



# Aviation Investigation Final Report

<b>Location:</b>	LUBBOCK, Texas	<b>Accident Number:</b>	FTW96LA357
<b>Date &amp; Time:</b>	August 25, 1996, 17:09 Local	<b>Registration:</b>	N4538H
<b>Aircraft:</b>	Mooney M20J	<b>Aircraft Damage:</b>	Substantial
<b>Defining Event:</b>		<b>Injuries:</b>	1 Minor, 1 None
<b>Flight Conducted Under:</b>	Part 91: General aviation - Personal		

## Analysis

During a climb to cruise, between 5,000 and 6,000 feet msl, on an IFR flight in VMC, the pilot 'declared an emergency due to his engine cutting out and he had a little manifold pressure/RPM.' The pilot tried to reach Reese AFB about 3 to 4 miles away; however, the airplane landed short of the airport in a cotton field. During the landing roll, the right main gear collapsed, and the right wing separated from the airframe at the forward attachment point. During a postaccident examination, an FAA inspector found that both of the magneto retention nuts that held the single drive magneto to the engine had loosened, and the magneto became disengaged from its drive gear. Maintenance records revealed that the magneto was overhauled and reinstalled during an engine overhaul on April 12, 1996. The airplane had flown 120 hours since the installation. According to the FAA inspector, the 'magneto was installed with the correct hardware.'

## Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: inadequate maintenance by maintenance personnel, which resulted in a total loss of engine power when the magneto disengaged from the engine. A related factor was the lack of suitable terrain for a forced landing.

## Findings

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

Findings

1. (C) IGNITION SYSTEM,MAGNETO - DISENGAGED
2. (C) MAINTENANCE,INSTALLATION - INADEQUATE - OTHER MAINTENANCE PERSONNEL

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Occurrence #2: FORCED LANDING

Phase of Operation: EMERGENCY DESCENT/LANDING

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Occurrence #3: ON GROUND/WATER ENCOUNTER WITH TERRAIN/WATER

Phase of Operation: EMERGENCY LANDING

Findings

3. (F) TERRAIN CONDITION - NONE SUITABLE
4. TERRAIN CONDITION - CROP

## Factual Information

On August 25, 1996, at 1709 central daylight time, a Mooney M20J, N4538H, registered to and operated by a private owner under Title 14 CFR Part 91, sustained substantial damage during a forced landing following a loss of engine power near Lubbock, Texas. The private pilot was not injured and the sole passenger received minor injuries. Visual meteorological conditions prevailed at the accident site. The flight was on an IFR flight plan and the flight originated from Lubbock, Texas, at 1657.

During interviews, conducted by the investigator-in-charge, on the enclosed ATC data, and the Pilot/Operator Report, the following information was revealed. The flight was en route to Childress, Texas; however, the pilot changed the destination to the Lubbock International Airport, Lubbock, Texas, due to rain and low ceilings at Childress. At Lubbock the pilot had the airplane refueled, filed an IFR flight plan to Las Cruces, New Mexico, and departed on runway 17R with a clearance to 10,000 feet MSL. At 1659, the pilot was cleared to contact departure control (frequency 119.2) and reported on the departure control frequency as the flight continued the climb to cruise. Between 5,000 feet MSL and 6,000 feet MSL, at approximately 1706, the pilot contacted the controller and "declared an emergency due to his engine cutting out and he had a little manifold pressure/RPM" The pilot was cleared for the landing at Lubbock; however, the pilot stated that he was going to try to land at Reese AFB. The controller told the pilot that Reese was to the right of the airplane about 3 to 4 miles and the pilot reported that he had Reese airport in sight. Subsequently, the pilot reported that he could not make the airport and would land the airplane at the present position. The airplane was landed in a cotton field and during the landing roll the right main gear collapsed and the right wing separated from the airframe at the forward attachment point.

Following the recovery of the airplane from the accident site, the airplane was examined at Lubbock, Texas by the FAA inspector. During the inspection, it was found that both of the magneto retention nuts that hold the single drive magneto to the engine had loosened and the magneto was disengaged from its drive gear.

A review of the maintenance records by the investigator-in-charge, and the FAA inspector, revealed that the magneto was overhauled and reinstalled during the engine overhaul on April 12, 1996. The airplane had flown 120 hours since the installation. According to the FAA inspector, the "magneto was installed with the correct hardware."

