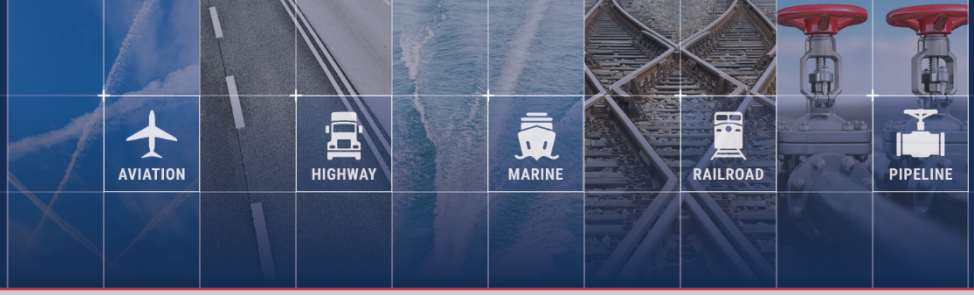

Aviation Investigation Final Report

Location:	Stillwater, Oklahoma	**Accident Number:**	CEN09FA230
Date & Time:	March 26, 2009, 20:30 Local	**Registration:**	N373E
Aircraft:	Cessna 337C	**Aircraft Damage:**	Substantial
Defining Event:	Fuel exhaustion	**Injuries:**	1 Fatal
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

Witnesses reported that the airplane departed a private airstrip and the engine or engines were running "rough or misfiring" before the engines "went silent" and the airplane impacted a ravine. The on-site examination of the airplane found that the left auxiliary and main fuel tanks contained about three gallons of fuel each, and that the right auxiliary and main fuel tanks contained less than a gallon total. The position of the fuel valves prior to impact could not be determined. The front fuel strainer/gascolator was found submerged and filled with water and the rear strainer/gascolator was found empty. The airframe and engine examinations did not reveal any abnormalities that would have prevented normal operation. Witnesses reported that the pilot was flying to another airport to refuel the airplane.

Probable Cause and Findings

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

Findings

Aircraft	Fuel - Fluid level
Personnel issues	Fuel planning - Pilot

Factual Information

History of Flight

Initial climb	Fuel exhaustion (Defining event)
Initial climb	Loss of engine power (total)
Maneuvering	Aerodynamic stall/spin
Maneuvering	Collision with terr/obj (non-CFIT)

HISTORY OF FLIGHT

On March 26, 2009, about 2030 central daylight time, a twin-engine, Cessna Skymaster 337 airplane, N373E, was substantially damaged upon impact with terrain shortly after departure from a private airstrip located about 7 miles south of Stillwater, Oklahoma. The airline transport pilot, the sole occupant, was fatally injured. The airplane was owned and operated by a private individual. No flight plan was filed and night visual meteorological conditions prevailed for the Title 14 Code of Federal Regulations Part 91 personal flight.

Several witnesses in the vicinity reported seeing or hearing the airplane depart the runway, and circle the area before the airplane impacted the ground. The witnesses added that the airplane was "low" and the engine (or engines were) running "rough or misfiring." They added that the engines went silent, before the airplane nosed sharply down. It was also reported that the pilot had intended to fly to the Stillwater Regional airport to refuel the airplane.

The NTSB Investigator in Charge (IIC), two Federal Aviation Administration (FAA) inspectors, and technical representatives from the airframe and engine manufacturers responded to the accident scene. After a preliminary inspection of the airplane and on-site documentation, the airplane wreckage was recovered and transported to a secure facility for further examination.

PERSONNEL INFORMATION

The pilot held an Airline Transport Pilot (ATP) license for airplane single and multi-engine land. His third class Federal Aviation Administration (FAA) medical was issued June, 2007. The former military and airline pilot's logbook was located and the pilot had recorded about 23,620 total flight hours.

AIRCRAFT INFORMATION

The airplane was a 1968 model Cessna 337, Skymaster, which was a twin-engine, push-pull configuration, high-wing, all-metal, retractable tricycle landing gear airplane. The airplane was powered by two Teledyne Continental Motors (TCM), IO-360-C, reciprocating engines, rated at 210 horsepower each. The last annual inspection was performed May 22, 2008, at a time of

3169.3 hours.

METEOROLOGICAL INFORMATION

At 2053, the automated weather observing system at the Stillwater Regional Airport, Stillwater, Oklahoma, approximately 10 miles north of the accident site, reported winds from 050 degrees at 10 knots, 10 miles visibility, a clear sky, temperature 51-degrees Fahrenheit, dew point 46-degrees Fahrenheit, and an altimeter setting of 29.71 inches of Mercury

COMMUNICATIONS

The pilot was not in communication with air traffic control at the time of the accident and no distress calls were reported.

WRECKAGE AND IMPACT INFORMATION

The airplane came to rest in a steep nose down, wings level attitude. The front engine and compartment was mostly submerged in water. All major components of the airplane were accounted for at the accident site. The impact site was a small ravine, which contained several large trees. The ground and impact signatures were consistent with the airplane being in a nose low attitude during the collision.

