



National Transportation Safety Board Aviation Accident Final Report

Location:	McEwen, TN	Accident Number:	ATL02FA008
Date & Time:	11/03/2001, 0155 CST	Registration:	N43334
Aircraft:	Piper PA-28-181	Aircraft Damage:	Destroyed
Defining Event:		Injuries:	3 Fatal
Flight Conducted Under:	Part 91: General Aviation - Personal		

Analysis

The pilot's original destination was Clarksville, Tennessee. However, because of adverse weather conditions in Clarksville, the pilot diverted to Waverly, Tennessee. The pilot contacted the Nashville automated Flight Service Station at about 2200 and again at about 0100 for a weather brief. The pilot limited the brief by only asking what Ft. Campbell, was reporting for visibility. At both times Ft. Campbell, Kentucky was reporting less than three miles visibility and fog. Shortly after 0130, the non-instrument rated private pilot, initiated VFR flight into IMC conditions. The airplane was last seen on radar at about 0155 in the vicinity of the accident site, circling, at about 1600 feet mean sea level. Examination of the wreckage found that the airplane had cartwheeled left wing first, then the nose, followed by the right wing, until it came to rest against a tree line. Further examination did not reveal evidence of mechanical malfunction, and there was no evidence of pilot impairment or incapacitation.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The pilot initiated a VFR flight into known IMC conditions which resulted in a loss of control of the airplane due to spatial disorientation. Factors were the low ceilings.

Findings

Occurrence #1: IN FLIGHT ENCOUNTER WITH WEATHER
Phase of Operation: TAKEOFF - INITIAL CLIMB

Findings

1. (F) WEATHER CONDITION - LOW CEILING
2. (C) VFR FLIGHT INTO IMC - CONTINUED - PILOT IN COMMAND

Occurrence #2: LOSS OF CONTROL - IN FLIGHT
Phase of Operation: CLIMB - TO CRUISE

Findings

3. (C) AIRCRAFT CONTROL - NOT MAINTAINED - PILOT IN COMMAND
4. (C) SPATIAL DISORIENTATION - PILOT IN COMMAND

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

Findings

5. TERRAIN CONDITION - GROUND

Factual Information

HISTORY OF FLIGHT

On November 3, 2001, at 0155 central standard time, a Piper PA-28-181, N43334, collided with the ground in McEwen, Tennessee, shortly after takeoff from the Humphreys County Airport in Waverly, Tennessee. The airplane was operated by Pilot's Choice Aviation and flown by the private pilot under the provisions of Title 14 CFR Part 91, and visual flight rules. Instrument meteorological conditions prevailed and no flight plan was filed for the personal flight. The pilot and two passengers received fatal injuries and the airplane was destroyed. The flight originated in Georgetown, Texas, at 1530 the previous day.

The pilot's original destination was Clarksville, Tennessee. However, because of adverse weather conditions in Clarksville, the pilot diverted to Waverly, Tennessee. According to security tapes at Waverly, the pilot fueled the airplane after landing and then pushed it back out of the view of the security camera. The pilot contacted the Nashville automated Flight Service Station about 2200 and again about 0100 for a weather briefing. The pilot limited the briefing by only asking what Ft. Campbell was reporting for visibility. At both times, Ft. Campbell, Kentucky, was reporting less than three miles visibility and fog. At 0130, the flight departed Waverly for Clarksville. The airplane was last seen on radar about 0155, at 1600 feet mean sea level. The airplane was found in a pasture by a local farmer at daybreak that morning, in McEwen, Tennessee.

PILOT INFORMATION

The pilot held a private certificate with privileges for airplane single engine land. The pilot was not instrument rated, and his private pilot certificate was issued on August 8, 2001, and at the time of the accident he had accumulated about 64 hours of total flight time. The pilot's most recent third class medical certificate was issued on June 14, 2001, with no waivers or limitations. According to records on file at Fort Hood, Texas, the pilot was designated as an Army Helicopter pilot and had accumulated about 1,537 total flight hours.

AIRCRAFT INFORMATION

The Piper PA-28-181, S/N 28-8490035, was manufactured and certificated in 1984. It was a four seat, single engine airplane, with tricycle fixed landing gear. The Federal Aviation Administration (FAA) records showed that the airplane was registered to the current owners on April 22, 1997. The airplane's maintenance records showed that the most recent inspection was a phase inspection, completed on November 1, 2001. The airplane had accumulated a total time of 9,220 hours at the time of the accident, including seven hours since its last inspection. A review of the airplanes maintenance logbooks revealed no discrepancies.

