



# Aviation Investigation Factual Report

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<b>Location:</b>	Moultrie, Georgia	<b>Accident Number:</b>	ERA09LA257
<b>Date &amp; Time:</b>	April 22, 2009, 13:00 Local	<b>Registration:</b>	N66VJ
<b>Aircraft:</b>	Maule M-5-180C	<b>Aircraft Damage:</b>	Substantial
<b>Defining Event:</b>	Loss of engine power (total)	<b>Injuries:</b>	3 None
<b>Flight Conducted Under:</b>	Part 91: General aviation - Personal		

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## Factual Information

### HISTORY OF FLIGHT

On April 22, 2009, about 1300 eastern daylight time, a Maule M-5-180C, N66VJ, was substantially damaged during a forced landing while on approach to Spence Airport (MUL), Moultrie, Georgia. The pilot/owner and the two passengers were not injured. The personal flight was operated under the provisions of Title 14 Code of Federal Regulations Part 91. Visual meteorological conditions prevailed for the flight, and no flight plan was filed.

The pilot stated that he departed from Hilltop Lakes Airport (OTE4), Hilltop Lakes, Texas, and made an intermediate fuel stop in Mississippi. He then flew to Moultrie Municipal Airport (MGR), Moultrie, Georgia, but realized that his intended destination, the Maule factory, was located at MUL. He departed MGR for MUL, which was 6 miles to the northeast. He stated that the fuel selector was set to the "BOTH" position for the flight between MGR and MUL. The pilot applied carburetor heat and switched the fuel boost pump on for the approach and descent into MUL. When the airplane was at an altitude of approximately 1,500 feet above mean sea level (msl) and 2 miles from the airport, the engine "quit running." The pilot looked at the fuel pressure gauge, and saw that it read "0 psig." He stated that the engine "started to run a couple of times," but he recognized that he would be unable to reach the runway, and executed a forced landing in an open field. Shortly after touchdown, the right main landing gear caught on an object or irregularity in the field, and caused the right wing to strike the ground. The left wing then struck the ground, and the airplane came to rest approximately 120 feet beyond its touchdown point.

### PERSONNEL INFORMATION

FAA records indicated that the pilot held a private pilot certificate with a single-engine land rating. The pilot reported 1,014 total hours of flight experience, with 161 hours in the accident airplane make and model. His most recent flight review was accomplished in August 2008, and his most recent FAA third-class medical certificate was issued in July 2008.

### AIRCRAFT INFORMATION

The airplane was manufactured in 1985, and first registered to the accident pilot in February 2008. The most recent annual inspection was completed four days before the accident, on April 18, 2009. As of the date of the accident, the airplane had accumulated 1,243 total hours in service.

### METEOROLOGICAL INFORMATION

The MGR automated weather observation 20 minutes prior to the accident included winds from 270 degrees at 10 knots, with gusts to 14 knots, clear skies, 4 miles visibility in haze, temperature 23 degrees C, dew point 6 degrees C, and an altimeter setting of 30.14 inches of mercury. The MGR automated weather observation 20 minutes after the accident, included winds from 290 degrees at 5 knots, with gusts to 14 knots, and an altimeter setting of 30.13 inches of mercury.

Overlay of the temperature and dew point values on a reference chart for carburetor icing potential revealed that the ambient conditions were in the region of the chart denoted as "serious icing at glide power."

#### ADDITIONAL INFORMATION

According to the Federal Aviation Administration (FAA) inspector who responded to the accident, the fuel selector was found in the "Both Tanks" position, and the carburetor heat control was found in the "ON" position. Approximately 40 gallons of fuel were obtained when the tanks were drained in preparation to remove the wings and transport the airplane to MUL.

The FAA inspector, and a certificated mechanic with airframe and powerplant ratings, and an inspection authorization, examined the airplane after it was recovered to MUL. According to the mechanic, the fuel lines and gascolator were checked for obstructions and contamination, but none was found. The fuel that was drained from the carburetor was unremarkable. The mechanic then introduced fuel to the fuel system upstream of the fuel boost pump. The boost pump was activated, and fuel pressure was obtained "right away." The engine then started normally. The engine was run to a maximum of 2,000 rpm, with "no problem." The magnetos were checked at 2,000 rpm, and no problems were noted.

The airplane was equipped with a flexible duct that was routed from an exhaust system shroud to the carburetor inlet air box, and which was intended to provide warm air to the carburetor when the carburetor heat control was activated. The duct was circular in cross section, approximately 4 inches in diameter, and consisted of silicone-impregnated cloth wrapped on a spiral wire for rigidity. The duct material was typically referred to as "scat hose" or "scat tubing." Examination of the duct revealed a split that extended approximately 3/4 of the way around the duct circumference, close to the point where the duct attached to the exhaust shroud.

