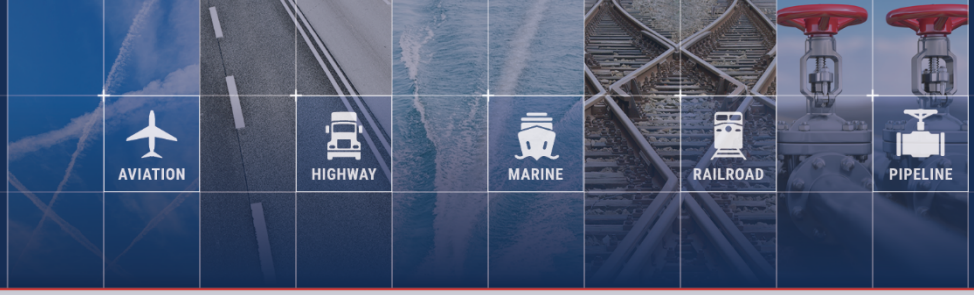

Aviation Investigation Final Report

Location:	Addison, Texas	**Accident Number:**	CEN09LA274
Date & Time:	May 3, 2009, 21:06 Local	**Registration:**	N528BM
Aircraft:	Beech 35-C33	**Aircraft Damage:**	Substantial
Defining Event:	Fuel exhaustion	**Injuries:**	2 Serious
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The two commercial pilots (one of which was the owner) flew to the accident location and dropped off a passenger. Prior to the first flight the owner pilot had checked the fuel levels and determined there was enough fuel to make their desired flights. Neither pilot ensured the fuel selector was selecting the fullest tank prior to the second takeoff. On departure and about 200 feet above the ground the engine began sputtering and then lost power. The pilots switched fuel tanks in-flight, but the engine did not restart. The airplane landed short of the runway, resulting in substantial damage to the airplane and serious injuries to both pilots. Examination of the airplane revealed the right main tank was empty and the fuel selector was selected to the left main tank.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: A loss of engine power in flight due to fuel starvation as a result of the pilots' inadequate fuel management.

Findings

Aircraft	Fuel - Fluid management
Personnel issues	Use of equip/system - Flight crew

Factual Information

History of Flight

Prior to flight	Miscellaneous/other
Initial climb	Fuel exhaustion (Defining event)
Initial climb	Loss of engine power (total)
Initial climb	Off-field or emergency landing

On May 3, 2009, about 2106 central daylight time, a Beech 35-C33 airplane, N528BM, was substantially damaged during a forced landing following a loss of engine power after takeoff from Addison Airport (ADS), Addison, Texas. Both commercial pilots were seriously injured. The flight was being conducted under the provisions of Title 14 Code of Federal Regulations Part 91 without a flight plan. The repositioning flight was originating from ADS, and was en-route to Hicks Airfield (T67), Fort Worth, Texas. Night, visual meteorological conditions prevailed at the time of the accident.

The pilot was flying in the left seat to build high performance pilot in command (PIC) time. His first flight in the airplane was the afternoon of the accident, when he and the airplane owner, who was also a commercial pilot, flew the owner's son from T67 to ADS. The pilot stated he was unfamiliar with the airplane.

The owner-pilot, who was in the right seat, stated he had checked the fuel before flying to ADS and determined each main tank had between 15 and 20 gallons of fuel and the fuel selector was on the right main tank.
The airplane was on departure from initial takeoff and about 200 feet above the ground when the engine started sputtering. The owner-pilot immediately suspected the problem was that the fuel selector was still on the right main tank and it should have been switched to the left main tank. He reached for the fuel selector switch, which was located under the pilot's left leg, but he could not reach it. He then took control of the airplane and the pilot switched the fuel selector. The pilot stated he could not recall which tank it was on. The owner-pilot then attempted to return to ADS and land, but the airplane landed short of the runway on airport property.

The owner-pilot stated on the Accident/Incident Report (NTSB Form 6120.1) "I believe we took-off on the [right main fuel tank] and ran it empty. There [was not] time for the fuel in the [left main fuel tank] to restart the engine before we hit the ground. Other factors were that [the pilot] was unfamiliar with the airplane and I [was not] double checking him." "The aircraft hit the ground before I could see [the ground]."

