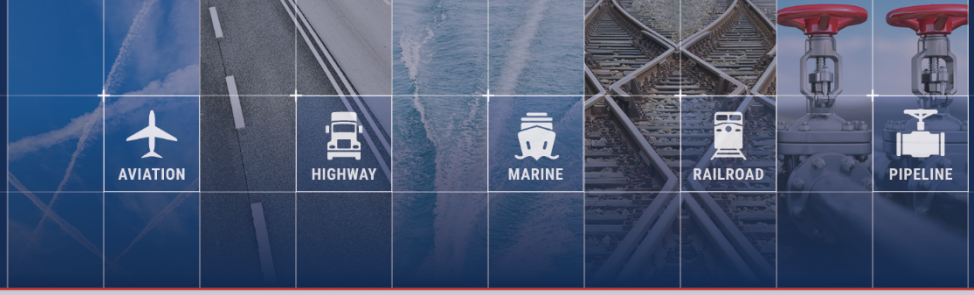

Aviation Investigation Final Report

Location:	Fredericksburg, Virginia	**Accident Number:**	ERA12FA583
Date & Time:	September 29, 2012, 17:15 Local	**Registration:**	N66246
Aircraft:	Cessna 150M	**Aircraft Damage:**	Substantial
Defining Event:	Loss of control in flight	**Injuries:**	2 Fatal
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

During takeoff in good visibility and calm wind, about 100 feet above ground level, the airplane made a 90-degree left bank and descended in a spiral until impact. The wreckage was located in a residential area, about 1,000 feet from the departure end of the runway. All major components of the airplane were accounted for at the scene. Examination of the airframe and engine did not reveal any preimpact mechanical malfunctions that would have precluded normal operation. Toxicological testing of specimens from the pilot revealed results consistent with prior consumption of alcohol at levels that could degrade decision-making and psychomotor performance. Additionally, testing revealed the presence of an antidepressant. Alcohol can aggravate drowsiness caused by the medication; however, the investigation could not determine the degree of interaction between the medication and alcohol.

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 airplane control during initial climb. Contributing to the accident was the pilot's impairment due to alcohol.

Findings

Aircraft	Lateral/bank control - Not attained/maintained
Personnel issues	Aircraft control - Pilot
Personnel issues	Alcohol - Pilot

Factual Information

History of Flight

Initial climb	Loss of control in flight (Defining event)
Uncontrolled descent	Collision with terr/obj (non-CFIT)

HISTORY OF FLIGHT

On September 29, 2012, about 1715 eastern daylight time, a Cessna 150M, N66246, operated by a private individual, was substantially damaged during impact with terrain, following an in-flight loss of control during initial climb from Shannon Airport (EZF), Fredericksburg, Virginia. The commercial pilot and passenger were fatally injured. Visual meteorological conditions prevailed and no flight plan was filed for the planned local flight. The personal flight was conducted under the provisions of 14 Code of Federal Regulations Part 91.

The owner of the airplane reported that he was a longtime friend of the accident pilot. The airplane was based at EZF and not flown often. The accident pilot was allowed to borrow the airplane whenever he wanted; however, he only flew it for 2 hours during April 2012, and the accident flight. No other flight hours were accrued during 2012 and the last annual inspection was completed in November 2011. Although the accident pilot was also a certificated mechanic, no maintenance work was performed on the airplane prior to the flight or in 2012.

The pilot fueled the airplane with 15 gallons of 100 low-lead aviation gasoline before the accident flight. According to a witness, who was a flight instructor, he and a student pilot were practicing landings in another airplane at EZF. The flight instructor heard the accident pilot report his intentions on the common traffic advisory frequency, which were to back-taxi on runway 6. Subsequently, during an approach, the flight instructor observed the accident airplane on departure from runway 6, about 100 feet above the trees. The accident airplane made a 90-degree left bank, and began to turn left until the nose descended and the airplane disappeared behind terrain. Other witnesses, who were on the ground near the accident site, reported seeing the airplane spinning as it descended.