METEOROLOGICAL INFORMATION

Weather at the time of the accident was reported by witnesses as foggy. One witness who found the airplane stated that visibility was near zero due to fog. Weather reported at Fort Campbell, Kentucky at 1255, was wind variable at 2 knots, visibility 2.5 statute miles, light rain, scattered clouds at 300 feet, broken clouds at 4000 feet, broken clouds at 9000 feet, temperature and dew point were 15 degrees Celsius and the altimeter was 30.31 millimeters of mercury. At 0153, Nashville, Tennessee was reporting, overcast at 940 feet, visibility 5 statute miles, temperature 17 degrees Celsius, and dew point at 16 degrees Celsius and wind light and variable.

WRECKAGE EXAMINATION

Examination of the wreckage on-scene found that the airplane rested next to a tree line bordering a cow pasture, about 5 miles southeast of the Waverly Airport. The left wing, aileron and flap had separated at the wing root. The outboard section of the wing spar was bent aft. The outboard leading edge of the wing had impact damage and was compressed aft and upward. The fuel cap was in-place and intact. The left main landing gear was found separated from the wing.

The left aileron was separated into two sections, including a missing outboard tip. The aileron was attached to the middle hinge only. The bell crank was attached to its attachment points, and the stops were in-place and intact. The push pull tube from the bell crank to the aileron was damaged and separated from its attachment point. Both aileron cables were attached to the bell crank and separated near the wing root. The primary cable was found cut. The balance cable was frayed and unwound. The flap was separated into two sections. The inboard section was attached to the inboard hinge. The outboard section was separated from its attachments.

The right wing was separated at the wing root. The outboard leading edge was buckled aft to the main spar, and the outboard tip was destroyed. Fuel, blue in color, was found in the breached fuel tank. The fuel cap was in-place and intact. The right main gear had impact damage.

The right aileron remained attached to all three of its attachment points. The bell crank was separated from its attachment points. The push pull rod from the bell crank to the aileron was separated. The aileron cables were attached to the bell crank and separated near the wing root. The cable separation was frayed and unwound. The flap was attached to the inboard hinge only, and the flap was separated into two sections.

The vertical stabilizer and rudder sustained impact damage. The leading edge of the vertical stabilizer had impact damage. The rudder was attached to the middle attachment point and to the rudder horn. The stops were in-place and intact. The rudder cables were attached to the rudder horn and separated near the baggage area where the fuselage had separated. The rudder cables were attached to the rudder bar and separated near the cabin area. The cable separation was frayed and unwound.

The horizontal tabulator was damaged. The left side of the tabulator had leading edge circular impact damage. Approximately 18 inches of the left outboard tabulator was separated and destroyed. The trim tab mechanism measured 3/4 of an inch and displayed 4 threads, which positioned the tab in the neutral position. The tabulator stops were in-place and intact. The tabulator cables were attached to the balance weight and separated at the aft baggage compartment. The cable separations were frayed and unwound. The tabulator cables were attached to the "T" Bar and separated near the cabin area. The fuselage had separated near the aft baggage compartment.

The flap handle was separated from its attachment point. The fuel selector was separated from its attachment points and was selected to the right tank position. The fuel selector was field tested by blowing air through the valves with no obstructions noted.

Examination of the engine revealed that it was separated from the airframe structure and all the tubular mounts were broken. Then engine controls were destroyed. Initial visual examination of the engine revealed no outward anomalies. Detail examination of the engine including partial disassembly found the spark plugs, valve covers, oil filter, and oil suction

screen unremarkable. Rotation of the crankshaft established internal gear and valve train continuity. All four cylinders developed thumb compression during crankshaft rotation. Bore scope examination of the engine revealed no primacy anomalies. The carburetor and fuel pump were damaged, separated. Several fuel hoses were broken. The carburetor was opened for examination, the bowl was clean, the nozzle was clear, one float was partly collapsed. No fuel was found within the engine components. Both fuel tanks were ruptured. A residual quantity of aviation fuel was found remaining in the right wing fuel tank area. The instrument vacuum system pump was found impact damaged but the drive coupling was intact, inspection of the internal vanes revealed no anomalies.

The propeller assembly was attached to the crankshaft flange. The #1 blade was heavily damaged, the outboard section was twisted, and approximately ten inches of blade material was torn off, and not located or recovered. The #2 blade exhibited tensional bending, and heavy leading edge nicks at the tip section was noted. Both blades had heavy scoring and abrasions.

