



National Transportation Safety Board Aviation Accident Data Summary

Location:	PINE CITY, MN	Accident Number:	CHI00LA103
Date & Time:	04/02/2000, 1600 CDT	Registration:	N54454
Aircraft:	Piper PA-28-140	Injuries:	1 Minor, 1 None
Flight Conducted Under:	Part 91: General Aviation - Aerial Observation		

Analysis

The airplane encountered an in-flight loss of engine power and sustained substantial damage on impact with a fence and vegetation during a forced landing in a field. The pilot had minor injury. The passenger was uninjured. The engine's number four cylinder's exhaust valve spring and valve were found failed. The valve spring had a 45-degree fracture approximately 0.75 inches from an end. The valve head was found with approximately a third of its' face fractured off. A section of valve head was found within the cylinder. The valve head's face and head section had indentations. The pilot stated, 'With the lake to our west, a bunch of trees to our north, a house to our south behind us, when the engine quit. I chose to turn 90[degrees] to the east fly under some high tension wires, which I knew I could do safely, to a field on the other side. The field was not very wide, but I felt it was safer for landing without any houses close by. Being 200 to 300 feet above the ground I didn't have the altitude to turn 180[degrees] and land in the field below. I could not get stopped in the narrow field, so consequently we went through the barb wire fence on the east side and hit a clump of bushes with our left wing, which brought us to a stop.'

Probable Cause

The National Transportation Safety Board determines the probable cause(s) of this accident to be: A loss of engine power due to the failure of the number four cylinder's exhaust valve spring and exhaust valve. Contributing to the accident were, the barbwire fence and the clump of high vegetation encountered by the airplane.

Findings

Occurrence #1: LOSS OF ENGINE POWER
Phase of Operation: CRUISE

Findings

1. (F) ENGINE ASSEMBLY, OTHER - FAILURE
2. (F) ENGINE ASSEMBLY, VALVE, EXHAUST - FAILURE

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

Findings

3. (C) TERRAIN CONDITION - NONE SUITABLE
4. EMERGENCY PROCEDURE - PERFORMED - PILOT IN COMMAND

Occurrence #3: ON GROUND/WATER COLLISION WITH OBJECT

Phase of Operation: EMERGENCY LANDING

Findings

5. (F) OBJECT - FENCE

Occurrence #4: ON GROUND/WATER ENCOUNTER WITH TERRAIN/WATER

Phase of Operation: EMERGENCY LANDING

Findings

6. (F) TERRAIN CONDITION - HIGH VEGETATION

Pilot Information

Certificate:	Commercial	Age:	28
Airplane Rating(s):	Multi-engine Land; Single-engine Land	Instrument Rating(s):	Airplane
Other Aircraft Rating(s):	None	Instructor Rating(s):	Airplane Single-engine; Instrument Airplane
Flight Time:	875 hours (Total, all aircraft), 30 hours (Total, this make and model), 802 hours (Pilot In Command, all aircraft), 131 hours (Last 90 days, all aircraft), 92 hours (Last 30 days, all aircraft), 6 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Piper	Registration:	N54454
Model/Series:	PA-28-140 PA-28-140	Engines:	1 Reciprocating
Operator:	HORIZON AVIATION INC.	Engine Manufacturer:	Lycoming
Operating Certificate(s) Held:	None	Engine Model/Series:	O-320-E3D
Flight Conducted Under:	Part 91: General Aviation - Aerial Observation		

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual Conditions	Condition of Light:	Day
Observation Facility, Elevation:	JMR, 1012 ft msl	Weather Information Source:	Weather Observation Facility
Lowest Ceiling:	Broken / 4200 ft agl	Wind Speed/Gusts, Direction:	8 knots / , 240°
Temperature:	11° C	Visibility	10 Miles
Precipitation and Obscuration:			
Departure Point:	MORA, MN (JMR)	Destination:	

Wreckage and Impact Information

Crew Injuries:	1 Minor	Aircraft Damage:	Substantial
Passenger Injuries:	1 None	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Latitude, Longitude:			

Administrative Information

Investigator In Charge (IIC):	EDWARD F MALINOWSKI	Adopted Date:	04/19/2001
Investigation Docket:	NTSB accident and incident dockets serve as permanent archival information for the NTSB's investigations. Dockets released prior to June 1, 2009 are publicly available from the NTSB's Record Management Division at pubinq@ntsb.gov , or at 800-877-6799. Dockets released after this date are available at http://dms.nts.gov/pubdms/ .		

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