PERSONNEL INFORMATION

The pilot, age 48, held a commercial pilot certificate with ratings for airplane single-engine land, airplane multiengine land and instrument airplane. He also held an airframe and powerplant certificate. His most recent Federal Aviation Administration (FAA) third-class medical certificate was issued on March 31, 2011. At that time, he reported a total flight experience of 1,050 hours. Review of the pilot's logbook revealed that the last entry was dated September 3, 2011, when he received his biannual flight review. Other than the 2 hours flown in the accident airplane during April 2012, the investigation could not determine if the pilot had

any additional recent flight experience.

AIRCRAFT INFORMATION

The two-seat, high-wing, fixed tricycle-gear airplane, serial number 15075950, was manufactured in 1974. It was powered by a Continental Motors O-200, 100-horsepower engine, equipped with a McCauley fixed-pitch propeller. Review of the airplane's logbooks revealed that its most recent annual inspection was completed on November 23, 2011. At that time, the airplane had accumulated 5,417 total hours of operation. The engine had accumulated approximately 3,568 total hours of operation since new, and 1,680 hours since major overhaul. The airplane had flown about 3 hours since the most recent annual inspection.

METEOROLOGICAL INFORMATION

The recorded weather at EZF, at 1715, was: wind calm; visibility 10 miles; clear sky; temperature 21 degrees C; dew point 7 degrees C; and altimeter 29.92 inches Hg.

WRECKAGE AND IMPACT INFORMATION

The wreckage was located at the end of a cul-de-sac, about 1,000 feet and 040 degrees from the departure end of runway 6 at EZF. All major components of the airplane were accounted for at the scene. The wreckage was intact, oriented on a heading of 060 degrees, resting vertically on the engine and leading edges of the wings. No debris path was observed and the only severed tree branches were directly above the wreckage.

The right wing exhibited impact damage along the leading edge. The right wing flap remained attached and was in the retracted position. The right aileron remained attached and was in a neutral position. The right wing fuel tank was compromised, but still contained some fuel. The left wing also exhibited impact damage along the leading edge. The left wing flap remained attached and was extended; however, the left wing flap cable had separated consistent with impact forces. The left aileron remained attached and was in an upward position. The left wing fuel tank had been compromised during impact and did not contain any fuel.

The aft section of fuselage and the empennage were buckled and canted to the left. Elevator, rudder, and elevator trim continuity were confirmed from their respective flight control surfaces to the mid cabin area, where the cables were crushed under the seats. Continuity was confirmed from the left aileron to the control yoke and the right aileron to the right wing root. The right aileron and right flap cables had been cut by rescue personnel. Additionally, the right aileron push-pull rod had separated at the aileron, consistent with impact forces. Measurement of the elevator trim jackscrew corresponded to an approximate neutral setting. Measurement of the flap actuator jackscrew corresponded to the flaps retracted position.

The cockpit area was crushed and part of the instrument panel was destroyed. The seatbelts and shoulder harnesses remained intact. The right seatbelt was cut by rescue personnel and

the left seatbelt was unlatched by rescue personnel. The throttle lever was in the full forward position. The mixture control was about .5 inch from the full rich position. The carburetor heat was off. The tachometer needle was indicating 1,750 rpm. The magneto switch was selected to both.

One propeller blade exhibited chordwise scratching and gouging on the cambered side. The other propeller blade was bent aft at the outboard end and buffed at the tip. The propeller flange had sheared from crankshaft, consistent with impact forces. The propeller hub remained attached to the propeller flange and the spinner was crushed inward. The No. 4 cylinder was impact damaged and the front of the engine crankcase was shattered, which allowed for visual inspection of the front side of crankshaft, camshaft, and lifters. Due to impact damage, the crankshaft could not be rotated by hand; however, borescope examination of all four cylinders did not reveal any preimpact mechanical malfunctions. The rocker arms and valve springs were manually actuated with a crowbar and no anomalies were noted. The electrodes of all eight sparkplugs remained intact and were unremarkable, with the exception that the bottom sparkplugs were oil soaked and the No 4. top sparkplug appeared to have been running richer than the others. The oil filter was opened and no metallic contamination was observed. The carburetor was disassembled for inspection. The floats, accelerator pump and needle were intact and no fuel was present. The starter and vacuum pump were dislodged from the rear accessory section of the engine. The mixture and throttle linkage remained attached and the air filter was absent of debris. The magnetos were also dislodged, but the ignition leads remained intact. Spark was produced at all leads when the magnetos were subsequently rotated on a test bench.

