



National Transportation Safety Board Aviation Accident Final Report

Location:	Brockport, NY	Accident Number:	NYC08LA199
Date & Time:	06/01/2008, 1203 EDT	Registration:	N3910R
Aircraft:	CESSNA 172H	Aircraft Damage:	Substantial
Defining Event:	Fuel exhaustion	Injuries:	2 Serious
Flight Conducted Under:	Part 91: General Aviation - Instructional		

Analysis

The student pilot performed a preflight inspection on the airplane prior to the instructional flight and observed 6 gallons of fuel in each fuel tank. The flight instructor and student then departed and flew to another airport to practice touch-and-go landings. After flying for approximately 1 hour during the return flight, the engine started to "shake" and then lost power. The flight instructor performed a forced landing to a field, during which the airplane impacted trees. Examination of the airplane revealed approximately 1 gallon of fuel in the right tank and 1 quart of fuel in the left tank. The fuel tanks were not compromised and there was no indication of a fuel leak in the fuel system. No fuel was observed in the fuel line from the fuel tank to the fuel strainer. Prior to the accident flight, the airplane was flown by another pilot for 1.7 hours. The pilot who flew the previous flight departed with 18 gallons of fuel. Fuel consumption calculations performed by a representative of the manufacturer revealed that the accident flight would have consumed 8.4 gallons of fuel. The previous flight (1.7 hours in duration) would have consumed 11.5 gallons. The flight instructor did not verify the fuel quantity prior to departure, did not perform any preflight or en route fuel consumption calculations, and did not refuel the airplane at either airport.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: A total loss of engine power due to fuel exhaustion as a result of the flight instructor's inadequate preflight planning.

Findings

Aircraft	Fuel - Fluid level (Cause)
Personnel issues	Fuel planning - Instructor/check pilot (Cause)

Factual Information

HISTORY OF FLIGHT

On June 1, 2008, at 1203 eastern daylight time, a Cessna 172H, N3910R, was substantially damaged during a forced landing in Brockport, New York. The certificated flight instructor and student pilot were seriously injured. Visual meteorological conditions prevailed and no flight plan was filed for the instructional flight conducted under 14 Code of Federal Regulations Part 91.

According to the student pilot, he performed a preflight inspection prior to takeoff and observed 6 gallons in each of the two fuel tanks. After departure, the pilots flew to Genesee County Airport (GVQ), Batavia, New York, where they practiced touch-and-go landings. During the return flight to Ledgesdale Airpark (7G0), Brockport, New York, the engine started to "shake" and then "lost power," when the airplane was at an altitude of 1,600 feet. The flight instructor performed a forced landing to a field, during which the airplane impacted trees, and came to rest 150 feet from the tree line.

The flight instructor had no memory of the accident; however, he did remember checking the fuel gauges in flight and noting they read 1/4 tank (5 gallons) each side.

PILOT INFORMATION

The certificated flight instructor held ratings for airplane single-engine land and instrument airplane. He also held an airline transport pilot certificate and commercial pilot certificate. His most recent FAA first-class medical certificate was issued on March 19, 2008. At that time he reported 17,320 hours of total flight experience. Examination of the pilot's logbook revealed it was labeled "single engine time," and contained entries from March 29, 2008 to May 30, 2008. During that time period, the pilot logged 48 hours of flight time, all of which was accumulated in make and model of the accident airplane.

The student pilot held an FAA second-class medical certificate, issued on April 1, 2008. At that time, he reported 14 hours of total flight experience.

AIRCRAFT INFORMATION

The aircraft was owned by the flight instructor and powered by a Continental O-300 engine.

According to the airplane and engine logbooks, the most recent annual inspection was completed on July 10, 2007, with no anomalies noted. The tach time at the annual inspection was 7,300 hours and the tach time at the accident was 7,557 hours.

The aircraft had a fuel capacity of 38 gallons of useable fuel, and 1 gallon of unusable fuel.

METEOROLOGICAL INFORMATION

The weather reported at Rochester International Airport (ROC), Rochester, New York, about 11 miles to the east, at 1154, included wind from 280 degrees at 13 knots, gusting to 19 knots, 10 miles visibility, a broken cloud layer at 3,800 feet, an overcast cloud layer at 4,600 feet, temperature 17 degrees Celsius (C), dew point 8 degrees C, and altimeter setting 29.79 inches mercury.

WRECKAGE INFORMATION

Examination of the airplane by a representative of the airplane manufacturer and the FAA inspector revealed approximately 1 gallon of fuel was observed in the right tank and 1 quart of fuel was observed in the left tank. The fuel tanks were not compromised and there was no indication of a fuel leak in the fuel system. No fuel was observed in the fuel line from the fuel tank to the fuel strainer. The fuel selector was set to the 'both' position. The throttle knob was full forward, the carburetor heat was in the off position, and the mixture was in the 'rich' position.

