Aviation Investigation Final Report

Location:	HOLDENVILLE, Oklahoma	**Accident Number:**	FTW99FA222
Date & Time:	August 16, 1999, 18:00 Local	**Registration:**	N7178Y
Aircraft:	Piper PA30	**Aircraft Damage:**	Destroyed
Defining Event:		**Injuries:**	1 Fatal
Flight Conducted Under:	Part 91: General aviation - Positioning		

Analysis

According to a witness, the twin-engine airplane's takeoff appeared to be 'normal' except for the loud noise, which he believed was coming from the right engine. The noise 'sounded like something rubbing against a metal fan.' The witness stated that 'after the plane was in the air, it started to turn to the left like it was going to gain altitude [and] then suddenly turned right, then it started to lose altitude.' He then lost sight of the airplane as it went behind some trees. Another witness described hearing the airplane overhead 'backfiring, popping.' The witness watched the aircraft for about 1/2 mile until it disappeared behind some trees. The witness continued to hear the engine 'pop' about 20 more times before hearing a 'large backfire, 'pop'' and 10-15 seconds later he 'heard the engines race in rpm (motor revved-up high).' He then heard the airplane impact the ground. According to an insurance application filled out nine months before the accident, the commercial pilot had a total of 507 flight hours, of which 85.6 hours were in multi-engine airplanes. Other than one flight with the operator of the airplane earlier in the day of the accident, the pilot did not have any previous experience in the same make and model as the accident airplane. Flight control continuity was established. The right propeller was found in what appeared to be the feather position. An examination of the engine did not reveal any anomalies that would have resulted in a loss of power.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: the pilot's failure to maintain aircraft control during takeoff initial climb. Factors were the loss of right engine power for undetermined reasons, and the pilot's lack of total experience in the make and model of aircraft.

Findings

Occurrence #1: LOSS OF ENGINE POWER
Phase of Operation: TAKEOFF - INITIAL CLIMB

Findings
1. 1 ENGINE
2. (F) REASON FOR OCCURRENCE UNDETERMINED

Occurrence #2: LOSS OF CONTROL - IN FLIGHT
Phase of Operation: TAKEOFF - INITIAL CLIMB

Findings
3. (C) AIRCRAFT CONTROL - NOT MAINTAINED - PILOT IN COMMAND
4. (F) LACK OF RECENT EXPERIENCE IN TYPE OF AIRCRAFT - PILOT IN COMMAND

Occurrence #3: IN FLIGHT COLLISION WITH TERRAIN/WATER
Phase of Operation: DESCENT - UNCONTROLLED

Findings
5. TERRAIN CONDITION - GROUND

Factual Information

HISTORY OF FLIGHT

On August 16, 1999, approximately 1800 central daylight time, a Piper PA30 twin-engine airplane, N7178Y, was destroyed during terrain impact following takeoff from the Holdenville Municipal Airport, Holdenville, Oklahoma. The aircraft was registered to Eagle Aviation Enterprises, Inc., and operated by Adventure Aero, LLC, both of Holdenville, Oklahoma. The commercial pilot, sole occupant of the aircraft, was fatally injured. Visual meteorological conditions prevailed, and a flight plan was not filed for the 14 Code of Federal Regulations Part 91 positioning flight. The flight was originating at the time of the accident, with Norman, Oklahoma, as its intended destination.

Earlier in the day, the operator showed the accident airplane to a prospective buyer in Tulsa, Oklahoma. The operator then flew the airplane to the University Of Oklahoma, Westheimer Airport at Norman, Oklahoma, and met the flight instructor with the intention of contracting him for flight instructional work. After a discussion, the two departed to Holdenville. During this flight, the instructor demonstrated his flying abilities for the operator. After arrival in Holdenville, the flight instructor made several touch-and-go landings before stopping for fuel.

The flight instructor was to fly the aircraft back to the Westheimer Airport where it would be based for the flight instruction. The operator reported that the flight instructor told him he was going to take his time flying back to Norman and practice touch-and-go landings.

A witness reported observing the airplane takeoff from the Holdenville Airport. The takeoff appeared to be "normal" except for the loud noise, which he believed was coming from the right engine. The noise "sounded like something rubbing against a metal fan." The witness stated that "after the plane was in the air, it started to turn to the left like it was going to gain altitude [and] then suddenly turned right, then it started to lose altitude." He then lost sight of the airplane as it descended behind trees. Subsequently, he heard a "thump (like something hitting the ground hard and solid)," and then he observed smoke.

