



National Transportation Safety Board

Aviation Accident Final Report

Location:	Daytona Beach, FL	Accident Number:	CHI04FA043
Date & Time:	12/17/2003, 0933 EST	Registration:	N155BM
Aircraft:	Piper PA46-500TP	Aircraft Damage:	Destroyed
Defining Event:		Injuries:	2 Fatal
Flight Conducted Under:		Part 91: General Aviation - Personal	

Analysis

The airplane was destroyed when it impacted trees and terrain following an in-flight loss of control during climb after takeoff. Meteorological information indicates that the cloud ceilings were between 1,200 and 1,700 feet above ground level at the time of the accident. While airborne, the accident pilot reported to another pilot that the cloud ceiling was 1,500 feet. Radar data shows that the airplane flight profile became erratic once it had climbed above about 1,700 feet pressure altitude. The final flight path sequence depicted by the radar data shows a right-hand turn of decreasing radius with an associated rapid rate of descent. The last radar return coincided with the accident location. The non-instrument rated pilot had logged 7.0 hours of simulated instrument experience. The pilot had logged 35.8 hours in the same make and model as the accident airplane, of which, all but 0.3 hours was listed as cross-country time. No records of training in the same make and model airplane were discovered. No pre-impact mechanical deficiencies were found during the post-accident examination of the wreckage.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The unqualified pilot's continued flight into known instrument meteorological conditions which resulted in spatial disorientation and subsequent loss of aircraft control. Factors were the pilot's lack of instrument flight experience and the low ceiling.

Findings

Occurrence #1: IN FLIGHT ENCOUNTER WITH WEATHER

Phase of Operation: CLIMB - TO CRUISE

Findings

1. (F) WEATHER CONDITION - LOW CEILING
 2. (C) FLIGHT INTO KNOWN ADVERSE WEATHER - INTENTIONAL - PILOT IN COMMAND
 3. (F) LACK OF TOTAL INSTRUMENT TIME - PILOT IN COMMAND
 4. (C) VFR FLIGHT INTO IMC - INTENTIONAL - PILOT IN COMMAND
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Occurrence #2: LOSS OF CONTROL - IN FLIGHT

Phase of Operation: DESCENT - UNCONTROLLED

Findings

5. (C) AIRCRAFT CONTROL - NOT MAINTAINED - PILOT IN COMMAND
 6. (C) SPATIAL DISORIENTATION - PILOT IN COMMAND
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Occurrence #3: IN FLIGHT COLLISION WITH TERRAIN/WATER

Phase of Operation: DESCENT - UNCONTROLLED

Findings

7. OBJECT - TREE(S)
8. TERRAIN CONDITION - GROUND

Factual Information

HISTORY OF FLIGHT

On December 17, 2003, at 0933 eastern standard time (EST), a Piper PA46-500TP, N155BM, was destroyed when it impacted trees and terrain near Daytona Beach, Florida. The 14 CFR Part 91 personal flight was operating in marginal visual meteorological conditions and was not on a flight plan. The non-instrument rated private pilot and his one passenger were fatally injured. The flight had originated from the Spruce Creek Airport (7FL6), Daytona Beach, Florida, about 0928, and was en route to Nacogdoches, Texas.

PERSONNEL INFORMATION

The pilot held a private pilot certificate with ratings for single and multi-engine land airplanes. The pilot did not have an instrument rating. A review of the pilot's logbook revealed that the pilot had about 1,914 hours of total flight experience. The logbook listed 7.0 total hours of simulated instrument flight training and 35.8 hours in PA46-500 aircraft. Of the time logged in PA46-500 aircraft, 35.5 hours of the time logged was listed as cross-country flight time. There were no records of any flight training in PA46 or PA46-500 aircraft. The pilot's first logged flight in the PA46-500, N61PK, was on May 16, 2003. Federal Aviation Administration (FAA) records show that the accident airplane was previously registered as N61PK.

The pilot held a third class medical certificate issued on November 11, 2002. The medical certificate stated that the pilot must wear corrective lenses for near vision while flying.

