



National Transportation Safety Board Aviation Accident Final Report

Location:	Prescott, AZ	Accident Number:	LAX02LA036
Date & Time:	12/01/2001, 1930 MST	Registration:	N7213P
Aircraft:	Piper PA-24-250	Aircraft Damage:	Substantial
Defining Event:		Injuries:	2 Minor
Flight Conducted Under:	Part 91: General Aviation - Personal		

Analysis

After flying for 2 hours the airplane arrived at the destination airport. Upon entering the traffic pattern the left seated pilot performed a prelanding check. However, he did not reposition the fuel tank selector from the nearly empty right auxiliary fuel tank to a main tank. Seconds after turning onto the final approach leg, the pilot performed another prelanding check. Again, he did not reposition the fuel tank selector away from the right auxiliary tank. Seconds thereafter, the engine sputtered and lost all power. The pilot then tried to reposition the fuel tank selector, but the pilot-rated passenger had already accomplished that task. Engine power was restored just prior to the airplane impacting a berm, about 500 feet short of the runway. The left seated pilot held commercial and certified flight instructor certificates. He had about 612 total flight hours including 32 hours in Comanches. The right seated pilot-rated passenger also held commercial and certified flight instructor certificates. He had about 1,740 total flight hours, including 40 hours in Comanches. The subsequent airplane examination revealed that the left auxiliary fuel tank and the two main tanks jointly contained a total of 50 gallons of fuel. The right auxiliary fuel tank was dry.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: Fuel starvation on final approach due to the pilot's fuel mismanagement, and his inattentiveness in following established prelanding procedures.

Findings

Occurrence #1: LOSS OF ENGINE POWER(TOTAL) - NONMECHANICAL
Phase of Operation: APPROACH - VFR PATTERN - FINAL APPROACH

Findings

1. (F) FUEL MANAGEMENT - IMPROPER - PILOT IN COMMAND
2. (F) PROCEDURES/DIRECTIVES - INATTENTIVE - PILOT IN COMMAND
3. FUEL TANK SELECTOR POSITION - IMPROPER - PILOT IN COMMAND

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

Findings

4. (C) FLUID,FUEL - STARVATION
5. EMERGENCY PROCEDURE - INITIATED - PILOT IN COMMAND

Occurrence #3: ON GROUND/WATER ENCOUNTER WITH TERRAIN/WATER
Phase of Operation: EMERGENCY LANDING

Findings

6. TERRAIN CONDITION - BERM

Factual Information

On December 1, 2001, about 1930 hours mountain standard time, a Piper PA-24-250, N7213P, experienced fuel starvation on final approach to runway 21R at the Ernest A. Love Field, Prescott, Arizona. During the ensuing forced landing, the airplane impacted a berm approximately 0.1 mile short of the runway. The pilot in the left seat was handling the airplane's flight controls, and he held commercial pilot and flight instructor certificates. The pilot in the right seat also held commercial pilot and flight instructor certificates, although he was riding as a passenger. The airplane, manufactured in November 1960, was registered to a private individual and was operated by the left seated pilot. During the accident, the airplane was substantially damaged, and both occupants sustained minor injuries. Visual meteorological conditions prevailed. The personal flight was performed under 14 CFR Part 91, and no flight plan was filed. The flight originated from Los Angeles, California, about 1630 Pacific standard time (1730 mountain standard time).

The left seated pilot reported to the National Transportation Safety Board investigator that he is currently employed as a certified flight instructor (CFI). His total flying experience was 612 hours, of which 32 hours were obtained piloting various Piper Comanches, including the PA-24-250. The pilot indicated that he was unaware whether the Comanches owner's handbook addressed landing with the fuel selector positioned to an auxiliary fuel tank. He indicated that prior to taking off for the nonstop flight, the two main and two auxiliary fuel tanks had been completely filled. During flight, he had repositioned the fuel selector several times. The fuel gauges were functioning, and no evidence of any mechanical malfunctions was noted during the flight.

Regarding the accident sequence, the pilot reported that when he entered the traffic pattern for landing, the fuel selector was still set to the right auxiliary fuel tank. Seconds after he turned onto the final approach leg he performed the "GUMP" (gas, undercarriage, mixture, propeller) prelanding check. The fuel selector was not repositioned at that time. The engine stopped producing power about 5 seconds after completing the prelanding check. The pilot stated that he immediately pitched the airplane to obtain the best glide speed, and he began performing other emergency functions, including repositioning the fuel selector toward the fullest fuel tank. However, the pilot-rated passenger had already just repositioned the selector. The power off approach continued. Engine power was restored seconds prior to impacting the ground.

According to the pilot-rated passenger, his total flying experience was 1,740 hours, of which 40 hours were obtained piloting the PA-24-250 airplane. The pilot reported that his friend had completed the prelanding check upon entering the traffic pattern from the 45-degree entry leg. Seconds after the pilot turned onto the final approach leg and commenced descending he performed the "GUMPS" check. Approximately 5 seconds thereafter, the engine sputtered and quit. The pilot-rated passenger additionally reported that as the pilot was performing functions, including checking the auxiliary fuel pump switch position and the mixture control position, he (the pilot-rated passenger) repositioned the fuel selector to the right main fuel tank. About 1 second before impact the engine restarted.

The pilot additionally reported that the impact occurred approximately 500 feet before reaching the approach end of runway 21R. Thereafter, the airplane rolled about 50 feet before colliding with a berm and bouncing over it. The airplane came to rest about 300 feet from the

runway facing 90 degrees right of centerline.

