



National Transportation Safety Board Aviation Accident Final Report

Location:	UNION CITY, CA	Accident Number:	LAX98LA049
Date & Time:	12/02/1997, 1435 PST	Registration:	N1396U
Aircraft:	Cessna T210N	Aircraft Damage:	Substantial
Defining Event:		Injuries:	1 Minor

Flight Conducted Under: Part 91: General Aviation - Positioning

Analysis

The aircraft was being repositioned to home base following a partial repaint. While on short final to land the engine lost power and the aircraft landed in a residential area. Postaccident examination of the fuel and ignition systems found the fuel flow transducer to be restricted. After several attempts it was possible to blow air through it, but with resistance. Nothing foreign was found in the lines or blown from the transducer. The component was sent to the manufacturer of the fuel system and met flow specifications. The component was then sent to a testing laboratory for examination where it was opened and examined. The interior, turbine, and bearing points appeared to be normal and functional.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: Blockage of the fuel flow transducer, which resulted in fuel starvation and the loss of engine power. Unsuitable terrain for an emergency landing was a contributing factor.

Findings

Occurrence #1: LOSS OF ENGINE POWER

Phase of Operation: APPROACH

Findings

1. FUEL SYSTEM - BLOCKED(TOTAL)
2. FLUID,FUEL - STARVATION

Occurrence #2: FORCED LANDING

Phase of Operation: DESCENT - EMERGENCY

Occurrence #3: IN FLIGHT COLLISION WITH OBJECT

Phase of Operation: EMERGENCY DESCENT/LANDING

Findings

3. OBJECT - RESIDENCE
4. UNSUITABLE TERRAIN OR TAKEOFF/LANDING/TAXI AREA

Factual Information

On December 2, 1997, at 1435 hours Pacific standard time, a Cessna T210N, N1396U, was substantially damaged during a forced landing at Union City, California. The aircraft was cleared for a straight-in approach to runway 28R at Hayward Air Terminal. At 4.5 miles from the runway, the pilot declared an emergency and landed in a residential area. The pilot received minor injuries. The aircraft departed Salinas, California, on a repositioning flight following a partial repaint of the aircraft. Visual meteorological conditions prevailed and no flight plan was filed.

On December 4, 1998, a postaccident examination of the aircraft and engine was conducted at Hayward, California. Present at the examination were four representatives from the Federal Aviation Administration Oakland Flight Standards District Office, Teledyne Continental Motors, and representatives from the operator of the aircraft.

According to maintenance information dated June 1997, a low fuel flow indication report was resolved by flushing fuel through the transducer. Another component of the system was also cleaned and the procedure resolved the condition.

The fuel and ignition systems were examined. Initial attempts to blow through the fuel flow transducer were unsuccessful due to a blockage. Subsequently, after several attempts it was possible to blow through the transducer, although it was with a degree of resistance according to the Continental representative.

On March 25, 1998, the transducer was functional tested at Shadin Company Incorporated, Louis Park, Minnesota, the manufacturer of the system. According to Shadin, the transducer met the system fuel flow specifications at the time of the test.

On May 7, 1998, the transducer was taken to Fowler Inc. for internal examination. Attempts to visually examine the interior by borescope were not possible. The transducer cavity closure/assembly is accomplished with an epoxy. It is not designed to be opened after manufacture. According to the manufacturer of this component of the system, FloScan, the only way to open it is to cut it open or pressurize it apart with nitrogen or hydraulics.

The transducer was taken to Tap-Ex Company for an electric metal disintegrator procedure. The procedure allowed access to the transducer turbine cavity without damage to the turbine. The turbine wheel, cavity, and bearing points appeared to be normal and functional.

The manufacturer of the transducer component of the system (FloScan) chose not to be involved in the testing/examination.

Pilot Information

Certificate:	Airline Transport	Age:	27, Male
Airplane Rating(s):	Multi-engine Land; Single-engine Land	Seat Occupied:	Left
Other Aircraft Rating(s):	None	Restraint Used:	Seatbelt, Shoulder harness
Instrument Rating(s):	Airplane	Second Pilot Present:	No
Instructor Rating(s):	None	Toxicology Performed:	No
Medical Certification:	Class 1 Valid Medical--no waivers/lim.	Last FAA Medical Exam:	05/28/1997
Occupational Pilot:		Last Flight Review or Equivalent:	
Flight Time:	1143 hours (Total, all aircraft), 1090 hours (Pilot In Command, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Cessna	Registration:	N1396U
Model/Series:	T210N T210N	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	No
Airworthiness Certificate:	Normal	Serial Number:	21064691
Landing Gear Type:	Retractable - Tricycle	Seats:	6
Date/Type of Last Inspection:	10/20/1997, Annual	Certified Max Gross Wt.:	3800 lbs
Time Since Last Inspection:	2 Hours	Engines:	1 Reciprocating
Airframe Total Time:	1306 Hours	Engine Manufacturer:	Continental
ELT:		Engine Model/Series:	TSIO-520-R
Registered Owner:	JAMES A. LONG	Rated Power:	285 hp
Operator:	JAMES A. LONG	Operating Certificate(s) Held:	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual Conditions	Condition of Light:	Day
Observation Facility, Elevation:	HWD, 47 ft msl	Distance from Accident Site:	4 Nautical Miles
Observation Time:	1452 PST	Direction from Accident Site:	270°
Lowest Cloud Condition:	Scattered / 11000 ft agl	Visibility	20 Miles
Lowest Ceiling:	None / 0 ft agl	Visibility (RVR):	0 ft
Wind Speed/Gusts:	7 knots /	Turbulence Type Forecast/Actual:	/
Wind Direction:	290°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	29 inches Hg	Temperature/Dew Point:	
Precipitation and Obscuration:			
Departure Point:	SALINAS, CA (KSNS)	Type of Flight Plan Filed:	None
Destination:	HAYWARD, CA (HWD)	Type of Clearance:	VFR
Departure Time:	0000	Type of Airspace:	Class D

Wreckage and Impact Information

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

Administrative Information

Investigator In Charge (IIC):	GEORGE E PETERSON	Report Date:	12/07/1999
Additional Participating Persons:	CINDY JESCH; OAKLAND, CA MIKE GRIMES; MOBILE, AL		
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/ .		

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