



NATIONAL TRANSPORTATION SAFETY BOARD

Office of Aviation Safety
Western Pacific Region

Mar 24, 2021

AIRFRAME EXAMINATION SUMMARY REPORT

WPR20LA270

This document contains 11 embedded photos.

A. ACCIDENT

Location: Susanville, CA
Date: Aug 15, 2020
Aircraft: N91449
NTSB IIC: Stephen Stein

Preliminary Report:

On August 15, 2020, about 1340 Pacific daylight time, a Piper PA-14 airplane, N91449, was substantially damaged when it was involved in an accident at Susanville, California. The pilot and pilot-rated passenger were fatally injured. The airplane was operated as a Title 14 *Code of Federal Regulations* Part 91 personal flight.

According to a friend of the pilot who also witnessed the accident, the pilot, pilot-rated passenger, and him had planned to fly over a landmark in the Nevada desert and then stay overnight in a campground north of Susanville. The friend was in his own airplane, while the pilot and passenger were in the accident airplane. They departed Redding, California about 0930 and flew east, but during cruise flight they chose to discontinue the flyover and make an intermediate stop at Susanville Municipal Airport (SVE), Susanville, California. The friend landed on the airport's only asphalt runway and the accident pilot landed on the dirt runway. After lunch they returned to the airport and boarded their airplanes. The accident airplane's takeoff was not observed. While the witness was taxiing to the asphalt runway, he witnessed the accident airplane about 350 ft above ground level about midfield in a steep left bank angle. The airplane immediately transitioned into a nose down pitch attitude and descended rapidly toward the ground. The friend, a flight instructor, stated that the sequence resembled an aerodynamic stall/spin.

The wreckage came to rest in dirt about 50 ft southwest of runway 11/29 on an eastern heading. (See figure 1) All major structural surfaces were accounted for at the accident site. The initial impact point was marked by left wing navigation light fragments that were in a small dirt impression a few feet north of the main wreckage. The nose and cabin were crushed aft and the propeller blades had separated from the propeller hub. Both wings were deformed but remained attached to the fuselage. The left wing displayed an upward bend about midspan, and the right wing displayed a slight upward bend at the wing root. The tail section remained attached to the airplane and was unremarkable.

The wreckage was retained for further examination.

B. EXAMINATION PARTICIPANTS:

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C. SUMMARY

Examination of the airframe and engine was conducted at the Air Transport in Phoenix, AZ on March 24, 2021. The examination of the engine was conducted by an investigator from Lycoming Engines. The airframe examination revealed no evidence of preaccident mechanical malfunctions or anomalies that would have precluded normal operation.

D. AIRFRAME EXAMINATION

The wings, stabilizers, elevators and the rudder were removed from the wreckage during the recovery process. The engine, firewall, instrument panel and forward fuselage remained attached and was removed from the main wreckage prior to the examination. The main landing gear was not available during the examination.



Figure 1-Main wreckage displayed in the examination area.

The forward left side of the fuselage (left cabin area) had extensive impact damage. The lower fuselage fabric was removed revealing control cables and structure. The fuselage tubing structure had corrosion deposits throughout. Many of the areas of the undamaged tubing's structure joints had bubbled and chipped paint revealing corrosion deposits. The cabin control sticks remained attached to their linkage and all flight control cables remained attached and secured to the control stick linkage.



Figure 2-Fuselage displayed in the examination area.



Figure 3-Lower side of fuselage with the fabric removed.

The venturi tube remained attached to a section of fuselage that separated from the main wreckage. The venturi tube was undamaged.

Flight control cable continuity was attained through the fuselage, from the elevators and rudder to the control stick linkage. The right aileron cable continuity was attained through cuts made during the recovery process. The left aileron cable continuity was attained through separations consistent impact damage and overload. A cable pulley for the left aileron cable, located at the top left side of the fuselage, revealed signatures of cable wear and would not easily rotate by hand.

The flap handle separated from the main wreckage and control cable continuity was attained through impact damage. The flap position was undetermined.



Figure 4-Left aileron cable and pulley assembly.

The aft positioned 3-point seat belt assembly remained attached and secured to the fuselage by extended cables to the aft cabin area. The shoulder harness webbing was cut by first responders. The forward 4-point seat belt assembly remained buckled and all four webbing straps were cut by first responders.

An empty vodka bottle (cap secured) and four unopened cans of an alcoholic beverage were found in the cabin area.

The right wing leading edge had impact damage with extensive crush damage to the leading edge outboard end. The fabric was removed from the wing and buckling was noted to the internal structure. The flap and aileron remained attached to their attach points. The aileron and flap control cable continuity were attained from their respective bellcrank, to the wing root area. The aileron bell crank separated from the aileron control rod. Impact damage was noted to the surrounding area. An inspection panel area was sealed off with silver duct tape near the flap's bellcrank.



Figure 5-Right wing lower surface.

The right wing fuel tank was removed from the wing. The tank was breached on the forward right corner and hydraulic deformation was noted. The vented fuel tank cap had impact damage and the cap seal was undamaged. The fuel tank indicator mount was damaged from its wing mount and separated from the tank. The fuel sump separated from the tank.