## Pilot Information

<b>Certificate:</b>	Private	<b>Age:</b>	59,U
<b>Airplane Rating(s):</b>	Single-engine land; Multi-engine land	<b>Seat Occupied:</b>	Left
<b>Other Aircraft Rating(s):</b>	None	<b>Restraint Used:</b>	
<b>Instrument Rating(s):</b>	Airplane	<b>Second Pilot Present:</b>	No
<b>Instructor Rating(s):</b>	None	<b>Toxicology Performed:</b>	No
<b>Medical Certification:</b>	Class 3 Valid Medical-w/ waivers/lim	<b>Last FAA Medical Exam:</b>	June 28, 1995
<b>Occupational Pilot:</b>	No	<b>Last Flight Review or Equivalent:</b>	
<b>Flight Time:</b>	4186 hours (Total, all aircraft), 507 hours (Total, this make and model), 4051 hours (Pilot In Command, all aircraft), 78 hours (Last 90 days, all aircraft), 32 hours (Last 30 days, all aircraft), 8 hours (Last 24 hours, all aircraft)		

## Aircraft and Owner/Operator Information

<b>Aircraft Make:</b>	Mooney	<b>Registration:</b>	N4538H
<b>Model/Series:</b>	M20J M20J	<b>Aircraft Category:</b>	Airplane
<b>Year of Manufacture:</b>		<b>Amateur Built:</b>	
<b>Airworthiness Certificate:</b>	Normal	<b>Serial Number:</b>	24-0795
<b>Landing Gear Type:</b>	Retractable - Tricycle	<b>Seats:</b>	4
<b>Date/Type of Last Inspection:</b>	April 12, 1996 Annual	<b>Certified Max Gross Wt.:</b>	2700 lbs
<b>Time Since Last Inspection:</b>	120 Hrs	<b>Engines:</b>	1 Reciprocating
<b>Airframe Total Time:</b>	2597 Hrs	<b>Engine Manufacturer:</b>	Lycoming
<b>ELT:</b>	Installed	<b>Engine Model/Series:</b>	IO-360-A3B6D
<b>Registered Owner:</b>	ELLIOTT R. WORTHINGTON	<b>Rated Power:</b>	200 Horsepower
<b>Operator:</b>		<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>	LBB ,3281 ft msl	<b>Distance from Accident Site:</b>	10 Nautical Miles
<b>Observation Time:</b>	15:56 Local	<b>Direction from Accident Site:</b>	90°
<b>Lowest Cloud Condition:</b>	Scattered / 3200 ft AGL	<b>Visibility</b>	10 miles
<b>Lowest Ceiling:</b>	Overcast / 8000 ft AGL	<b>Visibility (RVR):</b>	
<b>Wind Speed/Gusts:</b>	9 knots /	<b>Turbulence Type Forecast/Actual:</b>	/
<b>Wind Direction:</b>	150°	<b>Turbulence Severity Forecast/Actual:</b>	/
<b>Altimeter Setting:</b>	30 inches Hg	<b>Temperature/Dew Point:</b>	26°C / 18°C
<b>Precipitation and Obscuration:</b>	No Obscuration; No Precipitation		
<b>Departure Point:</b>	, TX (LBB )	<b>Type of Flight Plan Filed:</b>	IFR
<b>Destination:</b>	LAS CRUCES , NM (LRU )	<b>Type of Clearance:</b>	IFR
<b>Departure Time:</b>	16:57 Local	<b>Type of Airspace:</b>	Class C

## Airport Information

<b>Airport:</b>	LUBBOCK INTERNATIONAL LBB	<b>Runway Surface Type:</b>	Concrete
<b>Airport Elevation:</b>	3281 ft msl	<b>Runway Surface Condition:</b>	Dry
<b>Runway Used:</b>	17R	<b>IFR Approach:</b>	Visual
<b>Runway Length/Width:</b>	11500 ft / 150 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>	1 Minor	<b>Aircraft Fire:</b>	None
<b>Ground Injuries:</b>	N/A	<b>Aircraft Explosion:</b>	None
<b>Total Injuries:</b>	1 Minor, 1 None	<b>Latitude, Longitude:</b>	

## Administrative Information

<b>Investigator In Charge (IIC):</b>	Smith, Joyce
<b>Additional Participating Persons:</b>	MICHAEL R JORDAN; LUBBOCK , TX
<b>Original Publish Date:</b>	April 15, 1998
<b>Last Revision Date:</b>	
<b>Investigation Class:</b>	<a href="#">Class</a>
<b>Note:</b>	
<b>Investigation Docket:</b>	<a href="https://data.nts.gov/Docket?ProjectID=19954">https://data.nts.gov/Docket?ProjectID=19954</a>

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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](#).