pilot, age 56 held a private pilot certificate issued on February 20, 1993, with ratings for airplane single engine land, and the pilot held a third-class medical certificate issued on June 20, 2007, with the restriction "must wear corrective lenses." The pilot indicated on his application for the third class medical certificate that he had accumulated 175 total flight hours. The pilot's last flight review was completed on February 21, 2007. Review of the pilot's logbook revealed he had accumulated 238.1 total flight hours of which 150.2 hours were in the PA-28-

181. The pilot had logged 66.9 total night flight hour's of which 2 hours were flown in the last 90 days. The pilot had not logged any instrument time and had logged 1.2 hours of simulated instrument time. The last simulated instrument flight was conducted on February 10, 1993.

AIRCRAFT INFORMATION

The four seat, single-engine low-wing monoplane, serial number (S/N) 28-43061, was manufactured in 1996. It was powered by a Lycoming O-360-A4M 180-hp engine and equipped with a Sensenich model 76EM8S5-0-6 fixed pitch propeller. A review of the airframe maintenance records revealed the last annual inspection was performed on December 18, 2006, at tachometer time 1,260.9. The Hobbs meter at the accident site was 1574.9, and the tachometer was 1,415.4. The airplane had flown 154.5 hours since the last annual inspection. There is no record of a 100-hour inspection having been performed since the last annual inspection. The total airframe hours at the time of the accident was 1,415.4 hours. The altimeter, encoder, and static system test were conducted on January 12, 2005.

METEOROLOGICAL INFORMATION

The National Weather Service, (NWS) Weather Depiction Chart for 1800 depicted an area of instrument flight rule (IFR) conditions over eastern Georgia. Surrounding that area was an area of marginal visual flight rules (MVFR) conditions over portions of southern South Carolina, Georgia, Alabama, and the Florida panhandle due to marginal ceilings and rain. MVFR to IFR conditions were depicted along the route of flight and in the vicinity of the accident site, due to low overcast clouds and rain.

The Wright Army Airfield, (KLHW) Hinesville, Georgia, weather at 1955 was wind from 040 degrees at 4 knots, visibility 10 miles, a few clouds at 200 feet, scattered clouds at 600 feet, ceiling broken at 1,000 feet, overcast at 2,200 feet, temperature and dew point 75 Fahrenheit (F), and altimeter 29.97 inches of Hg.

KLHW special weather observation at 2047 was wind from 060 degrees at 6 knots, visibility 8 miles in light drizzle, ceiling overcast at 600 feet, temperature and dew point 75 degrees F, and altimeter 29.99 inches of Hg. Remarks; automated observation system, rain began at 2038 and ended at 2047, drizzle began at 2034, ceiling 300 variable 1,200 feet, sea level pressure 1015.4-hPa.

The NWS issued AIRMET Sierra update number 5 at 1645 for IFR and mountain obscuration conditions, valid until 2300. The advisory warned of ceilings below 1,000 feet agl and visibilities below 3 miles in precipitation, mist, and fog. The conditions were expected to continue beyond 2300 through 0500. The accident site was located within the boundaries of the advisory.

The pilot contacted the FAA Macon, Georgia, Federal Contract Facility (FCF)/Automated Flight Service Station (AFSS) between 1222 to 1236, and requested a weather briefing for the route from Marion Municipal Airport (KMZZ), Indiana, to Savannah (KSAV), Georgia, with a stop at Anderson Regional Airport (KAND), Anderson, South Carolina.

AIRMET Sierra was current for mountain obscuration over Georgia and South Carolina and the AIRMET was forecast to end at 1500. Since the advisory was expected to end while the flight was en-route, the briefer recommended that the pilot contact Flight Watch or flight service to make sure the weather did not move into the Anderson area.

The briefer reemphasized that given the conditions of the mountain obscuration, and extensive

area of overcast clouds that the pilot should obtain an update enroute and land as necessary in Kentucky or Tennessee if the clouds do not begin to break up to allow a VFR descent, and/or if the thunderstorm activity was impacting the area. The briefer then asked the pilot if he wished a briefing from Anderson to Savannah, and the pilot indicated he would get one on the ground in Anderson, South Carolina, before continuing. The briefer concluded and warned the pilot of thunderstorms and the current Convective SIGMET that were moving across the area and potentially impact the route from Anderson to Savannah. The pilot acknowledged and the briefing ended.

There was no record of the pilot of N96HA contacting an AFSS or obtaining a Direct User Access Terminal (DUAT) briefing from Anderson. It was not determined if the pilot used any local weather briefing services when he stopped in Anderson for fuel at the local fixed base operation (FBO).

A husband and wife living in the vicinity of the accident site provided a statement of what they witnessed on the evening of the accident. They indicated they were sitting on their front porch when they observed the accident airplane flying low north bound, and appeared to be operating just in the clouds. They then observed the airplane flying south-southwest bound below the clouds, and then heard varying engine noises and heard what sounded like an impact into the ground. They immediately called 911 to report the event. They noted the time from seeing the airplane to the impact was between 1957 and 1959 EDT.

Astronomical data obtained from the United States Naval Observatory website revealed sunset was at 1909 and end of civil twilight was at 1933. The moon was more than 10 degrees below the horizon at the elevation of the sun at 1959.

WRECKAGE AND IMPACT INFORMATION

The wreckage was located in a wooded area in Long County about 1 mile west of Walthourville, Georgia, and six-tenths of a mile west of Liberty County Airport, Hinesville, Georgia. Examination of the crash site revealed the airplane collided with 100-foot tall trees on a heading of 220 degrees magnetic. The airplane continued down the crash debris line (CDL) on a heading of 180 degrees magnetic. Tree branches with "V" cuts were present along the CDL. The CDL was 500 feet in length and the main fuselage came to rest on its right side.

