Aviation Investigation Final Report

Location:	Brenham, Texas	**Accident Number:**	CEN17LA093
Date & Time:	January 30, 2017, 15:48 Local	**Registration:**	N7039H
Aircraft:	Piper J3C	**Aircraft Damage:**	Substantial
Defining Event:	Loss of engine power (partial)	**Injuries:**	2 None
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The student pilot and flight instructor were conducting a personal flight. The flight instructor reported that the pretakeoff checks were "normal" but that, during the takeoff, the engine felt "weak" and that the engine lost power during the initial climb. The flight instructor conducted a forced landing to a field, during which the airplane impacted the top of a tree and then the ground.

Examination of the airplane revealed that the exhaust valve for the No. 4 cylinder was stuck in the "open" position possibly due to excessive deposits from the combustion process. It is likely that the stuck exhaust valve resulted in the partial loss of engine power reported by the flight instructor.

Probable Cause and Findings

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

The reciprocating engine's exhaust valve being stuck in the "open" position, which resulted in a partial loss of engine power during initial climb.

Findings

Aircraft	Recip engine power section - Not specified
Environmental issues	Tree(s) - Contributed to outcome

Factual Information

History of Flight

Initial climb	Loss of engine power (partial) (Defining event)
Landing	Collision with terr/obj (non-CFIT)

On January 30, 2017, about 1538 central standard time, a Piper J3C airplane, N7039H, sustained substantial damage during a forced landing following a partial loss of engine power during initial climb after takeoff near Brenham, Texas. The student pilot and flight instructor were not injured. The airplane's fuselage and wings were damaged during the forced landing. The aircraft was registered to and operated by the student pilot under the provisions of 14 Code of Federal Regulations Part 91 as a personal flight. Visual meteorological conditions prevailed for the flight, which was not on a flight plan. The flight was originating at the time of the accident for an unconfirmed destination.

The flight instructor reported that pre-takeoff engine checks were normal. He noted that during the takeoff he and the student pilot noticed that the engine felt "weak" but thought it was due to being unaccustomed to the airplane. The flight instructor said that he verified that the magneto switch was in the both position , the primer was locked, and the carburetor heat was off. By this time the remaining usable runway had been exhausted and the airplane was sinking with full throttle applied. He selected a field in which to execute a landing but the airplane impacted the top of a tree and then the ground during the forced landing.

Examination of the airplane by a Federal Aviation Administration Inspector revealed that the exhaust valve for the No. 4 cylinder was stuck in the open position due to excessive deposits from the combustion process.

Flight instructor Information

Certificate:	Commercial	**Age:**	36,Male
Airplane Rating(s):	Single-engine land; Single-engine sea; Multi-engine land	**Seat Occupied:**	Rear
Other Aircraft Rating(s):	None	**Restraint Used:**	3-point
Instrument Rating(s):	Airplane	**Second Pilot Present:**	Yes
Instructor Rating(s):	Airplane single-engine; Instrument airplane	**Toxicology Performed:**	No
Medical Certification:	Class 3 Without waivers/limitations	**Last FAA Medical Exam:**	May 23, 2012
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	
Flight Time:			

Student pilot Information

Certificate:	Student	**Age:**	41,Male
Airplane Rating(s):	None	**Seat Occupied:**	Front
Other Aircraft Rating(s):	None	**Restraint Used:**	3-point
Instrument Rating(s):	None	**Second Pilot Present:**	Yes
Instructor Rating(s):	None	**Toxicology Performed:**	No
Medical Certification:	Class 3 Without waivers/limitations	**Last FAA Medical Exam:**	December 5, 2016
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	
Flight Time:			

Aircraft and Owner/Operator Information

Aircraft Make:	Piper	**Registration:**	N7039H
Model/Series:	J3C	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	4601
Landing Gear Type:	Tailwheel	**Seats:**	2
Date/Type of Last Inspection:	July 4, 2016 Annual	**Certified Max Gross Wt.:**	
Time Since Last Inspection:	27 Hrs	**Engines:**	1 Reciprocating
Airframe Total Time:	6749 Hrs as of last inspection	**Engine Manufacturer:**	CONT MOTOR
ELT:		**Engine Model/Series:**	A75-8F(C)8
Registered Owner:	On file	**Rated Power:**	75 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:	11R,318 ft msl	**Distance from Accident Site:**	0 Nautical Miles
Observation Time:	19:35 Local	**Direction from Accident Site:**	0°
Lowest Cloud Condition:	Clear	**Visibility**	10 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	9 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	240°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	30.18 inches Hg	**Temperature/Dew Point:**	25°C / -4°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	BRENHAM, TX (11R)	**Type of Flight Plan Filed:**	None
Destination:	Waco, TX	**Type of Clearance:**	None
Departure Time:		**Type of Airspace:**	Class G

Airport Information

Airport:	BRENHAM MUNI 11R	**Runway Surface Type:**	Asphalt
Airport Elevation:	317 ft msl	**Runway Surface Condition:**	Vegetation
Runway Used:	16	**IFR Approach:**	None
Runway Length/Width:	6003 ft / 75 ft	**VFR Approach/Landing:**	Forced landing

Wreckage and Impact Information

Crew Injuries:	2 None	**Aircraft Damage:**	Substantial
Passenger Injuries:		**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	2 None	**Latitude, Longitude:**	30.219722,-96.374443

Administrative Information

Investigator In Charge (IIC):	Brannen, John
Additional Participating Persons:	Rick Bolton; FAA Houston FSDO; Houston, TX
Original Publish Date:	September 6, 2017
Last Revision Date:	
Investigation Class:	Class
Note:	The NTSB did not travel to the scene of this accident.
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=94671