



# Aviation Investigation Final Report

<b>Location:</b>	UMPIRE, Arkansas	<b>Accident Number:</b>	FTW99LA052
<b>Date &amp; Time:</b>	December 16, 1998, 11:30 Local	<b>Registration:</b>	N1933N
<b>Aircraft:</b>	Cessna 182	<b>Aircraft Damage:</b>	Substantial
<b>Defining Event:</b>		<b>Injuries:</b>	1 None
<b>Flight Conducted Under:</b>	Part 91: General aviation - Ferry		

## Analysis

About 15-minutes after takeoff, the pilot of the single engine airplane felt slight vibrations and a 'noise' which became increasingly louder. The engine then lost power and the pilot maneuvered over hilly terrain toward an open field. Approaching the field and in a rapid descent, the airplane struck power lines. After striking the lines, the pilot managed to land the airplane in the field, and the nose gear collapsed structurally damaging the airplane. An examination and disassembly of the engine revealed that the crankcase was penetrated. The #5 piston was separated in the piston boss area and the skirt was shattered. The piston pin was intact and attached to a short section of the #5 connecting rod. The #5 connecting rod was found fractured in two places along its length, with the center section of rod missing. The camshaft had numerous impact marks and was found separated into three parts.

## Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: Catastrophic engine failure due to failures of the #5 piston, #5 connecting rod, and the camshaft. A factor was the lack of suitable terrain for a forced landing.

## Findings

Occurrence #1: LOSS OF ENGINE POWER(TOTAL) - MECH FAILURE/MALF  
Phase of Operation: CLIMB - TO CRUISE

Findings

1. (C) ENGINE ASSEMBLY, PISTON - FAILURE
2. (C) ENGINE ASSEMBLY, CONNECTING ROD - FAILURE
3. (C) ENGINE ASSEMBLY, CAMSHAFT - FAILURE

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Occurrence #2: FORCED LANDING

Phase of Operation: EMERGENCY DESCENT/LANDING

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Occurrence #3: IN FLIGHT COLLISION WITH OBJECT

Phase of Operation: EMERGENCY DESCENT/LANDING

Findings

4. (F) TERRAIN CONDITION - NONE SUITABLE
5. TERRAIN CONDITION - MOUNTAINOUS/HILLY
6. OBJECT - WIRE, TRANSMISSION

## Factual Information

On December 16, 1998, approximately 1130 central standard time, a Cessna 182 airplane, N1933N, was substantially damaged during a forced landing following a loss of engine power while climbing in the vicinity of Umpire, Arkansas. The airline transport pilot, who was the sole occupant, was not injured. Visual meteorological conditions prevailed and a VFR flight plan was filed for the 14 Code of Federal Regulations Part 91 ferry flight. The flight originated from Mena, Arkansas, at 1100, and was en route to Lafayette, Louisiana. The airplane was owned by Manuel Investments Inc., of Lafayette, Louisiana.

According to the owner, the airplane had been at the Goodner Brothers Paint Shop, Mena, Arkansas, for complete exterior painting. After the work was completed, the pilot was hired to ferry the airplane to Lafayette.

During a telephone interview with the NTSB investigator-in-charge, the pilot reported that, about 15-minutes after takeoff from the Mena Airport, he felt slight vibrations and a "noise" which became increasingly louder. Shortly thereafter, the engine lost power and the pilot attempted to turn back to the airport. Realizing that he would not be able to make it back to the airport, he maneuvered the airplane over wooded, hilly terrain toward an open field. Approaching the field and in a rapid descent, the airplane struck power lines with the nose landing gear. After striking the power lines, the pilot managed to land the airplane in the field. Upon landing, the nose landing gear collapsed, resulting in the forward fuselage and firewall buckling.

An FAA airworthiness inspector conducted a preliminary examination of the wreckage at the accident site. During the examination, a hole, located above and between the #5 and #6 cylinders, was found in the engine crankcase. The penetration did not appear to be consistent with impact damage, as no other damage was noted on the crankcase. Usable fuel was found in both wing tanks. After discovery of the hole in the crankcase, the airframe and engine were transported to Dawson Aircraft, Clinton, Arkansas, for further examination.

The engine examination was conducted on March 18, 1999. It was supervised by the FAA airworthiness inspector, and attended by the owner's representative and a representative from Teledyne Continental Motors. The following information on the examination was provided to the NTSB by the FAA inspector. Externally, with the exception of the aforementioned crankcase penetration, the engine was essentially intact. The penetration appeared to be from the inside of the crankcase, outward. Disassembly of the cylinders and crankcase revealed the following. Cylinders #1, #2, #3, and #4 were not damaged. Moderate scoring was noted in their respective barrels, and moderate combustion deposits were noted on their pistons' domes. Their rings were essentially intact and coated with oil. The rocker arm areas were coated with oil. The barrel of the #6 cylinder could not be examined. The #6 piston could not

be removed from the cylinder, and exhibited impact damage on its skirt.

The #5 cylinder displayed heavy impact damage around the skirt, moderate scoring in the barrel, and moderate deposits on the piston dome. The #5 piston boss was separated from the piston and the piston skirt was shattered. The piston pin was intact and attached to a short section of the #5 connecting rod.

