Aviation Investigation Final Report

Location:	Olney, Texas	**Accident Number:**	FTW04FA206
Date & Time:	August 4, 2004, 08:45 Local	**Registration:**	N1050W
Aircraft:	Mooney M20J	**Aircraft Damage:**	Destroyed
Defining Event:		**Injuries:**	3 Fatal
Flight Conducted Under:	Part 91: General aviation		

Analysis

The 2,700-hour pilot lost control of the airplane while executing a steep left turn while on final approach to runway 35. A witness located on the airport observed the airplane initiate a 360 degree left turn while on approach. The witness stated that as the airplane started to turn around to a northerly heading, it appeared to have drifted east of the runway. The witness added that the angle of bank continued to increase as the airplane continued the turn and rolled over inverted. Subsequently, the nose dropped and the aircraft descended vertically and impacted the ground. The witness reported that the wind at the time of the accident were from the southwest at approximately 6 to 10 knots. No mechanical anomalies were noted with the engine or airframe. The airplane was found to be within weight and balance limits at the time of the accident.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The pilot's failure to maintain airspeed sufficient for flight resulting in the inadvertent stall/spin. A contributing factor was the prevailing tailwind.

Findings

Occurrence #1: LOSS OF CONTROL - IN FLIGHT
Phase of Operation: APPROACH - VFR PATTERN - FINAL APPROACH

Findings

1. (F) WEATHER CONDITION - TAILWIND
2. (C) AIRSPEED - NOT MAINTAINED - PILOT IN COMMAND
3. (C) STALL/SPIN - INADVERTENT - PILOT IN COMMAND

Occurrence #2: IN FLIGHT COLLISION WITH TERRAIN/WATER
Phase of Operation: DESCENT - UNCONTROLLED

Findings
4. TERRAIN CONDITION - GROUND

Factual Information

HISTORY OF FLIGHT

On August 4, 2004, approximately 0845 central daylight time, a Mooney M20J single-engine airplane, N1050W, was destroyed upon impact with terrain following a loss of control while maneuvering for landing at the Olney Municipal Airport (ONY), near Olney, Texas. The airplane was registered to a private individual and operated by Maxwell Aviation Services of Gladewater, Texas. The commercial pilot and two passengers were fatally injured. Visual meteorological conditions prevailed and no flight plan was filed for the 14 Code of Federal Regulations Part 91 business flight. The 200 nautical mile cross-country flight originated from the Gladewater Municipal Airport (07F), near Gladewater, Texas, about 0730, with ONY as its intended destination.

A witness located on the ramp of the airport reported that he heard a transmission in the blind from the accident aircraft reporting their intentions to land on Runway 35. The witness went outside and observed the airplane over the approach end of runway 35 at an altitude estimated at 500 feet above the ground. He then observed the airplane initiate a 360 degree left turn similar to a "360 overhead approach" to runway 35. As the airplane started to come around to a northerly heading, the airplane appeared to have drifted east of the runway. The pilot "appeared to correct by increasing the airplane's angle of bank." The witness added that the airplane continued the turn, rolled inverted, the nose dropped, and the airplane descended vertically until it impacted the ground.

The operator reported that the purpose of the flight to ONY was to perform temporary repairs to another Mooney that was involved in an incident when the nose gear collapsed about 3 weeks prior to this accident. Two of the passengers in the accident airplane were the pilot who was to ferry the disabled Mooney back to Gladewater, and the aviation technician that was going to make the required airframe repairs and replace the propeller prior to the ferry flight to Gladewater.

PERSONNEL INFORMATION

The pilot held a commercial pilot certificate with airplane single-engine land, and instrument ratings. The pilot was issued his most recent second-class medical on August 18, 2003, with the limitation of "MUST WEAR CORRECTIVE LENSES AND POSSESS GLASSES FOR NEAR AND INTERM VISION." The pilot reported on his most recent medical application that he had accumulated a total of 2,700 hours of flight time. The pilot's logbooks were not located during the course of the investigation.

AIRCRAFT INFORMATION

The 1989-model Mooney M20J, serial number 24-3115, was a low wing, semimonocoque design airplane, configured to carry a maximum of four occupants, with a retractable landing gear. The airplane was powered by a normally aspirated, direct drive, air-cooled, horizontally opposed, fuel injected 4 cylinder Lycoming IO-360-A3B6D engine, serial number L-1385-51A, rated at 200 horsepower, driving a two bladed constant speed McCauley propeller.

Review of the airframe and engine logbooks revealed the airplane's most recent 100-hour/annual inspection was on January 15, 2004, with a total airframe time of 9,633.1 hours.