MEDICAL AND PATHOLOGICAL INFORMATION

An autopsy was performed on the pilot by the State of Virginia, Office of the Chief Medical Examiner, Richmond, Virginia, on October 1, 2012. Toxicological testing, ordered by the Office of the Chief Medical Examiner, revealed "…Pleural Cavity Blood: -Ethanol 0.08% by weight by volume…"

Toxicological testing was also performed on the pilot by the FAA Bioaeronautical Science Research Laboratory, Oklahoma City, Oklahoma. Review of the toxicological report revealed:

"…117 (mg/dL, mg/hg) Ethanol detected in Urine
70 (mg/dL, mg/hg) Ethanol detected in Brain
67 (mg/dL, mg/hg) Ethanol detected in Muscle
Citalopram detected in Liver
Citalopram detected in Urine
N-Desmethylcitalopram detected in Liver
N-Desmethylcitalopram detected in Urine…"

Additionally, putrefaction was noted as no.

TESTS AND RESEARCH

A handheld global positioning system (GPS) receiver was recovered in the wreckage and retained for further examination by the NTSB Vehicle Recorders Laboratory, Washington, DC. Data was successfully downloaded; however, there was no data for the accident flight.

Pilot Information

Certificate:	Commercial	**Age:**	48,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 With waivers/limitations	**Last FAA Medical Exam:**	May 31, 2011
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	September 3, 2011
Flight Time:	1050 hours (Total, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Cessna	**Registration:**	N66246
Model/Series:	150M	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Normal; Utility	**Serial Number:**	15075950
Landing Gear Type:	Tricycle	**Seats:**	2
Date/Type of Last Inspection:	November 23, 2011 Annual	**Certified Max Gross Wt.:**	1600 lbs
Time Since Last Inspection:	3 Hrs	**Engines:**	1 Reciprocating
Airframe Total Time:	5417 Hrs as of last inspection	**Engine Manufacturer:**	CONT MOTOR
ELT:		**Engine Model/Series:**	O-200 SERIES
Registered Owner:	HOCKADAY DONALD R	**Rated Power:**	100 Horsepower
Operator:	HOCKADAY DONALD R	**Operating Certificate(s) Held:**	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	EZF,85 ft msl	**Distance from Accident Site:**	0 Nautical Miles
Observation Time:	17:15 Local	**Direction from Accident Site:**	0°
Lowest Cloud Condition:	Clear	**Visibility**	10 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	/	**Turbulence Type Forecast/Actual:**	/
Wind Direction:		**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	29.92 inches Hg	**Temperature/Dew Point:**	21°C / 7°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Fredricksburg, VA (EZF)	**Type of Flight Plan Filed:**	None
Destination:	Fredricksburg, VA (EZF)	**Type of Clearance:**	None
Departure Time:	17:15 Local	**Type of Airspace:**	

Airport Information

Airport:	Fredricksburg EZF	**Runway Surface Type:**	Asphalt
Airport Elevation:	85 ft msl	**Runway Surface Condition:**	Dry
Runway Used:	06	**IFR Approach:**	None
Runway Length/Width:	2999 ft / 100 ft	**VFR Approach/Landing:**	None

Wreckage and Impact Information

Crew Injuries:	1 Fatal	**Aircraft Damage:**	Substantial
Passenger Injuries:	1 Fatal	**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	2 Fatal	**Latitude, Longitude:**	38.27111,-77.443054

Administrative Information

Investigator In Charge (IIC):	Gretz, Robert
Additional Participating Persons:	James M Cook; FAA/FSDO; Richmond, VA Steve Miller; Cessna Aircraft Company; Wichita, KS Kurt Gibson; Continental Motors Inc.; Mobile, AL
Original Publish Date:	May 30, 2013
Last Revision Date:	
Investigation Class:	Class
Note:	The NTSB traveled to the scene of this accident.
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=85166