Aviation Investigation Final Report

Location:	Harlan, Kentucky	**Accident Number:**	NYC04FA092
Date & Time:	March 21, 2004, 20:50 Local	**Registration:**	N8173U
Aircraft:	Piper PA-32R-301	**Aircraft Damage:**	Destroyed
Defining Event:		**Injuries:**	6 Fatal
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

Prior to departing on a night visual flight rules flight, the non-instrument rated pilot telephoned a flight service station and received a standard weather briefing. The briefing included information about cloud cover along portions of the route. Specifically, the cloud cover was described as solid broken to overcast with bases between 3,000 to 4,000 feet msl, and tops at 6,000 feet. The flight proceeded uneventfully through the Tri-Cities Regional Airport (TRI) airspace, before it impact terrain, about 40 miles northwest of TRI. At the time of the accident, visual meteorological conditions prevailed at TRI. However, snowfall was reported in the mountainous area near the accident site. The wreckage was located at an elevation of 3,050 feet. Review of radar data revealed that the airplane was cruising in a northwesterly direction, at 4,500 feet msl. The last recorded radar return was approximately 6 miles southeast of the accident site.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The pilot's improper decision to continue VFR flight into IMC conditions and his failure to maintain terrain clearance, which resulted in controlled flight into terrain. Factors were night, snow and a low ceiling.

Findings

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

Findings
1. (F) WEATHER CONDITION - LOW CEILING
2. (C) PLANNING/DECISION - IMPROPER - PILOT IN COMMAND
3. (F) WEATHER CONDITION - SNOW
4. (C) VFR FLIGHT INTO IMC - CONTINUED - PILOT IN COMMAND

Occurrence #2: IN FLIGHT COLLISION WITH TERRAIN/WATER
Phase of Operation: CRUISE

Findings
5. (F) LIGHT CONDITION - DARK NIGHT
6. (C) CLEARANCE - NOT MAINTAINED - PILOT IN COMMAND
7. TERRAIN CONDITION - MOUNTAINOUS/HILLY

Factual Information

HISTORY OF FLIGHT

On March 21, 2004, about 2050 eastern standard time, a Piper PA-32R-301, N8173U, was destroyed when it impacted mountainous terrain, while in cruise flight near Harlan, Kentucky. The certificated private pilot and five passengers were fatally injured. Instrument meteorological conditions prevailed near the accident site, for the flight that departed Darlington County Jetport (UDG), Darlington, South Carolina; destined for Blue Grass Airport (LEX), Lexington, Kentucky. No flight plan was filed for the personal flight conducted under 14 CFR Part 91.

The pilot received a weather briefing from the Anderson, South Carolina Flight Service Station (FSS), and departed UDG at 1901. Review of air traffic control (ATC) communications and radar data revealed that the flight proceeded uneventfully on a northwesterly heading from UDG, to the Tri-Cities Regional Airport (TRI) airspace. The pilot contacted Tri-Cities Approach Control, requested transition through the airspace, and reported descending from 10,000 feet to 4,500 feet. The controller acknowledged the transmission, assigned a transponder code, and provided flight following services through the airspace. After transitioning through the airspace, ATC terminated services about 2041. The pilot acknowledged the cancellation of services and change in transponder code.

The last radar target return was recorded at 2048:43, with no altitude recorded. However, an altitude of 4,500 feet was recorded on the previous radar target return, at 2148:24. The position of the last target return was approximately 6 miles southeast of the accident site.

The accident occurred during the hours of night; located about 36 degrees, 53.61 minutes north latitude, and 83 degrees, 04.86 minutes west longitude. A search was initiated when the flight did not land at LEX or the pilot's home airport, Central Regional Illinois Airport (BMI), Bloomington, Illinois. The wreckage was located near the peak of Little Black Mountain on March 24, 2004, about 1600.

PERSONNEL INFORMATION

The pilot held a private pilot certificate, with a rating for airplane single engine land. The pilot was not instrument rated.