METEOROLOGICAL INFORMATION

The closest weather reporting station to the accident site was located at the Graham Municipal Airport (RPH), near Graham, Texas, approximately 18 nautical miles southeast of the accident site. At 0907, the automated surface observing system at RPH reported wind from 200 degrees at 6 knots, visibility 10 statute miles, sky condition clear, temperature 82 degrees Fahrenheit, dew point 68 degrees Fahrenheit, and an altimeter setting of 29.90 inches of Mercury.

The ONY airport manager reported the wind from the southwest approximately 6-10 knots at the time of the accident.

The density altitude was calculated by the NTSB investigator-in-charge to be 3,136 feet mean seal level (msl). The pressure altitude was calculated to be 1,295 feet msl.

COMMUNICATIONS

A radio transmission in the blind from the accident aircraft was overheard by the airport manager on the airport Common Traffic Advisory Frequency (CTAF) reporting their intentions to land on Runway 35.

AERODROME INFORMATION

The Olney Municipal Airport (ONY) is an uncontrolled airport operating under class E airspace. ONY features a total of six runways, 13/31, 04/22, and 17/35. Runway 35 is a 5,101 foot long, 75-foot wide asphalt runway.

The airport manager reported that the white runway identification numbers on Runway 35 were mostly chipped off from a recent hail storm. The airport manager also stated that Runway 17 is the preferred "no-wind" runway.

The airport is equipped with a CTAF/Unicom on a frequency of 122.80 megahertz. The CTAF/Unicom is not recorded.

WRECKAGE AND IMPACT INFORMATION

The airplane impacted terrain approximately 0.2 miles south of runway 35 on a heading of 135 degrees and came to rest upright in a drainage ditch on a heading of 130 degrees at a field elevation of 1,224 feet mean sea level (msl). The wreckage debris distribution area remained within a 50-foot radius to the main wreckage. The Global Positioning System (GPS) coordinates recorded at the accident site using a hand held GPS unit were 33 degrees 20 minutes north latitude and 098 degrees 49 minutes west longitude.

The initial impact crater was approximately 3 feet by 2 feet and contained multiple paint chips and an oil access door from the top section of the engine cowling. The propeller spinner was also located adjacent to the crater. Extending from the crater was a ground scar approximately 15 feet, 5 inches in length. Fragments of green glass consistent with the left wing navigational lens were found at the end of the ground scar.

The fuselage was mostly consumed by a post impact fire. The tubular fuselage structure remained present, however was burned aft to the empennage.

The inboard section of the left wing was destroyed by fire. The aileron remained attached to its respective mounts. The flap was destroyed by fire, however the outboard mount remained attached. Leading edge crushing was observed throughout the remaining length of the wing. The plastic wingtip was separated from the wing. The main landing gear was observed in the down and locked position and was fire damaged. Control continuity was established from the control bar underneath the front seating area throughout the wing to the aileron. The torque tube was separated from the aileron at the aileron attach point. The left wing fuel tank was destroyed.

The right wing remained attached to the fuselage. The leading edge of the wing was crushed aft throughout its respective span. The plastic wingtip was separated from the wing. The aileron and flap remained attached to their respective mounts. The right flap was extended approximately 10 degrees. Control continuity was established from the control bar underneath the front seating area to throughout the length of the wing to the aileron. The torque tube from the aileron to the main torque tube was separated. The right wing fuel tank was destroyed.

The vertical stabilizer and rudder displayed minor cosmetic damage. The left horizontal stabilizer was bent upwards approximately at the midpoint of its respective length at an approximate 20 degree angle. The right horizontal stabilizer displayed minor cosmetic damage. Flight control continuity was established from the empennage to the aft portion of the fuselage.

The cockpit and cabin area was destroyed by fire. Multiple tools, spare propeller, propeller flange, spinner, nose gear parts, and sheet metal working equipment were located within the aft baggage cabin area.

Examination of the engine revealed the throttle control arm remained attached to the engine. The throttle position was almost at full power at the fuel servo. The mixture arm was displaced from the arm of the fuel servo. The propeller pitch control arm was displaced from the propeller governor.

The vacuum pump was separated from its mount and the shear coupler drive shaft was melted. The rotor and vain assembly was fragmented. The oil finger screen was free of debris. Rotational continuity was established throughout the engine when rotated by hand using the propeller. The single-drive dual magneto was destroyed by fire. When compared to the Champion Aviation Check-A-Plug Wear Guide (Part Number AV-27), the top spark plugs displayed signatures consistent to normal operation. Fuel was observed in the fuel flow divider.

