Aviation Investigation Final Report

Location:	COVENTRY, Rhode Island	**Accident Number:**	NYC95LA023
Date & Time:	November 11, 1994, 14:30 Local	**Registration:**	N5869S
Aircraft:	BEECH 35-C33	**Aircraft Damage:**	Destroyed
Defining Event:		**Injuries:**	2 None
Flight Conducted Under:	Part 91: General aviation - Instructional		

Analysis

THE ENGINE LOST POWER WHEN THE INSTRUMENT STUDENT (PRIVATE) PILOT ATTEMPTED TO LEVEL THE AIRPLANE AT 3000 FEET MSL AFTER A DESCENT. THE FLT INSTRUCTOR TOOK CONTROL AND SET UP FOR A FORCED LANDING WHILE THE STUDENT PILOT ATTEMPTED TO RESTART THE ENGINE. THE AIRPLANE CAME TO REST IN TREES APPROX 1/4 OF A MILE FROM A PRIVATE ARPT. THE STUDENT HAD 250 HOURS OF TOTAL FLIGHT TIME, INCLUDING 77 HOURS IN TYPE. THE AIRPLANE WAS FOUND WITH THE ELECTRIC FUEL BOOST PUMP SWITCHED OFF AND THE STUDENT DID NOT MENTION IT WHEN INTERVIEWED ABOUT HIS EMERGENCY PROCEDURES. EXAMINATION OF THE AIRPLANE REVEALED THE ENGINE WOULD RUN WITH THE ELECTRIC FUEL BOOST PUMP ON, BUT WOULD NOT RUN USING THE ENGINE DRIVEN FUEL PUMP ONLY. THE ENGINE DRIVEN FUEL PUMP DRIVE SHAFT HAD FAILED AND THE BEARINGS WERE FROZEN. SMALL PARTICLES OF ALUMINUM WERE FOUND IN THE BEARINGS. THE PUMP HAD BEEN REMOVED FROM THE AIRPLANE, SHIPPED TO AN OVERHAUL FACILITY, AND RETURNED FOR INSTALLATION 52.3 HOURS PRIOR TO THE ACCIDENT. THE SOURCE OF THE PARTICLES WAS NOT DETERMINED.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: improper emergency procedures by the pilot and inadequate supervision by the flight instructor which resulted in their failure to restart the engine after it lost power due to a failed engine driven fuel pump.

Findings

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

Findings
1. (C) FUEL SYSTEM,PUMP - FAILURE,TOTAL
2. (C) EMERGENCY PROCEDURE - IMPROPER - DUAL STUDENT
3. (C) SUPERVISION - INADEQUATE - PILOT IN COMMAND(CFI)

Occurrence #2: FORCED LANDING
Phase of Operation: EMERGENCY DESCENT/LANDING

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

Findings
4. OBJECT - TREE(S)

Factual Information

On November 12, 1994, at 1430 eastern standard time, a Beech 35-C33, N5869S, owned and operated by Paul Millman, of New York, New York, lost power, and made an off airport forced landing in Coventry, Rhode Island. The airplane was destroyed and the pilots were not injured. Visual meteorological conditions prevailed and the flight was operated on an instrument flight rules (IFR) flight plan under 14 CFR Part 91.

The instructional flight originated at Danbury, Connecticut, with the owner/operator occupying the left seat and the flight instructor in the right seat. The flight had been in cruise flight at 7000 feet and was descended to 3000 feet. An unsigned statement, attached to the NTSB Operator report stated:

...leveling off at 3000 feet, the engine failed...the prop speed was 2450 rpm (almost full forward), manifold pressure between 15 in. and 20 in. (we used 15 in. for descent and 20 in. for cruise), and fuel flow prior to failure was about 12 GPH...

KF (flight instructor) flew the plane, trimmed for best glide, while PM (pilot under instruction) handled communication and attempted to restart the engine.

The airplane came to rest in trees 1/4 mile short of runway 27. FAA Inspector Mr. Arthur Rica, an airworthiness inspector with the Boston Flight Standards Field Office, reported that when he examined the airplane after the accident, the electric boost pump switch was off and there was no emergency checklist available in the cockpit.

When interviewed by telephone on November 15, 1994, the pilot was asked about the procedures used to restart the engine, the pilot said he richened the mixture, and switched tanks. He said he did not notice the fuel flow, nor did he mention that he turned on the boost pump.

