Aviation Investigation Final Report

Location:	Athens, Texas	**Accident Number:**	DEN08LA129
Date & Time:	July 26, 2008, 13:15 Local	**Registration:**	N6257E
Aircraft:	Cessna 172	**Aircraft Damage:**	Substantial
Defining Event:	Aerodynamic stall/spin	**Injuries:**	1 Serious, 2 Minor
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The pilot stated that prior to the accident flight, he told the fixed based operator that the airplane was "slightly off in performance" and the engine had a "tendency" to "build up carbon." On the day of the accident, the pilot fueled the airplane, and after thorough preflight and engine run-up checks that did not disclose any anomalies, he initiated the accident takeoff. The pilot stated that during the climb, there seemed to be a lack of engine power. A witness stated that the airplane "seemed to accelerate very slowly, however the engine sounded fine." The witness also stated that the airplane "continued to try to climb without much luck." The airplane started to descend, and the pilot stated that he attempted to maintain altitude. The pilot further stated that the engine power continued to decrease, and the stall horn sounded just above the tree tops. He attempted to "get the nose up" to expose the belly of the airplane to the obstacles ahead. The airplane impacted the trees and came to rest upright about one-half mile southwest of the airport. It was substantially damaged during the impact sequence. Postaccident examination of the airplane and engine did not reveal any mechanical malfunctions. The engine was started by investigators without hesitation and ran for several minutes. Maintenance records indicated that a "top overhaul" was conducted on the engine about 2 years prior to the accident, and that the last recorded annual inspection was about 10 years prior to the accident. The pilot did not hold a pilot certificate or current medical certificate.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: A partial loss of engine power during initial climb due to undetermined reasons, which led to an uncontrolled descent and subsequent aerodynamic stall. Contributing to the accident was the pilot's improper preflight decision to attempt the flight with a suspected engine problem.

Findings

Aircraft	Angle of attack - Not attained/maintained
Personnel issues	(general) - Pilot
Personnel issues	Qualification/certification - Pilot
Aircraft	(general) - Not specified

Factual Information

History of Flight

Initial climb	Aerodynamic stall/spin (Defining event)
Uncontrolled descent	Collision with terr/obj (non-CFIT)

On July 26, 2008, approximately 1315 central daylight time, a Cessna 172, N6257E, owned and piloted by a non-certificated pilot, was substantially damaged when it impacted trees shortly after departure from Athens Municipal Airport, Athens, Texas. Visual meteorological conditions prevailed at the time of the accident. The personal flight was being conducted under the provisions of Title 14 Code of Federal Regulations Part 91 without a flight plan. The pilot and front seat passenger sustained minor injuries; the rear seat passenger was seriously injured. The cross country flight was originating at the time of the accident and was en route to Liberty, Texas.

According to a telephone conversation with the pilot, he had flown to Athens to pick up his daughter. After fueling, and a thorough preflight and run-up, the airplane departed runway 17 (3,988 feet by 60 feet, asphalt). The pilot reported no anomalies prior to takeoff. He stated that during the climb, there seemed to be a lack of power. The airplane started to descend and he attempted to maintain altitude. The pilot stated that the rpms continued to decrease and the stall horn sounded just above the tree tops. He tried to "get the nose up" to expose the belly of the airplane to the obstacles ahead. The airplane impacted the trees and came to rest upright, 1/2 mile southwest of the airport.

According to the airport manager who witnessed the accident, just prior to departure, the pilot had the airplane topped off and loaded two large bags into the airplane. He reported that the airplane "seemed to accelerate very slowly, however the engine sounded fine." He stated that at "two thousand feet down the runway" the pilot "pulled the nose of the aircraft up." The airplane "continued to try to climb without much luck", turned to miss the taller trees, and eventually disappeared.

According to the Federal Aviation Administration Airworthiness (FAA) inspector who traveled to the scene, both wings were crushed aft, the landing gear had collapsed, and the firewall was wrinkled. The airplane was recovered and relocated to Lancaster, Texas, for further examination.