The propeller spinner displayed rotational damage. Part of the propeller spinner remained attached to the propeller hub. One of propeller blades displayed slight cosmetic damage. The other blade was bent aft slightly and displayed chordwise scratching throughout its length.

MEDICAL AND PATHOLIGICAL INFORMATION

The Office of the Medical Examiner for Tarrant County, of Fort Worth, Texas, performed an autopsy on the pilot, on August 5, 2004. No preexisting disease was found that would have contributed to the accident.

The FAA's Civil Aeromedical Institute's (CAMI) Forensic and Accident Research Center examined the specimens taken by the medical examiner. The toxicological tests for carbon monoxide and cyanide were not performed. However, the test was positive for volatiles, of which trace amounts of Ethanol and Acetaldehyde (values confirmed by the FAA) were found.

FIRE

A post impact fire ensued, and destroyed most of the airplane. The grass area immediately around the main wreckage was set on fire, but was extinguished by the local fire department. The fire movement pattern was predominately to the north of the main wreckage.

SURVIVAL ASPECTS

Shoulder seatbelt restraints were installed in the aircraft. Due to the extent of the fire damage, it was undetermined if the airplane was equipped with an emergency locator transmitter (ELT).

TESTS AND RESEARCH

Weight and balance calculations were made by using data from provided by the operator. Using the provided weights of the occupants, tools, and fuel, the airplane was estimated to be approximately 194 pounds below the airplane's maximum takeoff gross weight of 2,900

pounds at the time of departure.

ADDITIONAL INFORMATION

The wreckage was released to the owner's representative on December 28, 2004.

Pilot Information

Certificate:	Commercial	**Age:**	65,Male
Airplane Rating(s):	Single-engine land	**Seat Occupied:**	Left
Other Aircraft Rating(s):	None	**Restraint Used:**	
Instrument Rating(s):	Airplane	**Second Pilot Present:**	Yes
Instructor Rating(s):	None	**Toxicology Performed:**	Yes
Medical Certification:	Class 2 Valid Medical--w/ waivers/lim	**Last FAA Medical Exam:**	August 18, 2003
Occupational Pilot:	Yes	**Last Flight Review or Equivalent:**	January 24, 2002
Flight Time:	2700 hours (Total, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Mooney	**Registration:**	N1050W
Model/Series:	M20J	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	24-3115
Landing Gear Type:	Retractable - Tricycle	**Seats:**	4
Date/Type of Last Inspection:	January 15, 2004 Annual	**Certified Max Gross Wt.:**	2740 lbs
Time Since Last Inspection:	35 Hrs	**Engines:**	1 Reciprocating
Airframe Total Time:	9635 Hrs at time of accident	**Engine Manufacturer:**	Lycoming
ELT:		**Engine Model/Series:**	IO-360-A3B6D
Registered Owner:	ERIN M DAVENPORT	**Rated Power:**	180 Horsepower
Operator:	Maxwell Aviation Services	**Operating Certificate(s) Held:**	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	RPH,1123 ft msl	**Distance from Accident Site:**	22 Nautical Miles
Observation Time:	09:07 Local	**Direction from Accident Site:**	120°
Lowest Cloud Condition:	Clear	**Visibility**	10 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	6 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	200°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	29.89 inches Hg	**Temperature/Dew Point:**	28°C / 20°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Gladewater, TX (07F)	**Type of Flight Plan Filed:**	None
Destination:	Olney, TX (ONY)	**Type of Clearance:**	None
Departure Time:	07:30 Local	**Type of Airspace:**	Class E

Airport Information

Airport:	Olney Municipal Airport ONY	**Runway Surface Type:**	Asphalt
Airport Elevation:	1274 ft msl	**Runway Surface Condition:**	Dry
Runway Used:	35	**IFR Approach:**	None
Runway Length/Width:	5101 ft / 75 ft	**VFR Approach/Landing:**	Full stop;Straight-in

Wreckage and Impact Information

Crew Injuries:	1 Fatal	**Aircraft Damage:**	Destroyed
Passenger Injuries:	2 Fatal	**Aircraft Fire:**	On-ground
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	3 Fatal	**Latitude, Longitude:**	33.33472,-98.816947

Administrative Information

Investigator In Charge (IIC):	Casanova, Hector
Additional Participating Persons:	Willis Power; Federal Aviation Administration; Forth Worth, TX Mark Platt; Lycoming Engines; Williamsport, PA
Original Publish Date:	February 24, 2005
Last Revision Date:	
Investigation Class:	Class
Note:	The NTSB traveled to the scene of this accident.
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=59831