



Aviation Investigation Final Report

Location:	CALDWELL, Texas	Accident Number:	FTW97LA316
Date & Time:	August 17, 1997, 21:15 Local	Registration:	N6667P
Aircraft:	Piper PA-24-250	Aircraft Damage:	Substantial
Defining Event:		Injuries:	1 Minor, 1 None
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

During a night cross-country flight from El Paso, Texas, to College Station, Texas, the aircraft's engine lost power about 3 hours 49 minutes after takeoff. The pilot reported that the right fuel tank quantity gauge was indicating a quarter tank of fuel remaining when the engine lost power. He estimated fuel endurance for the flight would be 4.33 hours. The pilot initiated a forced landing to Highway 36, and during the approach to the highway, he flashed the aircraft's landing light to warn the traffic of his intention to land. All of the traffic moved out of the way except for a pickup truck which the aircraft's left wing struck. After landing the pilot looked into the right fuel tank with a flash light, and the bottom of the fuel tank appeared to be 'buckled or bunched' up against the fuel quantity float. Examination of the right fuel tank revealed a damp fuel stain on the wing that originated from the filler cap, and there was no 'bulging' in the bottom of the tank. It was calculated that approximately 10 gallons of fuel had siphoned out during the flight.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The loss of engine power due to fuel exhaustion which resulted from a leaking fuel cap. Factors were the dark night conditions, and the lack of suitable terrain for the forced landing.

Findings

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

Findings

1. (C) FUEL SYSTEM,CAP - LEAK
2. (C) FLUID,FUEL - SIPHONING
3. (C) FLUID,FUEL - EXHAUSTION

Occurrence #2: FORCED LANDING

Phase of Operation: EMERGENCY DESCENT/LANDING

Occurrence #3: ON GROUND/WATER COLLISION WITH OBJECT

Phase of Operation: LANDING - ROLL

Findings

4. (F) LIGHT CONDITION - DARK NIGHT
5. (F) TERRAIN CONDITION - NONE SUITABLE
6. OBJECT - VEHICLE

Factual Information

On August 17, 1997, at 2115 central daylight time, a Piper PA-24-250 airplane, N6667P, owned and operated by the pilot as a Title 14 CFR Part 91 personal flight, was substantially damaged during a forced landing, following a loss of engine power near Caldwell, Texas. The aircraft struck a pickup truck during the landing roll. The commercial pilot, sole occupant of the airplane, was not injured; however, the occupant of the pickup truck sustained minor injuries. Visual meteorological conditions prevailed for the night cross country flight, and a VFR flight plan was filed. The flight originated from El Paso, Texas, about 3 hours 49 minutes prior to the accident, with the destination of College Station, Texas.

During a telephone interview conducted by the NTSB investigator-in-charge (IIC) and on the enclosed Pilot/Operator Aircraft Accident Report, the pilot reported that he had flown the aircraft from Borrego Springs, California, nonstop to El Paso, Texas, with an en route time of 3.92 hours. At El Paso he topped off the aircraft's fuel tanks to overflowing with 50.8 gallons. On earlier flights he had observed that on a completely empty tank (left), he was only able to put 28.2 gallons in the tank to the point of overflowing, "despite the fact that the book capacity was 30 gallons." He calculated the fuel consumption from Borrego to El Paso was 13 gph (3.92 hours for 50.8 gallons). He estimated endurance for 56.4 gallons would be 4.33 hours.

The pilot further reported that he used the left fuel tank for takeoff and climb for a total of one hour before switching to the right fuel tank. He flew for one hour and then switched back to the left fuel tank. After the left tank "ran dry" (total of 2 hours and 1 minute), he switched back to the right tank. After approximately 48 minutes (total time of 3 hours 49 minutes), the aircraft's engine lost power. The right fuel tank quantity gauge was indicating a quarter tank of fuel remaining.

The pilot also reported that he initiated a forced landing to Highway 36, and during the approach to the highway he flashed the aircraft's landing light to warn the traffic of his intention to land. All of the traffic moved out of the way except for the pickup truck which the aircraft's left wing struck. The pilot also reported that after landing he looked into the right fuel tank with a flash light, and the bottom of the fuel tank appeared to be "buckled or bunched" up against the fuel quantity float. He checked the tank the following day and the bladder was "flat."

