



Aviation Investigation Final Report

Location:	SEQUIM, Washington	Accident Number:	SEA97LA086
Date & Time:	April 14, 1997, 14:15 Local	Registration:	N8645P
Aircraft:	Piper PA-24-260	Aircraft Damage:	Substantial
Defining Event:		Injuries:	1 Serious, 1 Minor
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The aircraft lost engine power about 10 minutes after takeoff and subsequently contacted trees in a forced landing attempt onto a road. On-site examination revealed that the aircraft's left wing tanks were empty and its right wing tanks, which had been fueled prior to the last departure, were full. Fuel samples taken from the aircraft and from the fuel tanks at the departure airport showed no visual evidence of contamination or impurities. In a post-accident test, the aircraft's engine started, ran, and responded to throttle changes when supplied with fuel (drained from the accident aircraft's tanks) through the feed line from the tank found selected at the accident site.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The pilot-in-command's improper fuel management, which resulted in fuel starvation and loss of engine power. A factor was trees in the forced landing area.

Findings

Occurrence #1: LOSS OF ENGINE POWER
Phase of Operation: CRUISE

Findings

1. (C) FUEL MANAGEMENT - IMPROPER - PILOT IN COMMAND
2. LACK OF CERTIFICATION - PILOT IN COMMAND

3. FLUID,FUEL - STARVATION

Occurrence #2: IN FLIGHT COLLISION WITH OBJECT
Phase of Operation: EMERGENCY DESCENT/LANDING

Findings

4. (F) OBJECT - TREE(S)

Factual Information

On April 14, 1997, approximately 1415 Pacific daylight time, a Piper PA-24-260, N8645P, was substantially damaged in a forced landing attempt following a loss of engine power east of Sequim, Washington. The private pilot-in-command, who owned the aircraft, received minor injuries. A second pilot, who was a certificated flight instructor, was seriously injured. No flight plan had been filed for the 14 CFR 91 flight, which was bound for Port Angeles, Washington from Bremerton, Washington.

The flight originated at Mulino, Oregon (approximately 22 nautical miles south of Portland), with an intermediate stop at Bremerton. The aircraft's fuel system consists of a main (28 gallons usable) and auxiliary (15 gallons usable) tank in each wing, for a total usable fuel capacity of 86 gallons. The pilot reported to an FAA inspector assigned to the accident that he took off from Mulino with 13 to 14 gallons in each wing, and flew from Mulino to Bremerton (a straight-line distance of approximately 137 nautical miles) at approximately 1,500 feet altitude on the left tanks. According to the PA-24-260 owner's manual, at an altitude of 2,000 feet and 65% power the aircraft cruises at a true airspeed of approximately 166 MPH (144 knots) with a fuel burn rate of approximately 12.6 to 14.4 gallons per hour. Calculation of estimated fuel remaining in the left wing tanks upon arrival at Bremerton, based on the above parameters of distance, true airspeed, and burn rate with zero wind, yielded approximately 1.1 to 3.6 gallons (5 to 17 minutes of fuel remaining in the left wing tanks at the above burn rates.)

The pilot serviced the aircraft's right wing tanks with 28.3 gallons of fuel at Bremerton. Based on this fuel servicing, the reported fuel of 13 to 14 gallons in the right tank on departure from Mulino, and flight from Mulino to Bremerton on left tanks, the right wing tanks upon departure from Bremerton were approximately full. The pilot reported that he took off from Bremerton with a left tank selected, and that approximately 10 minutes later, after switching to the right tank, the engine "missed" and "sputtered", running "off and on for several minutes." The pilot stated that he activated the aircraft's electric fuel pump, and that he tried all tanks but the engine subsequently failed. The pilot stated that he then relinquished control of the aircraft to the instructor, who attempted the forced landing. Information from the FAA indicated that the forced landing attempt was onto a road, but the aircraft contacted trees prior to touchdown. The accident site was approximately 35 nautical miles from Bremerton and 23 nautical miles from Port Angeles.