A review of maintenance records revealed only two entries which mentioned scat tubing. An entry dated September 1990 and that listed a "Hobbs" time of 306.5 hours, explicitly stated "changed carb heat hose." An entry dated October 2001, which listed a "recording tach time" of 922.7 and a "total time in service" of 1020.76, contained the text "installed new engine scat tubing as needed," but it could not be determined whether the carburetor heat duct was replaced at that time. A representative of a manufacturer of aircraft scat tubing stated that the company considered the material to have a "shelf life" of 20 years.

## Pilot Information

<b>Certificate:</b>	Private	<b>Age:</b>	64, Male
<b>Airplane Rating(s):</b>	Single-engine land	<b>Seat Occupied:</b>	Left
<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>	None	<b>Toxicology Performed:</b>	No
<b>Medical Certification:</b>	Class 3 With waivers/limitations	<b>Last FAA Medical Exam:</b>	July 15, 2008
<b>Occupational Pilot:</b>	No	<b>Last Flight Review or Equivalent:</b>	August 20, 2008
<b>Flight Time:</b>	1014 hours (Total, all aircraft), 161 hours (Total, this make and model), 1014 hours (Pilot In Command, all aircraft), 25 hours (Last 90 days, all aircraft), 13 hours (Last 30 days, all aircraft), 6 hours (Last 24 hours, all aircraft)		

## Aircraft and Owner/Operator Information

<b>Aircraft Make:</b>	Maule	<b>Registration:</b>	N66VJ
<b>Model/Series:</b>	M-5-180C	<b>Aircraft Category:</b>	Airplane
<b>Year of Manufacture:</b>		<b>Amateur Built:</b>	
<b>Airworthiness Certificate:</b>	Normal	<b>Serial Number:</b>	8077C
<b>Landing Gear Type:</b>	Tailwheel	<b>Seats:</b>	4
<b>Date/Type of Last Inspection:</b>	April 18, 2009 Annual	<b>Certified Max Gross Wt.:</b>	2300 lbs
<b>Time Since Last Inspection:</b>	6 Hrs	<b>Engines:</b>	1 Reciprocating
<b>Airframe Total Time:</b>	1243 Hrs at time of accident	<b>Engine Manufacturer:</b>	Lycoming
<b>ELT:</b>	Installed, not activated	<b>Engine Model/Series:</b>	O-360-C1F
<b>Registered Owner:</b>	On file	<b>Rated Power:</b>	180 Horsepower
<b>Operator:</b>	On file	<b>Operating Certificate(s) Held:</b>	None

## Meteorological Information and Flight Plan

<b>Conditions at Accident Site:</b>		<b>Condition of Light:</b>	Day
<b>Observation Facility, Elevation:</b>	MGR	<b>Distance from Accident Site:</b>	6 Nautical Miles
<b>Observation Time:</b>	12:40 Local	<b>Direction from Accident Site:</b>	225°
<b>Lowest Cloud Condition:</b>		<b>Visibility</b>	4 miles
<b>Lowest Ceiling:</b>		<b>Visibility (RVR):</b>	
<b>Wind Speed/Gusts:</b>	10 knots / 14 knots	<b>Turbulence Type Forecast/Actual:</b>	/
<b>Wind Direction:</b>	270°	<b>Turbulence Severity Forecast/Actual:</b>	/
<b>Altimeter Setting:</b>	30.13 inches Hg	<b>Temperature/Dew Point:</b>	23°C / 6°C
<b>Precipitation and Obscuration:</b>	No Obscuration; No Precipitation		
<b>Departure Point:</b>	Moultrie, GA (MGR )	<b>Type of Flight Plan Filed:</b>	None
<b>Destination:</b>	Moultrie, GA (MUL )	<b>Type of Clearance:</b>	None
<b>Departure Time:</b>	12:50 Local	<b>Type of Airspace:</b>	

## Airport Information

<b>Airport:</b>	Spence Field MUL	<b>Runway Surface Type:</b>	
<b>Airport Elevation:</b>	292 ft msl	<b>Runway Surface Condition:</b>	
<b>Runway Used:</b>		<b>IFR Approach:</b>	None
<b>Runway Length/Width:</b>		<b>VFR Approach/Landing:</b>	Forced landing;Straight-in

## Wreckage and Impact Information

<b>Crew Injuries:</b>	1 None	<b>Aircraft Damage:</b>	Substantial
<b>Passenger Injuries:</b>	2 None	<b>Aircraft Fire:</b>	None
<b>Ground Injuries:</b>	N/A	<b>Aircraft Explosion:</b>	None
<b>Total Injuries:</b>	3 None	<b>Latitude, Longitude:</b>	31.137777,-83.703887(est)

## Administrative Information

<b>Investigator In Charge (IIC):</b>	Huhn, Michael
<b>Additional Participating Persons:</b>	Jim Payne; FAA/FSDO; Atlanta, GA
<b>Report Date:</b>	August 11, 2010
<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=73711">https://data.nts.gov/Docket?ProjectID=73711</a>

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](#).