



Aviation Investigation Final Report

Location:	SANTANTA, Kansas	Accident Number:	CHI96LA282
Date & Time:	July 26, 1996, 15:40 Local	Registration:	N8086V
Aircraft:	Cessna 188-230	Aircraft Damage:	Substantial
Defining Event:		Injuries:	1 None
Flight Conducted Under:	Part 137: Agricultural		

Analysis

The pilot stated that he was about to make his third pass on a cornfield when the engine tachometer went to 800 rpm. There was 'no popping, no warning, just low power.' The pilot put the airplane down in the cornfield. On touchdown, the landing gear dug into the mud. Examination of the airplane's engine revealed that the number four cylinder exhaust valve push rod was broken and the number four cylinder intake valve push rod was bent.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: a loss of power due to a broken number four cylinder exhaust valve push rod and a bent number four cylinder intake valve push rod. The wet, soft cornfield was a factor.

Findings

Occurrence #1: LOSS OF ENGINE POWER(TOTAL) - MECH FAILURE/MALF
Phase of Operation: MANEUVERING - AERIAL APPLICATION

Findings

1. (C) ENGINE ASSEMBLY,PUSH ROD - SHEARED
2. (C) ENGINE ASSEMBLY,PUSH ROD - BENT

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

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

Findings

3. (F) TERRAIN CONDITION - WET
4. (F) TERRAIN CONDITION - SOFT
5. (F) TERRAIN CONDITION - CROP

Factual Information

On July 26, 1996, at 1540 central daylight time (cdt), a Cessna 188, N8086V, operated by a commercial pilot, sustained substantial damage when during aerial application the airplane's engine lost power. During the subsequent forced landing, the airplane impacted in a cornfield 7 miles southwest of Santanta, Kansas. Visual meteorological conditions prevailed at the time of the accident. The aerial application flight was being conducted under 14 CFR Part 137. The pilot reported no injuries. The local flight originated at Santanta, Kansas, at 1530 cdt.

In his written statement, the pilot stated that he was circling to the southeast to make his third pass on a cornfield when the engine tachometer went to 800 rpm. There was "no popping, no warning, just low power. I turned into the wind, (and) tried moving the throttle back and forth. I knew I had to put it [the airplane] down. It was not going to run. I aimed for the road but came up about 75 feet short. The field was muddy and the gear came off."

The Federal Aviation Administration (FAA) inspector who examined the wreckage found the airplane resting upright at the edge of a wet cornfield. Both of the main landing gear were bent to the right, outboard of the attach blocks, and were broken off. The cowling, firewall and forward fuselage were bent aft and to the right. The airplane skin aft of the cowling on the right side was wrinkled. The leading edge of the stub wings were dented at the roots. Both propeller blades were bent back slightly. Flight control continuity was confirmed. Engine controls and other airplane systems showed no anomalies. The fuel tank was full. Fuel samples were taken. The engine was retained for further testing.

The engine was examined at Santanta, Kansas, on August 22, 1996. The engine was left mounted to the airplane engine mounts and ran. The engine ran rough. The engine was next torn down and examined. The examination showed that the number four cylinder exhaust valve push rod was broken and the number four cylinder intake valve push rod was bent. A fuel sample taken at the accident site showed no signs of contamination.

Pilot Information

Certificate:	Commercial	Age:	39, Male
Airplane Rating(s):	Single-engine land	Seat Occupied:	Front
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 2 Valid Medical--no waivers/lim.	Last FAA Medical Exam:	June 6, 1996
Occupational Pilot:	Yes	Last Flight Review or Equivalent:	
Flight Time:	593 hours (Total, all aircraft), 250 hours (Total, this make and model), 550 hours (Pilot In Command, all aircraft), 286 hours (Last 90 days, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Cessna	Registration:	N8086V
Model/Series:	188-230 188-230	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	
Airworthiness Certificate:	Restricted (Special)	Serial Number:	188-0336
Landing Gear Type:	Tailwheel	Seats:	1
Date/Type of Last Inspection:	Annual	Certified Max Gross Wt.:	3300 lbs
Time Since Last Inspection:		Engines:	1 Reciprocating
Airframe Total Time:		Engine Manufacturer:	Continental
ELT:		Engine Model/Series:	O-470-R
Registered Owner:	SANTANTA FLYING SERVICE INC.	Rated Power:	230 Horsepower
Operator:		Operating Certificate(s) Held:	
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:	Clear	Visibility	10 miles
Lowest Ceiling:	None	Visibility (RVR):	
Wind Speed/Gusts:	7 knots /	Turbulence Type Forecast/Actual:	/
Wind Direction:	270°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:		Temperature/Dew Point:	25°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	(1K9)	Type of Flight Plan Filed:	None
Destination:		Type of Clearance:	None
Departure Time:	15:30 Local	Type of Airspace:	Class G

Airport Information

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

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:	37.430049,-100.979614(est)

Administrative Information

Investigator In Charge (IIC):	Bowling, David
Additional Participating Persons:	RON CENTER; WICHITA , KS
Original Publish Date:	February 18, 1997
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=10349

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