# National Transportation Safety Board
# Aviation Accident Final Report

| | | | |
|---|---|---|---|
| **Location:** | CLAYTON, AL | **Accident Number:** | ATL93FA120 |
| **Date & Time:** | 07/01/1993, 0905 CDT | **Registration:** | N5473S |
| **Aircraft:** | PIPER PA-28-140 | **Aircraft Damage:** | Substantial |
| **Defining Event:** | | **Injuries:** | 1 Fatal |
| **Flight Conducted Under:** | Part 91: General Aviation - Personal | | |

## Analysis

THE STUDENT PILOT REPORTED TO APPROACH CONTROL THAT HE WAS EXPERIENCING ENGINE PROBLEMS. THE PILOT WAS ISSUED VECTORS TO THE NEAREST AIRPORT. HIS LAST REPORTED ALTITUDE WAS 900 FT. THE WRECKAGE WAS FOUND IN A LARGE WOODED AREA APRX 5 MI FROM THE CLAYTON AIRPORT. EXAMINATION AND TEST RUN OF THE ENGINE REVEALED THAT THE ENGINE WAS RUNNING RICH. THE CARBURETOR HOUSING BOLTS WERE LOOSE AND COULD BE TURNED BY HAND. FUEL LEAKED FROM THE HOUSING DURING THE TEST RUN. THE CARBURETOR THROTTLE SHAFT AND BUSHINGS SHOWED SIGNS OF EXTENSIVE WEAR, AND WERE LOOSE IN THE HOUSING. THE FLOAT PENDULUM WAS NOT EVEN. AIRPLANE RECORDS INDICATED THAT THE CARBURETOR WAS REMOVED, INSPECTED, AND REPAIRED APRX 4 MONTHS PRIOR TO THE ACCIDENT.

## Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: INADEQUATE MAINTENANCE AND INSPECTION OF THE CARBURETOR BY MAINTENANCE PERSONNEL.

## Findings

Occurrence #1: LOSS OF ENGINE POWER(TOTAL) - MECH FAILURE/MALF
Phase of Operation: DESCENT - NORMAL

Findings
1. (C) FUEL SYSTEM,CARBURETOR - INOPERATIVE
2. (C) MAINTENANCE - INADEQUATE - OTHER MAINTENANCE PERSONNEL
---

Occurrence #2: FORCED LANDING
Phase of Operation: EMERGENCY LANDING
---

Occurrence #3: IN FLIGHT COLLISION WITH OBJECT
Phase of Operation: EMERGENCY LANDING

Findings
3. OBJECT - TREE(S)

## Factual Information

HISTORY OF FLIGHT

On July 1, 1993, about 0905 central daylight time, a Piper PA-28- 140, N5473S was substantially damaged following a collision with terrain during an emergency landing near Clayton, Alabama. The student pilot was 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 of the accident, and no flight plan had been filed for the personal flight. The flight departed Enterprise, Alabama about 0830, and was enroute to Fayetteville, North Carolina at the time of the accident.

Personnel at the Columbus, Georgia, Air Traffic Control Tower (ATC) stated that the pilot was in radio communication with their facility prior to the accident. The personnel stated that the pilot advised that he was descending from 5500 feet to 3500 feet. He later reported that his altitude was 2800 feet. About 0900, the tower received a distress call from the pilot. He reported that he was having engine trouble and could not maintain altitude. The ATC personnel gave him directions toward the nearest airport. The last radio transmission received was at 0905, and the pilot reported his altitude as 900 feet.

The aircraft wreckage was located in a wooded area near Clayton, Alabama.

PERSONNEL INFORMATION

The pilot held a student pilot certificate. He was enrolled in the United States Army Aviation School, and had completed all of the flight training for the helicopter pilot program. He was awaiting the graduation ceremony to receive his United States Army Aviator Wings.

Additional pilot information may be obtained on Page 3 of this report.

AIRCRAFT INFORMATION

Aircraft maintenance records showed that the last Annual Inspection was completed February 8, 1993. An invoice, provided by the aircraft owner, showed that the carburetor was removed, disassembled, inspected, reassembled, and reinstalled in the aircraft on March 2, 1993. No record of this maintenance was recorded in the aircraft, nor engine log books.

Additional aircraft information may be obtained on Page 2 of this report.

METEOROLOGICAL INFORMATION

Meteorological information may be obtained on Page 4 of this report.

WRECKAGE INFORMATION

The aircraft wreckage was located in a wooded area. The wreckage was distributed over an area approximately 123 feet in length, and on a heading of approximately 195 degrees.

The first indication of the wreckage path were two pine trees approximately 12 inches in diameter and 60 feet in height, which had been severed at approximately 45 feet above ground level.

A section of the left outboard wing, approximately five feet in length, was located approximately 15 feet in the direction of and 30 feet to the left of the wreckage path. Tree bark was found on the leading edge of the wing section.

The remainder of the left wing was located approximately 66 feet in the direction of and 10 feet to the right of the wreckage path. This section of the wing also had evidence of tree bark on the leading edge. There was chordwise crushing of the leading edge of this section of the wing.

An outboard section of the right wing, approximately 5 feet in length, was located approximately 99 feet in the direction of and 5 feet to the right of the wreckage path. The leading edge of this section had a large "U" shaped indention just inboard of the wing tip faring.

