



# Aviation Investigation Final Report

<b>Location:</b>	Nacogdoches, Texas	<b>Accident Number:</b>	CEN11LA112
<b>Date &amp; Time:</b>	December 15, 2010, 19:45 Local	<b>Registration:</b>	N422MR
<b>Aircraft:</b>	CIRRUS DESIGN CORP SR22	<b>Aircraft Damage:</b>	Substantial
<b>Defining Event:</b>	Loss of engine power (total)	<b>Injuries:</b>	1 Minor
<b>Flight Conducted Under:</b>	Part 91: General aviation - Executive/Corporate		

## Analysis

The airplane was in cruise flight when the airplane’s propeller began to surge and the engine power dropped to near idle. The pilot adjusted the throttle, selected another fuel tank, and activated the electric fuel boost pump, to no avail. The pilot saw an airport nearby, so he cancelled his instrument flight rules flight plan and set up the airplane’s best glide to that airport. During the glide, the pilot tried unsuccessfully to restart the engine. About 1,000 feet above ground level, the pilot realized that he was not going to reach the airport and activated the airplane’s ballistic parachute. Seconds later, the airplane impacted trees before coming to rest inverted on the ground. The pilot reported that he smelled fuel when he exited the airplane. Postaccident testing of the airplane’s engine did not reveal any preaccident mechanical malfunctions or anomalies that would have precluded normal operation.

## Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The total loss of engine power during cruise flight for undetermined reasons.

## Findings

<b>Aircraft</b>	(general) - Failure
<b>Not determined</b>	(general) - Unknown/Not determined

## Factual Information

### History of Flight

#### Enroute-cruise

Loss of engine power (total) (Defining event)

On December 15, 2010, about 1945 Central Standard Time, a single-engine Cirrus Design SR22, N422MR, was substantially damaged during impact with terrain following a loss of engine power near Nacogdoches, Texas. The airline transport rated pilot, the sole occupant, sustained minor injuries. The airplane was registered to Fifth Third Leasing Company of Cincinnati, Ohio, and was being operated by Martin Companies of Kilgore, Texas. Night visual meteorological conditions prevailed and an instrument flight rules (IFR) flight plan was filed for the 14 Code of Federal Regulations Part 91 flight. The cross-country flight originated from the La Porte Municipal Airport (T41), La Porte, Texas, and was en route to the East Texas Regional Airport (GGG), Longview, Texas.

According to the pilot, after dropping off a passenger at T41 he departed for a return trip to GGG. While en route, the propeller began to surge and the engine power dropped to near idle. The pilot attempted to troubleshoot the problem by adjusting the throttle, selecting another fuel tank, and turning the electric engine fuel boost pump on; however, it did not help. Observing an airport nearby, the pilot elected to cancel his IFR flight plan and set up best glide in an attempt to reach the airport. During the glide the pilot attempted an engine restart, which was not successful.

When down to about 1,000 feet above ground level (AGL), the pilot observed that he was not going to make the airport, and elected to activate the airplane's ballistic parachute. Seconds later the airplane impacted trees before coming to rest inverted on the ground in a yard of a residence. The pilot was able to exit the airplane unassisted. As the pilot was exiting the airplane, the homeowner came outside to determine what had happened. He said he heard no engine noises, just the sound of something crashing through the trees. The pilot warned the homeowner to be cautious due to the smell of fuel. The homeowner noted the smell. The airplane was recovered for further examination.

The airplane was examined at Lancaster, Texas, on December 22, 2010. An examination of the airplane's engine showed continuity through the crankshaft, piston rods and pistons. A boroscope examination of the cylinders showed normal fuel combustion deposits. Continuity was confirmed through camshaft, pushrods and valves. The fuel pump was removed and examined. A small amount of fuel was observed coming from the fuel inlet line to the fuel pump. The airplane's engine was test run on the airframe. The engine was started, allowed to warm up at idle, and then advanced to 1,700 rpm to check the magnetos. The throttle was then advanced to 2,700 rpm and to full power. All engine indications showed normal. After about 10 minutes, the engine was shut down using the mixture control. The examination did not reveal

any anomalies that would have prevented normal operation and production of rated horsepower. No other anomalies with the airplane were found.

The airplane was fueled the day before the flight with 42 gallons of 100 low lead. The airplane was flown on the day of the accident in the morning by another pilot. That pilot burned about 27.5 gallons of fuel. The pilot was notified soon afterward about flying a passenger to T41 that afternoon. The pilot had a mechanic take the airplane to the fuel pumps and had it filled “to the tabs.” Before taking off for T41, the pilot visually checked the fuel. Both tanks were filled to about one inch above the tabs. The pilot burned about 22 gallons of fuel on the flight to T41. The pilot dropped off the passenger and took off on the return leg for GGG. On level off, the pilot noted the fuel, figured he would burn 25 gallons during the one hour flight, leaving 20 gallons remaining on landing.

The SR22 Pilot's Operating Handbook reads that the airplane has a total fuel capacity of 84 gallons, 42 gallons per the two fuel tanks. The total usable fuel in level flight is 81 gallons. The unusable fuel is 3 gallons or 1.5 gallons per fuel tank.

