

# **Aviation Investigation Final Report**

**Location:** West Palm Beach, Florida **Accident Number:** ANC04LA043

Date & Time: March 20, 2004, 17:00 Local Registration: N6583R

Aircraft: Piper PA-24-250 Aircraft Damage: Substantial

**Defining Event:** 2 None

Flight Conducted Under: Part 91: General aviation - Personal

### **Analysis**

During the first flight after having maintenance performed on the airplane's fuel system, the pilot reported a total loss of engine power in cruise flight. During the flight the pilot and pilot-rated passenger discussed the lack of movement of the right fuel indicator needle with both main tanks in the "ON" position. After the loss of engine power, the pilot asked the more experienced pilot-rated passenger to take the controls for the landing. The airplane landed in a plowed field. After landing, the pilots noted that the right main tank was full, and the left main tank was empty. An inspection of the fuel system found the right fuel selector valve was assembled incorrectly, and actually blocked the flow of fuel from the right main tank when selected to the "ON" position.

### **Probable Cause and Findings**

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The incorrect assembly of the fuel selector valve by maintenance personnel, and the pilot's failure to make a precautionary landing to assess the fuel situation and lack of movement of the right fuel tank indicator. which resulted in fuel starvation and the loss of engine power during cruise flight.

#### **Findings**

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

Phase of Operation: CRUISE

#### Findings

- 1. (C) FLUID, FUEL STARVATION
- 2. FUEL SYSTEM, SELECTOR/VALVE REVERSED
- 3. (C) MAINTENANCE, ALIGNMENT INCORRECT OTHER MAINTENANCE PERSONNEL
- 4. (C) PRECAUTIONARY LANDING NOT PERFORMED PILOT IN COMMAND

-----

Occurrence #2: FORCED LANDING

Phase of Operation: EMERGENCY DESCENT/LANDING

-----

Occurrence #3: IN FLIGHT COLLISION WITH TERRAIN/WATER

Phase of Operation: EMERGENCY DESCENT/LANDING

#### Findings

5. TERRAIN CONDITION - PLOWED/FURROWED

Page 2 of 7 ANC04LA043

#### **Factual Information**

On March 20, 2004, about 1700 eastern standard time, a Piper PA-24-250 airplane, N6583R, received substantial damage when it collided with terrain about 12 miles northeast of West Palm Beach, Florida, during an emergency landing following a total loss of engine power in cruise flight. The airplane was being operated by the pilot as a visual flight rules (VFR) local personal flight under Title 14, CFR Part 91. The pilot and pilot-rated passenger were not injured. Visual meteorological conditions prevailed, and no flight plan was filed. The flight departed Palm Beach County Park Airport, West Palm Beach, about 1520.

During a telephone conversation with the National Transportation Safety Board (NTSB) investigator-in-charge (IIC), on March 20, the pilot/owner said he was conducting the first flight in the airplane after its release from maintenance. He said the right main fuel tank had been replaced, and the right fuel tank selector had been reconditioned. Additionally, four engine cylinders had been replaced. The pilot/owner said he was flying with the left and right fuel tank selectors in the "main" position, presumably drawing fuel from both main tanks. He said he and the pilot-rated passenger discussed the lack of movement of the right fuel gauge indicator compared to the movement of the left fuel gauge indicator. The pilot/owner stated the right fuel gauge had always been "sluggish," and continued the flight to "run-in" the new engine cylinders. He said 80 minutes into the flight, about 1,200 feet agl, the airplane had a total loss of engine power, and emergency procedures failed to restart the engine. The pilot/owner said he requested the more experienced, commercial certificated flight instructor passenger to take the controls for the landing, which he did. The pilot on the controls selected a road for landing, but was unable to reach the road, and landed in a cultivated field. After landing, both pilots visually inspected the fuel tanks, and noted that the right main fuel tank was full, and the left main fuel tank was empty. The pilot/owner said the airplane sustained damage to both wings, fuselage, tail, landing gear, flaps, and propeller.

During an inspection of the airplane on March 20, the IIC disassembled the recently reconditioned right fuel selector valve. The fuel valve was installed on the selector stem 180 degrees out of the correct position, blocking fuel flow from the right main tank when in the "on" position, and allowing fuel flow only from the left main tank.