Examination of the airplane revealed the left main landing gear strut was sheared off and pushed up through the left wing. The left horizontal stabilizer was damaged and the fuselage

was partially buckled. Investigators on scene found the left wing tank was intact and contained approximately five to six gallons of fuel and the right wing tank was empty. The fuel selector was found in the left tank position.

A post accident engine inspection revealed the fuel inlet line and fuel vapor line were both dry and did not contain any fuel. Fuel was observed in the fuel manifold. The inspection did not reveal any abnormalities that would have prevented normal operation.

Co-pilot Information

Certificate:	Commercial; Private	**Age:**	40,Male
Airplane Rating(s):	Single-engine land; Multi-engine land	**Seat Occupied:**	Right
Other Aircraft Rating(s):	None	**Restraint Used:**	
Instrument Rating(s):	Airplane	**Second Pilot Present:**	Yes
Instructor Rating(s):	None	**Toxicology Performed:**	No
Medical Certification:	Class 2 With waivers/limitations	**Last FAA Medical Exam:**	March 27, 2009
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	November 8, 2008
Flight Time:	1020 hours (Total, all aircraft), 816 hours (Total, this make and model), 923 hours (Pilot In Command, all aircraft), 60 hours (Last 90 days, all aircraft), 16 hours (Last 30 days, all aircraft), 0 hours (Last 24 hours, all aircraft)		

Pilot Information

Certificate:	Commercial; Flight instructor	**Age:**	34,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:**	Yes
Instructor Rating(s):	Airplane multi-engine; Airplane single-engine	**Toxicology Performed:**	No
Medical Certification:	Class 1 Without waivers/limitations	**Last FAA Medical Exam:**	June 3, 2008
Occupational Pilot:	Yes	**Last Flight Review or Equivalent:**	September 23, 2008
Flight Time:	905 hours (Total, all aircraft), 1 hours (Total, this make and model), 858 hours (Pilot In Command, all aircraft), 419 hours (Last 90 days, all aircraft), 144 hours (Last 30 days, all aircraft), 2 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Beech	**Registration:**	N528BM
Model/Series:	35-C33	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Normal; Utility	**Serial Number:**	CD-1056
Landing Gear Type:	Retractable - Tricycle	**Seats:**	4
Date/Type of Last Inspection:	January 16, 2009 Unknown	**Certified Max Gross Wt.:**	3858 lbs
Time Since Last Inspection:		**Engines:**	1 Reciprocating
Airframe Total Time:	577 Hrs as of last inspection	**Engine Manufacturer:**	CONT MOTOR
ELT:	Installed, not activated	**Engine Model/Series:**	IO-520-BB
Registered Owner:	MARTIN BRYAN S	**Rated Power:**	260 Horsepower
Operator:	MARTIN BRYAN S	**Operating Certificate(s) Held:**	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Night
Observation Facility, Elevation:	ADS	**Distance from Accident Site:**	0 Nautical Miles
Observation Time:	21:10 Local	**Direction from Accident Site:**	0°
Lowest Cloud Condition:	Thin Overcast / 2900 ft AGL	**Visibility**	13 miles
Lowest Ceiling:	Overcast / 2900 ft AGL	**Visibility (RVR):**	
Wind Speed/Gusts:	8 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	320°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	29.94 inches Hg	**Temperature/Dew Point:**	16°C / 13°C
Precipitation and Obscuration:			
Departure Point:	Addison, TX (ADS)	**Type of Flight Plan Filed:**	None
Destination:	Hicks Airfield, TX (T67)	**Type of Clearance:**	Unknown
Departure Time:	21:05 Local	**Type of Airspace:**	

Airport Information

Airport:	Addison Airport ADS	**Runway Surface Type:**	
Airport Elevation:	644 ft msl	**Runway Surface Condition:**	Dry
Runway Used:	33	**IFR Approach:**	None
Runway Length/Width:	7202 ft / 100 ft	**VFR Approach/Landing:**	None

Wreckage and Impact Information

Crew Injuries:	2 Serious	**Aircraft Damage:**	Substantial
Passenger Injuries:		**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	2 Serious	**Latitude, Longitude:**	32.968612,-96.836387(est)

Administrative Information

Investigator In Charge (IIC):	Baker, Daniel
Additional Participating Persons:	Benoit Lafargue; Federal Aviation Administration; Dallas, TX John Kent; Teledyne Continental Motors; Mobile, AL
Original Publish Date:	April 22, 2010
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=73768