The airplane was examined on scene prior to its recovery. Recovery personnel verbally reported to the Safety Board investigator that the four fuel tanks remained intact. Regarding residual fuel, about 10 gallons of fuel remained in the left auxiliary fuel tank, 25 gallons of fuel were in the left main fuel tank, and 15 gallons of fuel were in the right main fuel tank. The right auxiliary fuel tank was completely dry.

During the 1960's, the Piper Aircraft Corporation published an "Owner's Handbook" for various models of Comanches, including the PA-24-180 and the PA-24-250. In these handbooks, guidance was provided to pilots regarding positioning of the fuel selector. In pertinent part, in the "Approach and Landing" section of Piper's 1961 model year handbook, the pilot was advised to position the fuel selector to the "proper tank" when performing the landing check list.

Pilot Information

Certificate:	Flight Instructor; Commercial	Age:	27, Male
Airplane Rating(s):	Multi-engine Land; Single-engine Land	Seat Occupied:	Left
Other Aircraft Rating(s):	Helicopter	Restraint Used:	Seatbelt
Instrument Rating(s):	Airplane	Second Pilot Present:	Yes
Instructor Rating(s):	Airplane Single-engine; Helicopter	Toxicology Performed:	No
Medical Certification:	Class 2 Without Waivers/Limitations	Last FAA Medical Exam:	05/30/2001
Occupational Pilot:		Last Flight Review or Equivalent:	11/16/2001
Flight Time:	612 hours (Total, all aircraft), 32 hours (Total, this make and model), 457 hours (Pilot In Command, all aircraft), 63 hours (Last 90 days, all aircraft), 25 hours (Last 30 days, all aircraft), 2 hours (Last 24 hours, all aircraft)		

Pilot Information

Certificate:	Flight Instructor; Commercial	Age:	27, Male
Airplane Rating(s):	Multi-engine Land; Single-engine Land	Seat Occupied:	Right
Other Aircraft Rating(s):	None	Restraint Used:	Seatbelt
Instrument Rating(s):	Airplane	Second Pilot Present:	Yes
Instructor Rating(s):	Airplane Single-engine; Instrument Airplane	Toxicology Performed:	No
Medical Certification:	Class 1 Without Waivers/Limitations	Last FAA Medical Exam:	04/04/2001
Occupational Pilot:		Last Flight Review or Equivalent:	
Flight Time:	1740 hours (Total, all aircraft), 40 hours (Total, this make and model), 1524 hours (Pilot In Command, all aircraft), 149 hours (Last 90 days, all aircraft), 48 hours (Last 30 days, all aircraft), 0 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Piper	Registration:	N7213P
Model/Series:	PA-24-250	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	No
Airworthiness Certificate:	Normal	Serial Number:	24-2383
Landing Gear Type:	Retractable - Tricycle	Seats:	4
Date/Type of Last Inspection:	Annual	Certified Max Gross Wt.:	2900 lbs
Time Since Last Inspection:		Engines:	1 Reciprocating
Airframe Total Time:		Engine Manufacturer:	Lycoming
ELT:	Installed, activated, did not aid in locating accident	Engine Model/Series:	O-540-A1D5
Registered Owner:	Robert E. Albee	Rated Power:	250 hp
Operator:	Matthew T. Jones	Operating Certificate(s) Held:	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual Conditions	Condition of Light:	Night/Dark
Observation Facility, Elevation:	PRC, 5045 ft msl	Distance from Accident Site:	1 Nautical Miles
Observation Time:	1953 MST	Direction from Accident Site:	30°
Lowest Cloud Condition:		Visibility	10 Miles
Lowest Ceiling:	Broken / 10000 ft agl	Visibility (RVR):	
Wind Speed/Gusts:	4 knots /	Turbulence Type Forecast/Actual:	/
Wind Direction:	180°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	30.19 inches Hg	Temperature/Dew Point:	5°C / -5°C
Precipitation and Obscuration:			
Departure Point:	LOS ANGELES, CA (WHP)	Type of Flight Plan Filed:	None
Destination:	Prescott (PRC)	Type of Clearance:	VFR
Departure Time:	1630 PST	Type of Airspace:	Class D

Airport Information

Airport:	Ernest A. Love Field (PRC)	Runway Surface Type:	Asphalt
Airport Elevation:	5045 ft	Runway Surface Condition:	Dry
Runway Used:	21R	IFR Approach:	None
Runway Length/Width:	4846 ft / 60 ft	VFR Approach/Landing:	Forced Landing; Traffic Pattern

Wreckage and Impact Information

Crew Injuries:	1 Minor	Aircraft Damage:	Substantial
Passenger Injuries:	1 Minor	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	2 Minor	Latitude, Longitude:	34.654444, -112.419722

Administrative Information

Investigator In Charge (IIC): WAYNE POLLACK **Report Date:** 10/23/2002

Additional Participating Persons: Steve D'urso; FAA FSDO; Scottsdale, AZ

Publish Date:

Investigation Docket: NTSB accident and incident dockets serve as permanent archival information for the NTSB's investigations. Dockets released prior to June 1, 2009 are publicly available from the NTSB's Record Management Division at pubinq@ntsb.gov, or at 800-877-6799. Dockets released after this date are available at <http://dms.nts.gov/pubdms/>.

The National Transportation Safety Board (NTSB), established in 1967, is an independent federal agency mandated by Congress through the Independent Safety Board Act of 1974 to investigate transportation accidents, determine the probable causes of the accidents, issue safety recommendations, study transportation safety issues, and evaluate the safety effectiveness of government agencies involved in transportation. The NTSB makes public its actions and decisions through accident reports, safety studies, special investigation reports, safety recommendations, and statistical reviews.

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](#).