AIRCRAFT INFORMATION

The airplane was a Piper PA46-500TP monoplane of aluminum construction. A Pratt and Whitney Canada model PT6A-42A turbine engine rated at 500 shaft horsepower powered the airplane. The pressurized airplane had accommodations for six passengers including the flight crew.

The airplane, originally registered as N61PK, was involved in a previous landing accident that occurred on the delivery flight when being flown from the factory after initial purchase. In that accident, aircraft ran off of the runway on landing and did extensive damage to the aircraft, including damage to the underside of the fuselage that resulted in holes in the pressure vessel. Although considered a total loss by the aircraft manufacturer, the accident pilot purchased the damaged aircraft from the previous owner. The accident pilot contracted with a company in Texas to have the aircraft repaired. The aircraft underwent an extensive repair including placing doublers over several fuselage formers and replacement of bottom and side fuselage skins. Both aircraft wings were removed and extensive sheet metal repairs performed. The engine and propeller were repaired and the aircraft was given an annual inspection on April 2, 2003 at 30.0 hours total airframe time. FAA Form 337 entitled "Major Repair and Alteration" was submitted to the FAA on April 10, 2003.

An FAA Designated Engineering Representative who determined that the repairs were adequate approved the repairs on May 30, 2003 by issuance of FAA Form 8110-3 entitled "Statement of Compliance with the Federal Aviation Regulations".

METEOROLOGICAL INFORMATION

A NTSB Meteorologist prepared a Meteorological Factual Report regarding the weather

conditions in the vicinity of the accident. The full report is included in the public docket material associated with this accident.

A National Weather Service (NWS) Surface Analysis Chart for 1000 depicted a cold front that extended southward across North Carolina into the Atlantic Ocean and across central and southern Florida into the Gulf of Mexico. The cold front was south of the accident location.

A NWS Weather Depiction Chart for 0800 depicted several areas of instrument flight rule (IFR) conditions across central and northern Florida, with broken or overcast clouds less than 1,000 feet above ground level (agl), and/or visibilities less than 3 statute miles. The chart also depicted a larger area of marginal visual flight rule (MVFR) conditions, with ceilings between 1,000 and 3,000 feet above ground level, and/or visibility between 3 and 5 statute miles. The accident site was within the area depicted on the chart as MVFR.

The following surface observations were recorded at airports near the accident site:

Daytona Beach International Airport (DAB), located about 9 miles east of the accident site, recorded the weather conditions at 0753 as: Wind from 240 degrees at 10 knots; Visibility 8 statute miles; Sky condition few clouds at 500 feet AGL, scattered clouds at 6,000 feet AGL; Temperature 20 degrees Celsius (C); Dew point 18 degrees C; Altimeter setting 29.91 inches of Mercury (Hg).

The DAB recorded weather conditions at 0853 were: Wind from 260 degrees at 19 knots gusting to 24 knots; Visibility 10 statute miles; Sky condition scattered clouds at 1,900 feet AGL, ceiling broken at 2,400 feet AGL, broken at 8,500 feet AGL; Temperature 20 degrees C; Dew point 17 degrees C; Altimeter setting 29.93 inches of Hg.

The DAB recorded weather conditions at 0953 were: Wind from 270 degrees at 16 knots gusting to 27 knots; Visibility 10 statute miles; Sky condition ceiling broken at 1,700 feet AGL, overcast at 2,500 feet AGL; Temperature 17 degrees C; Dew point 14 degrees C; Altimeter setting 29.97 inches of Mercury (Hg).

Orlando Sanford International Airport (SFD), located about 21 miles south-southwest of the accident site, recorded the weather conditions at 0853 as: Wind from 280 degrees at 24 knots gusting to 28 knots; Visibility 10 statute miles; Sky condition scattered clouds at 1,200 feet AGL, ceiling broken at 1,800 feet AGL; Temperature 19 degrees C; Dew point 17 degrees C; Altimeter setting 29.93 inches of Hg.