Page 3 of 7 ANC04LA043

#### **Pilot Information**

Certificate:	Commercial; Flight instructor	Age:	64,Male
Airplane Rating(s):	Single-engine land; Multi-engine land	Seat Occupied:	Right
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:	No
Medical Certification:	Class 3 Valid Medical–w/ waivers/lim	Last FAA Medical Exam:	May 9, 2003
Occupational Pilot:	No	Last Flight Review or Equivalent:	April 3, 2002
Flight Time:	3130 hours (Total, all aircraft), 4 hours (Total, this make and model), 2630 hours (Pilot In Command, all aircraft), 114 hours (Last 90 days, all aircraft), 18 hours (Last 30 days, all aircraft), 0 hours (Last 24 hours, all aircraft)		

## **Pilot Information**

Certificate:	Private	Age:	46,Male
Airplane Rating(s):	Single-engine land	Seat Occupied:	Left
Other Aircraft Rating(s):	None	Restraint Used:	
Instrument Rating(s):	Airplane	Second Pilot Present:	No
Instructor Rating(s):	None	Toxicology Performed:	No
Medical Certification:	Class 2 Valid Medicalno waivers/lim.	Last FAA Medical Exam:	January 29, 2003
Occupational Pilot:	No	Last Flight Review or Equivalent:	January 31, 2003
Flight Time:	329 hours (Total, all aircraft), 187 hours (Total, this make and model), 230 hours (Pilot In Command, all aircraft), 22 hours (Last 90 days, all aircraft), 20 hours (Last 30 days, all aircraft), 2 hours (Last 24 hours, all aircraft)		

Page 4 of 7 ANC04LA043

## **Aircraft and Owner/Operator Information**

Aircraft Make:	Piper	Registration:	N6583R
Model/Series:	PA-24-250	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	
Airworthiness Certificate:	Normal; Utility	Serial Number:	1842
Landing Gear Type:	Retractable - Tricycle	Seats:	4
Date/Type of Last Inspection:	February 4, 2004 Annual	Certified Max Gross Wt.:	3000 lbs
Time Since Last Inspection:	11 Hrs	Engines:	1 Reciprocating
Airframe Total Time:	2811 Hrs as of last inspection	Engine Manufacturer:	Lycoming
ELT:	Installed, activated, did not aid in locating accident	Engine Model/Series:	O-540-B1A
Registered Owner:	RASA Air Inc.	Rated Power:	250 Horsepower
Operator:	Ralf Koklar	Operating Certificate(s) Held:	None

## 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:	
<b>Lowest Cloud Condition:</b>	Clear	Visibility	10 miles
Lowest Ceiling:	None	Visibility (RVR):	
Wind Speed/Gusts:	/	Turbulence Type Forecast/Actual:	/
Wind Direction:		Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	30.2 inches Hg	Temperature/Dew Point:	24°C
Precipitation and Obscuration:	No Obscuration; No Precipita	ation	
Departure Point:	Lantana, FL (KLNA)	Type of Flight Plan Filed:	None
Destination:		Type of Clearance:	None
Departure Time:	15:00 Local	Type of Airspace:	Class G

Page 5 of 7 ANC04LA043

## **Wreckage and Impact Information**

Crew Injuries:	1 None	Aircraft Damage:	Substantial
Passenger Injuries:	1 None	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	2 None	Latitude, Longitude:	26.588888,-80.09333

Page 6 of 7 ANC04LA043

#### **Administrative Information**

Investigator In Charge (IIC):	Lewis, Lawrence	
Additional Participating Persons:	Roberto Maldonato; Ft. Lauderdale FSDO-17; Fort Lauderdale, FL	
Original Publish Date:	October 28, 2004	
Last Revision Date:		
Investigation Class:	<u>Class</u>	
Note:		
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=58939	

The National Transportation Safety Board (NTSB) is an independent federal agency charged by Congress with investigating every civil aviation accident in the United States and significant events in other modes of transportation—railroad, transit, highway, marine, pipeline, and commercial space. We determine the probable causes of the accidents and events we investigate, and issue safety recommendations aimed at preventing future occurrences. In addition, we conduct transportation safety research studies and offer information and other assistance to family members and survivors for each accident or event we investigate. We also serve as the appellate authority for enforcement actions involving aviation and mariner certificates issued by the Federal Aviation Administration (FAA) and US Coast Guard, and we adjudicate appeals of civil penalty actions taken by the FAA.

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.

Page 7 of 7 ANC04LA043