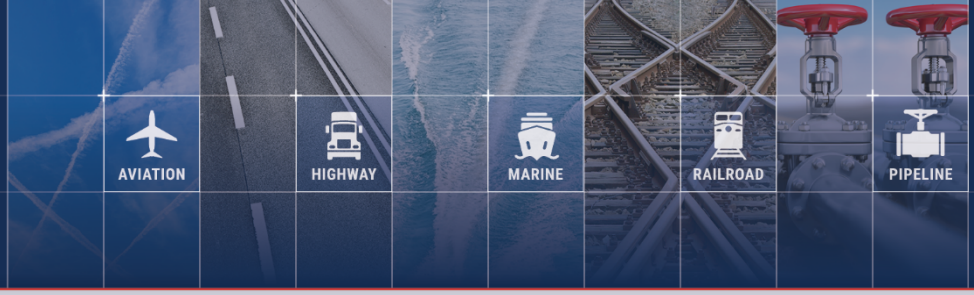

Aviation Investigation Final Report

Location:	SAN ANTONIO, Texas	**Accident Number:**	FTW95FA069
Date & Time:	December 18, 1994, 15:50 Local	**Registration:**	N21590
Aircraft:	PIPER PA-32RT	**Aircraft Damage:**	Destroyed
Defining Event:		**Injuries:**	1 Fatal, 1 Serious, 1 Minor
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

THE AIRCRAFT LOST POWER WHILE DESCENDING APPROXIMATELY 4 MILES NORTH OF SAN ANTONIO INTERNATIONAL AIRPORT (SAT). AFTER THE LOSS OF POWER, THE PILOT-RATED PASSENGER MANIPULATED THE FLIGHT CONTROLS WHILE THE PILOT ATTEMPTED A RESTART THAT WAS UNSUCCESSFUL. THE AIRPLANE CAME TO REST IN A GRASSY FIELD ADJACENT TO POWER LINES AND TREES ABOUT 1 1/2 MILES NORTHWEST OF RUNWAY 12L. EXAMINATION OF THE AIRPLANE AND ENGINE DID NOT REVEAL ANY STRUCTURAL OR MECHANICAL DEFECTS. TESTING OF THE ENGINE DRIVEN FUEL PUMP ACCESSORY REVEALED THAT IT WAS FLOWING FUEL FROM THE OVERBOARD DRAIN AT A RATE OF 1/2 GALLON PER MINUTE; HOWEVER, IT WAS STILL PUMPING FUEL TO THE ENGINE AT 25 PSI AND 275 LBS/HR. ON SITE EXAMINATION OF THE AIRCRAFT REVEALED USABLE FUEL IN BOTH WING TANKS. TEARDOWN OF THE PUMP REVEALED 'O' RINGS THAT WERE WORN AND DISPLAYED SQUARE CROSS SECTIONS. ADDITIONALLY, THE INLET SCREEN TO THE FUEL SERVO HAD NON-METALLIC DEBRIS IN THE FITTING AND THE SCREEN WAS OBSERVED TO BE PARTIALLY CLOGGED. THE ANOMALIES FOUND WITH THE FUEL SYSTEM ACCESSORIES WERE INCONCLUSIVE. THE REASON FOR THE LOSS OF ENGINE POWER COULD NOT BE DETERMINED.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: THE LOSS OF ENGINE POWER FOR UNDETERMINED REASONS. A FACTOR RELATED TO THE ACCIDENT WAS: THE LACK OF A SUITABLE AREA FOR THE FORCED LANDING.

