Aviation Investigation Final Report

Location:	COLUMBIA, Missouri	**Accident Number:**	CHI01LA182
Date & Time:	June 21, 2001, 11:54 Local	**Registration:**	N20WR
Aircraft:	Mooney M20J	**Aircraft Damage:**	Destroyed
Defining Event:		**Injuries:**	1 Fatal
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The pilot reported a loss of power to Mizzu Approach Control (ATC) approximately 7 minutes after taking off from the Columbia Municipal Airport (COU), Columbia, Missouri. ATC gave the pilot a vector back to COU. When ATC asked the pilot if he wanted emergency equipment standing by at the airport, the pilot said, "Uh negative, we got a little power ..." ATC radar showed the airplane in a right turn, 9 miles northeast of COU at 4,000 feet msl. ATC asked the pilot if he could maintain 3,000 msl? The pilot said, "Negative on three thousand ... were still going down ... we're just windmilling now." ATC radar showed the airplane at 2,200 feet msl. ATC then asked the pilot, "... are you still losing power?" The pilot responded that he had no power. ATC told the pilot he would put him on a vector that would bring him into COU. ATC told the pilot he was 6 miles from the airport and asked him if he was going to make it? The pilot responded, "... probably not." The pilot then reported, "Uh we just picked up power again yeah I'm going to see if I can climb back up a bit here." The pilot told ATC that he seemed to be able to maintain 1,500 feet. The ATC controller told the pilot to continue inbound and to let him know when the pilot had the airport in sight. There was no further radio contact with the pilot. ATC radar showed the airplane in a descent passing through 1,300 feet. When radar contact with the airplane was lost, it was 4.8 miles northeast of COU at 900 feet msl. The airplane was destroyed when it impacted into trees and a creek bed. The weather conditions for COU at the time of the accident were few clouds at 900 feet agl, 1,600 overcast, and 10 miles visibility with light rain. An examination of the airplane's right locking fuel tank cap showed the locking mechanism behind the key insertion missing. An internal examination of the fuel filter and housing in the fuel injector servo showed a large amount of reddish-brown colored flakes and powdered material. A piece of solid reddish-brown material approximately 1/4 inch long was taken from the filter housing. The material was consistent with corroded metal. Plugs at both ends of the filter housing showed corrosion. Corrosion was also observed on the housing threads, the fuel filter, and the fuel filter spring. There was light visible through the locking mechanism for the right fuel tank. There was rain the previous day. No other anomalies were found with the airplane.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The loss of engine power for an undetermined reason. A factor was the lack of suitable terrain for the forced landing.

Findings

Occurrence #1: LOSS OF ENGINE POWER(PARTIAL) - NONMECHANICAL
Phase of Operation: CLIMB - TO CRUISE

Findings
1. FUEL SYSTEM,FUEL CONTROL - CONTAMINATION
2. (C) REASON FOR OCCURRENCE UNDETERMINED

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

Occurrence #3: IN FLIGHT COLLISION WITH OBJECT
Phase of Operation: EMERGENCY DESCENT/LANDING

Findings
3. (F) OBJECT - TREE(S)

Occurrence #4: IN FLIGHT COLLISION WITH TERRAIN/WATER
Phase of Operation: DESCENT - UNCONTROLLED

Findings
4. (F) TERRAIN CONDITION - NONE SUITABLE

Factual Information

HISTORY OF FLIGHT

On June 21, 2001, at 1154 central daylight time, a Mooney M20J, N20WR, was destroyed when it impacted into trees and a creek bed 4.8 miles northeast of the Columbia Regional Airport (COU), Columbia, Missouri, following a loss of engine power. Marginal visual meteorological conditions prevailed at the time of the accident. The personal flight was being conducted on an instrument flight rules plan under the provisions of 14 CFR Part 91. The pilot succumbed to fatal injuries shortly after the accident occurred. The cross-country flight originated at Columbia, Missouri, at 1143, and was en route to Menominee, Michigan.

At 1149:52, the pilot reported to Mizzu Approach Control (ATC), "Uh departure this is Mooney two zero whiskey romeo just lost power uh currently uh nine miles to the north of uh Columbia turning back around." ATC gave the pilot a vector back to COU. When ATC asked the pilot if he wanted emergency equipment standing by at the airport, the pilot said, "... negative, we got a little power ..." ATC radar at 1149:45 showed the airplane in a right turn, 9 miles northeast of COU at 4,000 feet mean sea level (msl).

At 1151:34, ATC asked the pilot if he could maintain 3,000 msl. The pilot said, "Negative on three thousand ... were still going down we're just windmilling now." ATC radar showed the airplane at 2,200 feet msl.

At 1152:14, ATC asked the pilot, "... are you still losing power?" The pilot responded, "Ah, we've got no power." ATC told the pilot, "No power at all roger, I'm put you on a vector that'll put you right at the airport sir, right at the airport and you're about six miles out, you gonna be able to make it?" The pilot responded, "Uh, probably not."

At 1152:48, the pilot reported, "Uh we just picked up the power again yeah I'm going to see if I can climb back up a bit here."

At 1152:59, ATC radar showed the airplane on a southwesterly heading at 1,500 feet msl.

At 1153:34, the pilot told ATC that he seemed to be able "... to maintain fifteen hundred". ATC told the pilot to continue inbound and to let him know when the pilot had the airport in sight. There was no further radio contact with the pilot.

