Aviation Investigation Final Report

Location:	Virgil, New York	**Accident Number:**	NYC02FA197
Date & Time:	September 27, 2002, 20:36 Local	**Registration:**	N2276F
Aircraft:	Cessna 310L	**Aircraft Damage:**	Destroyed
Defining Event:		**Injuries:**	1 Fatal
Flight Conducted Under:	Part 91: General aviation		

Analysis

The pilot was cleared for an instrument approach. When the airplane was approximately 13 miles south of the airport, the pilot requested that the controller advise him when the airplane was over the final approach fix. The controller responded he would be unable due to the lack of radar coverage in the area, so the pilot cancelled his IFR clearance. About 4.5 minutes later, the airplane was seen flying about 80 feet agl, with both engines running. About 30 seconds after that, the airplane impacted trees. The ceiling at the time of the accident was approximately 500 feet, the visibility was approximately 0.75 mile in rain, and night prevailed. Examination of the wreckage revealed no preimpact failures or malfunctions with either the engine or airframe.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The pilot's decision to continue the flight into IMC after canceling his IFR clearance, and his failure to maintain terrain clearance while maneuvering. Factors in the accident were rain, low ceilings, and night.

Findings

Occurrence #1: IN FLIGHT COLLISION WITH OBJECT
Phase of Operation: MANEUVERING

Findings

1. (C) ALTITUDE/CLEARANCE - NOT MAINTAINED - PILOT IN COMMAND
2. (C) IN-FLIGHT PLANNING/DECISION - IMPROPER - PILOT IN COMMAND
3. (F) WEATHER CONDITION - RAIN
4. (F) WEATHER CONDITION - LOW CEILING
5. (F) LIGHT CONDITION - NIGHT
6. TERRAIN CONDITION - MOUNTAINOUS/HILLY
7. OBJECT - TREE(S)

Factual Information

HISTORY OF FLIGHT

On September 27, 2002, about 2036 eastern daylight time, a Cessna 310L, N2276F, was destroyed when it impacted trees in Virgil, New York, while maneuvering for the Cortland County Chase Airport (N03), Cortland, New York. The certificated commercial pilot was fatally injured. Night instrument meteorological conditions prevailed in the accident area for the business flight that departed Iron Mountain (IMT), Kingsford, Michigan, at 1736. A flight plan was not filed, and the flight was conducted under 14 CFR Part 91.

According to automated flight service station (AFSS) data, the pilot requested and received an "outlook" weather briefing in the morning via telephone, and then called back to get an update on the winds aloft just prior to boarding the airplane. During the outlook briefing, the pilot was advised by the briefer that cloud ceilings of 500 feet and 2 miles visibility with heavy rain showers were forecasted for the State of New York, until 2000. The briefer added that for Syracuse, New York, the forecast was for ceiling 800 feet overcast, and 2 miles visibility in moderate rain and mist until 2100. Other than the two AFSS telephone briefings, no other weather briefing data for the accident flight was located.

According to air traffic control data, the pilot was operating under visual flight rules until reaching the Buffalo, New York, area. At that point, he requested instrument flight rules (IFR) handling, and changed his plan destination from Syracuse, New York, to Cortland. Once in the Cortland area, the pilot was cleared for the VOR-A approach. Approximately 13 miles south of the airport, and while at 3,600 feet msl, the pilot requested the controller to advise him when the airplane was over the final approach fix. The controller responded he would be unable due to the lack of radar coverage in the area, so the pilot cancelled his IFR clearance. The controller confirmed the cancellation, instructed the pilot to squawk 1200, and approved a frequency change. The pilot acknowledged the controller, and made no report of any difficulties. About 5 minutes later, the airplane impacted trees approximately 5.5 miles south of the airport.

According to a witness who was approximately 2 miles south of the accident site and traveling in an automobile, the airplane was on a northerly heading about 300 to 500 feet agl, flying "slow" below the clouds, and in level flight. The witness then lost sight of the airplane. A few seconds later, she saw a bright flash followed by a glow in the distance. She then went to the accident site, and saw that the airplane had crashed and was on fire.

According to another witness who was outside and approximately 0.75 mile south of the accident site, the airplane flew over him about 80 feet agl, and both engines sounded "normal." He then saw a large "orange glow" near the accident site. The witness estimated that at the

time of the accident, visibility was approximately 0.75 mile in heavy rain.