Another witness described hearing the airplane overhead "backfiring, popping." The witness stated he knew there was a problem and watched the aircraft for about 1/2 mile until it disappeared behind some trees. The witness continued to hear it "pop" about 20 more times before hearing a "large backfire, 'pop'" and 10-15 seconds later he "heard the engines race in rpm (motor revved-up high)." He then heard the airplane impact the ground.

PERSONNEL INFORMATION

According to FAA records, the pilot was issued a commercial pilot certificate on December 13,

1997, with an instrument airplane rating. On January 27, 1998, the pilot obtained a multi-engine land airplane rating. The pilot was issued a flight instructor certificate for single-engine land airplanes on May 5, 1998. On June 26, 1998, the pilot obtained an additional flight instructor rating for instrument airplanes. On August 13, 1998, the pilot attained a multi-engine instructor (MEI) rating. On the application for the MEI rating the pilot reported that he had accumulated 378 hours total flight time, of which 31 hours were in the Beech 55 multi-engine airplane. The MEI check ride met the requirement of a biennial flight review.

The pilot was issued a second class medical certificate on August 31, 1998, with no limitations or restrictions. According to the last FAA medical application, dated August 31, 1998, the pilot reported having accumulated 420 total flight hours, of which 150 hours were in the previous six months.

The pilot's flight logbook was not located. According to an insurance application filled out on October 19, 1998, by the pilot, he had accumulated a total of 507 flight hours, of which 288 hours were accumulated in the previous 12 months and 153.1 hours were accumulated in the previous 90 days. The application also listed 85.6 hours in multi-engine airplanes under 12,500 pounds and 8 hours in multi-engine airplanes over 12,500 pounds. According to another insurance application, which the pilot completed on October 22, 1998, he had accumulated 37.4 hours in the Beech 55 and 12.1 hours in the Beech 58 (both aircraft are multi-engine airplanes under 12,500 pounds). There were no hours listed for the same make and model as the accident airplane. The operator indicated to the NTSB investigator-in-charge that the pilot did not have any previous experience in the same make and model as the accident airplane.

AIRCRAFT INFORMATION

The 1963-model Piper Twin Comanche was a low-wing, 4-seat airplane. The airplane was equipped with two Lycoming IO-320-B1A engines rated at 160-horsepower. The airplane was purchased by Eagle Aviation Enterprises, Inc., on June 3, 1999. The airplane was leased to Adventure Aero, LLC who took possession of the airplane on June 9, 1999. According to the operator, on June 11, 1999, the airplane had accumulated a total time of 5,303.61 hours. The airplane was then flown 27.5 hours prior to the accident.

The maintenance records were in the airplane at the time of the accident and were destroyed by the postimpact fire; however, a few burnt pages which were legible, were recovered. The aircraft and engine underwent their last annual inspection on February 26, 1999, at a total aircraft time of 5,295.41 hours. According to the operator, the last maintenance performed on the airplane was on the fuel gauges, the electric auxiliary fuel pump, the left engine starter, and a manifold crack on the left engine.

Prior to departure, the airplane was fueled, and one quart of oil was added to each engine.

WRECKAGE AND IMPACT INFORMATION

The aircraft wreckage was located in a field about 1.25 miles south-southwest of the departure end of runway 17, at latitude 35 degrees 04.099 minutes north and longitude 096 degrees 24.721 minutes west. Examination of the accident site revealed that the airplane impacted the ground on a measured magnetic heading of 130 degrees and came to rest upright on a measured magnetic heading of 160 degrees. There were ground scars 12 feet in front of the aircraft, and the size and shape of the scars resembled wing leading edges, both engines, and the nose of the airplane. The airplane was consumed by fire. Flight control continuity was confirmed from all flight control surfaces through the fuselage to the instrument panel. The flaps and landing gear were found to be retracted.

The left engine was found attached to the firewall, and the firewall was crushed into the accessory section. The engine sustained impact, heat, and fire damage. The oil sump assembly was partially consumed by the fire, and the crankcase was cracked in the area of the crankshaft propeller flange. The left and right magnetos were in place and attached but damaged by the fire. The starter and alternator were broken off and were heat damaged. The crankshaft could not be rotated. The propeller was pulled away from the crankshaft propeller flange and was bent at the propeller hub. The propeller dome was broken away, and one propeller blade was bent aft at the hub. The other blade was loose in the hub and bent back under the engine.

