



Aviation Investigation Final Report

Location:	MENOMONEE FALLS, Wisconsin	Accident Number:	CHI91LA215
Date & Time:	July 5, 1991, 18:15 Local	Registration:	N4735D
Aircraft:	CESSNA 182A	Aircraft Damage:	Substantial
Defining Event:		Injuries:	4 None
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

SHORTLY AFTER THE PILOT APPLIED FULL POWER FOR THE TAKEOFF GROUND ROLL, ONE PROPELLER BLADE FAILED AND SEPARATED FROM THE HUB ASSEMBLY. THE ENGINE THEN BROKE FREE OF THE ENGINE MOUNTS. POST ACCIDENT METALLURGICAL EXAMINATION OF THE PROPELLER BLADE AND HUB ASSEMBLY REVEALED THE FAILURE WAS DUE TO FATIGUE. THE POINT OF ORIGIN WAS THE FIRST THREAD OF THE THREADED HUB. THE PROPELLER HAD BEEN INSTALLED ON JULY 11, 1975, AND HAD ACCUMULATED 1227.57 HOURS AT THE TIME OF THE ACCIDENT. THE PROPELLER HAD NOT BEEN OVERHAULED. THE MANUFACTURER RECOMMENDS PROPELLER OVERHAUL AT INTERVALS NOT TO EXCEED 5 CALENDAR YEARS. AN AIRWORTHINESS DIRECTIVE EFFECTIVE 33 DAYS AFTER THE ACCIDENT REQUIRES A PENETRANT INSPECTION OF THE PROPELLER BLADE THREADED RETENTION AREA, AND A MODIFICATION OF THE PROPELLER ASSEMBLY FOR EARLY DETECTION OF FAILURE.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: THE FATIGUE INDUCED PROPELLER BLADE FAILURE. A RELATED FACTOR WAS THE OPERATOR'S DELAYED PROPELLER OVERHAUL.

Findings

Occurrence #1: AIRFRAME/COMPONENT/SYSTEM FAILURE/MALFUNCTION
Phase of Operation: TAKEOFF - ROLL/RUN

Findings

1. (C) PROPELLER SYSTEM/ACCESSORIES, BLADE - FATIGUE
2. PROPELLER SYSTEM/ACCESSORIES, BLADE - FAILURE, TOTAL
3. (F) MAINTENANCE, OVERHAUL - DELAYED - COMPANY/OPERATOR MANAGEMENT

Factual Information

Pilot Information

Certificate:	Private	Age:	39,Male
Airplane Rating(s):	Single-engine land	Seat Occupied:	Left
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 3 Valid Medical-w/ waivers/lim	Last FAA Medical Exam:	March 16, 1990
Occupational Pilot:	UNK	Last Flight Review or Equivalent:	
Flight Time:	668 hours (Total, all aircraft), 520 hours (Total, this make and model), 628 hours (Pilot In Command, all aircraft), 19 hours (Last 90 days, all aircraft), 9 hours (Last 30 days, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	CESSNA	Registration:	N4735D
Model/Series:	182A 182A	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	
Airworthiness Certificate:	Normal	Serial Number:	34835
Landing Gear Type:	Tricycle	Seats:	1
Date/Type of Last Inspection:	May 2, 1991 Annual	Certified Max Gross Wt.:	2650 lbs
Time Since Last Inspection:	90 Hrs	Engines:	1 Reciprocating
Airframe Total Time:	4200 Hrs	Engine Manufacturer:	CONTINENTAL
ELT:	Installed, activated, did not aid in locating accident	Engine Model/Series:	O-470-L
Registered Owner:	ROBERT D. BLANCHARD	Rated Power:	235 Horsepower
Operator:	ROBERT D. BLANCHARD	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:	Day
Observation Facility, Elevation:		Distance from Accident Site:	
Observation Time:		Direction from Accident Site:	
Lowest Cloud Condition:	Scattered	Visibility	15 miles
Lowest Ceiling:	None	Visibility (RVR):	
Wind Speed/Gusts:	/	Turbulence Type Forecast/Actual:	/
Wind Direction:	0°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:		Temperature/Dew Point:	
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:		Type of Flight Plan Filed:	None
Destination:		Type of Clearance:	None
Departure Time:	18:15 Local	Type of Airspace:	Class G

Airport Information

Airport:	AEROPARK 76C	Runway Surface Type:	Grass/turf
Airport Elevation:	850 ft msl	Runway Surface Condition:	Dry
Runway Used:	18	IFR Approach:	None
Runway Length/Width:	2600 ft / 50 ft	VFR Approach/Landing:	None

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:	43.140758,-88.120971(est)

Administrative Information

Investigator In Charge (IIC): Reeves, Jodi

Additional Participating Persons: J. D MARTIN; MILWAUKEE , WI

Original Publish Date: March 10, 1993

Last Revision Date:

Investigation Class: [Class](#)

Note:

Investigation Docket: <https://data.nts.gov/Docket?ProjectID=15118>

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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](#).