Findings

Occurrence #1: LOSS OF ENGINE POWER
Phase of Operation: DESCENT

Findings
1. (C) REASON FOR OCCURRENCE UNDETERMINED
2. FUEL SYSTEM,PUMP - LEAK
3. FUEL SYSTEM,PUMP - WORN
4. FUEL SYSTEM,SCREEN - FOREIGN MATERIAL/SUBSTANCE
5. FUEL SYSTEM,SCREEN - BLOCKED(PARTIAL)

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

Occurrence #3: IN FLIGHT COLLISION WITH TERRAIN/WATER
Phase of Operation: LANDING - FLARE/TOUCHDOWN

Findings
6. (F) TERRAIN CONDITION - NONE SUITABLE
7. TERRAIN CONDITION - HIGH VEGETATION
8. TERRAIN CONDITION - HIGH OBSTRUCTION(S)

Factual Information

HISTORY OF FLIGHT

On December 18, 1994, approximately 1550 central standard time, a Piper PA-32RT, N21590, was destroyed during a forced landing near San Antonio, Texas. The private pilot received serious injuries, one pilot-rated passenger was fatally injured and another pilot- rated passenger received minor injuries. No flight plan was filed and visual meteorological conditions prevailed for the personal cross-country flight.

The aircraft departed Addison Airport, Dallas, Texas, at 1430 for a visual flight rules (VFR) flight to San Antonio, Texas. The pilot reported that about 20 minutes into the flight, the engine "started to sputter a little" and the "RPMs were varying about 500 RPMs." He further stated that after adjustment of the "mixture knob (which seemed lower than normal), the sputter stopped." Approximately 1549, San Antonio approach control cleared the aircraft to land on runway 12L, at San Antonio International Airport (SAT). The airplane was about 4 miles north of the airport, approximately 1,500 feet above ground level (AGL), when the engine lost power. A restart was attempted but was not successful. The airplane came to rest in a grassy field adjacent to power lines and trees approximately 1 1/2 miles northwest of runway 12L.

PERSONNEL INFORMATION

In a written statement, the pilot and owner of the aircraft reported that two friends accompanied him on the flight to San Antonio. Both were certified flight instructors (CFI); however, in an interview, the pilot reported that the flight was not instructional. During the flight, the pilot occupied the front left seat, performed the takeoff, and flew the aircraft until the loss of engine power. The pilot further reported that after the engine "quit", the pilot-rated passenger (fatally injured), who was seated in the right seat said, "I've got the airplane." In a written statement, the pilot-rated passenger seated in the rear reported that after the "engine failure", the right seat occupant "took control of the yoke" and "a restart was initiated" by the pilot. The pilot stated that the right seat occupant was "at the controls" during the forced landing.

AIRCRAFT INFORMATION

A review of airframe and engine records did not reveal any anomalies or uncorrected maintenance defects. However, the pilot reported that he had an A&P mechanic inspect the engine for an oil leak prior to the flight (on the day of the accident). In an interview, the mechanic stated that he observed that "the engine had oil on it to the point where it was not possible to tell where the leak was coming from." After an engine wash and engine runup, he observed oil "on the forward side of the engine case." He "retorqued the case bolts on the

lower front side, and the bolts on the forward side of the oil sump." There was no documentation in the engine log records of the case bolts being retorqued.

WRECKAGE AND IMPACT INFORMATION

Examination of the airplane and engine did not disclose any structural or mechanical anomalies. Continuity was established to all the cylinders and to the accessory drive. There was compression in all cylinders and the magnetos had impulse. Control cable continuity was established from the cockpit to all control surfaces. The oil filter element was clean and there was no evidence of lack of lubrication or thermal distress within the engine.

Detailed examination of the fuel system revealed that the inlet screen to the fuel servo had non-metallic debris in the fitting and the screen was observed to be partially clogged. The left and right wing fuel tank screens and the fuel sump screen were clean. A Federal Aviation Administration (FAA) Inspector stated that approximately 20 gallons of fuel was observed in the left wing tank at the accident site. The ruptured right wing tank was observed to have residual fuel; however, a Federal Aviation Administration (FAA) Inspector reported that there was a fuel spill underneath the right wing. Both front seat shoulder harnesses were in the stowed position.

MEDICAL AND PATHOLOGICAL

An autopsy was performed on the pilot-rated passenger by Robert C. Bux, M.D., at the Forensic Science Center, Bexar County, Texas. Toxicology findings were negative.

