



National Transportation Safety Board Aviation Accident Final Report

Location:	Coalinga, CA	Accident Number:	WPR17LA011
Date & Time:	10/22/2016, 1800 PDT	Registration:	N201EU
Aircraft:	MOONEY M20J	Aircraft Damage:	Substantial
Defining Event:	Fuel starvation	Injuries:	2 None
Flight Conducted Under:	Part 91: General Aviation - Personal		

Analysis

The commercial pilot was conducting a local flight when the engine experienced a partial loss of power. The pilot stated that he switched the fuel selector from the right to the left tank, applied full throttle, set the mixture control to full rich, and extended the wing flaps. The engine seemed to continue running during the forced landing. The airplane impacted a stand of almond trees and came to rest in a nose-down attitude about 1 1/2 miles from the destination.

The pilot reported no mechanical anomalies with the airplane that would have precluded normal operation and stated that there was enough fuel to get to the destination, "but not all in the tank that was being drawn from."

A postaccident examination revealed that the right wing tank, which was undamaged, was void of any usable fuel; about 4 ounces of fuel was drained from the tank. Also, there was no evidence of a fuel leak from either wing tank. The fuel selector was observed positioned to draw fuel from the left tank, which contained about 7 gallons of fuel. Further examination revealed that the fuel control unit's inlet finger strainer was clean and free of obstructions. Additionally, the fuel supply line contained a small amount of clean, blue-colored fuel when disconnected. No water or particulate contaminants were detected in the fuel system.

A postaccident engine run revealed no anomalies that would have precluded normal operation. The partial loss of engine power was likely due to the pilot's improper in-flight fuel management, which resulted in fuel starvation to the engine after all of the usable fuel in the right wing tank had been consumed.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be:

A partial loss of engine power due to the pilot's improper in-flight fuel management, which resulted in fuel starvation.

Findings

Aircraft	Fuel - Fluid management (Cause) Fuel - Fluid level (Cause)
Personnel issues	Use of equip/system - Pilot (Cause)
Environmental issues	Tree(s) - Contributed to outcome

Factual Information

On October 22, 2016, about 1800 Pacific daylight time, a Mooney M20J airplane, N201EU, was substantially damaged following a forced landing due to a partial loss of engine power near Coalinga, California. The private pilot, who was the registered owner of the airplane, and his sole passenger were not injured. Visual meteorological conditions prevailed at the time of the accident. The personal flight was being operated in accordance with 14 *Code of Federal Regulations* Part 91, and a flight plan was not filed. The flight departed Hanford Municipal Airport (HJO), Hanford, California, about 1740, with a reported destination as Harris Ranch airstrip (3O8), located about 8 nautical miles (nm) northeast of Coalinga.

In a report submitted to the National Transportation Safety Board (NTSB) investigator-in-charge (IIC), the pilot reported that while on approach to 3O8 and about 8 nm [southeast] of the airstrip, the engine "hiccupped," then about 15 seconds later it began running rough and producing no power. The pilot stated that he then switched fuel tanks from the right tank to the left tank, and selected wide open throttle, mixture full rich, and added flaps to help with glide performance. In order to avoid high tension power lines, the pilot had to climb over them, which reduced both glide performance and airspeed. The airplane subsequently impacted a stand of almond trees, coming to rest in a nose down attitude on the ground. The pilot added that the engine appeared to be running until impact. Additionally, the pilot provided the following comment in the RECOMMENDATION section of the report: "We had enough fuel to get to our destination, but not all in the tank that was being drawn from. Better scan of the fuel flow would have helped prevent this accident."

An onsite postaccident examination of the airplane, which was performed by Federal Aviation Administration (FAA) aviation safety inspectors on the morning following the accident, revealed that the airplane had come to rest in a tree orchard about one and one-half miles east of 3O8. A visual inspection revealed that there were no signs of fuel leakage on the ground, nor were there any fuel stains on the exterior surfaces of the airplane. The fuel system was observed to be completely intact and undamaged, with both wing tanks and strainer free of contaminants. The fuel selector was found pointed to the left tank position. Investigators reported that when the right wing tip was slightly raised, and the fuel selector positioned to the right tank position, about 4 ounces of clean blue colored gasoline was observed drained into a clean glass container. Subsequently, the left fuel tank sump was drained completely of its contents, which yielded about 7 gallons of clean blue colored gasoline; the flow divider contained a trace of gasoline. Further examination revealed that the fuel control unit's inlet finger strainer was observed to be clean, free flowing, and free of obstructions. Additionally, the fuel supply line dribbled a spoonful of clean blue colored gasoline when disconnected. No water or particulate contaminants were detected in the fuel system.

