



Aviation Investigation Final Report

Location:	BOONE, North Carolina	Accident Number:	ATL93FA162
Date & Time:	September 26, 1993, 10:15 Local	Registration:	N5586P
Aircraft:	PIPER PA-24-250	Aircraft Damage:	Destroyed
Defining Event:		Injuries:	4 Fatal
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

THE DENSITY ALTITUDE AT THE BOONE AIRPORT AT THE TIME OF THE ACCIDENT WAS 5154 FEET MSL. THE AIRCRAFT GROSS WEIGHT AT THE TIME OF THE DEPARTURE WAS 3012.3 POUNDS. THE MAXIMUM GROSS WEIGHT LISTED IN THE PILOT'S HANDBOOK IS 2900 POUNDS. WITNESSES STATED THAT THE AIRCRAFT NEVER CLIMBED MORE THAN 200 FEET ABOVE GROUND LEVEL PRIOR TO THE ACCIDENT. THE WITNESSES STATED THAT AT A POINT ABOUT 1/2 MILE FROM THE DEPARTURE END OF THE RUNWAY THE AIRCRAFT WAS IN A NOSE HIGH ATTITUDE, THE WINGS WERE ROCKING FROM SIDE TO SIDE, AND THE LANDING GEAR WAS STILL IN THE EXTENDED POSITION. THE WITNESSES STATED THAT THE AIRCRAFT'S ALTITUDE WAS BELOW THE TOPS OF THE RIDGE LINE AHEAD, AND THAT JUST PRIOR TO THE RIDGE, THE AIRCRAFT NOSE PITCHED UP TO NEAR VERTICAL, THE AIRCRAFT BANKED SHARPLY TO THE RIGHT, THE NOSE DROPPED, AND IMPACTED THE TERRAIN IN A NEAR VERTICAL NOSE DOWN ATTITUDE. THE LANDING GEAR WAS FOUND TO BE IN THE DOWN AND LOCKED POSITION.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The pilot's improper preflight planning, his failure to retract the landing gear after departure, and his failure to maintain control of the aircraft. Factors in the accident were the high density altitude, and the mountainous terrain.

Findings

Occurrence #1: LOSS OF CONTROL - IN FLIGHT

Phase of Operation: TAKEOFF - INITIAL CLIMB

Findings

1. (F) WEATHER CONDITION - HIGH DENSITY ALTITUDE
2. (C) AIRCRAFT WEIGHT AND BALANCE - EXCEEDED - PILOT IN COMMAND
3. (F) TERRAIN CONDITION - MOUNTAINOUS/HILLY
4. (C) PREFLIGHT PLANNING/PREPARATION - IMPROPER - PILOT IN COMMAND
5. (C) GEAR RETRACTION - NOT PERFORMED - PILOT IN COMMAND
6. (C) STALL - INADVERTENT - PILOT IN COMMAND

Occurrence #2: IN FLIGHT COLLISION WITH TERRAIN/WATER

Phase of Operation: DESCENT - UNCONTROLLED

Factual Information

HISTORY OF FLIGHT

On September 26, 1993, at about 1015 eastern daylight time, a Piper PA-24-250, N5586P, was destroyed following a collision with terrain immediately after take off from the Boone-Blowing Rock Airport in Boone, North Carolina. Both private pilots and their two passengers were fatally injured in the accident. The aircraft was being operated under 14 CFR Part 91 by the pilot. Visual meteorological conditions existed at the time, and no flight plan had been filed for the personal flight. The intended destination of the flight was Dayton, Ohio.

Witnesses stated that the aircraft did not climb more than 200 feet above the ground after takeoff. They stated that the aircraft landing gear was still in the extended position at a point 1/2 mile past the departure end of the runway. The aircraft was below the top of the mountain ridge ahead of the aircraft. The witnesses stated that the aircraft wings appeared to rock back and forth after takeoff, and the nose pitched up to a near vertical attitude as the aircraft approached the ridge line. Then the aircraft banked to the right, the nose dropped, and impacted the terrain in a near vertical nose down position.

The aircraft impacted the terrain approximately nine tenths of a mile off the departure end of Runway 31.