The main wreckage, consisting of the fuselage, empennage, and remainder of the right wing were located, in an upright position, approximately 123 feet in the direction of the wreckage path. The engine and propeller were still attached to the fuselage. There was extensive deformation of the left side of the cockpit area. There was continuity of the aircraft flight controls from the rudder and elevator.

A test run of the aircraft engine was conducted after removing the aircraft from the wooded area. Prior to the test run, the spark plugs were removed and inspected. The spark plugs showed signs of sooting. The engine operated to 2550 revolutions per minute (RPM). The engine ran roughly at full rich mixture settings, but smoothed out and ran to full RPM after reducing the mixture control to approximately half. Inspection revealed that the carburetor housing bolts were loose, and could be rotated by hand. There was fuel leaking from the carburetor housing during the test run of the engine.

MEDICAL AND PATHOLOGICAL INFORMATION

An autopsy was performed by Dr. Allan D. Stillwell of the Alabama Department of Forensic Sciences on July 2, 1993.

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

TESTS AND RESEARCH

On January 25, 1994, an inspection of the aircraft carburetor, Marvel Schebler Model Number MA-45SPA, Part Number 10-5009, Serial Number BL 9 4397 was conducted. The inspection revealed that the carburetor had not been stamped MFV indicating compliance with an airworthiness directive requiring the installation of a one piece venturi.

The carburetor housing bolts were loose, and could be turned by hand. The throttle shaft and bushings had excessive wear, and were loose in the housing. The carburetor still had the two piece venturi installed. The float pendulum was not even, with the right side resting lower than the left.

ADDITIONAL INFORMATION

The aircraft wreckage was released to Mr. Donald R. Andersen, attorney for the owner on March 17, 1994.

## Pilot Information

| | | | |
|---|---|---|---|
| **Certificate:** | Student | **Age:** | 30, Male |
| **Airplane Rating(s):** | None | **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 2 Valid Medical--no waivers/lim. | **Last FAA Medical Exam:** | 02/12/1993 |
| **Occupational Pilot:** | | **Last Flight Review or Equivalent:** | |
| **Flight Time:** | 26 hours (Total, all aircraft), 5 hours (Total, this make and model), 18 hours (Pilot In Command, all aircraft), 2 hours (Last 90 days, all aircraft), 2 hours (Last 30 days, all aircraft) | | |

## Aircraft and Owner/Operator Information

| | | | |
|---|---|---|---|
| **Aircraft Make:** | PIPER | **Registration:** | N5473S |
| **Model/Series:** | PA-28-140 PA-28-140 | **Aircraft Category:** | Airplane |
| **Year of Manufacture:** | | **Amateur Built:** | No |
| **Airworthiness Certificate:** | Normal | **Serial Number:** | 28-7125127 |
| **Landing Gear Type:** | Tricycle | **Seats:** | 4 |
| **Date/Type of Last Inspection:** | 02/08/1993, Annual | **Certified Max Gross Wt.:** | 2150 lbs |
| **Time Since Last Inspection:** | 73 Hours | **Engines:** | 1 Reciprocating |
| **Airframe Total Time:** | 3459 Hours | **Engine Manufacturer:** | LYCOMING |
| **ELT:** | Installed, activated, aided in locating accident | **Engine Model/Series:** | O-320-E2A |
| **Registered Owner:** | HANSON, ROBERT J. | **Rated Power:** | 150 hp |
| **Operator:** | KAISER, JAMES R. | **Operating Certificate(s) Held:** | None |

## Meteorological Information and Flight Plan

| | | | |
|---|---|---|---|
| **Conditions at Accident Site:** | Visual Conditions | **Condition of Light:** | Day |
| **Observation Facility, Elevation:** | CSG, 397 ft msl | **Distance from Accident Site:** | 28 Nautical Miles |
| **Observation Time:** | 0852 CDT | **Direction from Accident Site:** | 30° |
| **Lowest Cloud Condition:** | Unknown / 0 ft agl | **Visibility** | 7 Miles |
| **Lowest Ceiling:** | Broken / 1500 ft agl | **Visibility (RVR):** | 0 ft |
| **Wind Speed/Gusts:** | / | **Turbulence Type Forecast/Actual:** | / |
| **Wind Direction:** | 30° | **Turbulence Severity Forecast/Actual:** | / |
| **Altimeter Setting:** | 30 inches Hg | **Temperature/Dew Point:** | 27°C / 23°C |
| **Precipitation and Obscuration:** | | | |
| **Departure Point:** | ENTERPRISE, AL (EDN) | **Type of Flight Plan Filed:** | None |
| **Destination:** | FAYETTEVILLE, NC (FAY) | **Type of Clearance:** | None |
| **Departure Time:** | 0830 CDT | **Type of Airspace:** | Class G |

## Wreckage and Impact Information

| | | | |
|---|---|---|---|
| **Crew Injuries:** | 1 Fatal | **Aircraft Damage:** | Substantial |
| **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):** | ROFF H SASSER, | **Report Date:** | 12/02/1994 |
| **Additional Participating Persons:** | THOMAS MILLER; BIRMINGHAM, AL | | |
| **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/. | | |