



National Transportation Safety Board Aviation Accident Final Report

Location:	DEERFIELD, VA	Accident Number:	NYC99FA163
Date & Time:	07/01/1999, 1402 EDT	Registration:	N602RM
Aircraft:	Piper PA-31T	Aircraft Damage:	Destroyed
Defining Event:		Injuries:	1 Fatal
Flight Conducted Under:	Part 91: General Aviation - Personal		

Analysis

The pilot was descending the airplane from 23,000 feet for an instrument approach. All communications were normal until after he acknowledged an instruction to contact approach control, when radio contact was lost. Radar contact ceased at 11,300 feet due to radar signal reception difficulties. Contact was lost almost directly over the eventual impact site, which was on the eastern side of a small valley. Witnesses on the western side of the valley had seen the airplane flying near them, at treetop level, eastbound, and clear of clouds. About the same time, on the eastern side of the valley where the airplane would impact trees, then terrain, there was heavy rain. The commercial pilot had about 1,850 total flight hours, and had completed a 'Wings III' flight proficiency program and an instrument proficiency program about two months earlier. The airplane had been on a continuous maintenance program. At the accident site, all of the airplane's control surfaces were found, and the engines and propellers displayed signatures consistent with being under power at impact. There were insufficient remains to conduct an autopsy or toxicological testing. Previously, the pilot's father, two uncles, and a male cousin had suffered fatal heart attacks.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: Loss of control of the airplane due to pilot incapacitation following a heart attack.

Findings

Occurrence #1: LOSS OF CONTROL - IN FLIGHT
Phase of Operation: DESCENT

Findings

1. (C) AIRCRAFT CONTROL - NOT MAINTAINED - PILOT IN COMMAND
2. (C) INCAPACITATION(CARDIOVASCULAR) - PILOT IN COMMAND

Occurrence #2: IN FLIGHT COLLISION WITH OBJECT
Phase of Operation: DESCENT - UNCONTROLLED

Findings

3. OBJECT - TREE(S)

Factual Information

HISTORY OF FLIGHT

On July 1, 1999, at 1402 Eastern Daylight Time, a Piper PA-31T Cheyenne II, N602RM, was destroyed when it struck trees and then impacted terrain near Deerfield, Virginia. The certificated commercial pilot was fatally injured. Instrument meteorological conditions prevailed at the time of the accident. An instrument flight rules flight plan had been filed for the flight, from Jonesboro Municipal Airport (JBR), Jonesboro, Arkansas, to Shenandoah Valley Regional Airport (SHD), Weyers Cave, Virginia. The flight was conducted under 14 CFR Part 91.

A review of air traffic control voice tapes revealed that the pilot was communicating on a Washington Center air traffic control frequency, at 23,000 feet. The airplane was cleared to descend to 15,000 feet, and the pilot acknowledged the clearance. A further clearance to 9,000 feet was issued, which the pilot once again acknowledged. The pilot later requested, and then received from the controller, the weather at Shenandoah Valley. He was subsequently cleared to proceed direct to GABLE intersection, and acknowledged the clearance. Afterwards, he was instructed to contact Richmond Approach Control. Once again he acknowledged the controller's instructions; however, no additional communications were received from the pilot.

Radar data indicated that after the airplane left 23,000 feet, it stopped briefly at 22,200 feet. It then continued descending to 11,300 feet, after which, the altitude readout was lost.

Only one additional position was recorded for the airplane, and that was without altitude readout. Earlier, during a passdown briefing, one controller stated to another: "We're losing [radar data] right and left...stuff we're usually picking up, we're not picking up."

At the time radar contact was lost, the airplane was positioned almost directly over the eventual crash site, which was located in a valley that was shaped like a "v," and open to the north and northeast. In the vicinity of the accident site, the valley averaged about 2 nautical miles across. It was ringed by steeply rising terrain on the western side, and more gradually rising terrain on the eastern side. Peaks on both sides exceeded 3,000 feet in elevation, while the lowest point of the valley floor was about 1,700 feet in elevation.

Two witnesses were in a house on the western side of the valley, about a mile from the crash site. They stated that they saw the airplane pass by the house, heading eastbound, about treetop level. One witness thought the airplane was going to land in a field just east of the house, because it sounded like engine power was being reduced. However, both witnesses saw the airplane continue to the east, and lost sight of it behind trees.

On the eastern side of the valley, another witness was in his workshop, with the door wide open. He stated that he heard the airplane approach with the engines at full throttle, and initially thought it was "some idiot doing dive bombing." It then "sounded like [the airplane] was trying to pull out," followed by the sound of the impact..

The accident occurred during the hours of daylight, in the vicinity of 38 degrees, 9.97 minutes north latitude, 79 degrees, 23.10 minutes west longitude.

PILOT INFORMATION

The commercial pilot had about 1,850 hours of flight time, including 1,200 hours in multi-

engine airplanes. On April 23, 1999, he completed a "Wings III" proficiency program and an instrument proficiency check at Simcon Training Center. He began flying the accident airplane on April 26, 1999, and had logged about 24 hours in it, including 5 hours of actual instrument time, prior to the accident flight. He had also flown Cessna 340 airplanes since at least May of 1981.

The pilot's latest third class medical certificate was issued on September 9, 1998. The pilot also had a letter from the Federal Aviation Administration (FAA), Aeromedical Certification Division, which acknowledged his history of diverticulitis.