On November 3, 2016, under the supervision of the NTSB IIC and FAA inspectors, a test run of the engine was performed at the facilities of Valley Air Crafts, Tulare, California. The results of the test run revealed normal engine priming with the boost pump, normal starting, and normal operation when supplied with adequate fuel. Idle speed, idle mixture magneto checks and run up to maximum power were smooth and normal with an exemplar propeller installed. There were no anomalies detected with the engine that would have precluded normal operation.

History of Flight

Enroute-cruise	Fuel starvation (Defining event)
Landing	Off-field or emergency landing
Landing-flare/touchdown	Collision with terr/obj (non-CFIT)

Pilot Information

Certificate:	Commercial	Age:	29, Male
Airplane Rating(s):	Single-engine Land	Seat Occupied:	Left
Other Aircraft Rating(s):	None	Restraint Used:	3-point
Instrument Rating(s):	Airplane	Second Pilot Present:	No
Instructor Rating(s):	None	Toxicology Performed:	No
Medical Certification:	Class 3 Without Waivers/Limitations	Last FAA Medical Exam:	11/10/2015
Occupational Pilot:	Yes	Last Flight Review or Equivalent:	05/16/2016
Flight Time:	986 hours (Total, all aircraft), 42 hours (Total, this make and model), 928 hours (Pilot In Command, all aircraft), 81 hours (Last 90 days, all aircraft), 26 hours (Last 30 days, all aircraft), 0.3 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	MOONEY	Registration:	N201EU
Model/Series:	M20J	Aircraft Category:	Airplane
Year of Manufacture:	1977	Amateur Built:	No
Airworthiness Certificate:	Normal	Serial Number:	24-0164
Landing Gear Type:	Retractable - Tricycle	Seats:	4
Date/Type of Last Inspection:	03/04/2016, Annual	Certified Max Gross Wt.:	2800 lbs
Time Since Last Inspection:	53 Hours	Engines:	1 Reciprocating
Airframe Total Time:	3453.4 Hours as of last inspection	Engine Manufacturer:	Lycoming
ELT:	Installed, activated, did not aid in locating accident	Engine Model/Series:	IO360
Registered Owner:	On file	Rated Power:	200
Operator:	On file	Operating Certificate(s) Held:	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual Conditions	Condition of Light:	Day
Observation Facility, Elevation:	KHJO, 240 ft msl	Distance from Accident Site:	33 Nautical Miles
Observation Time:	1756 PDT	Direction from Accident Site:	90°
Lowest Cloud Condition:	Clear	Visibility	10 Miles
Lowest Ceiling:	None	Visibility (RVR):	
Wind Speed/Gusts:	7 knots /	Turbulence Type Forecast/Actual:	/ None
Wind Direction:	20°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	29.81 inches Hg	Temperature/Dew Point:	26° C / 8° C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Hanford, CA (HJO)	Type of Flight Plan Filed:	None
Destination:	Coalinga, CA (308)	Type of Clearance:	None
Departure Time:	1740 PDT	Type of Airspace:	Class E

Wreckage and Impact Information

Crew Injuries:	1 None	Aircraft Damage:	Substantial
Passenger Injuries:	1 None	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	2 None	Latitude, Longitude:	36.242500, -120.217778

Administrative Information

Investigator In Charge (IIC):	Thomas Little	Report Date:	09/10/2018
Additional Participating Persons:	Fritz Bayer; Federal Aviation Administration; Fresno, CA Troy Wise; Federal Aviation Administration; Fresno, CA		
Publish Date:	09/10/2018		
Note:	The NTSB did not travel to the scene of this accident.		
Investigation Docket:	http://dms.nts.gov/pubdms/search/dockList.cfm?mKey=94262		

The National Transportation Safety Board (NTSB), established in 1967, is an independent federal agency mandated by Congress through the Independent Safety Board Act of 1974 to investigate transportation accidents, determine the probable causes of the accidents, issue safety recommendations, study transportation safety issues, and evaluate the safety effectiveness of government agencies involved in transportation. The NTSB makes public its actions and decisions through accident reports, safety studies, special investigation reports, safety recommendations, and statistical reviews.

The Independent Safety Board Act, as codified at 49 U.S.C. Section 1154(b), precludes the admission into evidence or use of any part of an NTSB report related to an incident or accident in a civil action for damages resulting from a matter mentioned in the report. A factual report that may be admissible under 49 U.S.C. § 1154(b) is available [here](#).