On-site examination revealed that the accident aircraft's left wing tanks were empty and its right wing tanks were full, although the aircraft's fuel selector valve was positioned to "right main." Fuel samples taken from the accident aircraft and from the fuel tanks at Bremerton revealed no visual evidence of impurities or contamination. Review of fueling system inspection records furnished by the Port of Bremerton indicated that required checks of the fueling system at the airport had been performed, and that test samples taken of the airport

fuel supply on the date of the accident had been clear. FAA investigators reported that preliminary on-site examination revealed no evidence of mechanical discrepancies with the engine, and that they were able to rotate the engine by hand.

A post-accident test run of the aircraft's Lycoming IO-540-D4A5 engine was conducted at the facilities of Rotor-Technics, Renton, Washington, on April 25, 1997. Investigators from the NTSB, FAA, The New Piper Aircraft, and Textron Lycoming participated in this examination. During this examination, a fuel supply containing fuel drained from the accident aircraft's right wing tanks was connected to the right main tank feed line (the selected tank at the accident site.) In this configuration, investigators were able to successfully start and run the accident aircraft's engine. The engine was responsive to throttle changes. The aircraft's electric fuel pump activated properly when switched on. Investigators were also able to verify proper flow continuity from each of the four fuel tank feed lines (left aux, left main, right main, and right aux) through the fuel selector valve to the engine.

The pilot stated on his NTSB accident report that his last FAA medical examination was in April 1995, but the last medical examination on file with the FAA was in 1981. The pilot did not furnish a copy of his FAA medical certificate with his report, as he had been requested by the NTSB investigator-in-charge (IIC) to do.

Pilot Information

Certificate:	Private	Age:	55, Male
Airplane Rating(s):	Single-engine land; Multi-engine land	Seat Occupied:	Left
Other Aircraft Rating(s):	None	Restraint Used:	
Instrument Rating(s):	None	Second Pilot Present:	Yes
Instructor Rating(s):	None	Toxicology Performed:	No
Medical Certification:	Class 2 Expired	Last FAA Medical Exam:	January 22, 1981
Occupational Pilot:	No	Last Flight Review or Equivalent:	
Flight Time:	1000 hours (Total, all aircraft), 200 hours (Total, this make and model), 15 hours (Last 90 days, all aircraft), 2 hours (Last 30 days, all aircraft), 2 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Piper	Registration:	N8645P
Model/Series:	PA-24-260 PA-24-260	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	
Airworthiness Certificate:	Normal	Serial Number:	24-4088
Landing Gear Type:	Retractable - Tricycle	Seats:	4
Date/Type of Last Inspection:	May 20, 1996 Annual	Certified Max Gross Wt.:	2900 lbs
Time Since Last Inspection:	37 Hrs	Engines:	1 Reciprocating
Airframe Total Time:	4324 Hrs	Engine Manufacturer:	Lycoming
ELT:	Installed, activated, did not aid in locating accident	Engine Model/Series:	IO-540-D4A5
Registered Owner:		Rated Power:	260 Horsepower
Operator:		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:		Distance from Accident Site:	
Observation Time:		Direction from Accident Site:	
Lowest Cloud Condition:	Unknown	Visibility	12 miles
Lowest Ceiling:	Overcast / 1800 ft AGL	Visibility (RVR):	
Wind Speed/Gusts:	/	Turbulence Type Forecast/Actual:	/
Wind Direction:	0°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:		Temperature/Dew Point:	13°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	BREMERTON , WA (PWT)	Type of Flight Plan Filed:	None
Destination:	PORT ANGELES , WA (CLM)	Type of Clearance:	None
Departure Time:	14:00 Local	Type of Airspace:	Class E

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:	1 Serious, 1 Minor	Aircraft Damage:	Substantial
Passenger Injuries:		Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	1 Serious, 1 Minor	Latitude, Longitude:	48.060195,-123.060447(est)

Administrative Information

Investigator In Charge (IIC):	Nesemeier, Gregg
Additional Participating Persons:	CHARLES COX; RENTON , WA KRIS WETHERELL; FEDERAL WAY , WA JEFF POSCHWATTA; KENT , WA
Original Publish Date:	October 14, 1997
Note:	
Investigation Docket:	https://data.nts.gov/Docket?ProjectID=42585

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The Independent Safety Board Act, as codified at 49 U.S.C. Section 1154(b), precludes the admission into evidence or use of any part of an NTSB report related to an incident or accident in a civil action for damages resulting from a matter mentioned in the report. A factual report that may be admissible under 49 U.S.C. § 1154(b) is available [here](#).