The accident occurred during the hours of darkness. The wreckage was located at 42 degrees, 30.91 minutes north latitude, 76 degrees, 14.17 minutes west longitude, and an elevation of approximately 1,685 feet msl.

PERSONNEL INFORMATION

The pilot held a commercial pilot certificate with an airplane single-engine-land, multi-engine land, and instrument airplane ratings. On his last Federal Aviation Administration (FAA) first-class medical certificate, which was dated March 26, 2002, he reported a total flight experience of 1,600 hours. The pilot's logbook was not located at the accident site, and follow on attempts to acquire it were unsuccessful.

AIRCRAFT INFORMATION

According to fueling records, the airplane was serviced with 69.0 gallons of fuel on September 23, 2002, at the Cortland Airport, and with 54.5 gallons on September 27, 2002, at Kingsford. According to maintenance records, the airplane received an annual inspection on September 21, 2002. At the time of the inspection the airplane had 5,233.9 hours.

METEOROLOGICAL INFORMATION

A weather observation taken about 5 minutes after the accident at the Cortland Airport, recorded the wind as calm, visibility 4 miles, ceiling 3,200 overcast, temperature 63 degrees Fahrenheit, dew point 63 degrees Fahrenheit, and an altimeter setting of 29.61 inches of mercury.

A weather observation taken about 14 minutes after the accident at the Ithaca Tompkins County Airport (ITH), Ithaca, New York, which was located 15.0 miles to the southwest of the accident site, recorded the wind as 300 degrees at 8 knots, visibility 0.5 mile in rain and mist, vertical visibility 200 feet, temperature 61 degrees Fahrenheit, dew point 61 degrees Fahrenheit, and an altimeter setting of 29.61 inches of mercury.

MEDICAL AND PATHOLOGICAL INFORMATION

An autopsy was performed on the pilot at the medical examiner's office at the Lordes Hospital in Binghamton, New York, on September 28, 2002.

The FAA Toxicology and Accident Research Laboratory in Oklahoma City, Oklahoma, performed a toxicological test on the pilot on November 6, 2002.

WRECKAGE AND IMPACT INFORMATION

The debris path was located in a wooded area, orientated on a magnetic heading of 360 degrees, and approximately 210 feet long. Within the debris path, all the major structural components for the airplane were identified, along with portions from all the flight control surfaces. The start of the debris path was marked by freshly broken tree branches approximately 45 feet above the ground. The down angle from the broken branches to the main wreckage was approximately 18 degrees. The horizontal angle of the broken branches was approximately 45 degrees left side low, and the majority of vegetation along the debris path displayed discoloration consistent with exposure to fuel. Approximately 150 feet from the start of the debris path was a section of cut wood. It was approximately 2 feet long, 3 inches in diameter, and cut on a 45-degree angle. On the cut surface was a red stripe, which was similar in size and shape to red stripes painted on the engine propeller blades.

The main wreckage came to rest upright about 210 feet from the start of the debris path, and was orientated on a magnetic heading of approximately 180 degrees. The wreckage displayed impact and fire damage, and was comprised of remnants of the cockpit, inboard left wing, empennage, left horizontal stabilizer and elevator, vertical stabilizer and rudder, right horizontal stabilizer and elevator, and inboard right wing. The nose wheel had separated from the airframe and was located with the main wreckage. The left and right main landing gear were still attached and in the down position.

The left engine had separated from its mounts, and was located within the limits of the main wreckage. The propeller was attached to the engine crankshaft flange, and the propeller spinner displayed impact marks on its nose and sides. Examination of the left propeller revealed all the blade tips were curled. In addition, the No. 1 blade displayed chordwise rubs, and the No. 2 and No. 3 displayed slight "S" bends. No leading edge gouges were identified on any of the blades.

The right engine was partially attached to the airframe. The propeller was attached to the engine crankshaft flange, and the propeller spinner displayed impact marks on its sides, but not its nose. Examination of the right propeller revealed no chordwise scratches, or leading edge gouges. The No. 1 blade display trailing edge gouges, the No. 2 blade displayed a slight rearward bend, and the No. 3 displayed a slight "S" bend.

