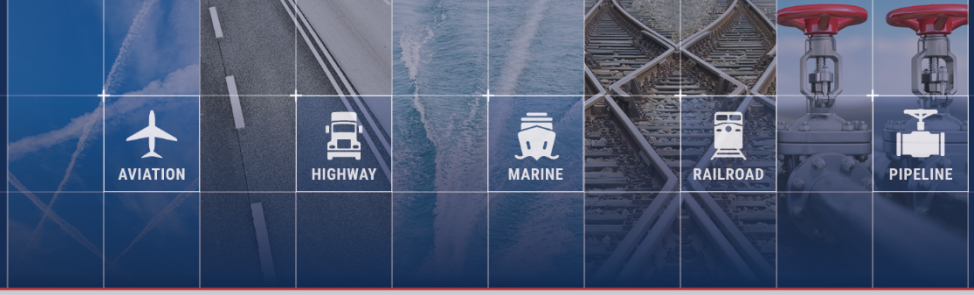

Aviation Investigation Final Report

Location:	DODGE CITY, Kansas	**Accident Number:**	CHI95LA137
Date & Time:	April 26, 1995, 12:34 Local	**Registration:**	N4614K
Aircraft:	CESSNA P210N	**Aircraft Damage:**	Minor
Defining Event:		**Injuries:**	3 Serious, 3 None
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

THE PILOT REPORTED THAT HE WAS CRUISING AT 16,000 FEET MEAN SEA LEVEL WHEN HE HEARD A LOUD EXPLOSION IN THE ENGINE COMPARTMENT AND THE ENGINE LOST POWER. HE DESCENDED THROUGH INSTRUMENT METEOROLOGICAL CONDITIONS AND WHEN HE BROKE OUT OF THE CLOUDS, THE AIRPORT WAS NOT IN SIGHT AND HE MADE A FORCED LANDING IN A FIELD. A FEDERAL AVIATION ADMINISTRATION (FAA) INSPECTOR WHO EXAMINED THE WRECKAGE REPORTED THAT THE PLANE WAS IN A WET WHEAT FIELD AND APPROXIMATELY 1000 FEET OF GROUND SCARS LED THROUGH A DITCH TO THE WRECKAGE. HE REPORTED NO EVIDENCE OF PREIMPACT AIRFRAME MALFUNCTION. DISASSEMBLY OF THE ENGINE REVEALED THE NUMBER ONE CONNECTING ROD FAILED DUE TO FATIGUE ORIGINATING FROM A DECARBURIZED LAYER ON THE SHANK OF THE ROD.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: fatigue and subsequent catastrophic failure of the connecting rod originating from the decarburized area on the shank of the rod. Factors were the low cloud weather condition and the ditch.

Findings

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

Findings
1. ENGINE ASSEMBLY,CONNECTING ROD - FATIGUE
2. (C) MATERIAL DEFECT - MANUFACTURER

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

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

Findings
3. (F) TERRAIN CONDITION - DITCH
4. (F) WEATHER CONDITION - LOW CEILING

Factual Information

On April 26, 1995, about 1234 central daylight time, a Cessna P210N, N4614K, piloted by an airline transport rated pilot, sustained minor damage during a forced landing near Dodge City, Kansas. The pilot and two passengers reported no injuries. Three passengers sustained serious injuries. Instrument meteorological conditions prevailed for the 14 CFR Part 91 flight. The flight originated in Sioux Falls, South Dakota, about 1000 with a planned destination of Amarillo, Texas. An IFR flight plan was filed.

The pilot reported that he was cruising at 16,000 feet mean sea level with the power set at 63 percent. He heard a loud explosion in the engine compartment and the engine lost power. He reported an "engine failure" to the air route traffic control center. The controller vectored the airplane toward Dodge City, Kansas. The pilot reported that he descended through instrument meteorological conditions and when he broke out of the clouds, the airport was not in sight and he elected to land in a field.

A Federal Aviation Administration (FAA) Inspector who examined the wreckage reported that the plane was in a wet wheat field and approximately 1000 feet of ground scars led downwind through a ditch to the wreckage. He reported no evidence of preimpact airframe malfunction.