The forward engine and cabin areas were largely destroyed by the impact. The left and right wings and tail booms remained attached to the fuselage. The main landing gear were extended and the flaps were retracted. The tail surfaces were attached in their respective positions, and exhibited only minor damage. Control continuity to the flight controls was established up to the front cabin area.

The overhead fuel selector panel and control cables were broken/stretched and the position of the fuel valves prior to impact could not be determined. The left auxiliary and main wing fuel tanks contained approximately 3 gallons of fuel each. The right wing and auxiliary fuel tanks contained a total of about a gallon of fuel. The front fuel strainer/gascolator was found submerged and filled with water. The rear strainer/gascolator was found empty. The on-site examination of the engines failed to identify any pre-impact malfunctions.

The airplane's rear engine was removed from the airframe and shipped to the TCM engine test facility, and on April 27-28, 2009, the engine was examined under the supervision of the NTSB IIC, and technical representatives from Teledyne Continental Motors (TCM) and Cessna Aircraft Company.

In order to run the engine, several minor components were either replaced or removed. Those items mainly consisted of the engine mounts, oil cooler, and magneto assembly cover. The rear engine was placed in an engine test cell. The engine was then fitted with a test propeller. The engine started, and then run for several minutes at various (idle to full) power settings.

During the tests, the engine was able to produce rated horsepower, without hesitation or interruption.

The front engine was removed from the airframe to facilitate an inspection. On May 7, 2009, the NTSB IIC along with technical representatives from the engine and airframe manufacturers examined the front engine at the salvage facility. The engine displayed accident impact forces with the crankshaft propeller flange separated from the crankshaft. The sparkplugs were removed from the engine and appeared "normal." The engine was rotated by hand; continuity through the engine was established. A thumb compression and borescope inspection was conducted on each cylinder. The left and right magnetos, which had been submerged in water, were dried, and then rotated by hand and produced spark at all the magneto posts. The inspection did not reveal any abnormalities that would have prevented normal engine operation.

The front propeller remained attached to the engine crankshaft flange. One propeller blade had a "forward" curve starting about mid-span. The other blade had a slight gentle curve towards the non-cambered side, starting near the root of the blade.

The rear propeller remained attached to the engine. During the accident sequence the rear engine moved forward, and the propeller contacted the engine cowling. The propeller rotated less than one complete revolution, once in contact with the cowling. The rear propeller blades had no apparent damage.

MEDICAL AND PATHOLOGICAL INFORMATION

The Oklahoma Office of the Chief Medical Examiner, Oklahoma City, Oklahoma, conducted autopsy the pilot on March 27, 2009. The cause of death was determined to be chest trauma, crushing blunt force.

The FAA Toxicology Accident Research Library, Oklahoma City, Oklahoma, conducted toxicological Testing. The pilot tested negative for carbon monoxide, cyanide, ethanol, and drugs.

Pilot Information

Certificate:	Airline transport	**Age:**	58,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 Without waivers/limitations	**Last FAA Medical Exam:**	June 1, 2007
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	September 19, 2008
Flight Time:	23620 hours (Total, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Cessna	**Registration:**	N373E
Model/Series:	337C	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	337-0937
Landing Gear Type:	Retractable - Tricycle	**Seats:**	6
Date/Type of Last Inspection:	May 22, 2008 Annual	**Certified Max Gross Wt.:**	
Time Since Last Inspection:		**Engines:**	2 Reciprocating
Airframe Total Time:	3169 Hrs as of last inspection	**Engine Manufacturer:**	CONT MOTOR
ELT:	C91 installed, not activated	**Engine Model/Series:**	IO-360 SER
Registered Owner:	On file	**Rated Power:**	210 Horsepower
Operator:	On file	**Operating Certificate(s) Held:**	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Night/dark
Observation Facility, Elevation:	KSWO	**Distance from Accident Site:**	10 Nautical Miles
Observation Time:		**Direction from Accident Site:**	
Lowest Cloud Condition:	Clear	**Visibility**	10 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	10 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	50°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	29.7 inches Hg	**Temperature/Dew Point:**	11°C / 8°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Stillwater, OK	**Type of Flight Plan Filed:**	Unknown
Destination:		**Type of Clearance:**	None
Departure Time:		**Type of Airspace:**	

Wreckage and Impact Information

Crew Injuries:	1 Fatal	**Aircraft Damage:**	Substantial
Passenger Injuries:		**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	1 Fatal	**Latitude, Longitude:**	36.079765,-97.069717(est)

Administrative Information

Investigator In Charge (IIC):	Hatch, Craig
Additional Participating Persons:	Earnest Holdsclaw; FAA FSDO; Oklahoma City, OK Rocky Patel; FAA FSDO; Oklahoma City, OK Steve Miller; Cessna Aircraft Company; Wichita, KS Jason Lukasik; Teledyne Continental Motors; Mobile, AL
Original Publish Date:	March 3, 2010
Last Revision Date:	
Investigation Class:	Class
Note:	The NTSB traveled to the scene of this accident.
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=73562