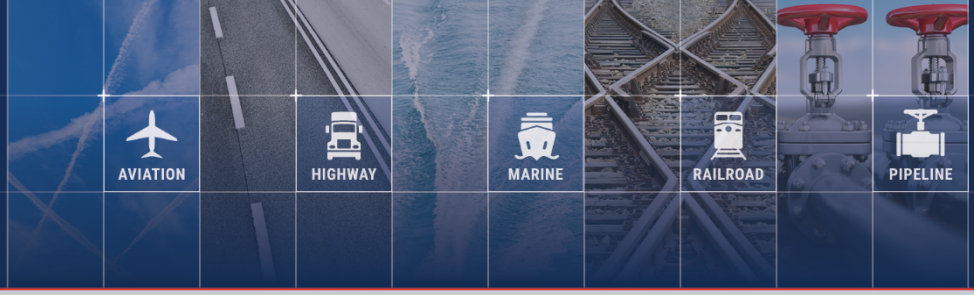


# Aviation Investigation Final Report

| | | | |
|---|---|---|---|
| **Location:** | FREDERICKSBURG, Texas | **Accident Number:** | FTW95LA018 |
| **Date & Time:** | October 16, 1994, 11:15 Local | **Registration:** | N821AC |
| **Aircraft:** | PIPER PA-23-250 | **Aircraft Damage:** | Substantial |
| **Defining Event:** | | **Injuries:** | 2 None |
| **Flight Conducted Under:** | Part 91: General aviation - Ferry | | |

## Analysis

DURING THE EN ROUTE CLIMB, THE LEFT ENGINE MADE A LOUD NOISE AND LOST POWER. THE PILOT RETARDED THE THROTTLE AND TURNED AROUND TO RETURN TO THE AIRPORT. HE NOTICED THE ENGINE NACELLE WAS ON FIRE AND HE SHUT OFF THE FUEL SUPPLY. THE FIRE APPEARED TO EXTINGUISH. THE PILOT THEN RETARDED THE MIXTURE AND PROPELLER CONTROLS, WHICH IS NOT THE PROPER SEQUENCE OUTLINED IN THE AIRPLANE OWNER'S MANUAL. THE PROPELLER FAILED TO FEATHER. DESPITE FULL POWER ON THE RIGHT ENGINE AND MAINTAINING BEST SINGLE ENGINE RATE OF CLIMB SPEED, THE AIRPLANE DESCENDED 200 TO 250 FEET PER MINUTE. THE PILOT MADE A FORCED WHEELS DOWN LANDING IN AN OPEN FIELD. THE AIRPLANE STRUCK A TERRACE AND THE LANDING GEAR COLLAPSED. POST ACCIDENT ENGINE INSPECTION DISCLOSED A LOOSE FUEL INJECTOR SUPPLY LINE, AND HEAT DAMAGE AND A 1-1/2 INCH BROWN STAIN ON THE CLAMP THAT ATTACHES THE TAILPIPE TO THE EXHAUST SIDE OF THE TURBOCHARGER. ENGINE MAINTENANCE, REQUIRING THE REMOVAL AND REATTACHMENT OF FUEL LINES, HAD BEEN PERFORMED ON THE AIRPLANE JUST PRIOR TO THE FLIGHT.

## Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: IMPROPER MAINTENANCE RESULTING IN AN ENGINE FIRE, AND THE PILOT'S IMPROPER PROPELLER FEATHERING PROCEDURE, CAUSING THE PROPELLER NOT TO FEATHER AND THE AIRPLANE'S ENGINE OUT CAPABILITY TO BE EXCEEDED. A FACTOR WAS THE UNSUITABLE TERRAIN CONDITIONS.

## Findings

Occurrence #1: FIRE
Phase of Operation: CLIMB - TO CRUISE

Findings
1. (C) MAINTENANCE,MAJOR REPAIR - IMPROPER - OTHER MAINTENANCE PERSONNEL
2. FUEL SYSTEM,LINE - LOOSE
3. EXHAUST SYSTEM,TURBOCHARGER - LEAK
4. (C) PROPELLER FEATHERING - IMPROPER - PILOT IN COMMAND
---

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

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

Findings
5. (F) TERRAIN CONDITION - NONE SUITABLE
6. TERRAIN CONDITION - ROUGH/UNEVEN

## Factual Information

On October 16, 1994, at 1115 central daylight time, N821AC, a Piper PA-23-250, was substantially damaged during a forced landing near Fredericksburg, Texas. The pilot and passenger were not injured. Visual meteorological conditions prevailed.

The following is based on the pilot's report. During the en route climb, the pilot heard a loud noise and noted the left engine losing power. He retarded the throttle, and turned the airplane around in an attempt to return to the airport. He then noticed the left engine nacelle was on fire and he shut off the fuel supply. The fire appeared to extinguish. The pilot then retarded the mixture control to idle cutoff and retarded the propeller control to the feather position.