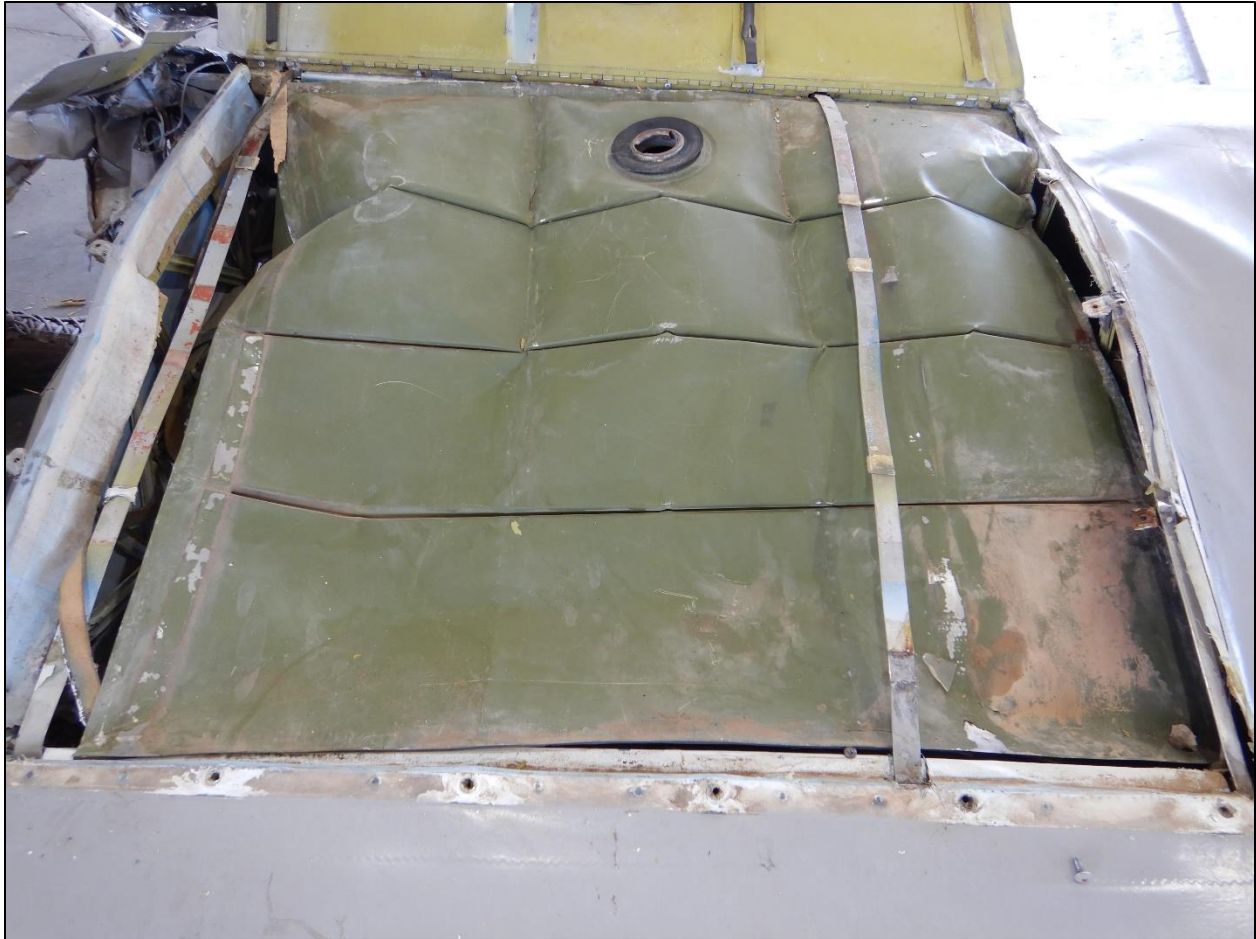


Figure 6-Right wing fuel tank.

The left wing leading edge had impact damage. The wing had buckling throughout. The aileron had impact damage and separated from the wing's attach points. The flap remained attached to its attach points. The aileron and flap control cable continuity were attained from their respective bellcrank, to the wing root area.



Figure 7-Left wing upper surface.

The wing fuel tank was breached on the forward right side and hydraulic deformation was noted to the top forward surface of the tank. The fuel tank cap remained attached to the tank and the cap seal was cracked and deteriorated.

The firewall was removed from the engine and had impact damage. The muffler, sections of the engine mount assembly, the instrument panel and forward fuselage remained attached to the firewall. The rudder pedal assembly remained attached to the forward fuselage and the rudder control cables were cut during the recovery process. The instrument panel had impact damage and contained most of its instruments. The throttle knob was pulled out about 4 inches from its full forward position and was bent downward.



Figure 8-Firewall and the forward fuselage section.

Fuel lines from the wing tanks to the fuel selector valve and from the fuel selector valve to the gascolator were found in damaged sections throughout the wreckage. The fuel selector valve separated from the main wreckage and remained attached the cabin's interior panel. The fuel selector valve handle was found in the left wing tank position and all fuel lines connecting to the valve had impact damage and separated near the valve. Pneumatic pressure was used to verify the valves internal position and the operation of each of the valve's positions. The selector valve and handle were found in the left wing tank position. The fuel gascolator remained attached to the firewall and had impact damage. The gascolator bowl partially separated from the gascolator revealing the internal screen. Dirt and debris were noted in the bowl and surrounding area.



Figure 9-Fuel gascolator.



Figure 10-Fuel selector valve.

The main landing gear shocks separated from the main wreckage and had impact damage.



Figure 11-Main landing gear shocks.

Submitted by: Andrew Swick