The engine was examined at the Teledyne Continental Motors Laboratory in Mobile, Alabama, on June 13, 1995. The number one and three cylinders, and the number one connecting rod were previously removed. The number one piston remained in the number one cylinder. The right magneto was broken off at the flange and there was a hole in the top of crankcase over the number one cylinder extending toward the crankcase centerline.

Disassembly of the engine revealed the main bearings exhibited wiping and the number two through six connecting rod bearings were destroyed. The pistons on the right side of the engine had a thin layer of light white colored deposits and the left side pistons had dark colored deposits with a trace of white. The magnetos, fuel pump, throttle control, and manifold valve operated normally when bench tested.

The number one connecting rod was fractured at the junction of the piston pin end and beam section. At the crankshaft end, the cap was spread at the parting surface and the bolts were fractured. A fragment of one bolt remained in the rod.

The number one connecting rod was examined by a materials engineer at the NTSB Laboratory, Washington, D.C. In his factual report, the materials engineer stated the fracture at the piston end of the rod featured "characteristic of a fatigue crack emanated from multiple origins" The surface of the connecting rod shank contained a decarburized layer, .01 inch deep and 0.6 inches wide, that extended partially into the fracture zone.

Pilot Information

Certificate:	Airline transport	**Age:**	54,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):	Airplane multi-engine; Airplane single-engine; Instrument airplane	**Toxicology Performed:**	No
Medical Certification:	Class 1 Valid Medical--w/ waivers/lim	**Last FAA Medical Exam:**	September 2, 1993
Occupational Pilot:	UNK	**Last Flight Review or Equivalent:**	
Flight Time:	11000 hours (Total, all aircraft), 1000 hours (Total, this make and model), 9000 hours (Pilot In Command, all aircraft), 60 hours (Last 90 days, all aircraft), 20 hours (Last 30 days, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	CESSNA	**Registration:**	N4614K
Model/Series:	P210N P210N	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	P21000237
Landing Gear Type:	Retractable - Tricycle	**Seats:**	6
Date/Type of Last Inspection:	December 1, 1994 Annual	**Certified Max Gross Wt.:**	3400 lbs
Time Since Last Inspection:		**Engines:**	1 Reciprocating
Airframe Total Time:		**Engine Manufacturer:**	CONTINENTAL
ELT:		**Engine Model/Series:**	TSIO-520-P
Registered Owner:	VOSBURG EQUIPMENT	**Rated Power:**	310 Horsepower
Operator:		**Operating Certificate(s) Held:**	None
Operator Does Business As:		**Operator Designator Code:**	

Meteorological Information and Flight Plan

Conditions at Accident Site:	Instrument (IMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	DDC ,2594 ft msl	**Distance from Accident Site:**	1 Nautical Miles
Observation Time:	12:14 Local	**Direction from Accident Site:**	180°
Lowest Cloud Condition:	Scattered / 700 ft AGL	**Visibility**	4 miles
Lowest Ceiling:	Overcast / 1200 ft AGL	**Visibility (RVR):**	
Wind Speed/Gusts:	22 knots / 32 knots	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	350°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	29 inches Hg	**Temperature/Dew Point:**	4°C / 3°C
Precipitation and Obscuration:	N/A - None - Fog		
Departure Point:	SIOUX FALLS , SD (FSD)	**Type of Flight Plan Filed:**	IFR
Destination:	AMARILLO , TX (AMA)	**Type of Clearance:**	IFR
Departure Time:	10:00 Local	**Type of Airspace:**	Class E

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 None	**Aircraft Damage:**	Minor
Passenger Injuries:	3 Serious, 2 None	**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	3 Serious, 3 None	**Latitude, Longitude:**	37.749141,-100.009437(est)

Administrative Information

Investigator In Charge (IIC):	Robbins, Wesley
Additional Participating Persons:	VERLE ENGEL; WICHITA , KS
Original Publish Date:	October 13, 1995
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=9878