In a written statement submitted by the pilot, he had spoken with the "FBO operator" about the airplane being "slightly off in performance" and the FBO operator suggested he "burn off [the] carbon" prior to takeoff. The pilot reported that he ran the engine to 1,800 rpm, leaned the mixture to the point that the engine "quit", then enrichened the mixture and allowed the engine to run an additional five minutes before takeoff. The pilot wrote that he felt the "tendency" of

the airplane engine "to build up carbon" should be considered in this accident.

On August 29, 2008, the maintenance records, airframe, airplane systems, and engine were examined by representatives from Cessna Aircraft, and Teledyne Continental Motors, under the auspices of the FAA. According to the maintenance records, a "top overhaul" was conducted on the engine in Brownsville, Texas, on November 13, 2006. No annual inspection was recorded to coincide with this maintenance. The most recent annual inspection recorded in the records took place on May 22, 1989. The engine started without hesitation or issues and ran for several minutes. An examination of the remaining systems revealed no anomalies.

According to the FAA database the pilot did not hold a pilot certificate or current medical certificate.

The closest weather observation station recorded a temperature of 91 degrees Fahrenheit. Density altitude was calculated to be between 2,509 and 2,804 feet. A weight and balance calculation revealed the airplane was at an estimated gross weight of 2,037 pounds, and within the performance envelope at the time of take-off. According to Cessna Aircraft, the airplane would have required no less than 1,604 feet to clear a 50 foot obstacle with an expected rate of climb of 647 feet per minute.

Pilot Information

Certificate:	None	**Age:**	52,Male
Airplane Rating(s):	None	**Seat Occupied:**	Left
Other Aircraft Rating(s):	None	**Restraint Used:**	
Instrument Rating(s):	None	**Second Pilot Present:**	No
Instructor Rating(s):	None	**Toxicology Performed:**	No
Medical Certification:	None None	**Last FAA Medical Exam:**	May 1, 2004
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	
Flight Time:	600 hours (Total, all aircraft), 6 hours (Last 90 days, all aircraft), 2 hours (Last 30 days, all aircraft), 2 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Cessna	**Registration:**	N6257E
Model/Series:	172	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	46357
Landing Gear Type:	Tricycle	**Seats:**	4
Date/Type of Last Inspection:	May 1, 1989 Annual	**Certified Max Gross Wt.:**	2200 lbs
Time Since Last Inspection:		**Engines:**	1 Reciprocating
Airframe Total Time:		**Engine Manufacturer:**	Teledyne Continental Motors
ELT:	Installed, activated, did not aid in locating accident	**Engine Model/Series:**	O-300A
Registered Owner:	On file	**Rated Power:**	145 Horsepower
Operator:	On file	**Operating Certificate(s) Held:**	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	TYR,544 ft msl	**Distance from Accident Site:**	24 Nautical Miles
Observation Time:	12:53 Local	**Direction from Accident Site:**	45°
Lowest Cloud Condition:	Clear	**Visibility**	10 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	10 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	240°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	30.11 inches Hg	**Temperature/Dew Point:**	33°C / 20°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Athens, TX (F44)	**Type of Flight Plan Filed:**	None
Destination:	Liberty, TX (T78)	**Type of Clearance:**	None
Departure Time:	13:15 Local	**Type of Airspace:**	

Airport Information

Airport:	Athens F44	**Runway Surface Type:**	Asphalt
Airport Elevation:	444 ft msl	**Runway Surface Condition:**	Dry
Runway Used:	17	**IFR Approach:**	None
Runway Length/Width:	3988 ft / 60 ft	**VFR Approach/Landing:**	None

Wreckage and Impact Information

Crew Injuries:	1 Minor	**Aircraft Damage:**	Substantial
Passenger Injuries:	1 Serious, 1 Minor	**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	1 Serious, 2 Minor	**Latitude, Longitude:**	32.163612,-95.82833

Administrative Information

Investigator In Charge (IIC):	Rodi, Jennifer
Additional Participating Persons:	Marcus Taite; Flight Standards District Office; Dallas, TX Mike Koontz; Cessna Aircraft Company; Wichita, KS John Kent; Teledyne Continental Motors; Mobile, AL
Original Publish Date:	April 15, 2009
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=68533