Aviation Investigation Final Report

Location:	Tillatoba, Mississippi	**Accident Number:**	ERA12LA543
Date & Time:	September 2, 2012, 20:54 Local	**Registration:**	N761YN
Aircraft:	Cessna T210M	**Aircraft Damage:**	Substantial
Defining Event:	Fuel exhaustion	**Injuries:**	1 Serious
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

When the pilot planned the long cross-country flight, he told flight service personnel that he expected to have to deviate due to thunderstorms. The pilot further stated that he would stop short of the destination airport if he could not safely navigate around thunderstorm cells. About 5 hours into the flight, the pilot notified an air traffic controller that he was going to deviate to a nearby alternate airport, which was in clear weather conditions. As a result, flight-following services were terminated when the airplane was about 10 miles from the alternate airport. According to global positioning system (GPS) data and a witness on the ground, the airplane flew safely over the alternate airport and circled; however, rather than land, the airplane continued to fly toward the original planned destination. About 10 minutes later, GPS data showed that the airplane reversed its course toward the alternate airport. The airplane's engine subsequently lost total engine power and the airplane collided with trees during the ensuing forced landing. The pilot reported that he was unable to recall the accident sequence because of accident-related injuries.

Postaccident examination of the engine, which included a successful test-run, did not reveal any preimpact mechanical malfunctions. At the time of the accident, the airplane had flown 5 hours 28 minutes without refueling. According to the pilot's operating handbook for the accident airplane, the airplane's endurance at 70% power was about 5 hours 10 minutes, not accounting for fuel used during engine start, taxi, takeoff, or climb.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be:

The pilot's improper fuel management and his decision to continue flight in deteriorating weather conditions with low fuel, which resulted in a total loss of engine power due to fuel exhaustion.

Findings

Personnel issues	Decision making/judgment - Pilot
Personnel issues	Fuel planning - Pilot
Aircraft	Fuel - Fluid management

Factual Information

History of Flight

Enroute-cruise	Course deviation
Enroute-cruise	Fuel exhaustion (Defining event)
Enroute-cruise	Loss of engine power (total)
Emergency descent	Off-field or emergency landing
Emergency descent	Collision with terr/obj (non-CFIT)

On September 2, 2012, at 2054 central daylight time, a Cessna T210M, N761YN, operated by a private individual, was substantially damaged when it impacted trees during a forced landing, following a total loss of engine power while in cruise flight near Tillatoba, Mississippi. The private pilot was seriously injured. The personal flight was conducted under the provisions of 14 Code of Federal Regulations Part 91. Night visual meteorological conditions prevailed and no flight plan was filed for the flight that departed Suffolk Executive Airport (SFQ), Suffolk, Virginia, about 1526; destined for Olive Branch Airport (OLV), Olive Branch, Mississippi.

The pilot telephoned flight service at 1505 and received a weather briefing for the planned visual flight rules (VFR) flight from SFQ to OLV. The flight service specialist advised of thunderstorms along the planned route of flight due to the remnants of Hurricane Isaac and he did not recommend VFR flight. The pilot remarked about deviating south to avoid thunderstorms, rather than flying a direct route to his planned destination. He further indicated that he may delay the flight, or land at a closer airport if weather deteriorated, and he declined any further weather briefing information from the flight service specialist.

According to a fuel receipt, the airplane was completely fueled at SFQ about 1 hour prior to departure. Review of data recovered from a handheld global positioning system (GPS) receiver revealed that the airplane departed at 1526 and flew a course south of a direct route to OLV. Additionally, the airplane did not stop while enroute to OLV. The last GPS point was recorded near the accident site at 2054, indicating a GPS altitude of 469 feet and a groundspeed of 67 knots. The GPS data indicated that the accident flight was 5 hours 28 minutes long.

According to data from the Federal Aviation Administration (FAA), the airplane was in radio and radar contact with Memphis Center. At 1925, the controller advised the pilot of severe weather at OLV. The pilot acknowledged the information and added that he was seeing the same thing at OLV. At 1955, the pilot stated that he was still 45 minutes away from OLV due to deviations and that the severe weather may move out of the area by the time he arrived. At 2010, the Memphis Center controller telephoned a Memphis Approach controller to get more weather information pertaining to OLV. The Memphis Approach controller advised that the severe weather was moving to the southeast at only 12 knots and it would be a while before it was clear of the area. The Memphis Center controller relayed the information to the pilot,

which he acknowledged. The pilot then advised that he planned to divert to University-Oxford Airport (UOX), Oxford, Mississippi, which the controller acknowledged.

