Aviation Investigation Final Report

Location:	Clewiston, Florida	**Accident Number:**	MIA04LA067
Date & Time:	April 10, 2004, 10:30 Local	**Registration:**	N5019U
Aircraft:	Cessna 206	**Aircraft Damage:**	Substantial
Defining Event:		**Injuries:**	2 None
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The pilot stated that after takeoff the flight climbed to 7,500 feet mean sea level (msl) and approximately 40-45 minutes into the flight, the engine started shaking. He repositioned the fuel selector, and the shaking decreased slightly. The flight continued and the shaking continued. He spiraled down to 3,500 feet msl, and the shaking became worse. He glanced at the cylinder head temperature gauge, and oil pressure and temperature gauges, and reported that at that time all were in the green. He looked for a place to land and due to cars on a nearby roadway, landed in a ditch adjacent to the road. Examination of the engine by a representative of the engine manufacturer with FAA oversight revealed that the No. 2 cylinder connecting rod and one of the connecting rod bolts were fractured. The other connecting rod bolt was not fractured and remained secured to the connecting rod cap and section of connecting rod. Additionally, the No. 2 crankpin was dry but not heat discolored, and the oil port for the No. 2 crankpin was free of obstructions. Metallurgical examination of the fractured components by the NTSB Materials Laboratory located in Washington, D.C., revealed the fracture surface of the connecting rod bolt exhibited features consistent with tensile overstress. The bolt was determined to meet specification related to hardness. Mechanical damage to the fracture surface of the connecting rod precluded determination of failure mode. Review of the maintenance records revealed the engine was last overhauled on March 29, 1977, and installed in the accident airplane on April 15, 1977. The engine was disassembled, inspected, and reassembled on July 15, 1977, or approximately 50.0 hours since the overhaul in March of that year. The engine was installed in the airplane, test run, and found to be airworthy. Cylinders 1, 4, and 6 were removed and replaced on April 4, 1981. The engine had accumulated approximately 1,652 hours since last overhaul at the time of the accident.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The failure of the No. 2 cylinder connecting rod for undetermined reasons, and the failure of one of the connecting rod bolts due to tension overload resulting in the total loss of engine power and subsequent collision with a ditch during the forced landing.

Findings

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

Findings
1. (C) ENGINE ASSEMBLY,CONNECTING ROD - FAILURE
2. (C) ENGINE ASSEMBLY,CONNECTING ROD BOLT - OVERLOAD

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

Occurrence #3: IN FLIGHT COLLISION WITH TERRAIN/WATER
Phase of Operation: EMERGENCY DESCENT/LANDING

Findings
3. TERRAIN CONDITION - DITCH

Factual Information

On April 10, 2004, about 1030 eastern daylight time, a Cessna 206, N5019U, registered to a private individual, was substantially damaged during a forced landing in a ditch near Clewiston, Florida. Visual meteorological conditions prevailed at the time and no flight plan was filed for the 14 CFR Part 91 personal flight from the Florida Keys Marathon Airport, Marathon, Florida, to the Vero Beach Municipal Airport, Vero Beach, Florida. The private-rated pilot and one occupant were not injured. The flight originated about 0945, from the Florida Keys Marathon Airport, Marathon, Florida.

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The airplane was released, and the NTSB retained parts were released to the airplane owner on August 26, 2004.

Pilot Information

Certificate:	Private	**Age:**	63,Male
Airplane Rating(s):	Single-engine land	**Seat Occupied:**	Left
Other Aircraft Rating(s):	None	**Restraint Used:**	
Instrument Rating(s):	None	**Second Pilot Present:**	No
Instructor Rating(s):	None	**Toxicology Performed:**	No
Medical Certification:	Class 3 Valid Medical--w/ waivers/lim	**Last FAA Medical Exam:**	April 29, 2003
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	
Flight Time:	700 hours (Total, all aircraft), 700 hours (Pilot In Command, all aircraft), 22 hours (Last 90 days, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Cessna	**Registration:**	N5019U
Model/Series:	206	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	206-0019
Landing Gear Type:	Tricycle	**Seats:**	6
Date/Type of Last Inspection:	August 10, 2003 Annual	**Certified Max Gross Wt.:**	3300 lbs
Time Since Last Inspection:	11 Hrs	**Engines:**	1 Reciprocating
Airframe Total Time:	3340 Hrs	**Engine Manufacturer:**	Continental
ELT:	Installed, activated, aided in locating accident	**Engine Model/Series:**	IO-520-A
Registered Owner:	Joseph L. Turnage	**Rated Power:**	285 Horsepower
Operator:		**Operating Certificate(s) Held:**	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	KFXE,14 ft msl	**Distance from Accident Site:**	
Observation Time:	10:53 Local	**Direction from Accident Site:**	
Lowest Cloud Condition:		**Visibility**	4 miles
Lowest Ceiling:	Overcast / 700 ft AGL	**Visibility (RVR):**	
Wind Speed/Gusts:	6 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	360°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	29.94 inches Hg	**Temperature/Dew Point:**	24°C / 22°C
Precipitation and Obscuration:	N/A - None - Haze		
Departure Point:	Marathon, FL (KMTH)	**Type of Flight Plan Filed:**	None
Destination:	Vero Beach, FL (KVRB)	**Type of Clearance:**	None
Departure Time:	09:45 Local	**Type of Airspace:**	Class G

Wreckage and Impact Information

Crew Injuries:	1 None	**Aircraft Damage:**	Substantial
Passenger Injuries:	1 None	**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	2 None	**Latitude, Longitude:**	26.276666,-80.855552

Administrative Information

Investigator In Charge (IIC):	Monville, Timothy
Additional Participating Persons:	John A Diaz; FAA Flight Standards District Office; Fort Lauderdale, FL John Kent; Teledyne Continental Motors; Mobile, AL
Original Publish Date:	October 28, 2004
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=59094