



NATIONAL TRANSPORTATION SAFETY BOARD

Office of Aviation Safety
Western Pacific Region

July 23, 2017

ON SCENE OBSERVATIONS

WPR17FA161

This document contains 9 embedded photos.

A. ACCIDENT

Location: Apple Valley, California
Date: July 22, 2017
Aircraft: Applegate Penzl S331E, Registration #331ST, Serial #001
NTSB IIC: Samantha Link

B. EXAMINATION PARTICIPANTS:

Samantha Link
Aviation Accident Investigator
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C. SUMMARY

The on scene examination of the airplane was conducted on July 23, 2017. No anomalies were noted that would have precluded normal operations.

D. DETAILS OF THE INVESTIGATION

1.0 Airframe and Engine Examination

- The airplane crashed about 3 miles northeast of the airport
- The airplane impacted the ground upright at about a 45 degree angle.
 - The airplane maintained its general form.
 - Fragments of airplane skin, canopy, etc were spread around the main wreckage.
- The engine came to rest in a crater that was about 3 feet by 4 feet wide and about 2 feet deep.
 - When the engine was removed, wood and composite propeller fragments were noted at the bottom of the crater.
 - There were no obvious signs of catastrophic mechanical anomalies with the engine
- Both the right and left wing leading edges left impact marks in the sand.
 - The right wing impact mark was about the width of the leading edge
 - The left wing impact mark was on a small hill and about double the width of the leading edge
 - It appeared as if the left wing had about 10 degrees of rotation at the time of impact.

- The wings were heavily damaged.
 - The wood spar and ribs were heavily damaged but mostly intact. The skin for both wings was completely separated and fragmented throughout the main wreckage.
 - Although the wing broke away from the ailerons, they remained connected to their attachment points.
 - The spades remained attached
- The aft fuselage sustained heavy crush damage. The aft fuselage skin was still attached to the airplane, but evidence of heavy damage was noted throughout.
- The empennage was mostly intact and sustained minimal damage. The elevator and rudder moved freely without binding.
- The flight controls were connected through push/pull tubes. Control continuity was established throughout the airplane.
 - The right aileron control and rudder controls were continuous and not damaged.
 - The connection for the ailerons are at the base of, and about two feet forward, of the control stick. The left aileron broke at eye bolt where it attaches to the control stick. The ball, and part of its surrounding attach point were still connected to the control stick attachment point. To the naked eye, the fracture appeared to be consistent with overload.
 - The elevator torque tube was disconnected from underneath the seat. Given the positioning of the fracture and the wreckage, we could not see the exact location of the break. However, the aft portion of the tube (extending towards the elevator) was clearly visible. The tube was bent in an overall “moon” shape, and to the naked eye, the fracture surface appeared to be consistent with overload.

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2.0 On Scene Photographs



Figure 1: Front of Airplane

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Figure 2: Right Wing

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Figure 3: Empennage



Figure 4: Empennage looking forward



Figure 5: Left Wing



Figure 6: Forward Left Side



Figure 7: Fractured and Bent Elevator Control



Figure 8: Fractured Left Aileron Control



Figure 9: Aileron Attachment Point for Control Stick

END.

Submitted by: Samantha Link