



Aviation Investigation Final Report

Location:	Belen, New Mexico	Accident Number:	DEN03LA049
Date & Time:	March 14, 2003, 07:30 Local	Registration:	N6960P
Aircraft:	Piper PA-24-250	Aircraft Damage:	Substantial
Defining Event:		Injuries:	1 Serious, 1 None
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

According to the pilot, he purchased the airplane on March 11, 2003, and was aware of recent maintenance on the fuel selector valve. He examined the airplane and departed on a cross-country flight back to his home base. He stated that, approximately 2 hours into the flight, the engine "quit," and that he had experienced fuel exhaustion. He switched the fuel selector valve to the left wing-tip fuel tank, restarted the engine and landed at the nearest airport. Upon landing, he examined the fuel tanks and found that the right main and right wing-tip fuel tanks were full, the left wing-tip fuel tank was half full and the left main fuel tank was "dry." He refueled the airplane and departed. During the next 2 hours of flying, he switched the fuel selector valve from the left and right wing-tip tanks, to the main tanks and at approximately 2 hours into the flight the engine "quit" a second time. He was able to restart the engine after switching back to the left wing-tip tank, landed at the nearest airport to refuel and then departed to his destination. On March 14, the day of the accident, he departed on a cross-country flight. During the second hour of flight, he switched the fuel selector valve from the main tanks to the left wing-tip tank, then to the right wing-tip tank and then back to the main tanks in 20-min intervals. Approximately 2 hours into the flight, the engine "sputtered and then stopped." He restarted the engine, but it only ran for a few seconds. He attempted to glide to the nearby Alexander Municipal Airport, but was forced to land approximately 250 feet short of runway 21. The impact resulted in substantial damage to both wings, the firewall, and the separation of all landing gear assemblies.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: the pilot's improper preflight/in-flight decision making which resulted in the loss of engine power due to fuel starvation. Contributing factors include, the partial fuel selector valve failure,

the pilot's intentional operation with known deficiencies in equipment and the lack of suitable terrain for a forced landing.

Findings

Occurrence #1: LOSS OF ENGINE POWER(TOTAL) - NONMECHANICAL

Phase of Operation: CRUISE - NORMAL

Findings

1. (F) FUEL SYSTEM,SELECTOR/VALVE - FAILURE,PARTIAL
2. (C) PREFLIGHT PLANNING/PREPARATION - IMPROPER - PILOT IN COMMAND
3. (F) FLUID,FUEL - STARVATION
4. (C) IN-FLIGHT PLANNING/DECISION - IMPROPER - PILOT IN COMMAND
5. (F) OPERATION WITH KNOWN DEFICIENCIES IN EQUIPMENT - INTENTIONAL - 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

Findings

6. (F) TERRAIN CONDITION - NONE SUITABLE

Factual Information

On March 14, 2003, at approximately 0730 mountain standard time, a Piper PA-24-250, N6960P, operated by the pilot, was substantially damaged when it impacted terrain during a forced landing near Alexander Municipal Airport (E80), Belen, New Mexico. The pilot was not injured, but his passenger sustained serious injuries. Visual meteorological conditions prevailed. No flight plan had been filed for this personal cross-country flight being conducted under Title 14 CFR Part 91. The flight originated from Tucson, Arizona, at approximately 0530.

According to the pilot, he purchased the airplane on March 11, 2003, and was aware of recent maintenance on the fuel selector valve. He examined the airplane and departed on a cross-country flight back to his home base. He stated that, approximately 2 hours into the flight, the engine "quit," and that he had experienced fuel exhaustion. He switched the fuel selector valve to the left wing-tip fuel tank, restarted the engine and landed at the nearest airport. Upon landing, he examined the fuel tanks and found that the right main and right wing-tip fuel tanks were full, the left wing-tip fuel tank was half full and the left main fuel tank was "dry." He refueled the airplane and departed. During the next 2 hours of flying, he switched the fuel selector valve from the left and right wing-tip tanks, to the main tanks and at approximately 2 hours into the flight the engine "quit" a second time. He was able to restart the engine after switching back to the left wing-tip tank, landed at the nearest airport to refuel and then departed to his destination.

On March 13, he flew the airplane from his home base to a nearby airport with a maintenance facility to have a mechanic examine the airplane's fuel selector valve. The mechanic stated that the right fuel selector valve did not have a detent. The pilot had the selector valve repaired. The selector valve was checked and it operated correctly. He then departed back to his home base.

