



# Aviation Investigation Final Report

<b>Location:</b>	MORRISON, Illinois	<b>Accident Number:</b>	CHI90LA276
<b>Date &amp; Time:</b>	September 27, 1990, 13:45 Local	<b>Registration:</b>	N7197U
<b>Aircraft:</b>	MOONEY M20E	<b>Aircraft Damage:</b>	Substantial
<b>Defining Event:</b>		<b>Injuries:</b>	1 None
<b>Flight Conducted Under:</b>	Part 91: General aviation - Personal		

## Analysis

THE ACCIDENT AIRPLANE EXPERIENCED AN INFLIGHT FAILURE OF A PROPELLER BLADE DURING CRUISE FLIGHT. ACCORDING TO THE PILOT'S STATEMENT THE AIRPLANE STARTED A SEVERE VIBRATION AND REDUCING THE ENGINE POWER HAD NO EFFECT ON IT. THE VIBRATION STOPPED AFTER HE SHUT DOWN THE ENGINE AND RAISED THE NOSE IN ORDER TO STOP THE WINDMILLING PROPELLER. DURING THE FORCED LANDING THE LANDING GEAR COLLAPSED AND THE AIRPLANE SLID INTO A DIRT BANK. EXAMINATION OF THE REMAINING PORTION OF THE FAILED PROPELLER BLADE FRACTURE SURFACE SHOWED A FATIGUE CRACK EXTENDING FROM THE LEADING EDGE TO A POINT 3-1/4 INCHES MEASURED IN THE CHORDWISE DIRECTION. THE LEADING EDGE HAD BEEN REWORKED BY FILING OR GRINDING.

## Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: IMPROPER MAINTENANCE OF THE PROPELLER BLADE BY UNKNOWN PERSONS AND THE SUBSEQUENT FAILURE OF THE BLADE IN FATIGUE DURING CRUISE FLIGHT. A FACTOR WAS: UNSUITABLE TERRAIN.

## Findings

Occurrence #1: AIRFRAME/COMPONENT/SYSTEM FAILURE/MALFUNCTION  
Phase of Operation: CRUISE - NORMAL

Findings

1. (C) PROPELLER SYSTEM/ACCESSORIES, BLADE - FATIGUE
2. (C) MAINTENANCE - IMPROPER - UNKNOWN

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Occurrence #2: FORCED LANDING

Phase of Operation: DESCENT - EMERGENCY

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Occurrence #3: COMPLETE GEAR COLLAPSED

Phase of Operation: LANDING - FLARE/TOUCHDOWN

Findings

3. OBJECT - FENCE POST
4. (F) TERRAIN CONDITION - NONE SUITABLE

## Factual Information

### Pilot Information

<b>Certificate:</b>	Private	<b>Age:</b>	47, Male
<b>Airplane Rating(s):</b>	Single-engine land; Single-engine sea	<b>Seat Occupied:</b>	Unknown
<b>Other Aircraft Rating(s):</b>	None	<b>Restraint Used:</b>	
<b>Instrument Rating(s):</b>	None	<b>Second Pilot Present:</b>	No
<b>Instructor Rating(s):</b>		<b>Toxicology Performed:</b>	No
<b>Medical Certification:</b>	Class 3 Valid Medical--w/ waivers/lim	<b>Last FAA Medical Exam:</b>	June 2, 1989
<b>Occupational Pilot:</b>	UNK	<b>Last Flight Review or Equivalent:</b>	
<b>Flight Time:</b>	850 hours (Total, all aircraft), 150 hours (Total, this make and model), 10 hours (Last 90 days, all aircraft), 5 hours (Last 30 days, all aircraft)		

### Aircraft and Owner/Operator Information

<b>Aircraft Make:</b>	MOONEY	<b>Registration:</b>	N7197U
<b>Model/Series:</b>	M20E M20E	<b>Aircraft Category:</b>	Airplane
<b>Year of Manufacture:</b>		<b>Amateur Built:</b>	
<b>Airworthiness Certificate:</b>		<b>Serial Number:</b>	415
<b>Landing Gear Type:</b>	Retractable - Tricycle	<b>Seats:</b>	4
<b>Date/Type of Last Inspection:</b>	June 22, 1990 Annual	<b>Certified Max Gross Wt.:</b>	2575 lbs
<b>Time Since Last Inspection:</b>	20 Hrs	<b>Engines:</b>	1 Reciprocating
<b>Airframe Total Time:</b>	3050 Hrs	<b>Engine Manufacturer:</b>	LYCOMING
<b>ELT:</b>	Installed	<b>Engine Model/Series:</b>	IO-360 A1A
<b>Registered Owner:</b>		<b>Rated Power:</b>	200 Horsepower
<b>Operator:</b>	LLOYD CRANDALL	<b>Operating Certificate(s) Held:</b>	None
<b>Operator Does Business As:</b>		<b>Operator Designator Code:</b>	

## Meteorological Information and Flight Plan

<b>Conditions at Accident Site:</b>	Visual (VMC)	<b>Condition of Light:</b>	Day
<b>Observation Facility, Elevation:</b>	SQ1 ,647 ft msl	<b>Distance from Accident Site:</b>	20 Nautical Miles
<b>Observation Time:</b>	12:45 Local	<b>Direction from Accident Site:</b>	110°
<b>Lowest Cloud Condition:</b>	Clear	<b>Visibility</b>	10 miles
<b>Lowest Ceiling:</b>	None	<b>Visibility (RVR):</b>	
<b>Wind Speed/Gusts:</b>	/	<b>Turbulence Type Forecast/Actual:</b>	/
<b>Wind Direction:</b>	0°	<b>Turbulence Severity Forecast/Actual:</b>	/
<b>Altimeter Setting:</b>		<b>Temperature/Dew Point:</b>	29°C / -18°C
<b>Precipitation and Obscuration:</b>	No Obscuration; No Precipitation		
<b>Departure Point:</b>	CADILLAC , MI (CAD )	<b>Type of Flight Plan Filed:</b>	None
<b>Destination:</b>	WEATHERFORD , OK (F91 )	<b>Type of Clearance:</b>	None
<b>Departure Time:</b>	10:20 Local	<b>Type of Airspace:</b>	

## Airport Information

<b>Airport:</b>	NONE	<b>Runway Surface Type:</b>	
<b>Airport Elevation:</b>	0 ft msl	<b>Runway Surface Condition:</b>	
<b>Runway Used:</b>	0	<b>IFR Approach:</b>	None
<b>Runway Length/Width:</b>	0 ft / 0 ft	<b>VFR Approach/Landing:</b>	Forced landing

## Wreckage and Impact Information

<b>Crew Injuries:</b>	1 None	<b>Aircraft Damage:</b>	Substantial
<b>Passenger Injuries:</b>		<b>Aircraft Fire:</b>	None
<b>Ground Injuries:</b>	N/A	<b>Aircraft Explosion:</b>	None
<b>Total Injuries:</b>	1 None	<b>Latitude, Longitude:</b>	41.800174,-89.960983(est)

## Administrative Information

**Investigator In Charge (IIC):** Bruce, William

**Additional Participating Persons:**

**Original Publish Date:** December 14, 1992

**Last Revision Date:**

**Investigation Class:** [Class](#)

**Note:**

**Investigation Docket:** <https://data.nts.gov/Docket?ProjectID=14785>

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