According to the operator of the airplane, the pilot and aircraft logbooks were on board the airplane at the time of the accident, and believed to be destroyed. The operator reported that the pilot had accumulated approximately 425 hours of total flight time; of which, about 59 hours were in the same make and model as the accident airplane.

AIRCRAFT INFORMATION

According to a maintenance facility work order, the airplane's most recent annual inspection was performed on July 23, 2003. At that time, the airplane had accumulated 3,439.4 hours of operation.

METEOROLOGICAL INFORMATION

Review of a recording from the Anderson FSS revealed that the pilot telephoned the FSS about 1845. He received a standard weather briefing for a visual flight rules (VFR) flight from UDG to BMI, with a proposed departure time of approximately 1915. The pilot did not specify a cruising altitude, but asked for winds at 6,000 feet and 9,000 feet.

The briefing including an icing advisory for occasional moderate rime or mixed ice in clouds and precipitation below 7,000 feet msl; over Kentucky and Indiana.

The briefing also included information about cloud cover north and west of the Appalachian Mountains. The cloud cover was described as solid broken to overcast with bases between 3,000 to 4,000 feet msl, and tops at 6,000 feet msl.

TRI was located about 40 miles southeast of the accident site. The reported weather at TRI, at 2053 was: wind 310 degrees at 10 knots; visibility 10 miles; few clouds at 4,700 feet agl; temperature 32 degrees F; dew point 20 degrees F; altimeter 30.24 inches Hg. However, a Kentucky State Trooper observed heavy snowfall in the Harlan County area at the time of the accident, with possible accumulation of 1 inch in the mountainous areas. Additionally, the NEXRAD Weather Radar Imagery report for 2100 revealed light to medium intensity echoes for southeastern Kentucky.

WRECKAGE AND IMPACT INFORMATION

The wreckage was examined at the accident site on March 25, 2004, and all major components of the airplane were accounted for at the scene. The main wreckage was resting about 10 feet upslope of the main impact point, and 300 feet below the peak, on the southeast side of the mountain. The wreckage was oriented about a 010-degree heading, approximately 3,050 feet msl. A debris path was observed, that initiated with several severed trees. The trees were severed about the same height, oriented about a 340-degree heading to the main impact point.

The right wingtip was located about 10 feet from the beginning of the debris path, and portions of the outboard right wing were situated about 10 feet beyond the right wingtip. The propeller was located about 10 feet beyond the right wing, near a large rock that exhibited scraping consistent with impact forces. The left wing was resting to the left of the propeller.

The cockpit, and a large section of fuselage, was destroyed by fire. The inboard portion of the right wing and the empennage were folded over the fuselage. The empennage was canted to the right, and the vertical and horizontal stabilators remained attached. Flight control continuity was established from the vertical stabilator, the horizontal stabilator, and the horizontal stabilator trim to the mid-cabin area. A jackscrew measurement of the stabilator trim corresponded to an approximate full nose down position; however, the trim position prior to impact could not be determined.

The right main landing gear was found retracted into the right wing, the nose gear was separated from the airplane, and left main landing gear had separated from the left wing. The inboard portion of the right flap remained attached to the right wing, and was near the retracted position. The flap handle was also found in the flap-retracted position. The right wing bellcrank remained inside the wing with two aileron cables attached. Both cables were separated and broom-strawed, consistent with overstress.

The left wing was fragmented into several pieces and separated from the fuselage. The left aileron was found detached from the wing, and separated into two sections. The left flap was also detached from the left wing. The left aileron bellcrank was found separated from the left wing, and one aileron cable remained attached to the bellcrank.

All three propeller blades exhibited s-bending and leading edge gouging. The propeller blade tips had separated from two of the propeller blades. One of the tips was recovered and was curled; the other tip was not recovered.