At 1153:41, ATC radar showed the airplane in a descent passing through 1,300 feet. At 1154:50, radar contact with the airplane was lost. The airplane was 4.8 miles northeast of COU at 900 feet msl.

At 1155:19, a Cessna aircraft in the area reported to ATC that he was receiving a strong Emergency Locator Transmitter signal.

METEOROLOGICAL INFORMATION

At 1154, the weather conditions at COU were few clouds at 900 feet above ground level (agl), an overcast ceiling of 1,600 feet agl, visibility 10 miles with light rain, temperature 66 degrees Fahrenheit (F), dew point 62 degrees F, winds 310 degrees at 10 knots, and altimeter 30.09 inches of Mercury.

WRECKAGE AND IMPACT INFORMATION

A Federal Aviation Administration (FAA) inspector examined the airplane at the accident site. The airplane was located in a wooded area behind a residence, approximately 1/4 mile south of a dead-end road. The airplane was standing upright on the front portion of the cabin with the remaining cabin, aft fuselage, and empennage propped up by surrounding trees. The engine, propeller, cowling, forward fuselage, and cabin aft to behind the instrument panel, were crushed upward. The spinner was crushed aft. The three propeller blades were bent aft. The left wing was broken aft, inboard of mid-span. The remaining left inboard wing section was crushed aft. The right wing was bent upward, twisted aft at mid-span and crushed. Numerous broken tree branches were located around and beneath the right wing. The aft fuselage was bent and wrinkled. The empennage showed minor damage. Flight control continuity was confirmed at the accident site. The fuel selector had the right tank selected. An examination of the right locking fuel tank cap showed the locking mechanism behind the key insertion missing. An examination of the engine and engine controls revealed no anomalies. A visual inspection of fuel taken from the airplane's fuel tanks showed light blue color with no water or particulates. The dual magneto and fuel injector servo were retained for further examination. There was light visible through the locking mechanism for the right fuel tank. There was rain the previous day.

MEDICAL AND PATHOLOGICAL INFORMATION

An autopsy of the pilot was conducted by the Boone County Medical Examiner, University of Missouri, Columbia, Missouri, on June 22, 2001.

The results of FAA toxicology testing of samples from the pilot revealed the following volatile concentrations:

ATROPINE detected in blood.
ATROPINE detected in kidney.

ATROPINE is resuscitative drug used in emergency medicine to constrict arterioles and veins and to restore a normal heart beat.

TESTS AND RESEARCH

The NTSB conducted examinations of the magneto and fuel injector servo at Addison, Illinois, on September 18, 2001. A functional test of the magneto was conducted on a test bench. The magneto functioned normally and showed no anomalies. A flow test of the fuel injector servo revealed no anomalies. An internal examination of the fuel filter and housing showed a large amount of reddish-brown colored flakes and powdered material. A piece of solid reddish-brown material approximately 1/4 inch long was taken from the filter housing. The material was consistent with corroded metal. Plugs at both ends of the filter housing showed corrosion. Corrosion was observed on the housing threads, the fuel filter, and the fuel filter spring.

ADDITIONAL INFORMATION

Parties to the investigation were the FAA and Textron Lycoming. All airplane components were released and returned to Air Wrecks, Incorporated, Chicago, Illinois.

Pilot Information

Certificate:	Private	**Age:**	59,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 3 Valid Medical--w/ waivers/lim	**Last FAA Medical Exam:**	May 7, 2001
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	April 3, 2001
Flight Time:	854 hours (Total, all aircraft), 782 hours (Pilot In Command, all aircraft), 53 hours (Last 90 days, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Mooney	**Registration:**	N20WR
Model/Series:	M20J	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	24-1299
Landing Gear Type:	Retractable - Tricycle	**Seats:**	4
Date/Type of Last Inspection:	July 28, 2000 Annual	**Certified Max Gross Wt.:**	2843 lbs
Time Since Last Inspection:	322 Hrs	**Engines:**	1 Reciprocating
Airframe Total Time:	2979 Hrs at time of accident	**Engine Manufacturer:**	Lycoming
ELT:	Installed, activated, aided in locating accident	**Engine Model/Series:**	IO-360-A3B6D
Registered Owner:	PAUL E. KJELDSEN	**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:	COU,889 ft msl	**Distance from Accident Site:**	5 Nautical Miles
Observation Time:	11:54 Local	**Direction from Accident Site:**	225°
Lowest Cloud Condition:	Few / 900 ft AGL	**Visibility**	10 miles
Lowest Ceiling:	Overcast / 1600 ft AGL	**Visibility (RVR):**	
Wind Speed/Gusts:	10 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	310°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	30.09 inches Hg	**Temperature/Dew Point:**	19°C / 17°C
Precipitation and Obscuration:	Light - None - Rain		
Departure Point:	COLUMBIA, MO (COU)	**Type of Flight Plan Filed:**	IFR
Destination:	(MNM)	**Type of Clearance:**	IFR
Departure Time:	11:43 Local	**Type of Airspace:**	Class D

Wreckage and Impact Information

Crew Injuries:	1 Fatal	**Aircraft Damage:**	Destroyed
Passenger Injuries:		**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	1 Fatal	**Latitude, Longitude:**	38.94979,-92.31932(est)

Administrative Information

Investigator In Charge (IIC):	Bowling, David
Additional Participating Persons:	Val Ziedins; Federal Aviation Administration; Kansas City, MO Gregory Erikson; Textron-Lycoming; Wayne, IL
Original Publish Date:	April 8, 2003
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=53262