



Aviation Investigation Final Report

Location:	JACKSON, Mississippi	Accident Number:	MIA93FA156
Date & Time:	July 15, 1993, 08:03 Local	Registration:	N57287
Aircraft:	MOONEY M20-J	Aircraft Damage:	Substantial
Defining Event:		Injuries:	1 Fatal, 1 Serious, 2 Minor
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

BOTH WITNESSES ON THE GROUND AND THE PASSENGERS STATED THAT THE ENGINE DID NOT SEEM TO PRODUCE ADEQUATE POWER, AND THE AIRPLANE USED THE ENTIRE 8,000-FT RUNWAY TO BECOME AIRBORNE. AFTER TAKEOFF, THE PILOT RADIOED TO THE TOWER THAT HE WAS EXPERIENCING ENGINE PROBLEMS AND WAS RETURNING. THE AIRPLANE WAS OBSERVED TO TURN LEFT IN A STEEP TURN ABOUT 200 FT ABOVE THE GROUND. IT THEN COLLIDED WITH TREES AND THE GROUND. THERE WAS OPEN TERRAIN AT THE DEPARTURE END OF THE RUNWAY. CYLINDER COMPRESSION WAS FOUND TO BE 40/80, 30/80, 42/80 AND 72/80. NO OTHER DISCREPANCIES WERE FOUND. THE AIRPLANE WAS MODIFIED TO INCREASE THE TAKEOFF MANIFOLD PRESSURE FROM 36 TO 38.5 IN HG. TWO DAYS BEFORE THE ACCIDENT THE ENGINE HAD QUIT WHILE TAXIING FROM LANDING. A MECHANIC STATED THAT HE ADJUSTED THE THROTTLE LINKAGE TO INCREASE THE IDLE SETTING.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: A POWER LOSS FOR UNDETERMINED REASONS DURING TAKEOFF, THE FAILURE OF THE PILOT-IN-COMMAND TO ABORT THE TAKEOFF, AND HIS IMPROPER DECISION TO TURN BACK TO THE AIRPORT WHEN THERE WAS SUITABLE TERRAIN AHEAD FOR THE FORCED LANDING.

Findings

Occurrence #1: LOSS OF ENGINE POWER

Phase of Operation: TAKEOFF

Findings

1. (C) REASON FOR OCCURRENCE UNDETERMINED
2. ENGINE ASSEMBLY, CYLINDER - LOW COMPRESSION

Occurrence #2: FORCED LANDING

Phase of Operation: TAKEOFF

Findings

3. (C) ABORTED TAKEOFF - NOT PERFORMED - PILOT IN COMMAND

Occurrence #3: IN FLIGHT COLLISION WITH OBJECT

Phase of Operation: MANEUVERING - TURN TO LANDING AREA (EMERGENCY)

Findings

4. (C) IN-FLIGHT PLANNING/DECISION - IMPROPER - PILOT IN COMMAND
5. OBJECT - TREE(S)

Factual Information

HISTORY OF FLIGHT On July 15, 1993, about 0803 central daylight time, N57287, a Mooney M20-J registered to Chamberlain Leasing, and operated by the pilot, Thomas W. Gray, crashed on takeoff at Jackson, Mississippi, while on a 14 CFR Part 91 personal flight. Visual meteorological conditions prevailed at the time and an IFR flight plan was filed. The airplane was substantially damaged and the pilot received fatal injuries. One passenger received serious injuries and two passengers received minor injuries. The flight was originating at the time of the accident.

Witnesses observed the airplane use almost the entire length of the 8,000-foot long runway and reported that the engine ran smooth, but did not sound like it was developing full power. The pilot radioed the tower after takeoff that he had engine problems and requested landing clearance. The clearance was issued and the airplane was observed to turn left in a steep turn about 200 feet above the ground. The airplane then struck trees and the ground.

The pilot had experienced problems with the engine 2 days before the accident. After landing in Hickory, North Carolina for an overnight stop and refueling, the airplane engine failed during taxi after landing. The pilot had the airplane towed in and had an aircraft mechanic examine the engine the next morning. The mechanic stated he adjusted the throttle linkage to increase the idle setting. The passengers stated the flight from Hickory, North Carolina, to Jackson, Mississippi, was routine.

PRESONNEL INFORMATION

The pilot Thomas W. Gray was the holder of a private pilots certificate with ratings for airplane single engine land and instrument airplane. He held a Class II medical certificate dated December 11, 1991, with a limitation that the holder wear corrective lenses. Additional pilot information is located within this report.

AIRCRAFT INFORMATION

N57287 was a Mooney 20-J registered to Chamberlain Aircraft Leasing Inc., and was operated by the pilot. The airplane records were reviewed and the last recorded inspection was an annual inspection recorded as completed on April 2, 1993, at an airplane total hours of 1,423.9. The airplane had flown about 110 hours since that inspection. The airplane was modified with a Mod Squad "Rocket" modification increasing the manifold pressure from 36 inHg to 38.5 inHg for takeoff. Additional airplane information is located within this report.