The flaps were in the retracted position.

The engine crankshaft was rotated at the propeller flange and valve train continuity and compression were obtained on all cylinders.

ADDITIONAL INFORMATION

According to the pilot who flew the airplane prior to the accident flight, he departed for his flight with 18 gallons of fuel, and flew for 1.7 hours. The pilot reported no mechanical anomalies with the airplane during his flight.

The airplane was not refueled prior to the accident flight, which was 1.1 hours in duration, according to the aircraft flight log.

Fuel consumption calculations performed by a representative of the manufacturer revealed the accident flight would have consumed 8.4 gallons of fuel. The previous flight (1.7 hours in duration) would have consumed 11.5 gallons.

History of Flight

Prior to flight	Preflight or dispatch event
Enroute-cruise	Fuel exhaustion (Defining event) Loss of engine power (total)
Emergency descent	Off-field or emergency landing

Flight Instructor Information

Certificate:	Airline Transport; Commercial	Age:	47
Airplane Rating(s):	Multi-engine Land; Single-engine Land	Seat Occupied:	Right
Other Aircraft Rating(s):		Restraint Used:	
Instrument Rating(s):	Airplane	Second Pilot Present:	Yes
Instructor Rating(s):	Airplane Single-engine; Instrument Airplane	Toxicology Performed:	No
Medical Certification:	Class 1 With Waivers/Limitations	Last Medical Exam:	03/19/2008
Occupational Pilot:		Last Flight Review or Equivalent:	
Flight Time:	17320 hours (Total, all aircraft)		

Student Pilot Information

Certificate:	Student	Age:	26, Male
Airplane Rating(s):	None	Seat Occupied:	Left
Other Aircraft Rating(s):	None	Restraint Used:	
Instrument Rating(s):	None	Second Pilot Present:	Yes
Instructor Rating(s):	None	Toxicology Performed:	No
Medical Certification:	Class 2 Without Waivers/Limitations	Last Medical Exam:	04/01/2008
Occupational Pilot:	No	Last Flight Review or Equivalent:	
Flight Time:	(Estimated) 14 hours (Total, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Manufacturer:	CESSNA	Registration:	N3910R
Model/Series:	172H	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	No
Airworthiness Certificate:		Serial Number:	17255410
Landing Gear Type:		Seats:	4
Date/Type of Last Inspection:		Certified Max Gross Wt.:	
Time Since Last Inspection:		Engines:	1 Reciprocating
Airframe Total Time:		Engine Manufacturer:	CONT MOTOR
ELT:	Not installed	Engine Model/Series:	O-300 SER
Registered Owner:	MERRITT AIRE LLC	Rated Power:	145 hp
Operator:	Merritt Aire LLC	Air Carrier Operating Certificate:	None

Meteorological Information and Flight Plan

Observation Facility, Elevation:	ROC	Observation Time:	1154
Distance from Accident Site:		Condition of Light:	
Direction from Accident Site:		Conditions at Accident Site:	Visual Conditions
Lowest Cloud Condition:		Temperature/Dew Point:	17°C / 8°C
Lowest Ceiling:	Broken / 3800 ft agl	Visibility	10 Miles
Wind Speed/Gusts, Direction:	13 knots/ 19 knots, 280°	Visibility (RVR):	
Altimeter Setting:	30 inches Hg	Visibility (RVV):	
Precipitation and Obscuration:			
Departure Point:	Batavia, NY (GVQ)	Type of Flight Plan Filed:	None
Destination:	Brockport, NY (7G0)	Type of Clearance:	None
Departure Time:	1130 EDT	Type of Airspace:	Class E

Wreckage and Impact Information

Crew Injuries:	2 Serious	Aircraft Damage:	Substantial
Passenger Injuries:	N/A	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	2 Serious		

Administrative Information

Investigator In Charge (IIC):	Jill M Andrews	Adopted Date:	06/22/2009
Additional Participating Persons:	Chris Holliday; FAA/FSDO; Rochester, NY Tom Moody; Cessna Aircraft Company; Wichita, KS		
Publish Date:	06/22/2009		
Investigation Docket:	NTSB accident and incident dockets serve as permanent archival information for the NTSB's investigations. Dockets released prior to June 1, 2009 are publicly available from the NTSB's Record Management Division at pubinq@ntsb.gov , or at 800-877-6799. Dockets released after this date are available at http://dms.nts.gov/pubdms/ .		

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