Aviation Investigation Final Report

Location:	OKLAHOMA CITY, Oklahoma	**Accident Number:**	FTW99LA010
Date & Time:	October 18, 1998, 10:00 Local	**Registration:**	N6534B
Aircraft:	Mooney M20A	**Aircraft Damage:**	Substantial
Defining Event:		**Injuries:**	3 None
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The engine lost power soon after departing from runway 35 at an altitude of 400 to 500 feet AGL. The pilot was aware during the preflight inspection that the left main fuel cell was 3/4 full and the right tank was very low on fuel. Prior to takeoff, the pilot inadvertently switched the fuel selector to the right fuel tank. The pilot assumed that the engine had malfunctioned and did not switch the fuel selector to the fullest tank. The 400 hour pilot landed the airplane in an open pasture with the landing gear extended. During the landing roll, the airplane collided with a terrace, collapsing the landing gear. According to local law enforcement personnel that responded to the accident site, the pilot reported that 'the airplane ran out of fuel;' however, the left main fuel cell was approximately 3/4 full. The pilot added that the 1959 vintage airplane was equipped with a single fuel gauge controlled by a two-position toggle switch for both fuel cells.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The loss of engine power due to fuel starvation as result of the pilot's improper placement of the fuel tank selector switch. A factor was the lack of suitable terrain for the pilot to execute the forced landing.

Findings

Occurrence #1: LOSS OF ENGINE POWER(TOTAL) - NONMECHANICAL
Phase of Operation: APPROACH - VFR PATTERN - DOWNWIND

Findings
1. CHECKLIST - NOT FOLLOWED - PILOT IN COMMAND
2. (C) FLUID,FUEL - STARVATION
3. (C) FUEL TANK SELECTOR POSITION - IMPROPER - PILOT IN COMMAND

Occurrence #2: FORCED LANDING
Phase of Operation: DESCENT - EMERGENCY

Occurrence #3: ON GROUND/WATER ENCOUNTER WITH TERRAIN/WATER
Phase of Operation: EMERGENCY LANDING

Findings
4. TERRAIN CONDITION - DIRT BANK/RISING EMBANKMENT
5. (F) TERRAIN CONDITION - NONE SUITABLE

Factual Information

On October 18, 1998, at 1000 central daylight time, a Mooney M20A airplane, N6534B, was substantially damaged during a forced landing following the loss of engine power near Oklahoma City, Oklahoma. The instrument rated private pilot and her two passengers were not injured. The airplane was owned and operated by the pilot under Title 14 CFR Part 91. Visual meteorological conditions prevailed for the personal flight for which a flight plan was not filed. The flight originated from the Sundance Airpark, near Yukon, Oklahoma, approximately 10 minutes prior to the accident.

In the enclosed NTSB Form 6120.1/2, the pilot stated that she checked the fuel tanks prior to takeoff and noted that the left fuel tank was 3/4 full and the right fuel tank was "very low." During takeoff; however, the pilot positioned the fuel selector on the right fuel tank. The engine lost power soon after departing from runway 35, while at an altitude of 400 to 500 feet AGL. The pilot added that she thought she had selected the fullest tank and "assumed there was an engine malfunction," so she did not switch the fuel selector to the left tank.

The 400 hour pilot landed the airplane in an open pasture with the landing gear extended. During the landing roll, the airplane collided with a terrace, collapsing the landing gear. In a telephonic interview, the pilot reported to the NTSB investigator-in-charge, that her total concentration after the loss of power was "to fly the airplane to a safe landing."

According to local law enforcement personnel that responded to the accident site, the pilot reported that "the airplane ran out of fuel." Examination of the airplane revealed that the left main fuel cell was approximately 3/4 full. The pilot added that the 1959 vintage airplane was equipped with a single fuel gauge controlled by a two-position toggle switch which selects which fuel tank quantity is displayed.

Examination of the airplane by the FAA inspector and the owner revealed that both wooden wings and the flaps sustained structural damage.

Pilot Information

Certificate:	Private	**Age:**	49,Female
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:**	No
Medical Certification:	Class 3 Valid Medical--w/ waivers/lim	**Last FAA Medical Exam:**	March 21, 1997
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	
Flight Time:	403 hours (Total, all aircraft), 30 hours (Total, this make and model), 295 hours (Pilot In Command, all aircraft), 20 hours (Last 90 days, all aircraft), 10 hours (Last 30 days, all aircraft), 1 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Mooney	**Registration:**	N6534B
Model/Series:	M20A M20A	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	1203
Landing Gear Type:	Retractable - Tricycle	**Seats:**	4
Date/Type of Last Inspection:	August 30, 1998 Annual	**Certified Max Gross Wt.:**	2600 lbs
Time Since Last Inspection:		**Engines:**	1 Reciprocating
Airframe Total Time:	1396 Hrs	**Engine Manufacturer:**	Lycoming
ELT:	Installed, not activated	**Engine Model/Series:**	O-360-A1D
Registered Owner:	MARIANNE C. TURNER	**Rated Power:**	180 Horsepower
Operator:		**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:	PWA ,1190 ft msl	**Distance from Accident Site:**	1 Nautical Miles
Observation Time:	09:53 Local	**Direction from Accident Site:**	180°
Lowest Cloud Condition:	Clear	**Visibility**	10 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	8 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	10°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	30 inches Hg	**Temperature/Dew Point:**	11°C / 6°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	(HSD)	**Type of Flight Plan Filed:**	None
Destination:		**Type of Clearance:**	None
Departure Time:	09:50 Local	**Type of Airspace:**	Class G

Airport Information

Airport:		**Runway Surface Type:**	
Airport Elevation:		**Runway Surface Condition:**	
Runway Used:	0	**IFR Approach:**	None
Runway Length/Width:		**VFR Approach/Landing:**	Forced landing

Wreckage and Impact Information

Crew Injuries:	1 None	**Aircraft Damage:**	Substantial
Passenger Injuries:	2 None	**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	3 None	**Latitude, Longitude:**	

Administrative Information

Investigator In Charge (IIC):	Casanova, Hector
Additional Participating Persons:	JERRY YATES; OKLAHOMA CITY , OK
Original Publish Date:	February 15, 2001
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=45126