Aviation Investigation Final Report

Location:	FLOYD, Virginia	**Accident Number:**	IAD98LA065
Date & Time:	June 1, 1998, 16:32 Local	**Registration:**	N7794Y
Aircraft:	Piper PA-30	**Aircraft Damage:**	Destroyed
Defining Event:		**Injuries:**	2 Serious
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

In cruise flight at 10,500 feet, the pilot reported a loss of engine power on one engine and requested vectors to an airport approximately 40 miles away. The controller offered vectors to any of three airports closer to the airplane's position. The pilot declined the offer and repeated his initial request. The airplane subsequently lost power in both engines and crashed approximately 30 miles prior to the requested airport. Examination revealed an undetermined amount of fuel in both outboard auxiliary fuel tanks. Both inboard main fuel tanks contained no evidence of fuel. The cockpit area revealed each fuel selector was in the 'Main' position. The two main tanks held a total of 60 gallons, of which 6 gallons were unusable. Performance charts for the airplane revealed that in cruise flight at 10,500 feet, the airplane consumed approximately 15 gallons of fuel per hour. Examination of the airplane's rental and fueling records revealed the it had flown approximately 4 hours since the last fuel service and had completed at least 5 takeoffs and landings. Examination of the fuel system revealed no defects and both engines ran to rated power in a test cell.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The pilot's improper selection of fuel tank position resulting in fuel starvation of both engines.

Findings

Occurrence #1: LOSS OF ENGINE POWER(TOTAL) - NONMECHANICAL
Phase of Operation: CRUISE - NORMAL

Findings
1. ALL ENGINES
2. (C) FLUID,FUEL - STARVATION
3. (C) FUEL TANK SELECTOR POSITION - IMPROPER - PILOT IN COMMAND

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

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

Factual Information

HISTORY OF FLIGHT

On June 1, 1998, at 1632 eastern daylight time, a Piper PA-30, N7794Y, was destroyed during a forced landing near Floyd, Virginia. The two certificated commercial pilots were seriously injured. Visual meteorological conditions prevailed for the flight that originated at Concorde, North Carolina, approximately 1500, destined for Lewisburg, West Virginia. No flight plan was filed for the personal flight conducted under 14 CFR Part 91.

A review of voice communication transcripts from the Federal Aviation Administration (FAA) revealed N7794Y contacted Roanoke Approach Control, at 1620, for advisories and flight following services. The airplane was approximately 45 miles southwest of Roanoke, Virginia (ROA), at 10,500 feet.

At 1622, N7794Y reported "...we're descending through ah nine thousand, we're losing the right engine, we need priority." The pilot also requested radar vectors for Roanoke. The approach controller advised N7794Y that three airports were closer to their position than ROA. The pilot advised they would continue to ROA. When the controller asked the number of occupants and the amount of fuel on board, the pilot responded, "we got two souls on board and we're full of fuel...I'm estimating eighty-five gallons."

During the subsequent descent, the pilot advised they were "...losing altitude and directional stability." The approach controller, a licensed pilot, stated he could hear the airplane's stall warning horn over the pilot's radio transmissions.

The airplane crashed approximately 30 miles southwest of the Roanoke Regional Airport.

The accident occurred during the hours of daylight approximately 37 degrees, 5 minutes north latitude, and 80 degrees, 20 minutes west longitude.

PERSONNEL INFORMATION

The pilot held a commercial pilot certificate with ratings for airplane single engine land, multi-engine land, and instrument airplane. His most recent second class medical certificate was issued May 1, 1997.

A review of the pilot's records revealed 801 hours of total flight experience, 168 hours of which were in multi-engine airplanes. The pilot logged 6 hours of flight experience in the 3 days prior to the accident, 2.1 hours of which were in the accident airplane the day before the accident. The pilot had not flown in the year prior to the flight logged May 28, 1998.

The second pilot held a commercial pilot certificate with ratings for airplane single engine land, multi-engine land, and instrument airplane. He also held a flight instructor certificate with ratings for airplane single and multi-engine land.

The second pilot's most recent FAA second class medical certificate was issued February 2, 1998.

The second pilot's logbook was not recovered. However, he did report 1,300 hours of flight experience on the date of his most recent FAA medical examination. In a telephone interview with an FAA Aviation Safety Inspector (Operations), the airplane's owner reported that the second pilot had approximately110 hours of multi-engine experience, 65 hours of which were in the PA-30.

METEOROLOGICAL INFORMATION

The weather reported at Pulaski, Virginia, 23 miles northwest of the accident site was: clear skies with winds from 320 degrees at 12 knots gusting to 15 knots.

WRECKAGE AND IMPACT INFORMATION

Two FAA Aviation Safety Inspectors (Operations and Airworthiness) examined the wreckage on June 2, 1998, and all major components were accounted for at the scene. The wings were separated outboard of the engine nacelles and the empennage was separated aft of the cabin area. Flight control cable continuity was established from the cockpit to the point of wing and empennage separation. All flight control cables appeared to have failed in overload at the points of separation.