The SFD recorded weather conditions at 0945 were: Wind from 280 degrees at 27 knots gusting to 33 knots; Visibility 10 statute miles; Sky condition ceiling overcast at 1,400 feet AGL, broken at 8,500 feet AGL; Temperature 16 degrees C; Dew point 14 degrees C; Altimeter setting 29.98 inches of Hg.

The SFD recorded weather conditions at 0953 were: Wind from 270 degrees at 21 knots gusting to 29 knots; Visibility 10 statute miles; Sky condition ceiling broken at 1,400 feet AGL, broken at 2,500 feet AGL, overcast at 3,800 feet AGL; Temperature 16 degrees C; Dew point 13 degrees C; Altimeter setting 29.98 inches of Hg.

Orlando Executive Airport (ORL), located about 36 miles west of the accident site, recorded the weather conditions at 0853 as: Wind from 270 degrees at 19 knots gusting to 25 knots; Visibility 9 statute miles; Sky condition ceiling broken at 1,800 feet AGL; Temperature 20 degrees C; Dew point 17 degrees C; Altimeter setting 29.95 inches of Hg.

The ORL recorded weather conditions at 0939 were: Wind from 280 degrees at 25 knots gusting to 32 knots; Visibility 8 statute miles; Sky condition scattered clouds at 1,000 feet AGL, ceiling overcast at 1,400 feet AGL; Temperature 16 degrees C; Dew point 14 degrees C; Altimeter setting 30.00 inches of Hg.

The ORL recorded weather conditions at 0953 were: Wind from 280 degrees at 19 knots gusting to 32 knots; Visibility 6 statute miles; Sky condition ceiling overcast at 1,200 feet AGL; Temperature 15 degrees C; Dew point 13 degrees C; Altimeter setting 30.02 inches of Hg.

St. Augustine Airport (SGJ), located about 50 miles north of the accident site, recorded the weather conditions at 0835 as: Wind from 250 degrees at 12 knots gusting to 18 knots; Visibility 7 statute miles; Sky condition scattered clouds at 1,400 feet AGL, ceiling broken at 2,200 feet AGL, overcast at 3,600 feet; Temperature 18 degrees C; Dew point 16 degrees C; Altimeter setting 29.89 inches of Hg.

The SGJ recorded weather conditions at 0935 were: Wind from 290 degrees at 15 knots gusting to 21 knots; Visibility 10 statute miles; Sky condition ceiling broken at 1,200 feet AGL, overcast at 3,000 feet AGL; Temperature 14 degrees C; Dew point 12 degrees C; Altimeter setting 29.95 inches of Hg.

The SGJ recorded weather conditions at 1015 were: Wind from 290 degrees at 13 knots gusting to 18 knots; Visibility 10 statute miles; Sky condition ceiling overcast at 1,000 feet AGL; Temperature 12 degrees C; Dew point 10 degrees C; Altimeter setting 29.97 inches of Hg.

Gainesville Regional Airport (GNV), located about 66 miles northwest of the accident site, recorded the weather conditions at 0830 as: Wind from 300 degrees at 16 knots gusting to 22 knots; Visibility 10 statute miles; Sky condition ceiling broken at 1,000 feet AGL, broken at 1,700 feet AGL, overcast at 3,400 feet AGL; Temperature 12 degrees C; Dew point 9 degrees C; Altimeter setting 29.97 inches of Hg.

GNV recorded weather conditions at 0853 were: Wind from 290 degrees at 20 knots gusting to 25 knots; Visibility 10 statute miles; Sky condition ceiling broken at 1,000 feet AGL, overcast at 1,400 feet AGL; Temperature 10 degrees C; Dew point 8 degrees C; Altimeter setting 30.00 inches of Hg.

GNV recorded weather conditions at 0953 were: Wind from 290 degrees at 17 knots gusting to 23 knots; Visibility 10 statute miles; Sky condition ceiling overcast at 1,300 feet AGL; Temperature 8 degrees C; Dew point 4 degrees C; Altimeter setting 30.05 inches of Hg.

At 0720, a commercial airliner located about 5 miles south of Daytona Beach, reported the bases of the overcast were at 1,000 feet above mean sea level (msl), and the tops were at 13,000 feet msl.