The unsigned, attached statement to the accident report also stated:

Attempts to restart included switching fuel tanks, activating auxiliary fuel pump, mixture rich, throttle full forward, switched magnetos.

According to the Pilot's operating handbook, the procedure for loss of engine power include checking the fuel flow and if it is low, place the mixture to rich and turn on the auxiliary fuel pump. If no change after a few moments, the auxiliary fuel pump is to be turned off.

The engine was run while attached to the fuselage. Mr. Rica reported that the engine performed satisfactorily with the electric fuel boost pump, but would not run on the engine

driven fuel pump.

Examination of the engine driven fuel pump disclosed the drive shaft had failed at the shear neck. The bearings were seized and contained small pieces of aluminum, of undetermined origin.

According to documents supplied by the FAA, the engine driven fuel pump was removed from N5869S and shipped to Approved Aircraft Accessories, Inc, Romulus, Michigan. It was received on April 26, 1994, with a note stating that no fittings were installed. It was overhauled and tested on April 27, 1994. According to the overhaul manual, fittings must be installed for testing of the pump. The pump was returned to the facility that shipped the pump, Bluebird Aviation Corp, Danbury, Connecticut, where it was reinstalled on N5869S on April 28, 1994. According to a signed statement from the mechanic who installed the pump, "...[The pump] was received bare without any fittings installed.

The pump had accumulated 52.3 hours at the time of the accident.

Pilot Information

Certificate:	Commercial	**Age:**	56,Male
Airplane Rating(s):	Single-engine land	**Seat Occupied:**	Right
Other Aircraft Rating(s):	None	**Restraint Used:**	
Instrument Rating(s):	Airplane	**Second Pilot Present:**	Yes
Instructor Rating(s):	Airplane single-engine; Instrument airplane	**Toxicology Performed:**	Yes
Medical Certification:	Class 2 Valid Medical--w/ waivers/lim	**Last FAA Medical Exam:**	March 1, 1994
Occupational Pilot:	UNK	**Last Flight Review or Equivalent:**	
Flight Time:	6900 hours (Total, all aircraft), 300 hours (Total, this make and model), 6700 hours (Pilot In Command, all aircraft), 125 hours (Last 90 days, all aircraft), 50 hours (Last 30 days, all aircraft), 6 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	BEECH	**Registration:**	N5869S
Model/Series:	35-C33 35-C33	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Utility	**Serial Number:**	CD-831
Landing Gear Type:	Retractable - Tricycle	**Seats:**	4
Date/Type of Last Inspection:	January 25, 1994 Annual	**Certified Max Gross Wt.:**	3050 lbs
Time Since Last Inspection:	70 Hrs	**Engines:**	1 Reciprocating
Airframe Total Time:	2789 Hrs	**Engine Manufacturer:**	CONTINENTAL
ELT:	Installed, not activated	**Engine Model/Series:**	IO-470
Registered Owner:	SUPER STRUCTURES	**Rated Power:**	225 Horsepower
Operator:	PAUL L. MILLMAN	**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:	PVD ,55 ft msl	**Distance from Accident Site:**	16 Nautical Miles
Observation Time:	14:00 Local	**Direction from Accident Site:**	100°
Lowest Cloud Condition:	Clear	**Visibility**	15 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	/ 16 knots	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	0°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	30 inches Hg	**Temperature/Dew Point:**	9°C / -5°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	DANBURY , CT (DXR)	**Type of Flight Plan Filed:**	IFR
Destination:	PROVIDENCE , RI (PVD)	**Type of Clearance:**	IFR
Departure Time:	12:50 Local	**Type of Airspace:**	Class E

Airport Information

Airport:	RICONN NONE	**Runway Surface Type:**	
Airport Elevation:	390 ft msl	**Runway Surface Condition:**	
Runway Used:	0	**IFR Approach:**	None
Runway Length/Width:		**VFR Approach/Landing:**	Forced landing

Wreckage and Impact Information

Crew Injuries:	2 None	**Aircraft Damage:**	Destroyed
Passenger Injuries:		**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	2 None	**Latitude, Longitude:**	

Administrative Information

Investigator In Charge (IIC):	Hancock, Robert
Additional Participating Persons:	ART RICA; BOSTON , MA JOHN MOELLER; MOBIL , AL
Original Publish Date:	May 16, 1995
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=38897