Flight control continuity for the left and right ailerons were verified to the copilot control yoke, but not to the pilot control yoke because of impact damage. Elevator control continuity was verified to the control column. The elevator trim actuator was extended 1.8 inches, which equated to approximately 5 degrees tab up. Continuity of the elevator trim system was verified to the center console, but not to the trim wheel because of impact damage. Rudder cable continuity was confirmed from the rudder horn to the cockpit area, but not to the rudder pedals because of impact damage. The rudder trim actuator was extended approximately 1.15 inches, which equated to approximately 3.0 degrees tab left. Continuity of the rudder trim system was verified from the actuator to the rudder trim wheel. Continuity of the flap system was verified to the flap motor. The left flap chain had 4 links on the bottom, and the right had 4.5 links on the top, which equated to approximately approach flaps. Continuity from the flap

motor to the flap selector switch, which was located in the cockpit, could not be verified because of impact damage.

Examination of the center console revealed that the left throttle was 1 inch aft of full forward, the right throttle was mid range, both propeller controls were full forward, the left mixture control was 1 inch aft of full forward, and the right mixture control was full forward. The left fuel selector handle was between "OFF" and "RIGHT" and the right fuel selector handle had separated from the selector. The landing gear lever and flap selector switch were not identified.

The left fuel selector valve was outside its normal limits. The valve was opened, it contained approximately .25 cup of fuel, and approximately 1 percent of the filter was covered by contaminates. The right fuel selector valve was not recovered.

An attitude indicator was located on the ground within the limits of the main wreckage. It displayed impact damage and indicated left wing low. The gyro housing was opened and examined. The rotor and inside surface of the housing both displayed rotational scarring. A directional gyro was recovered from the cockpit area and examined. The case displayed impact damage, and the instrument indicated 124 degrees. The gyro housing was opened, and no rotational scoring or static marks were identified on either the rotor or inside portion of the housing.

Examination of the avionics revealed that the No. 1 communication radio was set to 122.8 MHz, the No. 1 navigation radio was set to 112.2 MHz, the No. 2 communication radio was also set to 122.8 MHz, and the No. 2 navigation radio was set to 111.8 MHz. The area navigation unit displayed impact damage, and was set to radial 003 and 000 miles. The No. 1 OBS was set to 002 degrees, and the No. 2 OBS was set to 085 degrees. An altimeter face was recovered from the cockpit area. All the needles had separated from the instrument, and the Kollsman window was set to 29.67 inches of mercury.

TESTS AND RESEARCH

Left Engine

The left engine displayed moderate impact damage to the engine oil cooler, and minor impact damage to the remainder of the engine. The top sparkplugs were removed, and all the electrodes were gray in color and absent of debris. A rotational force was applied to the engine crankshaft. The crankshaft rotated, vacuum and compression was obtained on all six cylinders, the accessory drives gears rotated, and spark was observed on all the ignition lead ends. In addition, continuity of the induction and exhaust systems was confirmed.

The fuel servo was attached to the engine, and the throttle cable was attached to the throttle arm. The throttle arm and throttle plate were in the open position. The mixture control cable was attached to the mixture arm, and the mixture arm was in the mid range position. Engine

control continuity could not be confirmed to the cockpit because of impact damage. The fuel screen was removed from the fuel servo, and about 20 percent of the surface area of the screen was covered with an organic material. Continuity to the fuel manifold was confirmed. The fuel manifold was opened, the screen was absent of debris, the manifold chamber contained fuel, and no contaminates were identified. Continuity to the fuel nozzles was confirmed. The nozzles were removed and examined. The No. 1, 3, 4, and 6 nozzles were absent of debris. The No. 2, and 5 nozzles were partially blocked. Samples of the debris were removed, and examined. The samples were dark gray in color, and consistent with carbon deposit associated with a postcrash fire.

The engine driven fuel pump was removed. The input line was submerged in water, a rotational force was applied to the input drive, and water was expelled from the outflow line. The vacuum pump was removed from the accessory section and opened. The shear coupling was in place, and the rotor and vanes were intact. Examination of the left propeller governor revealed that the control linkage had separated from the control arm consistent with overload.

Right Engine

The right engine displayed moderate impact damage to the No. 6 cylinder cooling fins, the engine oil dip stick assembly, both magnetos, and the engine oil cooler. The remainder of the engine displayed minor impact damage. The top sparkplugs were removed, and the electrodes examined. All were gray in color and absent of debris. A rotational force was applied to the engine crankshaft. The crankshaft rotated, vacuum and compression was obtained on all six cylinders, and the accessory gears rotated. In addition, continuity of the induction and exhaust systems was confirmed.