The airplane owner's manual states (in part): "...the propeller on the dead engine should be feathered by pulling the throttle to idling position and the prop pitch control back fully; then the mixture should be set at idle cut-off and the ignition off." The handbook further states: "The Hartzell feathering propellers can only be feathered while the failed engine is rotating, and not if the engine drops below 1,000 RPM, because the centrifugal force due to rotation is necessary to hold out a stop-pin which keeps the propeller from feathering each time the engine is stopped on the ground. . .single engine flight can be maintained with the dead engine propeller unfeathered, although a noticeable decrease in single engine performance will take place." Retarding the mixture before retarding the propeller will cause the engine to stop with a resultant loss of oil pressure.

The following is based on the continuation of the pilot's report. Although the pilot maintained full power on the right engine and 104 MPH (90 knots) indicated airspeed (best single engine rate of climb airspeed), the airplane descended at 200 to 250 feet per minute. He then noticed the propeller had failed to feather, and

it became apparent he was not going to make it to the airport. The pilot made a forced wheels down landing in a field near the airport. During the landing roll, the airplane struck a terrace in the field and the landing gear collapsed.

The left engine was later examined by a Federal Aviation Administration (FAA) airworthiness inspector. According to his report, fire damage was confined to the left side of the engine. Some highlights of his report:

> Oil seepage around a broken turbocharger oil inlet supply line; > Fire damage to the insulated fuel and oil lines in the middle and left side of the accessory section; > Heat damage and a 1-1/2 inch brown stain on the clamp that attaches the tailpipe to the exhaust side of the turbocharger;

> Heat damage to the turbocharger heat shield; > Loose fuel injector supply lines (a similar situation was found on the right engine).

According to the FAA, the airplane had been at the Fredericksburg Airport to be painted and some engine maintenance.  The latter required the removal and reattachment of fuel lines.

## Pilot Information

| | | | |
|---|---|---|---|
| **Certificate:** | Airline transport; Commercial | **Age:** | 30,Male |
| **Airplane Rating(s):** | Single-engine land; Multi-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 1 Valid Medical--no waivers/lim. | **Last FAA Medical Exam:** | March 18, 1994 |
| **Occupational Pilot:** | No | **Last Flight Review or Equivalent:** | |
| **Flight Time:** | 2020 hours (Total, all aircraft), 10 hours (Total, this make and model), 1915 hours (Pilot In Command, all aircraft), 61 hours (Last 90 days, all aircraft), 19 hours (Last 30 days, all aircraft) | | |

## Aircraft and Owner/Operator Information

| | | | |
|---|---|---|---|
| **Aircraft Make:** | PIPER | **Registration:** | N821AC |
| **Model/Series:** | PA-23-250 PA-23-250 | **Aircraft Category:** | Airplane |
| **Year of Manufacture:** | | **Amateur Built:** | |
| **Airworthiness Certificate:** | Normal | **Serial Number:** | 27-7554038 |
| **Landing Gear Type:** | Retractable - Tricycle | **Seats:** | 2 |
| **Date/Type of Last Inspection:** | January 11, 1994 Annual | **Certified Max Gross Wt.:** | 5200 lbs |
| **Time Since Last Inspection:** | 52 Hrs | **Engines:** | 2 Reciprocating |
| **Airframe Total Time:** | 2880 Hrs | **Engine Manufacturer:** | LYCOMING |
| **ELT:** | Installed | **Engine Model/Series:** | TIO-540-C1A |
| **Registered Owner:** | CHURCH OF BIBLE UNDERSTANDING | **Rated Power:** | 250 Horsepower |
| **Operator:** | MITCHELL, DANIEL L. | **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:** | Day |
| **Observation Facility, Elevation:** | | **Distance from Accident Site:** | |
| **Observation Time:** | | **Direction from Accident Site:** | |
| **Lowest Cloud Condition:** | Scattered / 1100 ft AGL | **Visibility** | 10 miles |
| **Lowest Ceiling:** | Broken / 1300 ft AGL | **Visibility (RVR):** | |
| **Wind Speed/Gusts:** | 10 knots / | **Turbulence Type Forecast/Actual:** | / |
| **Wind Direction:** | 200° | **Turbulence Severity Forecast/Actual:** | / |
| **Altimeter Setting:** | 29 inches Hg | **Temperature/Dew Point:** | 26°C / -2°C |
| **Precipitation and Obscuration:** | N/A - None - Fog | | |
| **Departure Point:** | , TX (T82 ) | **Type of Flight Plan Filed:** | IFR |
| **Destination:** | PENSACOLA , FL (PNS ) | **Type of Clearance:** | IFR |
| **Departure Time:** | 10:55 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:** | 1 None | **Aircraft Fire:** | In-flight |
| **Ground Injuries:** | N/A | **Aircraft Explosion:** | None |
| **Total Injuries:** | 2 None | **Latitude, Longitude:** | 30.270528,-98.869453(est) |

## Administrative Information

| | |
|---|---|
| **Investigator In Charge (IIC):** | Scott, Arnold |
| **Additional Participating Persons:** | FRED J CECH; SAN ANTONIO , TX |
| **Original Publish Date:** | March 27, 1995 |
| **Last Revision Date:** | |
| **Investigation Class:** | Class |
| **Note:** | |
| **Investigation Docket:** | https://data.ntsb.gov/Docket?ProjectID=19285 |