



NATIONAL TRANSPORTATION SAFETY BOARD

Office of Aviation Safety
Western Pacific Region

DATE: October 29, 2020

AIRFRAME AND ENGINE EXAMINATION

WPR19FA256

This document contains 15 embedded photos.

A. ACCIDENT

Location: La Grande, OR.

Date: September 8, 2019

Aircraft: Piper PA32-300, Serial Number: 32-40487

NTSB IIC: Fabian Salazar

B. EXAMINATION PARTICIPANTS:

Name: Fabian Salazar
Duty Position: IIC
National Transportation Safety Board
Federal Way, WA 98003

Name: Gregory W. Horrell
Duty Position: PMI
Federal Aviation Administration
Boise FSDO
Boise, Idaho

Name: Kathryn Whitaker
Duty Position: Air Safety Investigator
Organization: Piper Aircraft
City, State, Zip: Phoenix, AZ.

Name: Mark Platt
Duty Position: Air Safety Investigator
Organization: Lycoming Engines
City, State, Zip: Phoenix, AZ.

C. SUMMARY

A preliminary examination of the airframe and engine was conducted at the accident site in La Grande, Oregon, and a detailed examination was conducted on the airframe and engine on October 2, 2019. No evidence of mechanical malfunction or anomalies that would have precluded normal operation were noted during the examination of the airframe and engine.

D. DETAILS OF THE INVESTIGATION

Airframe Examination

WRECKAGE AND IMPACT INFORMATION

Fuselage. The fuselage was destroyed as it descended through trees to the terrain.

Right Wing. The wing was separated from the fuselage at the root. The outer portion, from the tip of the wing to the main landing gear remained intact. The remaining portion of the wing, from the main landing gear to the wing root, was fragmented into several portions. The leading edge displayed a dent about 12 inches from the root that was consistent with an 8-inch diameter

object. A brown material consistent with tree bark was found embedded into the dented aluminum. The fuel cap was intact and secured to the wing. The rubber seal was intact soft and pliable. There was no fuel in the fuel tank. The outer half of the aileron was separated from the wing. The inner half remained attached at the hinge. The flap was separated from the wing at the attachment points and fractured into two pieces. The fiberglass tip tank was separated from the wing and fragmented into multiple pieces. The tip tank fuel cap was recovered and found to be secured with the rubber seal soft and pliable. The navigation light was shattered with the mount still attached to a fragment of the tip tank.

Left Wing. The wing was separated from the fuselage at the root and fractured into five major portions, the tip tank and four pieces of the wing. All portions of the wing displayed damage. The outer portion, from the tip of the wing to about the main landing gear, displayed damage from the leading edge and the trailing edge. The fuel cap was intact and secured to the wing. The rubber seal was intact soft and pliable. There was no fuel in the fuel tank. The stall warning tab was secure and undamaged. The aileron was separated from the wing, damaged, but remained intact. The flap was separated from the wing at the attachment points and damaged from the trailing edge forward and distorted into a V-shape. The fiberglass tip tank was separated from the wing and fragmented into multiple pieces. The tip tank fuel cap was recovered and found to be secured with the rubber seal soft and pliable. The navigation light was shattered with the mount still attached to a fragment of the tip tank.

Empennage. The empennage was damaged and fragmented. The vertical stabilizer remained attached to the aft fuselage and received damage along the top half of the leading edge. The rudder remained attached at the hinges and damaged from the trailing edge forward. The stabilator was damaged and fragmentation at both the left and right leading edge. The tips of the stabilator were both separated. The right tip displayed damage from about 10 inches from the tip inboard. The remaining inboard portion of the stabilator was fragmented, a small portion remained attached to the aft fuselage. The remaining portion was displaced aft. The trim tab, which ran across the left and right sides of the stabilator, remained attached to the stabilator. The right half of the trim tab was separated. The trim tab actuator remained attached to the tail cone and was found in a neutral setting with about three threads showing.

Landing Gear. The main landing gear was damaged and partially separated from the fuselage. The upper half of both main landing gear assemblies remained attached to their respective wings. The left wheel and lower oleo strut separated from the left wing as a unit. The right wheel and lower oleo strut separated from the upper half of the oleo strut but remained attached to the wing by the brake hose. The nose gear was separated from the fuselage and fragmented into two pieces. The nose wheel and the lower portion of the nose gear assembly and the upper portion of the nose gear assembly.

Engine. The engine nacelle was fragmented and found in multiple pieces throughout the debris field. The engine separated from the firewall along with the engine mounts. The three right-hand cylinders (1, 3, and 5) were absent, and the number 1 piston was separated from the piston rod. The number 1 cylinder had tree bark and wood embedded in the cooling fins. The crank case was damaged with fractures of the block behind the number 1, 3, and 5-cylinder bosses. The fuel

servo was separated but remained attached via a cable. The intake and exhaust manifolds were crush damaged.