PERSONNEL INFORMATION

The pilot in the left front seat, Mr. Gerald L. Coon, held a private pilot certificate with airplane single engine land and instrument airplane ratings. Mr. Coon held a Class 3 Medical Certificate dated March 3, 1992.

Mr. Coon's medical application dated March 3, 1992, indicated a total flight time of 1500 hours. No other record of Mr. Coon's flight experience was made available.

The pilot in the right front seat, Mr. Fred C. Everly, held a private pilot certificate with airplane single engine land rating. Mr. Everly held a Class 3 Medical Certificate dated July 27, 1992.

Mr. Everly's medical application dated July 27, 1992 indicated a total flight time of 104 hours. No other record of Mr. Everly's flight experience was made available.

It could not be determined who was operating the controls of the aircraft at the time of the accident.

Additional personnel information may be obtained in this report on page 3 under section titled

First Pilot Information, and in Supplement E attached to this report.

AIRCRAFT INFORMATION

The Piper Comanche PA-24-250 Owner's Handbook lists a maximum gross weight for the aircraft of 2,900 pounds. The estimated gross weight of the aircraft at the time of the accident was 3,012.3 pounds.(See Weight and Balance Computations Below.)

Weight and Balance Computations for N5586P on September 26, 1993.

ITEM	Weight	Arm	Moment
Aircraft	1705.3	84.1	143404.6
Engine Oil	17.0	28.0	476.0
Fuel(56 Gal. INBD)*	336.0	90.0	30240.0
Fuel(20 Gal. OBD)*	120.0	95.0	11400.0
Pilot(Front LT.)**	165.0	84.8	13992.0
Pilot(Front RT.)**	188.0	84.8	15942.4
Rear Passengers(2)**	283.0	118.5	33535.5
Baggage***			198.0
	142.0		28116.0
Total	3012.3	91.99	277106.5

* Fuel Quantities Are Estimated Amounts Needed For Flight From Boone, North Carolina To Dayton, Ohio Including VFR Reserve.

** Pilot And Passenger Weights Taken After Accident.

*** Actual Baggage Weight At Time Of Accident.

The Owner's Handbook shows that the aircraft, at 2,900 pounds gross weight and with landing gear retracted, would be capable of climbing at a rate of approximately 950 feet per minute, at a density altitude of 5,194 feet.(See Copy of Section Four of The Pilot's Handbook Titled Rate of Climb vs Density Altitude Attached to This Report.)

The owner's handbook does not indicate, and the manufacturer does not have data to indicate what the reduction in climb performance would be with a gross weight of 3012 pounds and with the landing gear extended.

METEOROLOGICAL INFORMATION

Witnesses in the area stated that the temperature, at the time of the accident, was about 85 degrees.(See Record of Interview Attached to This Report.)

The density altitude at the time of the accident was 5,194 feet, mean sea level.

Additional meteorological information may be obtained in this report on pages 3 and 4 under section titled Weather Information.

AERODROME INFORMATION

The Boone Airport is a private airport located in the mountainous terrain of northwestern North Carolina. It is at an elevation of approximately 3,200 feet above sea level with mountains as high as 4,660 feet above mean sea level surrounding the airport. The airport has one asphalt runway with a magnetic heading of 330 degrees and 150 degrees. The runway is 2,100 feet in length and 75 feet in width.

WRECKAGE AND IMPACT INFORMATION

The aircraft impacted the mountainous terrain at an altitude of 3,233 feet mean sea level, and approximately 700 feet below the top of the mountain ridge line.

The fuselage of the aircraft was broken just aft of the passenger section, and the roof of the passenger section was torn away from the point of attachment at the windshield. There was continuity of the rudder and elevator control cables into the cabin area of the aircraft.

Both left and right wings exhibited extensive chordwise leading edge crushing from the wing attach points outward to the wing tips. The right wing was broken, and held attached by electrical cables, at a point about 3 feet inboard of the wing tip. There was continuity of the aileron cables into the cabin area of the aircraft.

The flaps were in the retracted position. The aircraft landing gear was found to be in the down and locked position.