COMMUNICATIONS

There were no known communications with Air Traffic Control relating to the accident.

A pilot witness who departed from the same airport after the accident airplane stated that he had inquired on the common traffic advisory frequency in regard to the cloud ceiling. He reported that the accident pilot responded and the accident pilot reported that the ceiling was 1,500 feet. The witness stated that he departed and turned south after departure. He stated that the ceiling was "pretty solid".

WRECKAGE AND IMPACT INFORMATION

The aircraft impacted into a wooded swamp near Daytona Beach, Florida, at coordinates 29 degrees 7.514 minutes north latitude, 81 degrees 12.588 minutes west longitude. The wreckage path was oriented in an approximately 230 degree magnetic direction. The main impact crater was about 6 feet deep. The airplane was fragmented and the fuselage and tail section were compressed. The major parts of the fuselage remained in the impact crater. The wings were fragmented and portions were found within a fan-shaped pattern that emanated from the impact crater. The engine and propeller were found within the impact crater. The remains of the airplane were removed from the accident site and transported to a recovery facility for further examination. To facilitate removal from the accident site, the control cables between the forward cockpit and the aft cabin section were marked and cut.

The fuselage of the airplane was removed from the impact crater in three sections: The aft cabin and tail section; the forward cockpit and cabin area back to and including the main wing spar carry-through; the fuselage forward of and including the instrument panel. All of the flight control surfaces were located at the accident site. Portions of both wing tips including sections of wing skin around and adjacent to the fuel filler caps were found. Sections of the main wing spar and wing skin material was found distributed throughout the debris field. The left horizontal stabilizer and the inboard portion of the right horizontal stabilizer remained attached to the tail section of the airplane. The outboard section of the right horizontal stabilizer was found at the accident site. The main vertical stabilizer spar remained attached to the tail cone of the airplane. The vertical stabilizer skin was found at the site. The lower portion of the rudder including the rudder trim tab was recovered. The upper portion of the rudder was not recovered.

The propeller hub with two attached blades was recovered from the impact crater. The remaining two blades were also recovered from the crater. One of the unattached blades was broken at the blade root. The other unattached blade was displaced from the hub. The propeller blades exhibited "S" shaped bending and damage to the leading edges. A portion of a tree limb was found that had a diagonal cut.

The rudder cables remained attached to the rudder sector within the tail cone. The rudder sector was broken with evidence of bending. The fracture features were consistent with overstress. The rudder cables were traced forward to the rudder/aileron interconnect near the pilot station. The elevator sector within the tail cone of the airplane was broken with evidence of bending. The fracture features were consistent with overstress. The elevator cables remained attached to the elevator sector. The elevator cables were traced forward to the elevator spring in the forward cockpit. Portions of the aileron cables remained attached to the rudder/aileron interconnect mechanism. The portions of the aileron cables exhibited features consistent with overload.

The airplane engine was examined and compressor damage and rubbing were found. The damage was consistent with rotation during the impact sequence.

No evidence of a pre or post-impact fire was noted.

MEDICAL AND PATHOLOGICAL INFORMATION

The Volusia County Medical Examiners Office, Daytona Beach, Florida, performed an autopsy on the pilot.

A Federal Aviation Administration (FAA) Final Forensic Toxicology Fatal Accident Report listed the following findings:

CITALOPRAM detected in Kidney

CITALOPRAM detected in Lung

DI-N-DESMETHYLCITALOPRAM detected in Lung

N-DESMETHYLCITALOPRAM detected in Kidney

N-DESMETHYLCITALOPRAM detected in Lung

Citalopram is a prescription antidepressant also known by the trade name Celexa. The medication is also used for anxiety, obsessive-compulsive disorder (OCD), panic disorder, posttraumatic stress disorder, schizophrenia, and social phobia.

TESTS AND RESEARCH

Radar data was obtained from the FAA. Radar returns for the accident area and approximate accident time were examined. A series of returns associated with a 1200 transponder beacon code depict an aircraft that departed 7FL6 on a predominately westerly heading.