MEDICAL/PATHOLOGICAL INFORMATION

An autopsy examination of the pilot and passengers was conducted by the Department of the Army, 31st Military Police Detachment (CID) (Air Assault) 3D Military Police Group Criminal Investigation Division (CID) USACIDC, Fort Campbell, Kentucky. The autopsy examination established the manner of death for the pilot and passenger as, accidental, and the cause of death as multiple blunt force trauma.

A post accident toxicological examination was performed by the Federal Aviation Administration (FAA) Civil Aero medical Institute, in Oklahoma City, Oklahoma. The toxicology report on the pilot revealed no ethanol was detected in the muscle, 25(mg/do, mg/hg) ethanol detected in kidney and 10(mg/do, mg/hg) acetaldehyde detected in kidney. No drugs were detected in the kidney. The low levels of ethanol and acetaldehyde detected in the kidney is likely a result of post-mortem production.

ADDITIONAL INFORMATION

Radar data was recovered from Memphis Air Traffic Control Center in Memphis, Tennessee. A review of the data and a controllers statement found that the airplane was between 1,600 feet and 1,700 feet, and according to the controller the airplane was "circling, disoriented, or returning to Waverly, Tennessee."

The wreckage was released to the owners representative on August 28, 2002, US Aviation Underwriters.

Pilot Information

Certificate:	Military; Private	Age:	41, 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 Valid Medical--no waivers/lim.	Last FAA Medical Exam:	06/14/2001
Occupational Pilot:		Last Flight Review or Equivalent:	06/14/2001
Flight Time:	1601 hours (Total, all aircraft), 7 hours (Total, this make and model), 49 hours (Pilot In Command, all aircraft), 19 hours (Last 90 days, all aircraft), 16 hours (Last 30 days, all aircraft), 6 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Piper	Registration:	N43334
Model/Series:	PA-28-181	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	No
Airworthiness Certificate:	Normal	Serial Number:	28-8490035
Landing Gear Type:	Tricycle	Seats:	4
Date/Type of Last Inspection:	11/01/2001, Continuous Airworthiness	Certified Max Gross Wt.:	2550 lbs
Time Since Last Inspection:	7 Hours	Engines:	1 Reciprocating
Airframe Total Time:	9220 Hours at time of accident	Engine Manufacturer:	Lycoming
ELT:	Installed, activated, aided in locating accident	Engine Model/Series:	O-360-A4M
Registered Owner:	Howard C. Wilson	Rated Power:	180 hp
Operator:	Beth Jenkins	Operating Certificate(s) Held:	None
Operator Does Business As:	Pilot's Choice Aviation	Operator Designator Code:	

Meteorological Information and Flight Plan

Conditions at Accident Site:	Instrument Conditions	Condition of Light:	Night/Dark
Observation Facility, Elevation:	HOP, 573 ft msl	Distance from Accident Site:	50 Nautical Miles
Observation Time:	1255 CST	Direction from Accident Site:	20°
Lowest Cloud Condition:	Scattered / 300 ft agl	Visibility	2.5 Miles
Lowest Ceiling:	Broken / 4000 ft agl	Visibility (RVR):	
Wind Speed/Gusts:	2 knots /	Turbulence Type Forecast/Actual:	/
Wind Direction:	Variable	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	30.31 inches Hg	Temperature/Dew Point:	15° C / 15° C
Precipitation and Obscuration:			
Departure Point:	Waverly, TN (OM5)	Type of Flight Plan Filed:	None
Destination:	Clarksville, TN (CKV)	Type of Clearance:	None
Departure Time:	0115 CST	Type of Airspace:	Class G

Airport Information

Airport:	Humphreys County Airport (OM5)	Runway Surface Type:	Asphalt
Airport Elevation:	756 ft	Runway Surface Condition:	Dry
Runway Used:	21	IFR Approach:	None
Runway Length/Width:	4000 ft / 75 ft	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	Latitude, Longitude:	36.161389, -87.685833

Administrative Information

Investigator In Charge (IIC):	Butch Wilson	Report Date:	07/23/2003
Additional Participating Persons:	Edward G Rogalski; Textron Lycoming; Bellview, FL Robert Martellotti; The New Piper Aircraft, Inc.; Centreville, VA Curtis L Wilkes; Federal Aviation Administration; Nashville, TN		
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/ .		

The National Transportation Safety Board (NTSB), established in 1967, is an independent federal agency mandated by Congress through the Independent Safety Board Act of 1974 to investigate transportation accidents, determine the probable causes of the accidents, issue safety recommendations, study transportation safety issues, and evaluate the safety effectiveness of government agencies involved in transportation. The NTSB makes public its actions and decisions through accident reports, safety studies, special investigation reports, safety recommendations, and statistical reviews.

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](#).