



NATIONAL TRANSPORTATION SAFETY BOARD

Office of Aviation Safety
Western Pacific Region

December 20, 2018

ACCIDENT SITE / AIRFRAME / ENGINE EXAMINATION SUMMARY

WPR19FA042

This document contains 7 embedded photos.

A. ACCIDENT

Location: Aberdeen, ID
Date: December 17, 2018
Aircraft: Piper PA-24-250, N6283P
NTSB Investigator-in-Charge: Joshua Cawthra

B. DETAILS OF THE INVESTIGATION

1.0 Accident Site Examination

GPS Location: 042.920280, -112.894601

Examination of the accident site revealed that the airplane impacted open terrain about 1,850 ft west of the departure end of runway 25. Wreckage debris (windscreen plexiglass) was contained within about 50 feet of the main wreckage. The airplane came to rest upright on a heading of about 279° magnetic, at an altitude of 4,156 ft mean sea level. A ground impression consistent with the right-wing fuel tip tank was observed adjacent to the right-wing tip tank. In addition, an area of compressed dirt to the right of the fuselage/cowling area. All major structural components were located at the accident site. A scent of fuel was noticed at the accident site.



Figure 1: View of the main wreckage.

2.0 Airframe Examination

The right wing remained attached to the fuselage. The bottom side of the wing was compressed upward throughout its span. Multiple tears in the leading edge along with bending and buckling throughout was observed. The wing was downward about 67 inches inboard of the wing tip tank. The wing tip tank remained attached and exhibited an approximate 45° crush angle extending from the bottom of the tip tank to the top. The right flap and aileron remained attached via their mounts with the exception of the outboard aileron mount, which was separated. The flap was observed in the “up” position. Both the tip tank and main fuel tank fuel caps were observed in place and secure. Both the main fuel tank and tip fuel tank were breached. The right main landing gear was in the “up” position.



Figure 2: View of the right wing.

The left wing remained attached to the fuselage. The bottom side of the wing exhibited upward crushing throughout its span. The left-wing tip tank remained attached. The left flap and aileron remained attached via their mounts. The flap was observed in the “up” position. Both the tip tank and main fuel tank fuel caps were observed in place and secure. Both the main fuel tank and tip fuel tank were breached. The left main landing gear was in the “up” position.



Figure 3: View of the left wing.

The fuselage was mostly intact. The engine, cowling, and forward portion were slightly displaced to the right. The cabin area was mostly intact, and the roof structure was bent/buckled. Both the left and right seats were intact and remained attached to the seat rails. The left seat “U” channel clamps were observed compressed outward and the seat was found at an approximate mid-travel of the seat rails. The nose wheel landing gear was compressed upward into the cabin area. The fuselage structure aft of the cabin area was buckled and displaced upward and to the right. The fuselage structure just forward to the vertical stabilizer was buckled. The vertical stabilizer, rudder, stabilator, and stabilator trim tab remained attached and secure to their respective mounts. The stabilator trim actuator appeared to be in a position near neutral. Electrical power was applied to the airframe fuel boost pumps and both pumps operated.

Instrument Panel / Cockpit Documentation:

Throttle: About 1.5 inches from full forward and bent downward.

Mixture: Full In

Propeller: Full In

Primer: In / locked

Carb Heat: Off

Left Fuel Gauge: 0

Right Fuel Gauge: 20 Gallons

Oil Pressure: Destroyed

Oil Temp: Damaged

Amps: 0

CHT: Digital

EGT: Needle deflected left
Turn/Bank: Damaged
Attitude Indicator: Level horizon, 20-30 degree bank to the left
Radios: Damaged
Carb Temp: needle deflected left
Suction Gauge: 1
Cabin Heat: Off
Altimeter: damaged / kollsman: 30.46
Magnetos: Off / key broken
Compass, Rotating Beacon, Turn and Bank, Lights: Off/damaged
Master Switch: On
Fuel Pump switch: Broken
Airspeed: 206 (approx.) knots
Tach: 1100 rpm, 4269.0 hours

Fuel Selector Valves:

Left: Left Tip

Right: Between Right Main and Right Tip

Handles exhibited slight wear; all internal passages were free of obstructions.



Figure 4: View of the fuel selector valve handles.

Flight control continuity was established from all primary flight control surfaces to the cockpit controls. No separations in the control cables was observed.

3.0 Engine Examination

The engine remained attached to the fuselage via its mounts. The engine was cut away from the fuselage and suspended for further examination. The carburetor, magnetos, fuel pump, vacuum pump, oil filter, and starter were separated. The alternator and propeller governor remained attached. The upper spark plugs were removed, and the rocker box covers were removed. The engine crankshaft was rotated by hand using the propeller. Rotational continuity was established throughout the engine and valve train. Thumb compression and suction was established on all six cylinders. Equal movement of the intake and exhaust lifter arms was observed when the crankshaft was rotated.