The first radar return for this aircraft occurred at 09:28:02.89 (hh:mm:ss.ss). The altitude returns show that the airplane climbed to a pressure altitude of 1,400 feet, leveled for about 30 seconds, then climbed to 1,700 feet where the airplane leveled again for about 28 seconds. At this point the altitude profile shows that the airplane climbed to 2,300 feet, descended to 1,900 feet, climbed to 2,800 feet, descended to 2,600 feet, and then climbed to 3,200 feet. Two altitude returns were received indicating the 3,200 foot pressure altitude. The last altitude return was recorded at 09:33:13.63 indicating a pressure altitude of 1,100 feet. The calculated rate of descent between the last two radar returns was 16,000 feet per minute.

The radar data was used to plot the course of the airplane. The plotted radar data shows the airplane departing from runway 23 at 7FL6. The plot shows the airplane turned to a westerly heading until 09:31:03.82 when the airplane made a right turn to the north. At 09:32:04.21, the airplane made a left turn to the southwest. At this time, 09:32:41.08, the airplane had reached its maximum-recorded pressure altitude of 3,200 feet. The airplane then made a right turn with a rapid descent. Over the next 32 seconds, the airplane turns approximately 195 degrees to the right and descends 2,100 feet in altitude.

The last radar return coincided with the accident location of the airplane.

Tabulated and plotted radar data are included in the public docket material associated with this accident report.

ADDITIONAL INFORMATION

The FAA, The New Piper Aircraft, and Pratt and Whitney Canada were parties to the investigation.

The aircraft was released to a representative of the recovery company.

Pilot Information

Certificate:	Private	Age:	62, Male
Airplane Rating(s):	Multi-engine Land; 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--w/ waivers/lim.	Last FAA Medical Exam:	11/11/2002
Occupational Pilot:		Last Flight Review or Equivalent:	11/09/2001
Flight Time:	1914 hours (Total, all aircraft), 36 hours (Total, this make and model), 1725 hours (Pilot In Command, all aircraft), 15 hours (Last 90 days, all aircraft), 3 hours (Last 30 days, all aircraft), 0 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Piper	Registration:	N155BM
Model/Series:	PA46-500TP	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	No
Airworthiness Certificate:	Normal	Serial Number:	4697053
Landing Gear Type:	Retractable - Tricycle	Seats:	6
Date/Type of Last Inspection:	04/02/2003, Annual	Certified Max Gross Wt.:	4850 lbs
Time Since Last Inspection:		Engines:	1 Turbo Prop
Airframe Total Time:	30 Hours as of last inspection	Engine Manufacturer:	Pratt & Whitney Canada
ELT:	Installed	Engine Model/Series:	PT6A-42A
Registered Owner:	BME Air Ranch, Inc.	Rated Power:	500 hp
Operator:	BME Air Ranch, Inc.	Operating Certificate(s) Held:	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual Conditions	Condition of Light:	Day
Observation Facility, Elevation:	DAB, 34 ft msl	Distance from Accident Site:	9 Nautical Miles
Observation Time:	0953	Direction from Accident Site:	67°
Lowest Cloud Condition:	Clear	Visibility	10 Miles
Lowest Ceiling:	Broken / 1700 ft agl	Visibility (RVR):	
Wind Speed/Gusts:	16 knots / 27 knots	Turbulence Type Forecast/Actual:	/
Wind Direction:	270°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	29.97 inches Hg	Temperature/Dew Point:	17°C / 14°C
Precipitation and Obscuration:			
Departure Point:	DAYTONA BEACH, FL (44J)	Type of Flight Plan Filed:	None
Destination:	LUFKIN, TX (LFK)	Type of Clearance:	None
Departure Time:	0928 EST	Type of Airspace:	Class E

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:	29.125556, -81.209722

Administrative Information

Investigator In Charge (IIC):	John M Brannen	Report Date:	01/31/2006
Additional Participating Persons:	Jack Murphy; FAA, Orlando, Florida, FSDO; Orlando, FL Thomas A Berthe; Pratt & Whitney Canada George Hollongsworth; The New Piper Aircraft		
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.ntsb.gov/pubdms/ .		

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