TESTS AND RESEARCH

One gallon of fuel was sampled from the left wing sump drain at the accident site for testing. According to Petroleum Specialist Lab, Floresville, Texas, the sample conformed to "standard specifications for aviation gasolines."

The engine driven fuel pump accessory, p/n RG908OJ6A, s/n D-733, was tested at Aircraft Fuel Injection Service, Dallas, Texas. The pump produced 25 psi of fuel pressure, and 275 pounds per hour fuel flow at 2600 RPM. During the test, fuel flowed "out the overboard drain fitting at a rate of 1/2 gallon" per minute. Additionally, it was observed that all of the "O" rings inside the pump were "worn" and displayed square cross sections. Fuel stains were observed on the outside of the fuel pump, inside of the fuel servo, and inside the induction pipes. According to the manufacturer, "fuel flowing from the overboard drain fitting indicates leakage past the fuel pump drive shaft seal." The anomalies found during testing of the engine driven fuel pump were inconclusive.

ADDITIONAL DATA

The aircraft was released to the owner's representative.

Pilot Information

Certificate:	Private	**Age:**	35,Male
Airplane Rating(s):	Single-engine land	**Seat Occupied:**	Left
Other Aircraft Rating(s):	None	**Restraint Used:**	
Instrument Rating(s):	None	**Second Pilot Present:**	Yes
Instructor Rating(s):	None	**Toxicology Performed:**	No
Medical Certification:	Class 3 Valid Medical--w/ waivers/lim	**Last FAA Medical Exam:**	April 8, 1994
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	
Flight Time:	423 hours (Total, all aircraft), 377 hours (Pilot In Command, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	PIPER	**Registration:**	N21590
Model/Series:	PA-32RT PA-32RT	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	32R-7887219
Landing Gear Type:	Retractable - Tricycle	**Seats:**	6
Date/Type of Last Inspection:	November 6, 1994 Annual	**Certified Max Gross Wt.:**	3200 lbs
Time Since Last Inspection:	49 Hrs	**Engines:**	1 Reciprocating
Airframe Total Time:		**Engine Manufacturer:**	LYCOMING
ELT:	Installed, activated, did not aid in locating accident	**Engine Model/Series:**	TIO-540-S1AD
Registered Owner:	ALBERT W. DENSON	**Rated Power:**	300 Horsepower
Operator:		**Operating Certificate(s) Held:**	None
Operator Does Business As:	LTD AVIATION	**Operator Designator Code:**	

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	SAT ,809 ft msl	**Distance from Accident Site:**	11 Nautical Miles
Observation Time:	15:50 Local	**Direction from Accident Site:**	10°
Lowest Cloud Condition:	Unknown	**Visibility**	15 miles
Lowest Ceiling:	Broken / 8000 ft AGL	**Visibility (RVR):**	
Wind Speed/Gusts:	5 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	60°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	30 inches Hg	**Temperature/Dew Point:**	19°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	DALLAS , TX (ADS)	**Type of Flight Plan Filed:**	None
Destination:	(SAT)	**Type of Clearance:**	VFR
Departure Time:	14:30 Local	**Type of Airspace:**	Class C

Airport Information

Airport:		**Runway Surface Type:**	
Airport Elevation:		**Runway Surface Condition:**	
Runway Used:	0	**IFR Approach:**	None
Runway Length/Width:		**VFR Approach/Landing:**	Forced landing

Wreckage and Impact Information

Crew Injuries:	1 Serious	**Aircraft Damage:**	Destroyed
Passenger Injuries:	1 Fatal, 1 Minor	**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	1 Fatal, 1 Serious, 1 Minor	**Latitude, Longitude:**	29.540018,-98.489555(est)

Administrative Information

Investigator In Charge (IIC):	Lemishko, Alexander
Additional Participating Persons:	WILFRED J BIRON; SAN ANTONIO , TX
Original Publish Date:	October 13, 1995
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=19198