National Transportation Safety Board
Aviation Accident Final Report

Location:	Pagosa Springs, CO	**Accident Number:**	CEN18LA381
Date & Time:	09/19/2018, 1000 MDT	**Registration:**	N8003W
Aircraft:	Piper PA28	**Aircraft Damage:**	Substantial
Defining Event:	Fuel starvation	**Injuries:**	2 None
Flight Conducted Under:	Part 91: General Aviation - Instructional		

Analysis

The airline transport pilot rated flight instructor was introducing engine failure emergency procedures to the student pilot. Emergency procedures were reviewed inflight. The flight instructor then reduced the engine power to idle to simulate a loss of engine power. The student pilot conducted the emergency procedures on the left side of the cockpit that included switching the fuel tank selector position from right to left. The engine sputtered when the flight instructor subsequently added power to go around about 600 ft above the ground. The engine sputtered. Emergency procedures were reviewed again and the fuel pressure indication was zero. The flight instructor subsequently performed a forced landing where the airplane impacted fencing and ditches and came to rest in a field. Following the accident, the flight instructor noticed the fuel selector valve was about 1.5 to 2 inches between the left detent and off positions.

No preimpact mechanical malfunctions or failures with the airframe and engine that would have precluded normal operation were reported by the flight instructor and the engine was operational during a subsequent examination of the accident airplane at the accident site.

It is likely the student pilot, while conducting the emergency procedure, mismanaged the positioning of the fuel selector valve. While the student pilot was conducting the emergency procedure, the flight instructor did not adequately supervise the student pilot to ensure the fuel selector valve was properly set to the correct position.

Probable Cause and Findings

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

The student pilot's mismanagement of the fuel selector valve during the simulated forced landing demonstration and the flight instructor's inadequate supervision to ensure the fuel selector was properly set, which resulted in a loss of engine power and subsequent forced landing on unsuitable terrain.

Findings

Aircraft	Fuel - Fluid management (Cause)
Personnel issues	Use of equip/system - Student pilot (Cause)
	Monitoring other person - Instructor/check pilot (Cause)
Environmental issues	Fence/fence post - Contributed to outcome
	Rough terrain - Contributed to outcome

Factual Information

On September 19, 2018, about 1000 mountain daylight time, a Piper PA28 180 airplane, N8003W, impacted fencing and terrain during a forced landing near Pagosa Springs, Colorado, following an inflight loss of engine power. The airline transport pilot rated flight instructor and the student pilot were uninjured. The airplane sustained substantial damage during the impact with fencing. The airplane was registered to and operated by San Juan Flyers Inc. as a Title 14 *Code of Federal Regulations* Part 91 instructional flight. Day visual meteorological conditions prevailed in the area about the time of the accident, and the flight was not operated on a flight plan. The local flight originated from the Stevens Field Airport, near Pagosa Springs, Colorado, about 0900.

According to the flight instructor's accident report, the flight instructor was introducing engine failure emergency procedures to the student pilot. Emergency procedures were reviewed inflight, the instructor located a landing spot, and pulled the throttle to idle to simulate a loss of engine power. The student pilot conducted the emergency procedures on the left side of the cockpit that included switching the fuel tank selector position from right to left, verifying the primer was in and locked, turning on the fuel pump, checking magneto operation, and turning the carburetor heat on. The flight instructor subsequently added power to go around about 600 ft above the ground. The engine sputtered. Emergency procedures were reviewed again and the flight instructor noticed that the fuel pressure indication was zero. The flight instructor did not check the fuel selector nor could the selector be seen due to its location. The flight instructor subsequently performed a forced landing during which the airplane impacted fencing and ditches before coming to rest in a field. Following the accident, the flight instructor observed the fuel selector valve was about 1.5 to 2 inches between the left detent and off positions.

Subsequent to the accident, a Federal Aviation Administration inspector examined the accident airplane at the accident site. The airplane's engine was started, and the engine was operational.

The flight instructor reported no preimpact mechanical malfunctions or failures with the airframe and engine that would have precluded normal operation and had a safety recommendation to double check the fuel selector valve position during the forced landing demonstration.

