



Aviation Investigation Final Report

Location:	LUDINGTON, Michigan	Accident Number:	CHI93LA016
Date & Time:	October 24, 1992, 21:00 Local	Registration:	N6345P
Aircraft:	PIPER PA-24-180	Aircraft Damage:	Substantial
Defining Event:		Injuries:	4 None
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

THE PILOT STATED SHORTLY AFTER TAKEOFF, THE AIRPLANE '...LOST THE ABILITY TO CLIMB/MAINTAIN ALTITUDE.' EMERGENCY PROCEDURES WERE UNSUCCESSFUL, AND THE AIRPLANE SETTLED INTO THE TREE TOPS. POSTACCIDENT EXAMINATION REVEALED NO EVIDENCE OF PREIMPACT PROPELLER ASSEMBLY FAILURE. AN ENGINE TEARDOWN REVEALED THE TOP PISTON RING IN THE #1 CYLINDER WAS BROKEN, WITH NO EVIDENCE OF SCORING ON THE CYLINDER WALL. THE RIGHT MAGNETO OPERATION WAS INTERMITTENT, ESPECIALLY AT HIGHER RPM SETTINGS. THE ENGINE TOTAL TIME WAS 3,169.9 HOURS, AND TIME SINCE MAJOR OVERHAUL WAS 2,064.5 HOURS. THE AIRPLANE HAD OPERATED 2.4 HOURS SINCE THE MOST RECENT ANNUAL INSPECTION.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: THE PARTIAL LOSS OF ENGINE POWER DURING THE INITIAL CLIMB OUT ON A NIGHT FLIGHT.

Findings

Occurrence #1: LOSS OF ENGINE POWER(PARTIAL) - MECH FAILURE/MALF
Phase of Operation: TAKEOFF - INITIAL CLIMB

Findings

1. IGNITION SYSTEM,MAGNETO - ERRATIC

2. (F) ENGINE ASSEMBLY,RING - FAILURE,TOTAL
3. (F) ENGINE ASSEMBLY,CAMSHAFT - WORN
4. (C) MAINTENANCE - INADEQUATE - OTHER MAINTENANCE PERSONNEL

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

Occurrence #3: IN FLIGHT COLLISION WITH OBJECT
Phase of Operation: DESCENT - EMERGENCY

Findings

5. LIGHT CONDITION - DARK NIGHT
6. OBJECT - TREE(S)

Occurrence #4: IN FLIGHT COLLISION WITH TERRAIN/WATER
Phase of Operation: DESCENT - UNCONTROLLED

Factual Information

Pilot Information

Certificate:	Commercial; Flight instructor	Age:	Male
Airplane Rating(s):	Single-engine land; Multi-engine land	Seat Occupied:	Left
Other Aircraft Rating(s):	Helicopter	Restraint Used:	
Instrument Rating(s):	Airplane; Helicopter	Second Pilot Present:	No
Instructor Rating(s):	Airplane single-engine; Instrument airplane	Toxicology Performed:	No
Medical Certification:	Class 2 Valid Medical--no waivers/lim.	Last FAA Medical Exam:	August 27, 1992
Occupational Pilot:	No	Last Flight Review or Equivalent:	
Flight Time:	1250 hours (Total, all aircraft), 46 hours (Total, this make and model), 951 hours (Pilot In Command, all aircraft), 23 hours (Last 90 days, all aircraft), 3 hours (Last 30 days, all aircraft), 1 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	PIPER	Registration:	N6345P
Model/Series:	PA-24-180 PA-24-180	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	
Airworthiness Certificate:	Normal	Serial Number:	24-1455
Landing Gear Type:	Retractable - Tricycle	Seats:	4
Date/Type of Last Inspection:	October 7, 1992 Annual	Certified Max Gross Wt.:	2550 lbs
Time Since Last Inspection:	2 Hrs	Engines:	1 Reciprocating
Airframe Total Time:	3170 Hrs	Engine Manufacturer:	LYCOMING
ELT:	Installed, activated, did not aid in locating accident	Engine Model/Series:	O-360-A1A
Registered Owner:	ZEELAND AERO CLUB, INC.	Rated Power:	180 Horsepower
Operator:	ZEELAND AERO CLUB, INC.	Operating Certificate(s) Held:	None
Operator Does Business As:		Operator Designator Code:	

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	Condition of Light:	Night/dark
Observation Facility, Elevation:	MBL ,620 ft msl	Distance from Accident Site:	20 Nautical Miles
Observation Time:	20:56 Local	Direction from Accident Site:	20°
Lowest Cloud Condition:	Clear	Visibility	10 miles
Lowest Ceiling:	None	Visibility (RVR):	
Wind Speed/Gusts:	/	Turbulence Type Forecast/Actual:	/
Wind Direction:	0°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	30 inches Hg	Temperature/Dew Point:	4°C / 1°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	(LDM)	Type of Flight Plan Filed:	None
Destination:	ZEELAND , MI (NONE)	Type of Clearance:	None
Departure Time:	21:00 Local	Type of Airspace:	Class G

Airport Information

Airport:	MASON COUNTY LDM	Runway Surface Type:	Asphalt
Airport Elevation:	642 ft msl	Runway Surface Condition:	Dry
Runway Used:	7	IFR Approach:	
Runway Length/Width:	5000 ft / 75 ft	VFR Approach/Landing:	

Wreckage and Impact Information

Crew Injuries:	1 None	Aircraft Damage:	Substantial
Passenger Injuries:	3 None	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	4 None	Latitude, Longitude:	43.949287,-86.440147(est)

Administrative Information

Investigator In Charge (IIC):	Reeves, Jodi
Additional Participating Persons:	JOHN BEEBY; GRAND RAPIDS , MI
Original Publish Date:	September 14, 1993
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=15612

The National Transportation Safety Board (NTSB) is an independent federal agency charged by Congress with investigating every civil aviation accident in the United States and significant events in other modes of transportation—railroad, transit, highway, marine, pipeline, and commercial space. We determine the probable causes of the accidents and events we investigate, and issue safety recommendations aimed at preventing future occurrences. In addition, we conduct transportation safety research studies and offer information and other assistance to family members and survivors for each accident or event we investigate. We also serve as the appellate authority for enforcement actions involving aviation and mariner certificates issued by the Federal Aviation Administration (FAA) and US Coast Guard, and we adjudicate appeals of civil penalty actions taken by the FAA.

The NTSB does not assign fault or blame for an accident or incident; rather, as specified by NTSB regulation, “accident/incident investigations are fact-finding proceedings with no formal issues and no adverse parties ... and are not conducted for the purpose of determining the rights or liabilities of any person” (Title 49 *Code of Federal Regulations* section 831.4). Assignment of fault or legal liability is not relevant to the NTSB’s statutory mission to improve transportation safety by investigating accidents and incidents and issuing safety recommendations. In addition, statutory language prohibits the admission into evidence or use of any part of an NTSB report related to an accident in a civil action for damages resulting from a matter mentioned in the report (Title 49 *United States Code* section 1154(b)). A factual report that may be admissible under 49 *United States Code* section 1154(b) is available [here](#).