Connecting rods #1, #2, #3, #4, and #6 were not damaged, and were free to rotate about their crankpins. Connecting rod #5 was found fractured in two places along its length, with the center section of rod missing. One end of the rod was connected to the crankshaft, and the other end was connected to the piston pin. The camshaft had numerous impact marks and was found separated into three parts. The camshaft lobes had moderate scoring and were coated with oil.

The oil pump was intact and free to rotate. No metal particles were found in the pump. The oil cooler was not damaged and was full of oil. Both magnetos sparked at all terminals when rotated by hand. All spark plugs exhibited light wear, with moderate deposits on the electrodes.

Attempts to obtain a completed Pilot/Operator Aircraft Accident Report (NTSB Form 6120.1/2) from the operator were not successful.

### Pilot Information

<b>Certificate:</b>	Airline transport; Commercial	<b>Age:</b>	51, Male
<b>Airplane Rating(s):</b>	Single-engine land; Multi-engine land	<b>Seat Occupied:</b>	Left
<b>Other Aircraft Rating(s):</b>		<b>Restraint Used:</b>	
<b>Instrument Rating(s):</b>	Airplane	<b>Second Pilot Present:</b>	
<b>Instructor Rating(s):</b>	Airplane multi-engine; Airplane single-engine; Instrument airplane	<b>Toxicology Performed:</b>	No
<b>Medical Certification:</b>	Class 1 Valid Medical--no waivers/lim.	<b>Last FAA Medical Exam:</b>	June 15, 1998
<b>Occupational Pilot:</b>	Yes	<b>Last Flight Review or Equivalent:</b>	
<b>Flight Time:</b>	10500 hours (Total, all aircraft), 1500 hours (Total, this make and model), 9700 hours (Pilot In Command, all aircraft), 150 hours (Last 90 days, all aircraft), 50 hours (Last 30 days, all aircraft), 5 hours (Last 24 hours, all aircraft)		

## Aircraft and Owner/Operator Information

<b>Aircraft Make:</b>	Cessna	<b>Registration:</b>	N1933N
<b>Model/Series:</b>	182 182	<b>Aircraft Category:</b>	Airplane
<b>Year of Manufacture:</b>		<b>Amateur Built:</b>	
<b>Airworthiness Certificate:</b>	Normal	<b>Serial Number:</b>	18265355
<b>Landing Gear Type:</b>	Tricycle	<b>Seats:</b>	4
<b>Date/Type of Last Inspection:</b>	May 1, 1998 Annual	<b>Certified Max Gross Wt.:</b>	2550 lbs
<b>Time Since Last Inspection:</b>		<b>Engines:</b>	1 Reciprocating
<b>Airframe Total Time:</b>		<b>Engine Manufacturer:</b>	Continental
<b>ELT:</b>	Installed, not activated	<b>Engine Model/Series:</b>	O-470-U
<b>Registered Owner:</b>	MANUEL INVESTMENTS INC.	<b>Rated Power:</b>	230 Horsepower
<b>Operator:</b>		<b>Operating Certificate(s) Held:</b>	None
<b>Operator Does Business As:</b>		<b>Operator Designator Code:</b>	

## Meteorological Information and Flight Plan

<b>Conditions at Accident Site:</b>	Visual (VMC)	<b>Condition of Light:</b>	Day
<b>Observation Facility, Elevation:</b>		<b>Distance from Accident Site:</b>	
<b>Observation Time:</b>		<b>Direction from Accident Site:</b>	
<b>Lowest Cloud Condition:</b>	Clear	<b>Visibility</b>	10 miles
<b>Lowest Ceiling:</b>	Broken	<b>Visibility (RVR):</b>	
<b>Wind Speed/Gusts:</b>	9 knots / None	<b>Turbulence Type Forecast/Actual:</b>	/
<b>Wind Direction:</b>	250°	<b>Turbulence Severity Forecast/Actual:</b>	/
<b>Altimeter Setting:</b>	30 inches Hg	<b>Temperature/Dew Point:</b>	12°C
<b>Precipitation and Obscuration:</b>	No Obscuration; No Precipitation		
<b>Departure Point:</b>	MENA (M89 )	<b>Type of Flight Plan Filed:</b>	VFR
<b>Destination:</b>	LAFAYETTE (LFT )	<b>Type of Clearance:</b>	VFR on top
<b>Departure Time:</b>	11:00 Local	<b>Type of Airspace:</b>	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:	N/A	Aircraft Explosion:	None
Total Injuries:	1 None	Latitude, Longitude:	34.280498,-94.110221(est)

## Administrative Information

**Investigator In Charge (IIC):** Lemishko, Alexander

**Additional Participating Persons:** BUDDY M KOELLNER;

**Original Publish Date:** March 8, 2001

**Last Revision Date:**

**Investigation Class:** [Class](#)

**Note:**

**Investigation Docket:** <https://data.nts.gov/Docket?ProjectID=45478>

The National Transportation Safety Board (NTSB) is an independent federal agency charged by Congress with investigating every civil aviation accident in the United States and significant events in other modes of transportation—railroad, transit, highway, marine, pipeline, and commercial space. We determine the probable causes of the accidents and events we investigate, and issue safety recommendations aimed at preventing future occurrences. In addition, we conduct transportation safety research studies and offer information and other assistance to family members and survivors for each accident or event we investigate. We also serve as the appellate authority for enforcement actions involving aviation and mariner certificates issued by the Federal Aviation Administration (FAA) and US Coast Guard, and we adjudicate appeals of civil penalty actions taken by the FAA.

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](#).