### Pilot Information

<b>Certificate:</b>	Airline transport	<b>Age:</b>	41, Male
<b>Airplane Rating(s):</b>	Single-engine land; Multi-engine land	<b>Seat Occupied:</b>	Left
<b>Other Aircraft Rating(s):</b>	None	<b>Restraint Used:</b>	
<b>Instrument Rating(s):</b>	Airplane	<b>Second Pilot Present:</b>	No
<b>Instructor Rating(s):</b>	None	<b>Toxicology Performed:</b>	No
<b>Medical Certification:</b>	Class 2 Without waivers/limitations	<b>Last FAA Medical Exam:</b>	May 10, 2010
<b>Occupational Pilot:</b>	Yes	<b>Last Flight Review or Equivalent:</b>	April 6, 2010
<b>Flight Time:</b>	6000 hours (Total, all aircraft), 430 hours (Total, this make and model), 5500 hours (Pilot In Command, all aircraft), 110 hours (Last 90 days, all aircraft), 40 hours (Last 30 days, all aircraft), 5 hours (Last 24 hours, all aircraft)		

## Aircraft and Owner/Operator Information

<b>Aircraft Make:</b>	CIRRUS DESIGN CORP	<b>Registration:</b>	N422MR
<b>Model/Series:</b>	SR22	<b>Aircraft Category:</b>	Airplane
<b>Year of Manufacture:</b>		<b>Amateur Built:</b>	
<b>Airworthiness Certificate:</b>	Normal	<b>Serial Number:</b>	2789
<b>Landing Gear Type:</b>	Tricycle	<b>Seats:</b>	4
<b>Date/Type of Last Inspection:</b>	September 2, 2010 Annual	<b>Certified Max Gross Wt.:</b>	3400 lbs
<b>Time Since Last Inspection:</b>		<b>Engines:</b>	1 Reciprocating
<b>Airframe Total Time:</b>	1126 Hrs at time of accident	<b>Engine Manufacturer:</b>	CONT MOTOR
<b>ELT:</b>	Installed, activated, did not aid in locating accident	<b>Engine Model/Series:</b>	IO-550-N
<b>Registered Owner:</b>	FIFTH THIRD LEASING CO	<b>Rated Power:</b>	310 Horsepower
<b>Operator:</b>	Martin Companies	<b>Operating Certificate(s) Held:</b>	None

## Meteorological Information and Flight Plan

<b>Conditions at Accident Site:</b>	Visual (VMC)	<b>Condition of Light:</b>	Night/dark
<b>Observation Facility, Elevation:</b>	OCH,355 ft msl	<b>Distance from Accident Site:</b>	2 Nautical Miles
<b>Observation Time:</b>	18:55 Local	<b>Direction from Accident Site:</b>	180°
<b>Lowest Cloud Condition:</b>	Clear	<b>Visibility</b>	10 miles
<b>Lowest Ceiling:</b>	None	<b>Visibility (RVR):</b>	
<b>Wind Speed/Gusts:</b>	7 knots /	<b>Turbulence Type Forecast/Actual:</b>	/
<b>Wind Direction:</b>	10°	<b>Turbulence Severity Forecast/Actual:</b>	/
<b>Altimeter Setting:</b>	29.94 inches Hg	<b>Temperature/Dew Point:</b>	11°C / 3°C
<b>Precipitation and Obscuration:</b>	No Obscuration; No Precipitation		
<b>Departure Point:</b>	La Porte, TX (T41 )	<b>Type of Flight Plan Filed:</b>	IFR
<b>Destination:</b>	Longview, TX (GGG )	<b>Type of Clearance:</b>	IFR
<b>Departure Time:</b>	19:15 Local	<b>Type of Airspace:</b>	

## Wreckage and Impact Information

<b>Crew Injuries:</b>	1 Minor	<b>Aircraft Damage:</b>	Substantial
<b>Passenger Injuries:</b>		<b>Aircraft Fire:</b>	None
<b>Ground Injuries:</b>	N/A	<b>Aircraft Explosion:</b>	None
<b>Total Injuries:</b>	1 Minor	<b>Latitude, Longitude:</b>	31.610624,-94.650497(est)

## Administrative Information

<b>Investigator In Charge (IIC):</b>	LeBaron, Timothy
<b>Additional Participating Persons:</b>	Robert D Idema; Federal Aviation Administration; Houston, TX Anthony Blake; Martin Resource Management Company; Kilgore, TX Brad Miller; Cirrus Design; Duluth, MN John T Kent; Teledyne Continental Motors; Mobile, AL
<b>Original Publish Date:</b>	August 7, 2012
<b>Last Revision Date:</b>	
<b>Investigation Class:</b>	<a href="#">Class</a>
<b>Note:</b>	
<b>Investigation Docket:</b>	<a href="https://data.nts.gov/Docket?ProjectID=78022">https://data.nts.gov/Docket?ProjectID=78022</a>

The National Transportation Safety Board (NTSB) is an independent federal agency charged by Congress with investigating every civil aviation accident in the United States and significant events in other modes of transportation—railroad, transit, highway, marine, pipeline, and commercial space. We determine the probable causes of the accidents and events we investigate, and issue safety recommendations aimed at preventing future occurrences. In addition, we conduct transportation safety research studies and offer information and other assistance to family members and survivors for each accident or event we investigate. We also serve as the appellate authority for enforcement actions involving aviation and mariner certificates issued by the Federal Aviation Administration (FAA) and US Coast Guard, and we adjudicate appeals of civil penalty actions taken by the FAA.

The NTSB does not assign fault or blame for an accident or incident; rather, as specified by NTSB regulation, “accident/incident investigations are fact-finding proceedings with no formal issues and no adverse parties ... and are not conducted for the purpose of determining the rights or liabilities of any person” (Title 49 *Code of Federal Regulations* section 831.4). Assignment of fault or legal liability is not relevant to the NTSB’s statutory mission to improve transportation safety by investigating accidents and incidents and issuing safety recommendations. In addition, statutory language prohibits the admission into evidence or use of any part of an NTSB report related to an accident in a civil action for damages resulting from a matter mentioned in the report (Title 49 *United States Code* section 1154(b)). A factual report that may be admissible under 49 *United States Code* section 1154(b) is available [here](#).