Examination of the airframe, flight controls, and flight instruments revealed no evidence of pre-impact mechanical malfunction. The propeller remained attached to the crankshaft and the crankshaft was intact. Both propeller blades were bent aft 45 degrees about 17 inches inboard of the propeller tips. Torsional twisting was present on both propeller blades, and one propeller blade exhibited trailing edge "s" bending. Partial disassembly of the engine assembly and accessories revealed no evidence of a pre-impact mechanical malfunction.

MEDICAL AND PATHOLOGICAL INFORMATION

The Forensic Pathologist, Georgia Bureau of Investigation, performed an autopsy on the pilot on October 5, 2007. The reported cause of death was "multiple blunt force trauma." The Forensic Toxicology Research Section, Federal Aviation Administration, Oklahoma City, Oklahoma, performed postmortem toxicology of specimens from the pilot. The studies were negative for carbon monoxide, cyanide, and ethanol. Pioglitazone was detected in the blood and lungs. The pilot, a physician, had not reported any history of diabetes or use of medications on his applications for the third class medical certificate.

TEST AND RESEARCH

Advisory Circular 60-4A states in part, "The attitude of an aircraft is generally determined by reference to the natural horizon or other visual references with the surface. If either horizon or surface references exist, the attitude of an aircraft must be determined by artificial means from the flight instruments. Sight supported by other senses, allow the pilot to maintain orientation. However during periods of low visibility, the supporting senses sometimes conflict with what is seen. When this happens, a pilot is particularly vulnerable to disorientation. The degree of orientation may vary considerably with individual pilots. Spatial disorientation to a pilot means simply the inability to tell which way is "up."...Surface references and the natural horizon may at times become obscured, although visibility may be above flight rule minimums. Lack of natural horizon or such reference is common on over water flights, at night, and especially at night in extremely sparsely populated areas, or in low visibility conditions.... The disoriented pilot may place the aircraft in a dangerous attitude.... Therefore, the use of flight instruments is essential to maintain proper attitude when encountering any of the elements which may result in spatial disorientation."

ADDITIONAL INFORMATION

A United States Government Flight Information Publication, U.S. Terminal Procedures Southeast (SE) Volume 2 of 3, instrument approach procedures, standard terminal arrivals, standard instrument departures, and airport diagrams for Georgia, South Carolina, and North Carolina, was found in the wreckage. The issue date of the publication was July 22, 1993, and the expiration date was September 16, 1993.

Pilot Information

Certificate:	Private	Age:	56, 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 With Waivers/Limitations	Last FAA Medical Exam:	06/01/2007
Occupational Pilot:		Last Flight Review or Equivalent:	02/01/2007
Flight Time:	238 hours (Total, all aircraft), 150 hours (Total, this make and model), 172 hours (Pilot In Command, all aircraft), 7 hours (Last 90 days, all aircraft), 1 hours (Last 30 days, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Piper	Registration:	N96HA
Model/Series:	PA-28-181	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	No
Airworthiness Certificate:	Normal	Serial Number:	2843061
Landing Gear Type:	Tricycle	Seats:	4
Date/Type of Last Inspection:	12/01/2006, Annual	Certified Max Gross Wt.:	2550 lbs
Time Since Last Inspection:	154.5 Hours	Engines:	1 Reciprocating
Airframe Total Time:	1415.4 Hours at time of accident	Engine Manufacturer:	Lycoming
ELT:	Installed, activated, did not aid in locating accident	Engine Model/Series:	O-360-A4M
Registered Owner:	Stick and Rudder Inc	Rated Power:	180 hp
Operator:	Om P. Rehil	Operating Certificate(s) Held:	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual Conditions	Condition of Light:	Night/Dark
Observation Facility, Elevation:	KLHW, 45 ft msl	Distance from Accident Site:	1 Nautical Miles
Observation Time:	1955 EDT	Direction from Accident Site:	270°
Lowest Cloud Condition:	Few / 200 ft agl	Visibility	10 Miles
Lowest Ceiling:	Broken / 1000 ft agl	Visibility (RVR):	
Wind Speed/Gusts:	4 knots /	Turbulence Type Forecast/Actual:	/
Wind Direction:	40°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	29.97 inches Hg	Temperature/Dew Point:	24° C / 24° C
Precipitation and Obscuration:	Light - Fog		
Departure Point:	Anderson, SC (KAND)	Type of Flight Plan Filed:	None
Destination:	Hinesville, GA (2J2)	Type of Clearance:	None
Departure Time:	1830 EDT	Type of Airspace:	

Wreckage and Impact Information

Crew Injuries:	1 Fatal	Aircraft Damage:	Destroyed
Passenger Injuries:	1 Fatal	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	2 Fatal	Latitude, Longitude:	31.780556, -81.647222

Administrative Information

Investigator In Charge (IIC):	Carrol A Smith	Report Date:	02/28/2008
Additional Participating Persons:	James D Nichols; College Park, FSDO; College Park,, GA James M Childers; Textron Lycoming; Elizabethton, TN Paul Lehman; Piper Aircraft; Vero Beach, FL		
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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The Independent Safety Board Act, as codified at 49 U.S.C. Section 1154(b), precludes the admission into evidence or use of any part of an NTSB report related to an incident or accident in a civil action for damages resulting from a matter mentioned in the report. A factual report that may be admissible under 49 U.S.C. § 1154(b) is available [here](#).