At 2024, the pilot advised that he was diverting to Water Valley Municipal Airport (33M), Water Valley, Mississippi, as lighting was getting too close to UOX. The controller acknowledged the new destination, advised of no traffic between the airplane and 33M, and terminated radar services with an instruction to the pilot to enter a VFR transponder code. The pilot acknowledged the instruction and thanked the controller for his help. No further communications were received from the accident airplane. At that time, the airplane was about 10 miles south of 33M. It descended and circled over 33M at 2029, but then continued north until 2040, where it reversed course near Panola County Airport (PMU), Batesville, Mississippi. The airplane subsequently flew in a southerly direction until the end of the data, which was approximately 13 miles west-southwest of 33M.

A witness, who was driving his car near 33M about 2030, stated that he saw an airplane with its landing lights on and descending, as if it was going to land at 33M. At the time, the weather conditions were good at the airport with no ceiling, a slight breeze, and the runway lights were on. The airplane then flew northwest parallel to the runway and the witness thought that the pilot was setting up for an approach from the north; however, the airplane continued northwest out of sight. At the time, severe storms were present to the north and northeast.

Examination of the wreckage by an FAA inspector revealed that both wings separated during impact and no evidence of fuel was observed in the vicinity of the accident site. Additionally, the propeller blades exhibited little to no rotational damage. The engine was examined after the airplane was recovered to a hangar. The examination, which included a successful test-run of the engine, did not reveal any preimpact mechanical malfunctions.

The pilot held a private pilot certificate, with ratings for airplane single-engine land and instrument airplane. His most recent FAA third-class medical certificate was issued on August 26, 2010. At that time, the pilot reported a total flight experience of 2,525 hours. Due to his injuries, the pilot could not recall the accident sequence.

Review of an endurance chart, contained in a pilot's operating handbook for the same make and model airplane, revealed that at 70 percent power, the airplane had an endurance of approximately 5 hours 10 minutes, which did not account for fuel used for engine start, taxi, takeoff, and climb.

Pilot Information

Certificate:	Private	**Age:**	59,Male
Airplane Rating(s):	Single-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:**	No
Medical Certification:	Class 3 With waivers/limitations	**Last FAA Medical Exam:**	August 26, 2010
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	
Flight Time:	2525 hours (Total, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Cessna	**Registration:**	N761YN
Model/Series:	T210M	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	21062626
Landing Gear Type:	Retractable - Tricycle	**Seats:**	6
Date/Type of Last Inspection:	October 13, 2011 Annual	**Certified Max Gross Wt.:**	3800 lbs
Time Since Last Inspection:	34 Hrs	**Engines:**	1 Reciprocating
Airframe Total Time:	4270 Hrs as of last inspection	**Engine Manufacturer:**	CONT MOTOR
ELT:	Installed, activated, aided in locating accident	**Engine Model/Series:**	TSIO-520-R
Registered Owner:	BYRD KENNETH M	**Rated Power:**	285 Horsepower
Operator:	BYRD KENNETH M	**Operating Certificate(s) Held:**	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Night
Observation Facility, Elevation:	UOX,452 ft msl	**Distance from Accident Site:**	27 Nautical Miles
Observation Time:	20:35 Local	**Direction from Accident Site:**	35°
Lowest Cloud Condition:	Clear	**Visibility**	10 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	9 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	230°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	29.85 inches Hg	**Temperature/Dew Point:**	29°C / 22°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Suffolk, VA (SFQ)	**Type of Flight Plan Filed:**	None
Destination:	Olive Branch, MS (OLV)	**Type of Clearance:**	VFR flight following
Departure Time:	15:26 Local	**Type of Airspace:**	

Wreckage and Impact Information

Crew Injuries:	1 Serious	**Aircraft Damage:**	Substantial
Passenger Injuries:		**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	1 Serious	**Latitude, Longitude:**	34.008056,-89.865837(est)

Administrative Information

Investigator In Charge (IIC):	Gretz, Robert
Additional Participating Persons:	Robert F Mahaffey; FAA/FSDO; Jackson, MS Nicole Charnon; Continental Motors Inc.; Mobile, AL Andrew Hall; Cessna Aircraft Company; Wichita, KS
Original Publish Date:	May 9, 2013
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=84885