The engine exhibited impact and fire damage, but remained attached to the firewall. The propeller flange was bent right, and the crankshaft was unable to be rotated by hand. A portion of the number two cylinder had separated from the engine, and was found about 20 feet prior to the main wreckage, along the debris path. The front portion of the engine case had cracked, and the number one cylinder valve cover separated from the engine. The magnetos and rear accessory section of the engine were destroyed by fire. The oil suction screen, oil filter, fuel servo, and fuel pump were destroyed. The fuel inlet screen was recovered in soot, and was charred. The fuel manifold was opened; no fuel was present and the diaphragm remained intact. The spark plugs were removed from the engine for inspection. All electrodes were intact and light gray in color; except for the number two bottom spark plug electrode, which was destroyed.

MEDICAL AND PAHTOLOGICAL INFORMATION

An autopsy was performed on the pilot by the Commonwealth of Kentucky, Office of the Chief Medical Examiner, Frankfort, Kentucky.

Toxicological testing was conducted on the pilot at the FAA Toxicology Accident Research Laboratory, Oklahoma City, Oklahoma.

ADDITIONAL INFORMATION

The wreckage was released to a representative of the owner's insurance company on March 25, 2004.

Pilot Information

Certificate:	Private	**Age:**	41,Male
Airplane Rating(s):	Single-engine land	**Seat Occupied:**	Left
Other Aircraft Rating(s):	None	**Restraint Used:**	
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:**	December 11, 2002
Occupational Pilot:	UNK	**Last Flight Review or Equivalent:**	June 13, 2002
Flight Time:	425 hours (Total, all aircraft), 59 hours (Total, this make and model)		

Aircraft and Owner/Operator Information

Aircraft Make:	Piper	**Registration:**	N8173U
Model/Series:	PA-32R-301	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	32R8013073
Landing Gear Type:	Retractable - Tricycle	**Seats:**	6
Date/Type of Last Inspection:	July 23, 2004 Annual	**Certified Max Gross Wt.:**	3600 lbs
Time Since Last Inspection:		**Engines:**	1 Reciprocating
Airframe Total Time:	3439 Hrs as of last inspection	**Engine Manufacturer:**	Lycoming
ELT:	Installed, not activated	**Engine Model/Series:**	IO-540
Registered Owner:	Crosswinds Flying Club	**Rated Power:**	300 Horsepower
Operator:		**Operating Certificate(s) Held:**	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Instrument (IMC)	**Condition of Light:**	Night
Observation Facility, Elevation:	TRI,1519 ft msl	**Distance from Accident Site:**	41 Nautical Miles
Observation Time:	20:53 Local	**Direction from Accident Site:**	120°
Lowest Cloud Condition:	Few / 4700 ft AGL	**Visibility**	10 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	10 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	310°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	30.23 inches Hg	**Temperature/Dew Point:**	0°C / -7°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Darlington, SC (UDG)	**Type of Flight Plan Filed:**	None
Destination:	Lexington, KY (LEX)	**Type of Clearance:**	None
Departure Time:	19:01 Local	**Type of Airspace:**	Class G

Airport Information

Airport:	Blue Grass Airport LEX	**Runway Surface Type:**	
Airport Elevation:	979 ft msl	**Runway Surface Condition:**	Unknown
Runway Used:		**IFR Approach:**	None
Runway Length/Width:		**VFR Approach/Landing:**	None

Wreckage and Impact Information

Crew Injuries:	1 Fatal	**Aircraft Damage:**	Destroyed
Passenger Injuries:	5 Fatal	**Aircraft Fire:**	On-ground
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	6 Fatal	**Latitude, Longitude:**	36.839622,-83.319625(est)

Administrative Information

Investigator In Charge (IIC):	Gretz, Robert
Additional Participating Persons:	John Cox; FAA FSDO-01; Louisville, KY George Hollingsworth; New Piper Aircraft; Vero Beach , FL Aaron Spotts; Lycoming Engines; Williamsport, PA
Original Publish Date:	December 3, 2004
Last Revision Date:	
Investigation Class:	Class
Note:	The NTSB traveled to the scene of this accident.
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=58948