On March 14, the day of the accident, he departed on a cross-country flight. During the second hour of flight, he switched the fuel selector valve from the main tanks to the left wing-tip tank, then to the right wing-tip tank and then back to the main tanks in 20-min intervals. Approximately 2 hours into the flight, the engine "sputtered and then stopped." He restarted the engine, but it only ran for a few seconds. He attempted to glide to the nearby Alexander Municipal Airport, but was forced to land approximately 250 feet short of runway 21. The impact resulted in a cord wise buckle of both the left and right wings approximately 4 feet inboard of the wing tip tanks, the displacement of the engine, the separation of the left side of the firewall from the fuselage, and the separation of the left and right main landing gear and nose landing gear assemblies.

According to an FAA Inspector, there was approximately 60 gallons of fuel remaining on-board the airplane. The fuel was located within the left wing tank and the left and right wing-tip tanks.

The right wing tank was empty.

Pilot Information

Certificate:	Private	Age:	57, Male
Airplane Rating(s):	Single-engine land	Seat Occupied:	Left
Other Aircraft Rating(s):		Restraint Used:	
Instrument Rating(s):	None	Second Pilot Present:	No
Instructor Rating(s):	None	Toxicology Performed:	No
Medical Certification:	Class 3 Valid Medical--w/ waivers/lim	Last FAA Medical Exam:	May 5, 2003
Occupational Pilot:	Yes	Last Flight Review or Equivalent:	May 30, 2002
Flight Time:	191 hours (Total, all aircraft), 42 hours (Total, this make and model), 115 hours (Pilot In Command, all aircraft), 48 hours (Last 30 days, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Piper	Registration:	N6960P
Model/Series:	PA-24-250	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	
Airworthiness Certificate:	Normal	Serial Number:	24-2098
Landing Gear Type:	Tricycle	Seats:	4
Date/Type of Last Inspection:	March 1, 2003 Annual	Certified Max Gross Wt.:	3000 lbs
Time Since Last Inspection:	8 Hrs	Engines:	1 Reciprocating
Airframe Total Time:	3000 Hrs at time of accident	Engine Manufacturer:	Lycoming
ELT:	Installed, not activated	Engine Model/Series:	O-540
Registered Owner:	On file	Rated Power:	250 Horsepower
Operator:	On file	Operating Certificate(s) Held:	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	Condition of Light:	Day
Observation Facility, Elevation:	ABQ,5355 ft msl	Distance from Accident Site:	27 Nautical Miles
Observation Time:	07:56 Local	Direction from Accident Site:	23°
Lowest Cloud Condition:	Clear	Visibility	10 miles
Lowest Ceiling:	None	Visibility (RVR):	
Wind Speed/Gusts:	4 knots / 0 knots	Turbulence Type Forecast/Actual:	/
Wind Direction:	130°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	30.14 inches Hg	Temperature/Dew Point:	11°C / -9°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Tucson, AZ (AVQ)	Type of Flight Plan Filed:	None
Destination:	Fergus Falls, MN (FFM)	Type of Clearance:	None
Departure Time:	05:30 Local	Type of Airspace:	Class G

Airport Information

Airport:	Alexander Municipal E80	Runway Surface Type:	
Airport Elevation:		Runway Surface Condition:	Unknown
Runway Used:		IFR Approach:	None
Runway Length/Width:		VFR Approach/Landing:	Forced landing

Wreckage and Impact Information

Crew Injuries:	1 None	Aircraft Damage:	Substantial
Passenger Injuries:	1 Serious	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	1 Serious, 1 None	Latitude, Longitude:	34.645278,-106.83361

Administrative Information

Investigator In Charge (IIC):	Mayer, Brannon
Additional Participating Persons:	James L Malecha; FAA FSDO; Albuquerque, NM
Original Publish Date:	November 25, 2003
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.nts.gov/Docket?ProjectID=56631

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The NTSB does not assign fault or blame for an accident or incident; rather, as specified by NTSB regulation, “accident/incident investigations are fact-finding proceedings with no formal issues and no adverse parties ... and are not conducted for the purpose of determining the rights or liabilities of any person” (Title 49 *Code of Federal Regulations* section 831.4). Assignment of fault or legal liability is not relevant to the NTSB’s statutory mission to improve transportation safety by investigating accidents and incidents and issuing safety recommendations. In addition, statutory language prohibits the admission into evidence or use of any part of an NTSB report related to an accident in a civil action for damages resulting from a matter mentioned in the report (Title 49 *United States Code* section 1154(b)). A factual report that may be admissible under 49 *United States Code* section 1154(b) is available [here](#).