



Aviation Investigation Final Report

Location:	SAINT VINCENT, Minnesota	Accident Number:	CHI00LA211
Date & Time:	June 30, 2000, 08:00 Local	Registration:	N11A
Aircraft:	Piper PA-36-285	Aircraft Damage:	Substantial
Defining Event:		Injuries:	1 None
Flight Conducted Under:	Part 137: Agricultural		

Analysis

The pilot was returning to the airport when the engine failed. A subsequent landing in a wheat field resulted. The pilot said, "After pulling out of field I felt an abnormal vibration, I pulled the throttle back 100 rpm and it seemed OK. After only approximately 1/2 mile the engine shook violently and quit." The aircraft was powered by a Continental 6-285 "Tiara" geared engine. A postaccident examination revealed that the prop driver gear shaft on the engine was protruding out of the front of the engine approximately one inch further than normal. The engine could not be rotated by hand. No other engine or airframe anomalies were detected that could be associated with a preexisting condition.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: the failure of the engine reduction gear assembly. Factors were the low altitude when the failure occurred and the crops.

Findings

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

Findings

1. (C) REDUCTION GEAR ASSY - FAILURE, TOTAL

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

Occurrence #3: ON GROUND/WATER ENCOUNTER WITH TERRAIN/WATER
Phase of Operation: EMERGENCY LANDING

Findings

2. (F) TERRAIN CONDITION - CROP
3. (F) ALTITUDE - LOW - PILOT IN COMMAND

Factual Information

On June 30, 2000, about 0800 central daylight time, a Piper PA-36-285, N11A, piloted by a commercial pilot, sustained substantial damage during a forced landing following a loss of engine power near Saint Vincent, Minnesota. The 14 CFR Part 137 aerial application flight was not on a flight plan. The pilot, who was the sole occupant was not injured. Visual meteorological conditions prevailed at the time of the accident. The flight originated from the Pembina Municipal airport (PMB), Pembina, North Dakota, at 0700, and was returning to PMB when the accident happened.

In a written statement the pilot said that he had finished spraying a field and, "...was returning to [the] airport of departure (Pembina). After pulling out of field I felt an abnormal vibration, I pulled the throttle back 100 rpm and it seemed OK. After only approximately 1/2 mile the engine shook violently and quit." The pilot said that he was only about 150 feet above ground level when the engine failure occurred. The airplane was subsequently landed in a wheat field where it was damaged.

A Continental 6-285 "Tiara" geared engine powered the aircraft. A postaccident examination of the aircraft by a Federal Aviation Administration Inspector revealed that the prop driver gear shaft on the engine was protruding out of the front of the engine approximately one inch further than normal. The engine could not be rotated by hand. No disassembly of the engine was performed. No other engine or airframe anomalies were detected that could be associated with a preexisting condition.

Pilot Information

Certificate:	Commercial	Age:	40, Male
Airplane Rating(s):	Single-engine land	Seat Occupied:	Center
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 Expired	Last FAA Medical Exam:	October 24, 1996
Occupational Pilot:	UNK	Last Flight Review or Equivalent:	
Flight Time:	5200 hours (Total, all aircraft), 28 hours (Total, this make and model), 28 hours (Last 90 days, all aircraft), 28 hours (Last 30 days, all aircraft), 6 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Piper	Registration:	N11A
Model/Series:	PA-36-285 PA-36-285	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	
Airworthiness Certificate:	Normal	Serial Number:	36-7560117
Landing Gear Type:	Tailwheel	Seats:	1
Date/Type of Last Inspection:	March 20, 2000 Annual	Certified Max Gross Wt.:	4400 lbs
Time Since Last Inspection:	59 Hrs	Engines:	1 Reciprocating
Airframe Total Time:	3582 Hrs	Engine Manufacturer:	Continental
ELT:	Not installed	Engine Model/Series:	6-285-CA2
Registered Owner:	NORTH STAR AVIATION OF HALLOCK	Rated Power:	285 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:	GFK ,844 ft msl	Distance from Accident Site:	60 Nautical Miles
Observation Time:	07:53 Local	Direction from Accident Site:	180°
Lowest Cloud Condition:	Scattered / 25000 ft AGL	Visibility	10 miles
Lowest Ceiling:	None	Visibility (RVR):	
Wind Speed/Gusts:	5 knots /	Turbulence Type Forecast/Actual:	/
Wind Direction:	240°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	29 inches Hg	Temperature/Dew Point:	66°C / 57°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	PEMBINA , ND (PMB)	Type of Flight Plan Filed:	None
Destination:		Type of Clearance:	None
Departure Time:	07:00 Local	Type of Airspace:	Class G

Airport Information

Airport:		Runway Surface Type:	
Airport Elevation:		Runway Surface Condition:	Vegetation
Runway Used:	0	IFR Approach:	None
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:	48.970397,-97.219306(est)

Administrative Information

Investigator In Charge (IIC):	Brannen, John
Additional Participating Persons:	CASEY HEGGERSTON; MINNEAPOLIS , MN
Original Publish Date:	August 21, 2001
Last Revision Date:	
Investigation Class:	Class
Note:	The NTSB traveled to the scene of this accident.
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=49762

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