National Transportation Safety Board
Aviation Accident Final Report

Location:	San Angelo, TX	**Accident Number:**	CEN12LA124
Date & Time:	01/03/2012, 1730 CST	**Registration:**	N5768W
Aircraft:	PIPER PA-28-160	**Aircraft Damage:**	Substantial
Defining Event:	Loss of engine power (total)	**Injuries:**	2 None
Flight Conducted Under:	Part 91: General Aviation - Instructional		

Analysis

While on the downwind leg of the landing pattern, the flight instructor asked the student to switch fuel tanks in order to balance the remaining fuel. Shortly thereafter, the student added power to adjust his approach path to the runway but the engine did not respond. The student switched back to the previous fuel tank; however, engine power was not restored. The airplane was substantially damaged during the forced landing. The flight instructor stated that, during the previous flight, the student had mentioned that the fuel selector valve did not have a noticeable detent position and asked if it was normal for the selector to rotate 360 degrees. The flight instructor was not familiar with the accident airplane and its various nuances and had not flown it before the day of the accident. A postaccident examination of the engine, fuel selector valve, and fuel systems revealed no anomalies. A representative of the airplane's manufacturer indicated that the fuel selector valve was an older type that allows the valve to rotate without restriction; newer valve designs restrict travel so that the "off" position cannot be selected without depressing a stop. The airplane was not operating in weather conditions favorable for the formation of carburetor icing at the time of accident. The reason for the loss of engine power could not be determined.

Probable Cause and Findings

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

Findings

Not determined	Not determined - Unknown/Not determined (Cause)

Factual Information

On January 3, 2012, approximately 1730 central standard time, a Piper PA-28-160 airplane, N5768W, was substantially damaged during a forced landing near San Angelo, Texas. Visual meteorological conditions prevailed at the time of the accident. The instructional flight was being conducted under the provisions of 14 Code of Federal Regulations Part 91 without a flight plan. The certified flight instructor and student pilot were not injured. The local flight departed the San Angelo Regional Airport (KSJT), San Angelo, Texas, approximately 1705.

The flight instructor reported that they were performing touch-and-go landings in the traffic pattern. While on the downwind leg, the flight instructor asked the student to switch fuel tanks in order to balance the remaining fuel. Shortly thereafter, the student added power to adjust his approach path to the runway and the engine did not respond. The student switched back to the previous tank; however, engine power was not restored. During the forced landing, the right wing struck a tree and separated from the airplane.

The flight instructor stated that during the previous flight, the student had mentioned that the fuel selector valve did not have a noticeable detent position and asked if it was normal for the selector to rotate 360 degrees. The flight instructor was not familiar with the accident airplane and had not flown it prior to the day of the accident. He stated that he was not familiar with the various nuances of the accident airplane.

An on scene examination of the engine, conducted by the Federal Aviation Administration (FAA), revealed no anomalies. On February 29, 2012, the fuel selector valve and fuel assembly were examined by investigators with the National Transportation Safety Board and Piper Aircraft. The examination revealed that the fuel selector valve was firm to rotate with notable detents at the prescribed positions. The fuel lines, filters, and fuel pump were free of blockage. The reason for the loss of engine power was not determined.

The temperature and dew point at the time of the accident were 15 degrees and minus 7 degrees Celsius respectively. A review of the carburetor icing probability chart, located in the FAA's Special Airworthiness Information Bulletin CE-09-35, dated 6/30/2009, revealed that the airplane was not operating in an area favorable for the formation of carburetor icing.

History of Flight

Approach-VFR pattern downwind	Loss of engine power (total) (Defining event)
Landing	Collision with terr/obj (non-CFIT)

Flight Instructor Information

Certificate:	Flight Instructor; Commercial	**Age:**	22, Male
Airplane Rating(s):	Multi-engine Land; Single-engine Land	**Seat Occupied:**	Right
Other Aircraft Rating(s):	None	**Restraint Used:**	Seatbelt
Instrument Rating(s):	Airplane	**Second Pilot Present:**	Yes
Instructor Rating(s):	Airplane Single-engine	**Toxicology Performed:**	No
Medical Certification:	Class 2 With Waivers/Limitations	**Last Medical Exam:**	11/30/2011
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	05/06/2010
Flight Time:	361 hours (Total, all aircraft), 300 hours (Total, this make and model), 297 hours (Pilot In Command, all aircraft), 21 hours (Last 90 days, all aircraft), 16 hours (Last 30 days, all aircraft), 1 hours (Last 24 hours, all aircraft)		

Student Pilot Information

Certificate:	None	**Age:**	56, Male
Airplane Rating(s):	None	**Seat Occupied:**	Left
Other Aircraft Rating(s):	None	**Restraint Used:**	Seatbelt
Instrument Rating(s):	None	**Second Pilot Present:**	Yes
Instructor Rating(s):	None	**Toxicology Performed:**	No
Medical Certification:	None	**Last Medical Exam:**	
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	
Flight Time:			

Aircraft and Owner/Operator Information

Aircraft Manufacturer:	PIPER	**Registration:**	N5768W
Model/Series:	PA-28-160	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	No
Airworthiness Certificate:	Normal	**Serial Number:**	28-1554
Landing Gear Type:	Tricycle	**Seats:**	4
Date/Type of Last Inspection:	07/11/2011, Annual	**Certified Max Gross Wt.:**	2200 lbs
Time Since Last Inspection:		**Engines:**	1 Reciprocating
Airframe Total Time:	3696 Hours	**Engine Manufacturer:**	LYCOMING
ELT:	Installed, not activated	**Engine Model/Series:**	O-320-D2A
Registered Owner:	Jimmy Bennet	**Rated Power:**	180 hp
Operator:	Jimmy Bennet	**Air Carrier Operating Certificate:**	None

Meteorological Information and Flight Plan

Observation Facility, Elevation:	KSJT, 1919 ft msl	**Observation Time:**	1751 CST
Distance from Accident Site:	1 Nautical Miles	**Condition of Light:**	Day
Direction from Accident Site:		**Conditions at Accident Site:**	Visual Conditions
Lowest Cloud Condition:	Clear	**Temperature/Dew Point:**	15°C / -7°C
Lowest Ceiling:	None	**Visibility**	10 Miles
Wind Speed/Gusts, Direction:	14 knots, 190°	**Visibility (RVR):**	
Altimeter Setting:	30.22 inches Hg	**Visibility (RVV):**	
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	San Angelo, TX (KSJT)	**Type of Flight Plan Filed:**	None
Destination:	San Angelo, TX (KSJT)	**Type of Clearance:**	None
Departure Time:	1705 CST	**Type of Airspace:**	

Airport Information

Airport:	San Angelo (KSJT)	**Runway Surface Type:**	
Airport Elevation:	1919 ft	**Runway Surface Condition:**	
Runway Used:	N/A	**IFR Approach:**	None
Runway Length/Width:		**VFR Approach/Landing:**	Forced Landing

Wreckage and Impact Information

Crew Injuries:	2 None	**Aircraft Damage:**	Substantial
Passenger Injuries:	N/A	**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	2 None		

Administrative Information

Investigator In Charge (IIC):	Jennifer Rodi	**Adopted Date:**	04/20/2012
Additional Participating Persons:	Reginald Vessels; FAA Flight Standards District Office; Lubbock, TX		
Publish Date:	04/20/2012		
Investigation Docket:	http://dms.ntsb.gov/pubdms/search/dockList.cfm?mKey=82621		

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