AIRPLANE INFORMATION

The airplane was on a continuous maintenance program, and had received its latest inspection on May 20, 1999, about 18 flight hours prior to the accident flight.

WRECKAGE SITE INFORMATION

The impact site was located approximately 265 degrees magnetic, 27 miles from the pilot's destination. Nearby trees on the top of a small knoll, about 1,830 feet above sea level, exhibited broken and cut branches, with some cut at a 45-degree angle. A swath of additional broken and cut branches descended at an angle of about 20 degrees from the initial tree strikes. In relation to the horizontal plane, the swath corresponded to a right wing being down about 50 degrees. Initial ground marks were found about 30 feet prior to a crater, which was located at the base of a 3-foot elevated driveway. A debris path emanated from the crater, heading 135 degrees magnetic, for approximately 500 additional feet.

The airplane was almost completely destroyed; however, all control surfaces were accounted for at the wreckage site. All eight propeller blades were found separated from their hubs. Two were fractured, and all exhibited varying degrees of s-bending and chordwise scoring. The engines were also fractured, with their external housings detached. Circumferential rubbing and rotational scoring marks were found in the compressor and turbine sections of both engines.

METEOROLOGICAL INFORMATION

A review of weather radar data indicated scattered showers within the general area where the accident occurred. At the pilot's destination airport, the weather, at the time of the accident, included haze, and broken cloud layers at 4,100 feet and 5,000 feet above the ground.

According to the two witnesses on the western side of the valley, weather there at the time of the airplane's sighting included an overcast sky; however, the airplane was clear of the clouds.

The witness on the eastern side of the valley stated that the weather there at the time of the accident included "very hard rain and wind," with the rain so hard that he could not see the surrounding mountains.

MEDICAL AND PATHOLOGICAL INFORMATION

There were insufficient remains to conduct an autopsy or toxicological testing.

The pilot's sister stated that there had been a history of heart disease on the paternal side of the family. The pilot was 61 years old at the time of the accident. His father had suffered a fatal attack at age 61, one uncle had suffered a fatal heart attack at age 64, and another suffered a fatal heart attack at age 34. A male cousin of the pilot also suffered a fatal heart attack, at age

45.

The pilot's medical records could not be located. The pilot's sister stated that there probably would not have been any, since the pilot had been a physician, and took care of his own health needs. She also noted that the pilot had a history of not taking very good care of himself.

ADDITIONAL INFORMATION

The wreckage was released to a representative from Hagerstown Air Services, Hagerstown, Maryland.

Pilot Information

Certificate:	Commercial	Age:	61, Male
Airplane Rating(s):	Multi-engine Land; Single-engine Land	Seat Occupied:	Unknown
Other Aircraft Rating(s):	None	Restraint Used:	
Instrument Rating(s):	Airplane	Second Pilot Present:	No
Instructor Rating(s):	None	Toxicology Performed:	No
Medical Certification:	Class 3 Valid Medical--w/ waivers/lim.	Last FAA Medical Exam:	09/28/1998
Occupational Pilot:		Last Flight Review or Equivalent:	
Flight Time:	1857 hours (Total, all aircraft), 24 hours (Total, this make and model), 25 hours (Last 90 days, all aircraft), 7 hours (Last 30 days, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Piper	Registration:	N602RM
Model/Series:	PA-31T PA-31T	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	No
Airworthiness Certificate:	Normal	Serial Number:	31T-7920081
Landing Gear Type:	Retractable - Tricycle	Seats:	8
Date/Type of Last Inspection:	05/20/1999, AAIP	Certified Max Gross Wt.:	9000 lbs
Time Since Last Inspection:	18 Hours	Engines:	2 Turbo Prop
Airframe Total Time:	4852 Hours	Engine Manufacturer:	P&W
ELT:	Installed	Engine Model/Series:	PT6A-28
Registered Owner:	BRIAN HAWLEY	Rated Power:	620 hp
Operator:	BRIAN HAWLEY	Operating Certificate(s) Held:	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Instrument Conditions	Condition of Light:	Day
Observation Facility, Elevation:	, 0 ft msl	Distance from Accident Site:	0 Nautical Miles
Observation Time:	0000	Direction from Accident Site:	0°
Lowest Cloud Condition:	Unknown / 0 ft agl	Visibility	0 Miles
Lowest Ceiling:	Overcast / 0 ft agl	Visibility (RVR):	0 ft
Wind Speed/Gusts:	/	Turbulence Type Forecast/Actual:	/
Wind Direction:		Turbulence Severity Forecast/Actual:	/
Altimeter Setting:		Temperature/Dew Point:	
Precipitation and Obscuration:			
Departure Point:	JONESBORO, AR (JBR)	Type of Flight Plan Filed:	IFR
Destination:	WEYER'S CAVE, VA (SHD)	Type of Clearance:	IFR
Departure Time:	0000	Type of Airspace:	Class E

Airport Information

Airport:	SHENANDOAH VALLEY REGIONAL (SHD)	Runway Surface Type:	
Airport Elevation:		Runway Surface Condition:	
Runway Used:	0	IFR Approach:	None
Runway Length/Width:		VFR Approach/Landing:	

Wreckage and Impact Information

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

Administrative Information

Investigator In Charge (IIC):	PAUL R COX	Report Date:	06/22/2000
Additional Participating Persons:	MARGARET MORRISON; RICHMOND, VA, PAUL LEHMAN; VERO BCH, FL, THOMAS BERTHE; LONGUEUIL, QUE,		
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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