Examination of the four fuel tanks revealed an undetermined amount of fuel in both outboard auxiliary fuel tanks. Both inboard main fuel tanks contained no evidence of fuel. Examination of the cockpit area revealed each fuel selector in the "Main" position.

On June 3, 1998, the airplane engines were removed from the scene for further examination.

TESTS AND RESEARCH

Both fuel selectors and fuel strainers were removed and examined by the FAA Inspectors for defects outlined in Airworthiness Directives. No defects were noted. According to a written report by the Inspectors: "No defects were found that would prevent fuel flow to the engines."

The engines were examined on July 15 and 16, 1998, at the Textron Lycoming Company, Williamsport Pennsylvania, under the supervision of a Safety Board Investigator. Both engines started and ran to rated power in a test cell.

ADDITIONAL INFORMATION

The Piper PA-30 had a total fuel capacity of 90 gallons. The two main tanks held a total of 60 gallons, of which 6 gallons was unusable. Performance charts for the PA-30 revealed that in cruise flight at 10, 500 feet, the airplane consumed approximately 15 gallons of fuel per hour.

Examination of the airplane's rental and fueling records revealed N7794Y had flown approximately 4 hours since the last fuel service and had completed at least 5 takeoffs and landings.

Examination of the Piper PA-30 Pilot's Operating Handbook revealed the airplane was not equipped with a stall warning horn. The airplane was equipped with a gear up warning horn. According to the handbook: "The gear up warning horn will sound when power is reduced (below 12 inches of manifold pressure) on both engines and the gear is not down and locked."

According to the FAA Operations Inspector, the airplane's owner said the airplane was rented to the pilot on the day of the accident. The pilot had completed a check-out in the airplane the day before. The pilot wanted to practice instrument flight "under the hood" and invited the second pilot along to act as safety pilot on a trip to Lewisburg, West Virginia. The second pilot watched the first pilot perform the pre-flight inspection from inside the terminal building.

According to the Owner's Handbook for the model PA-30, the emergency procedure for a loss of engine power in cruise flight was "...maintain airspeed and directional control of airplane; immediately advance mixture, propeller and throttle controls...Turn on fuel pumps, check ignition switches, fuel gauges and fuel cell selectors..."

The airplane wreckage was released on November 17, 1998, to a representative of the owner's insurance company.

Pilot Information

Certificate:	Commercial	**Age:**	44,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:**	Yes
Instructor Rating(s):	None	**Toxicology Performed:**	No
Medical Certification:	Class 2 Valid Medical--no waivers/lim.	**Last FAA Medical Exam:**	January 5, 1997
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	
Flight Time:	801 hours (Total, all aircraft), 589 hours (Pilot In Command, all aircraft), 6 hours (Last 90 days, all aircraft), 6 hours (Last 30 days, all aircraft), 6 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Piper	**Registration:**	N7794Y
Model/Series:	PA-30 PA-30	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	30-877
Landing Gear Type:	Retractable - Tricycle	**Seats:**	4
Date/Type of Last Inspection:	March 18, 1998 100 hour	**Certified Max Gross Wt.:**	3600 lbs
Time Since Last Inspection:	50 Hrs	**Engines:**	2 Reciprocating
Airframe Total Time:	4197 Hrs	**Engine Manufacturer:**	Lycoming
ELT:	Installed, activated, did not aid in locating accident	**Engine Model/Series:**	IO-320
Registered Owner:	LEONARD M. LANCASTER	**Rated Power:**	150 Horsepower
Operator:		**Operating Certificate(s) Held:**	None
Operator Does Business As:	LANCASTER AVIATION INC	**Operator Designator Code:**	

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	PSK ,2120 ft msl	**Distance from Accident Site:**	23 Nautical Miles
Observation Time:	16:42 Local	**Direction from Accident Site:**	300°
Lowest Cloud Condition:	Clear	**Visibility**	10 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	12 knots / 15 knots	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	320°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	29 inches Hg	**Temperature/Dew Point:**	26°C / 12°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	CONCORDE , NC (3N8)	**Type of Flight Plan Filed:**	None
Destination:	LEWISBURG , WV (LWB)	**Type of Clearance:**	VFR on top
Departure Time:	15:00 Local	**Type of Airspace:**	Class G

Airport Information

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

Wreckage and Impact Information

Crew Injuries:	2 Serious	**Aircraft Damage:**	Destroyed
Passenger Injuries:		**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	2 Serious	**Latitude, Longitude:**	36.909011,-80.309768(est)

Administrative Information

Investigator In Charge (IIC):	Rayner, Brian
Additional Participating Persons:	JOHN H PHELPS; RICHMOND , VA JAMES F BROWN; WILLIAMSPORT , PA
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Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=28304