Examination of the aircraft by the FAA inspector revealed that a section of the left wing, outboard of the landing gear was separated. The inboard section of the left wing was buckled, and the fuselage was wrinkled. Examination of the right fuel tank revealed a damp fuel stain on the wing that originated from the filler cap, and there was no "bulging" in the bottom of the tank. The FAA inspector calculated that approximately "10 gallons" of fuel had siphoned out during the flight.

The pilot reported that the aircraft "experienced a siphoning leak previously on [the] original departure from CLL [College Station] to ELP [El Paso] and the short flight from Bakersfield to Orange County due to a loose cap (screw down type on the right, and lever type on the left)." He had placed a "sheet of polyethylene plastic under the left cap to shim it to seal." The right tank cap was "screwed down tight. Aware of this potential problem I visually checked both tank caps several times on climb, and there was no visual [fuel] leaking from either tank."

Pilot Information

Certificate:	Commercial	Age:	51, Male
Airplane Rating(s):	Single-engine land	Seat Occupied:	Left
Other Aircraft Rating(s):	None	Restraint Used:	
Instrument Rating(s):	Airplane	Second Pilot Present:	
Instructor Rating(s):	None	Toxicology Performed:	No
Medical Certification:	Class 2 Valid Medical-w/ waivers/lim	Last FAA Medical Exam:	March 27, 1997
Occupational Pilot:	UNK	Last Flight Review or Equivalent:	
Flight Time:	2258 hours (Total, all aircraft), 1998 hours (Total, this make and model), 2165 hours (Pilot In Command, all aircraft), 27 hours (Last 90 days, all aircraft), 20 hours (Last 30 days, all aircraft), 9 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Piper	Registration:	N6667P
Model/Series:	PA-24-250 PA-24-250	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	
Airworthiness Certificate:	Normal	Serial Number:	24-1791
Landing Gear Type:	Retractable - Tricycle	Seats:	4
Date/Type of Last Inspection:	February 27, 1997 Annual	Certified Max Gross Wt.:	2800 lbs
Time Since Last Inspection:	31 Hrs	Engines:	1 Reciprocating
Airframe Total Time:	5055 Hrs	Engine Manufacturer:	Lycoming
ELT:	Installed, not activated	Engine Model/Series:	O-540-A1A5
Registered Owner:	ROGER R. FAY	Rated Power:	250 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:	Night/dark
Observation Facility, Elevation:		Distance from Accident Site:	
Observation Time:		Direction from Accident Site:	
Lowest Cloud Condition:	Clear	Visibility	10 miles
Lowest Ceiling:	None	Visibility (RVR):	
Wind Speed/Gusts:	6 knots / None	Turbulence Type Forecast/Actual:	/
Wind Direction:	180°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:		Temperature/Dew Point:	29°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	EL PASO (ELP)	Type of Flight Plan Filed:	VFR
Destination:	COLLEGE STATION (CLL)	Type of Clearance:	VFR on top
Departure Time:	17:27 Local	Type of Airspace:	Class E

Airport Information

Airport:		Runway Surface Type:	
Airport Elevation:		Runway Surface Condition:	
Runway Used:	0	IFR Approach:	
Runway Length/Width:		VFR Approach/Landing:	Forced landing

Wreckage and Impact Information

Crew Injuries:	1 None	Aircraft Damage:	Substantial
Passenger Injuries:		Aircraft Fire:	None
Ground Injuries:	1 Minor	Aircraft Explosion:	None
Total Injuries:	1 Minor, 1 None	Latitude, Longitude:	30.520843,-96.699851(est)

Administrative Information

Investigator In Charge (IIC): Wigington, Douglas

Additional Participating Persons: JAMES R WATSON; HOUSTON , TX

Original Publish Date: November 6, 1998

Last Revision Date:

Investigation Class: [Class](#)

Note:

Investigation Docket: <https://data.nts.gov/Docket?ProjectID=20317>

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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](#).