



NATIONAL TRANSPORTATION SAFETY BOARD
Office of Aviation Safety

Wreckage Examination Group Field Notes

November 14, 2022

A. ACCIDENT WPR22FA320

Location: Ione, California
Date: May 26, 2022
Time: 1227 PDT
Operator: Private
Aircraft: Cessna 152
Registration: N49430

B. PARTICIPANTS or GROUP NAME:

Stephen Stein
National Transportation Safety Board
Federal Way, Washington

Steven Gustison
Federal Aviation Administration
Sacramento, California

C. SUMMARY

On August 26, 2022, about 1227 Pacific daylight time, a Cessna 152, N49430, was substantially damaged when it was involved in an accident near Ione, California. The flight instructor and student pilot were not injured. The airplane was operated as a Title 14 *Code of Federal Regulations* Part 91 instructional flight.

The instructor stated that he was assigned by his management to perform a discovery flight with a student pilot on the day of the accident. After the instructor completed an engine run-up, he departed and flew northeast towards an airpark. When they reached the airpark the student pilot asked the instructor if they could land. The instructor agreed to the student's request and chose to

land to the west as the winds appeared calm. After a successful touchdown and landing roll on the dirt runway, the instructor turned the airplane around for a departure to the east. He held the toe brakes as he advanced the throttle to full power to perform a short field takeoff. The instructor stated that he observed between 2,300 and 2,400 rpm on the tachometer at the beginning of the takeoff roll.

As the airplane moved the instructor split his attention between the environment outside the cockpit and the cockpit instruments. When the airplane was about midfield, the instructor noticed that both the analog airspeed indicator needle and the Garmin electronic flight instrument displayed 0 kts. The instructor stated that he had observed the lagging airspeed indication prior to midfield, but had dismissed it. He decided to abort the takeoff, but when he reduced power, he observed the airspeed indicator needle suddenly advance to about 45 kts. The airplane was about three quarters down the total length of the runway about this time. At the same time, the instructor noticed a fence in the airplane's path beyond the runway end that was rapidly approaching. After the airplane collided with the fence, the instructor attempted to maneuver around a tree, but the left wing impacted the tree, the airplane spun to the left and came to rest.

The instructor reported that he had not calculated the performance of the airplane for landing or takeoff from the dirt strip.

According to a witness and nearby resident, the runway was approximately 1,300 feet long. She stated that the temperature was about 95° at the time of the accident with light winds from the west. The witness reported that the airplane never left the ground and that the engine sounded smooth and continuous throughout the takeoff attempt.

D. DETAILS OF THE INVESTIGATION

The airplane was recovered to Faeth Aircraft in Sacramento, California where an examination was completed on November 14, 2022.



Photograph 1: Accident airplane and prior to examination

D.1 Airframe Examination

D.1.1 Fuel System

A fuel sample taken from the fuel strainer exhibited a blue hue and consisted of an odor that was consistent with 100 low lead aviation grade gasoline. The fuel strainer bowl contained a trace amount of debris and the strainer screen was free of foreign contaminants.

The carburetor was manufactured by Marvel-Schebler and was a model 3A. Disassembly of the carburetor revealed several ounces of fuel in the carburetor bowl, which was free of debris. The fuel delivery channel did not display any foreign contaminants and the carburetor floats were unremarkable.



Photograph 2: Sample from fuel strainer bowl



Photograph 3: Carburetor bowl

D.2 Engine

The airplane was equipped with a Lycoming Engines O-235-L2C, a 118 hp, horizontally opposed, air cooled, carbureted, normally aspirated, reciprocating engine. The engine sustained minimal damage with exception of the airbox, which was partially crushed.



Photograph 4: Engine from right side prior to examination

Throttle continuity was confirmed from the cockpit to the throttle arm at the carburetor, which moved throughout its full travel when the throttle control was cycled by hand. The mixture control was continuous from the cockpit to the mixture control arm at the carburetor and moved throughout its full range of travel when the mixture control was cycled by hand.

Mechanical continuity was established throughout the rotating group, valve train and accessory section as the crankshaft was manually rotated at the propeller by hand. Thumb compression was achieved at all four cylinders and the valves displayed normal lift when the crankshaft was rotated. Examination of the cylinders combustion chamber interior components using a lighted borescope revealed evidence of normal wear at the piston face and valves at all four cylinders, and no indications of catastrophic engine failure. The valves were intact and did not display any eyebrow marks on the piston tops.

All eight massive electrode spark plugs were secure at their respective ports with each ignition lead securely attached. The top spark plugs to cylinders 1, 3 and 4 were lead fouled and the cylinder 2 plug was dark in appearance. The center electrodes to spark plugs 2 and 3 were worn. The right and left magnetos were timed at 20° below top dead center, consistent with the timing listed on the engine data plate. Spark was achieved at each of the four top ignition leads in the proper firing order.



Photograph 5: Top spark plugs

The induction air filter did not display any debris.

The two bladed constant speed propeller remained attached at the crankshaft flange. Both blades remained attached to the hub. The spinner was partially crushed. One blade was bent aft near the blade tip and the other blade was also bent aft about midspan.

The oil suction screen was free of debris.