



Aviation Investigation Final Report

Location:	Canadaigua, New York	Accident Number:	NYC02LA188
Date & Time:	September 16, 2002, 09:45 Local	Registration:	N201ZC
Aircraft:	Mooney M20J	Aircraft Damage:	Substantial
Defining Event:		Injuries:	1 Serious
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The pilot fueled the airplane outside, in the rain. The airplane then remained parked outside, overnight, in the rain. The pilot stated that the following morning he completed a preflight inspection of the airplane. The pilot added that during the inspection, he shook the wings, drained both fuel tanks, and did not observe any water in the fuel. He started the engine, and waited for approximately 15 minutes. The pilot then taxied to runway 31, performed a run-up, and did not observe any discrepancies. He initiated a takeoff roll on a 3,200-foot long runway, with the fuel selector positioned to the left tank. After retracting the landing gear, the pilot noticed the first indication of a power loss. The engine began to surge and the airplane settled. The pilot subsequently performed a gear-up forced landing to a field at the end of the runway. Examination of the wreckage revealed water in the left fuel tank and fuel manifold. The reported rainfall, at a nearby airport during a 4-hour period the previous night, was 1.5 inches.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The pilot's inadequate preflight inspection of the airplane, which resulted in a loss of engine power due to fuel contamination.

Findings

Occurrence #1: LOSS OF ENGINE POWER(TOTAL) - NONMECHANICAL
Phase of Operation: TAKEOFF - INITIAL CLIMB

Findings

1. FLUID,FUEL - CONTAMINATION,WATER
2. (C) AIRCRAFT PREFLIGHT - INADEQUATE - PILOT IN COMMAND

Occurrence #2: IN FLIGHT COLLISION WITH TERRAIN/WATER

Phase of Operation: EMERGENCY LANDING

Factual Information

On September 16, 2002, about 0945 eastern daylight time, a Mooney M20J, N201ZC, was substantially damaged during a forced landing, following a power loss after takeoff from Canadaigua Airport (D38), Canadaigua, New York. The certificated private pilot was seriously injured. Visual meteorological conditions prevailed for the intended flight to Lake Villa, Illinois. No flight plan was filed for the personal flight conducted under 14 CFR Part 91.

According to his written statement, one day prior to the accident, the pilot diverted to D38 due to weather. The pilot utilized a self-service fuel tank to add 7 gallons of fuel to the left tank, and 14 gallons of fuel to the right tank. The fueling was accomplished outside, in the rain. The pilot further stated that his friend covered the respective fuel tank openings, while the pilot fueled the airplane. After checking the weather, the pilot decided to secure the airplane overnight, and return the following morning. The airplane remained parked outside, in the rain.

On the day of the accident, during the preflight inspection, the pilot shook both wings. He then sumped both fuel tanks, and did not observe any water. The pilot then utilized the cockpit drain, to drain fuel from both tanks. He started the engine, and waited for approximately 15 minutes. The pilot then taxied to runway 31, performed a run-up, and did not observe any discrepancies. He initiated a takeoff roll on the 3,200-foot long runway, with the fuel selector positioned to the left tank. After retracting the landing gear, the pilot noticed the first indication of a power loss. The engine began to surge and the airplane settled. The pilot positioned the fuel selector to the right tank, checked the mixture control, and verified the fuel pump was on. The engine continued to surge, and the pilot positioned the fuel selector back to the left tank. He then performed a gear-up forced landing to a field at the end of the runway. During the forced landing, the airplane struck rocks, and came to rest upright.

The wreckage was examined by the Federal Aviation Administration (FAA) inspector. He rotated the propeller by hand, and was able to confirm crankshaft and camshaft continuity, attain thumb compression, and observe spark at all leads. The inspector's examination revealed that the right fuel tank was intact, and the left fuel tank had ruptured. The fuel in the right tank was light blue in color, clear, and absent of debris. However, the inspector recovered approximately 2 ounces of fuel from the left tank, and 1 ounce of water. Additionally, the inspector observed water in the fuel manifold.

The FAA inspector subsequently examined fuel from the airport fuel farm, and from another aircraft that had recently been fueled. He did not observe any contamination in the fuel farm or other aircraft.

FAA Airworthiness Directive (AD) 85-24-03 was written to preclude fuel contamination and water entrapment in fuel tanks, and pertained to the make and model accident airplane. The

FAA inspector reviewed the aircraft logbooks, and noted that the respective AD was complied with.

The reported weather at an airport approximately 18 nautical miles northwest of the accident site, included rain from the evening hours on September 15, into the morning hours of September 16. Additionally, the reported rainfall at an airport approximately 20 nautical miles southeast of the accident site, from 1600-2200 on September 15, was 1.5 inches.

Pilot Information

Certificate:	Commercial	Age:	56, 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):	Airplane single-engine	Toxicology Performed:	No
Medical Certification:	Class 2 Valid Medical-w/ waivers/lim	Last FAA Medical Exam:	July 19, 2001
Occupational Pilot:	No	Last Flight Review or Equivalent:	July 15, 2002
Flight Time:	1179 hours (Total, all aircraft), 400 hours (Total, this make and model), 1161 hours (Pilot In Command, all aircraft), 30 hours (Last 90 days, all aircraft), 15 hours (Last 30 days, all aircraft), 2 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Mooney	Registration:	N201ZC
Model/Series:	M20J	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	
Airworthiness Certificate:	Normal	Serial Number:	24-0674
Landing Gear Type:	Retractable - Tricycle	Seats:	4
Date/Type of Last Inspection:	May 1, 2002 Annual	Certified Max Gross Wt.:	2900 lbs
Time Since Last Inspection:	40 Hrs	Engines:	1 Reciprocating
Airframe Total Time:	2512 Hrs as of last inspection	Engine Manufacturer:	Lycoming
ELT:	Installed, activated, did not aid in locating accident	Engine Model/Series:	IO-360
Registered Owner:	Michael J. Maloney	Rated Power:	200 Horsepower
Operator:		Operating Certificate(s) Held:	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	Condition of Light:	Day
Observation Facility, Elevation:	ROC,560 ft msl	Distance from Accident Site:	18 Nautical Miles
Observation Time:	09:54 Local	Direction from Accident Site:	320°
Lowest Cloud Condition:	Scattered / 7000 ft AGL	Visibility	10 miles
Lowest Ceiling:	Overcast / 9000 ft AGL	Visibility (RVR):	
Wind Speed/Gusts:	4 knots /	Turbulence Type Forecast/Actual:	/
Wind Direction:	340°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	30.05 inches Hg	Temperature/Dew Point:	17°C / 14°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Canadaigua, NY (D38)	Type of Flight Plan Filed:	None
Destination:	Lake Villa, IL (NONE)	Type of Clearance:	None
Departure Time:	09:45 Local	Type of Airspace:	Class G

Airport Information

Airport:	Canadaigue D38	Runway Surface Type:	Asphalt
Airport Elevation:	814 ft msl	Runway Surface Condition:	Wet
Runway Used:	31	IFR Approach:	None
Runway Length/Width:	3200 ft / 75 ft	VFR Approach/Landing:	Forced landing

Wreckage and Impact Information

Crew Injuries:	1 Serious	Aircraft Damage:	Substantial
Passenger Injuries:		Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	1 Serious	Latitude, Longitude:	42.907222,-77.321662

Administrative Information

Investigator In Charge (IIC):	Schiada, Luke
Additional Participating Persons:	Sergio Perez; FAA/FSDO; Rochester, NY
Original Publish Date:	May 13, 2003
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=55702

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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](#).