The accessory gearbox remained attached to the rear of the engine. The two magnetos impact separated from the accessory gearbox and received damage to the magneto housings.

The vacuum pump was damaged and could not be tested. The remaining components appeared normal and remained attached at their respective locations. All gearing associated with the accessory gearbox appeared normal. The engine gears appeared to be properly timed. Due to the damage to the engine, proper rotation could not be established.

The oil screen contained some debris that appeared to come from the accident. The starter ring gear separated from the mount but remained in place behind the propeller.

The propeller governor remained attached to the engine block

Propeller. The two-blade, constant speed, Hartzell propeller remained attached to the engine. One blade received damage causing about 6 inches of the tip to separate. The remaining blade curled over onto itself spanwise. The other blade received minimal damage. The hub remained intact and the spinner received crush damage.

Flight Control Continuity. Flight control continuity was established for the rudder and the stabilator from the control surfaces to the flight control rudder pedals and yoke in the cockpit. Flight control continuity for the right aileron was established from the flight control surface to the flight control yoke in the cockpit. Flight control continuity was not established for the left aileron due to the absence of the aileron bell crank and the control cable from the bell crank to the flight control yoke in the cockpit.

The pilot's seat and opposite forward seat were damaged. Seat position in the seat rails could not be determined

Instrument panel. The cockpit was destroyed by the accident. The instrument panel was fractured and all flight and engine instruments were scattered throughout the debris field. The key switch was found in the BOTH position. The ignition key was absent and later found in the debris field. The master switch was found in the ON position. The following instruments were as noted below:

Fuel Left Main 0 gallons

Fuel Left Tip: Missing the gauge

Fuel Right Main: 0 gallons

Fuel Right Tip: >5 gallons, < 10 gallons

Oil Temp: Green arc, >180°

The engine tachometer gauge was separated from the instrument panel, the glass broken, and the needle stuck at about 2700 RPM.

Engine tach time. The engine tach odometer was separated from the internal mount. The individual dials rotated freely. Determination of the ending value could not be determined.

Comm 2 radio: tuned to 135.275

Strobe Lights: On

Hobbs meter: Casing for Hobbs meter recovered, but the internal components including the odometer were missing.

ELT. Model: SHARC 7, 7H-2-197. Serial number: 136291. The ELT was in the debris field. The ON/OFF/ARM switch was found in the OFF position.

PHOTO EXHIBIT



Photo 1. Right Side View of N6300Z



Photo 2. Front View



Photo 3. Left Rear View



Photo 4. Right Wing. Photo 1 of 2.



Photo 5. Right Wing. Photo 2 of 2



Photo 6. Left Wing. Photo 1 of 2



Photo 7. Left Wing. Photo 2 of 2



Photo 8. Engine. Photo 1 of 5



Photo 9. Engine. Photo 2 of 5



Photo 10. Engine. Photo 3 of 5



Photo 11. Engine. Photo 4 of 5



Photo 12. Engine. Photo 5 of 5, showing engine cylinders 1, 3 and 5.



Photo 13. Right Main Landing Gear

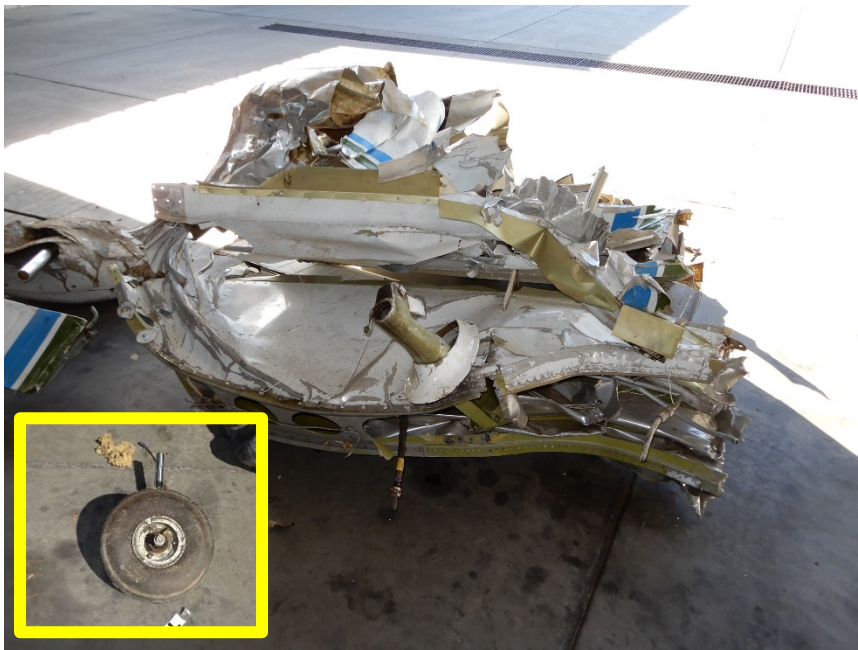


Photo 14. Left Main Landing Gear



Photo 15. Nose Gear