The right engine was attached to the firewall, and the firewall was crushed into the accessory section. The engine sustained impact, heat and fire damage. The oil sump assembly was partially consumed by the fire. The left and right magnetos were in place and attached but destroyed be the fire. The starter and alternator were broken off and had sustained heat damage. The crankshaft could only be rotated about 1/4 of a turn and continuity was confirmed to the accessory gears. The propeller was attached to the engine. Both propeller blades were found in what appeared to be the feather position. The propeller dome was broken away. One propeller blade tip sustained fire damage. The other blade was bent somewhat aft.

The aircraft was recovered to Air Salvage Of Dallas near Lancaster, Texas, where a detailed examination of both engines was performed. On September 29, 1999, a teardown examination of the engines was performed. No evidence of a pre-impact mechanical failure was noted during the examinations.

MEDICAL AND PATHOLOGICAL INFORMATION

The Office of the Chief Medical Examiner in Oklahoma City, Oklahoma, conducted an autopsy of the pilot. Toxicological testing was performed by the FAA Civil Aeromedical Institute's (CAMI) Forensic Toxicology and Accident Research Center at Oklahoma City, Oklahoma. The toxicological tests were negative for alcohol and drugs.

ADDITIONAL INFORMATION

The airplane was released to a representative of the owner on December 12, 1999.

Pilot Information

Certificate:	Commercial; Flight instructor	**Age:**	27,Male
Airplane Rating(s):	Single-engine land; Multi-engine land	**Seat Occupied:**	Left
Other Aircraft Rating(s):	None	**Restraint Used:**	
Instrument Rating(s):	Airplane	**Second Pilot Present:**	No
Instructor Rating(s):	Airplane multi-engine; Airplane single-engine; Instrument airplane	**Toxicology Performed:**	Yes
Medical Certification:	Class 2 Valid Medical--no waivers/lim.	**Last FAA Medical Exam:**	August 31, 1998
Occupational Pilot:	Yes	**Last Flight Review or Equivalent:**	
Flight Time:	701 hours (Total, all aircraft), 485 hours (Pilot In Command, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Piper	**Registration:**	N7178Y
Model/Series:	PA30 PA30	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	30-198
Landing Gear Type:	Retractable - Tricycle	**Seats:**	4
Date/Type of Last Inspection:	February 26, 1999 Annual	**Certified Max Gross Wt.:**	3600 lbs
Time Since Last Inspection:	36 Hrs	**Engines:**	2 Reciprocating
Airframe Total Time:	5331 Hrs	**Engine Manufacturer:**	Lycoming
ELT:	Installed	**Engine Model/Series:**	IO-320-B1A
Registered Owner:	EAGLE AVIATION, INC.	**Rated Power:**	160 Horsepower
Operator:	ADVENTURE AERO, LLC.	**Operating Certificate(s) Held:**	None
Operator Does Business As:	ADVENTURE AERO LLC	**Operator Designator Code:**	

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	MLC ,770 ft msl	**Distance from Accident Site:**	33 Nautical Miles
Observation Time:	17:53 Local	**Direction from Accident Site:**	102°
Lowest Cloud Condition:	Clear	**Visibility**	10 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	4 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	160°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	30 inches Hg	**Temperature/Dew Point:**	36°C / 12°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	(F99)	**Type of Flight Plan Filed:**	None
Destination:	NORMAN , OK (OUN)	**Type of Clearance:**	None
Departure Time:	18:00 Local	**Type of Airspace:**	Class G

Airport Information

Airport:	HOLDENVILLE F99	**Runway Surface Type:**	
Airport Elevation:	860 ft msl	**Runway Surface Condition:**	
Runway Used:	17	**IFR Approach:**	
Runway Length/Width:	3250 ft / 100 ft	**VFR Approach/Landing:**	

Wreckage and Impact Information

Crew Injuries:	1 Fatal	**Aircraft Damage:**	Destroyed
Passenger Injuries:		**Aircraft Fire:**	On-ground
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	1 Fatal	**Latitude, Longitude:**	35.079895,-96.390228(est)

Administrative Information

Investigator In Charge (IIC):	Wigington, Douglas
Additional Participating Persons:	MONTE R DAVIS; OKLAHOMA CITY , OK GERALD R JAMES; WILLIAMSPORT , PA MICHAEL MCCLURE; VERO BEACH , FL
Original Publish Date:	May 30, 2001
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=47090