History of Flight

Maneuvering	Fuel starvation (Defining event)
Emergency descent	Off-field or emergency landing
Landing	Collision with terr/obj (non-CFIT)

Pilot Information

Certificate:	Airline Transport; Flight Instructor; Commercial	**Age:**	57, Female
Airplane Rating(s):	Multi-engine Land; Single-engine Land	**Seat Occupied:**	Right
Other Aircraft Rating(s):	None	**Restraint Used:**	
Instrument Rating(s):	Airplane	**Second Pilot Present:**	Yes
Instructor Rating(s):	Airplane Single-engine	**Toxicology Performed:**	No
Medical Certification:	Class 2 Without Waivers/Limitations	**Last FAA Medical Exam:**	11/21/2016
Occupational Pilot:	Yes	**Last Flight Review or Equivalent:**	
Flight Time:	10000 hours (Total, all aircraft), 500 hours (Total, this make and model), 9800 hours (Pilot In Command, all aircraft), 54 hours (Last 90 days, all aircraft), 11 hours (Last 30 days, all aircraft), 1 hours (Last 24 hours, all aircraft)		

Student Pilot Information

Certificate:	None	**Age:**	62, Male
Airplane Rating(s):	None	**Seat Occupied:**	Left
Other Aircraft Rating(s):	None	**Restraint Used:**	
Instrument Rating(s):	None	**Second Pilot Present:**	Yes
Instructor Rating(s):	None	**Toxicology Performed:**	No
Medical Certification:	Class 3 With Waivers/Limitations	**Last FAA Medical Exam:**	03/26/2018
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	
Flight Time:	3.4 hours (Total, all aircraft), 3.4 hours (Total, this make and model), 3.4 hours (Last 90 days, all aircraft), 3.4 hours (Last 30 days, all aircraft), 0.7 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Piper	**Registration:**	N8003W
Model/Series:	PA28 180	**Aircraft Category:**	Airplane
Year of Manufacture:	1964	**Amateur Built:**	No
Airworthiness Certificate:	Normal	**Serial Number:**	28-2063
Landing Gear Type:	Tricycle	**Seats:**	4
Date/Type of Last Inspection:	05/18/2018, Annual	**Certified Max Gross Wt.:**	2400 lbs
Time Since Last Inspection:		**Engines:**	1 Reciprocating
Airframe Total Time:	5125 Hours at time of accident	**Engine Manufacturer:**	Lycoming
ELT:	C91 installed, not activated	**Engine Model/Series:**	O-360-A4A
Registered Owner:	San Juan Flyers Inc	**Rated Power:**	180 hp
Operator:	San Juan Flyers Inc	**Operating Certificate(s) Held:**	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual Conditions	**Condition of Light:**	Day
Observation Facility, Elevation:	KPSO, 7661 ft msl	**Distance from Accident Site:**	5 Nautical Miles
Observation Time:	1055 MDT	**Direction from Accident Site:**	309°
Lowest Cloud Condition:	Scattered / 10000 ft agl	**Visibility**	10 Miles
Lowest Ceiling:		**Visibility (RVR):**	
Wind Speed/Gusts:	6 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	180°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	30.22 inches Hg	**Temperature/Dew Point:**	21°C / 0°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Pagosa Springs, CO (PSO)	**Type of Flight Plan Filed:**	None
Destination:	Pagosa Springs, CO (PSO)	**Type of Clearance:**	None
Departure Time:	0900 MDT	**Type of Airspace:**	Class G

Airport Information

Airport:	Stevens Field (PSO)	**Runway Surface Type:**	N/A
Airport Elevation:	7663 ft	**Runway Surface Condition:**	Rough
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	**Latitude, Longitude:**	37.230278, -106.967222 (est)

Administrative Information

Investigator In Charge (IIC):	Edward F Malinowski	**Report Date:**	11/06/2019
Additional Participating Persons:	Bret Proud; Federal Aviation Administration; Denver, CO		
Publish Date:	11/06/2019		
Note:	The NTSB did not travel to the scene of this accident.		
Investigation Docket:	http://dms.ntsb.gov/pubdms/search/dockList.cfm?mKey=98322		