The fuel servo was attached to the engine. The throttle cable was attached to the throttle arm, and the arm and throttle plate were in the closed position. The mixture cable was attached to the mixture arm, which was in the closed position. The fuel screen was removed and about 20 percent of the screen was cover with an organic material. Continuity to the fuel manifold was confirmed. The fuel manifold was opened, the screen was absent of debris, the chamber contained fuel, and no contaminates were identified. Continuity to the fuel nozzles was also confirmed. The nozzles were removed and examined. All the fuel nozzles were absent of debris except for the No. 5, which was partially blocked. The blockage was removed and was consistent with a carbon deposit associated with a postcrash fire. In addition, the No. 6, No. 4, and No. 2 fuel nozzle housings all had a blue stain on them.

Both magnetos were removed, a rotational force was applied to the input drives, and spark was observed on all the top ignition lead ends. The engine driven fuel pump was removed. The input line was submerged in water, a rotational force was applied to the input drive, and water was expelled from the outflow line. The vacuum pump was removed from the accessory section and opened. The shear coupling was in place, and the rotor and vanes were intact. The propeller governor arm was in the low pitch position, and continuity to the cockpit could not be confirmed because of impact damage.

ADDITIONAL INFORMATION

The wreckage was released to the owner's representative on October 1, 2002.

Pilot Information

Certificate:	Commercial	**Age:**	54,Male
Airplane Rating(s):	Single-engine land; Multi-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:**	March 26, 2002
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	
Flight Time:	1600 hours (Total, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Cessna	**Registration:**	N2276F
Model/Series:	310L	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	310L0076
Landing Gear Type:	Retractable - Tricycle	**Seats:**	6
Date/Type of Last Inspection:	September 21, 2002 Annual	**Certified Max Gross Wt.:**	5200 lbs
Time Since Last Inspection:	10 Hrs	**Engines:**	2 Reciprocating
Airframe Total Time:	5244 Hrs at time of accident	**Engine Manufacturer:**	Continental
ELT:	Installed, activated, did not aid in locating accident	**Engine Model/Series:**	IO-470-V
Registered Owner:	Kevin Hundshamer	**Rated Power:**	260 Horsepower
Operator:		**Operating Certificate(s) Held:**	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Instrument (IMC)	**Condition of Light:**	Night
Observation Facility, Elevation:	ITH,1099 ft msl	**Distance from Accident Site:**	15 Nautical Miles
Observation Time:	20:50 Local	**Direction from Accident Site:**	220°
Lowest Cloud Condition:		**Visibility**	0.5 miles
Lowest Ceiling:	Indefinite (V V) / 200 ft AGL	**Visibility (RVR):**	
Wind Speed/Gusts:	8 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	300°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	29.61 inches Hg	**Temperature/Dew Point:**	16°C / 16°C
Precipitation and Obscuration:	Moderate - None - Rain		
Departure Point:	Kingsford, MI (IMT)	**Type of Flight Plan Filed:**	None
Destination:	Cortland, NY (N03)	**Type of Clearance:**	None
Departure Time:	17:36 Local	**Type of Airspace:**	Class G

Airport Information

Airport:	Cortland County Chase NO3	**Runway Surface Type:**	
Airport Elevation:	1198 ft msl	**Runway Surface Condition:**	Unknown
Runway Used:		**IFR Approach:**	None
Runway Length/Width:		**VFR Approach/Landing:**	Unknown

Wreckage and Impact Information

Crew Injuries:	1 Fatal	**Aircraft Damage:**	Destroyed
Passenger Injuries:		**Aircraft Fire:**	On-ground
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	1 Fatal	**Latitude, Longitude:**	42.505033,-76.192329(est)

Administrative Information

Investigator In Charge (IIC):	Muzio, David
Additional Participating Persons:	Richard J Shaughnessy; FAA/FSDO; Rochester, NY Scott Boyle; Teledyne Continental Motors; Arvada, CO Seth Buttner; Cessna Aircraft; Wichita, KS
Original Publish Date:	July 23, 2003
Last Revision Date:	
Investigation Class:	Class
Note:	The NTSB traveled to the scene of this accident.
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=55790

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