There was extensive chordwise scratching and twisting toward low pitch of the propeller blades. The engine spark plugs appeared normal in color when compared to a spark plug analysis chart.

MEDICAL AND PATHOLOGICAL INFORMATION

An autopsy of Mr. Coon was performed by Dr. Nordstrom of the Office of Chief Medical Examiner of North Carolina in Chapel Hill, North Carolina.

The report of toxicological examination of Mr. Coon was negative for the presence of ethanol and drugs.

An autopsy of Mr. Everly was performed by Dr. Nordstrom of the Office of Chief Medical Examiner of North Carolina in Chapel Hill, North Carolina.

The report of toxicological examination of Mr. Everly was negative for the presence of ethanol

and drugs.

ADDITIONAL INFORMATION

There were 198 pounds of luggage on board the aircraft at the time of the accident.

The airport operator reported that the he had topped off the main fuel tanks in accordance with directions of the pilot. He stated that 33 gallons of fuel was used to fill the tanks.(See Record of Interview Attached to This Report.)

The aircraft wreckage was released to insurance adjuster, Mr. James T. Bowie of THG Inflight Aviation on September 27, 1993.

Pilot Information

Certificate:	Private	Age:	56, Male
Airplane Rating(s):	Single-engine land	Seat Occupied:	Left
Other Aircraft Rating(s):	None	Restraint Used:	
Instrument Rating(s):	Airplane	Second Pilot Present:	Yes
Instructor Rating(s):	Airplane single-engine; None	Toxicology Performed:	Yes
Medical Certification:	Class 3 Valid Medical-w/ waivers/lim	Last FAA Medical Exam:	March 3, 1992
Occupational Pilot:	No	Last Flight Review or Equivalent:	
Flight Time:	1500 hours (Total, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	PIPER	Registration:	N5586P
Model/Series:	PA-24-250 PA-24-250	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	
Airworthiness Certificate:	Normal	Serial Number:	24-650
Landing Gear Type:	Retractable - Tricycle	Seats:	4
Date/Type of Last Inspection:	May 27, 1993 Annual	Certified Max Gross Wt.:	2800 lbs
Time Since Last Inspection:	39 Hrs	Engines:	1 Reciprocating
Airframe Total Time:	2648 Hrs	Engine Manufacturer:	LYCOMING
ELT:	Installed, not activated	Engine Model/Series:	O-540-A1A5
Registered Owner:	KADON CORPORATION	Rated Power:	250 Horsepower
Operator:	COON, GERALD L.	Operating Certificate(s) Held:	None
Operator Does Business As:		Operator Designator Code:	

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	Condition of Light:	Day
Observation Facility, Elevation:	AVL ,2165 ft msl	Distance from Accident Site:	50 Nautical Miles
Observation Time:	10:50 Local	Direction from Accident Site:	210°
Lowest Cloud Condition:	Clear	Visibility	15 miles
Lowest Ceiling:	None	Visibility (RVR):	
Wind Speed/Gusts:	4 knots /	Turbulence Type Forecast/Actual:	/
Wind Direction:	180°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	30 inches Hg	Temperature/Dew Point:	27°C / 16°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:		Type of Flight Plan Filed:	None
Destination:	DAYTON , OH (DAY)	Type of Clearance:	None
Departure Time:	10:14 Local	Type of Airspace:	Class G

Airport Information

Airport:	BOONE NONE	Runway Surface Type:	Asphalt
Airport Elevation:	3120 ft msl	Runway Surface Condition:	Dry
Runway Used:	33	IFR Approach:	None
Runway Length/Width:	2100 ft / 75 ft	VFR Approach/Landing:	None

Wreckage and Impact Information

Crew Injuries:	2 Fatal	Aircraft Damage:	Destroyed
Passenger Injuries:	2 Fatal	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	4 Fatal	Latitude, Longitude:	36.200809,-81.659622(est)

Administrative Information

Investigator In Charge (IIC):	Sasser, Roff
Additional Participating Persons:	EDWARD GLAVIN; WINSTON-SALEM , NC
Original Publish Date:	December 2, 1994
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=3192

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