Figure 5: View of the engine and propeller assembly.

The left and right magnetos were retained for further examination.



Figure 6: View of the right magneto. Photo courtesy of Lycoming Engines.

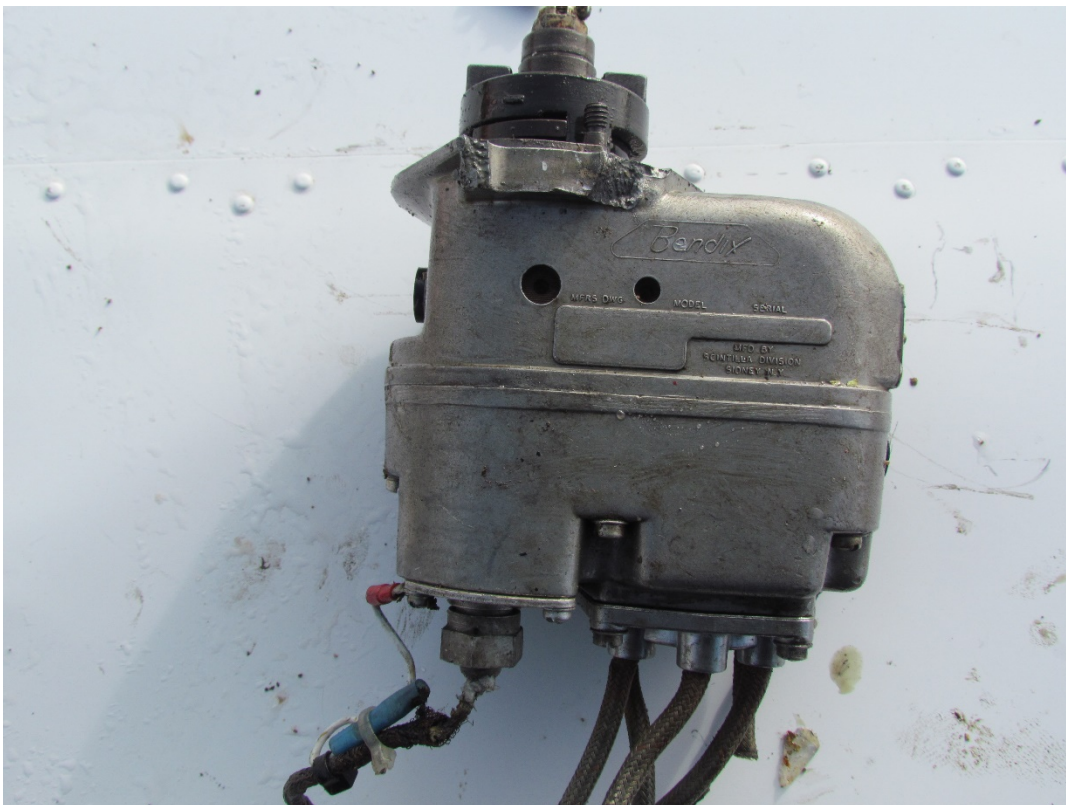


Figure 7:View of the left magneto. Photo courtesy of Lycoming Engines.

The carburetor was separated from the engine, however, remained attached to the cowling/air intake structure. The throttle arm remained attached, and the throttle cable end remained attached, however, the cable was separated between the throttle control and throttle arm. The mixture arm was separated. The carburetor was disassembled and examined. The floats were intact and exhibited slight hydro (liquid impact) damage. The fuel inlet screen was free of debris. The float bowl contained a small amount of fuel and no debris was noted. The throttle arm moved from stop to stop by hand. The mixture metering sleeve was free of debris.

The engine driven fuel pump was disassembled and found to be unremarkable.

The oil pickup screen was free of debris.

The top spark plugs exhibited normal operational signatures. Cylinders 1, 2, 3, and 4 spark plugs exhibited gray deposits within the electrode area. Cylinders 5 and 6 spark plugs exhibited dark/black deposits within the electrode area.

The exhaust was impact damaged. No evidence of any exhaust leaks or internal baffle separation was observed.

The induction system was impact damaged.

All six cylinders were examined using a lighted borescope and found to be unremarkable.

The propeller remained attached to the crankshaft propeller flange. One of the three propeller blades was separated from hub and exhibited chordwise scuffing on the forward side of the blade. One of the two remaining propeller blades that remained attached to the hub was free to move within the hub, and exhibited chordwise polishing and leading-edge polishing, along with twisting in the opposite direction of rotation. The third propeller blade remained attached to the propeller hub and exhibited some chordwise scratching along with slight forward bending.

Submitted by: Joshua Cawthra