WRECKAGE AND IMPACT INFORMATION

The main fuselage of N57287 was found with the longitudinal axis on a magnetic heading of 040 degrees, in a clearing in a wooded area just south of the Jackson, Mississippi airport. A tree about 50 yards east of the wreckage exhibited broken limbs, and the forward left cabin area and windshield had bark and foilage material similiar to the tree imbedded in the structure. About 35 feet west of the tree was an impact scar about 14 inches deep. The right wing leading edge was more extensively crushed aft than the left wing and the right leading edge had dirt and sod imbedded in it. The engine mount was partially failed at the firewall attach fittings. Examination of the aerodynamic flight controls revealed control continuity to all surfaces. The landing gear was in the up position and the flaps were up. The entire aft fuselage was crushed and broken open. The magneto switch was found in the off position by the first people to respond to the accident. The propeller exhibited only minor leading edge damage and only minimal tortional twisting. The engine was removed and examined at a local maintenance facility. Crankshaft, camshaft, connecting rod, piston, valve, and accessory gear continuity was established. A cold compression check was conducted using 80 psi regulated shop compressed air, the results were:#1 40/80, #2 30/80, #3 42/80, #4 72/80. The magnetos were removed and when hand turned fired on all points sequentially and adequately. The fuel divider block was examined and found to be functional and free of contaminants. The fuel servo was removed and taken to a shop in Miami, Florida. The servo was bench flowed, tested and found to be within servicible limits. A small dead bug was found in the inlet screen of the servo, after the test.

MEDICAL AND PATHOLOGICAL INFORMATION

A postmortem examination of the pilot was conducted by the local Jackson, Mississippi Medical Examiner who reported the cause of death to be multiple blunt traumatic injuries. Toxicological examinations conducted by the Civil Aeromedical Institute, Oklahoma City, Oklahoma,were negative for basic and acetic drugs.

ADDITIONAL INFORMATION

The wreckage was released to Mr. David E. Gourgues of the owner's insurance company on July 17, 1993, and the fuel servo was released to the same party on March 8, 1994.

Pilot Information

Certificate:	Private	Age:	42, Male
Airplane Rating(s):	Single-engine land	Seat Occupied:	Left
Other Aircraft Rating(s):	None	Restraint Used:	
Instrument Rating(s):	Airplane	Second Pilot Present:	No
Instructor Rating(s):	None	Toxicology Performed:	Yes
Medical Certification:	Class 2 Valid Medical-w/ waivers/lim	Last FAA Medical Exam:	December 11, 1991
Occupational Pilot:	No	Last Flight Review or Equivalent:	
Flight Time:	1200 hours (Total, all aircraft), 50 hours (Total, this make and model), 12 hours (Last 30 days, all aircraft), 4 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	MOONEY	Registration:	N57287
Model/Series:	M20-J M20-J	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	
Airworthiness Certificate:	Normal	Serial Number:	24-1440
Landing Gear Type:	Retractable - Tricycle	Seats:	4
Date/Type of Last Inspection:	April 2, 1993 Annual	Certified Max Gross Wt.:	2740 lbs
Time Since Last Inspection:	110 Hrs	Engines:	1 Reciprocating
Airframe Total Time:	1533 Hrs	Engine Manufacturer:	LYCOMING
ELT:	Installed, activated, did not aid in locating accident	Engine Model/Series:	IO-360-A3B6D
Registered Owner:	CHAMBERLAIN AIRCRAFT LEASING	Rated Power:	200 Horsepower
Operator:	GRAY, THOMAS W.	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:	JAN ,346 ft msl	Distance from Accident Site:	1 Nautical Miles
Observation Time:	08:05 Local	Direction from Accident Site:	360°
Lowest Cloud Condition:	Clear	Visibility	10 miles
Lowest Ceiling:	None	Visibility (RVR):	
Wind Speed/Gusts:	3 knots /	Turbulence Type Forecast/Actual:	/
Wind Direction:	260°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	30 inches Hg	Temperature/Dew Point:	26°C / 23°C
Precipitation and Obscuration:			
Departure Point:		Type of Flight Plan Filed:	IFR
Destination:	COLLEGE STATION, TX (CLL)	Type of Clearance:	IFR
Departure Time:	08:02 Local	Type of Airspace:	

Airport Information

Airport:	JACKSON INTL JAN	Runway Surface Type:	Asphalt
Airport Elevation:	346 ft msl	Runway Surface Condition:	Dry
Runway Used:	15R	IFR Approach:	None
Runway Length/Width:	8501 ft / 150 ft	VFR Approach/Landing:	None

Wreckage and Impact Information

Crew Injuries:	1 Fatal	Aircraft Damage:	Substantial
Passenger Injuries:	1 Serious, 2 Minor	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	1 Fatal, 1 Serious, 2 Minor	Latitude, Longitude:	

Administrative Information

Investigator In Charge (IIC):	Alston, Andrew
Additional Participating Persons:	JAMES BROWN; WILLIAMSPORT , PA BOB HOKE; JACKSON , MS
Original Publish Date:	May 26, 1994
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.nts.gov/Docket?ProjectID=37346

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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](#).