

National Transportation Safety Board

Office of Aviation Safety

Washington, DC 20594



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AIRFRAME AND ENGINE EXAMINATION REPORT

November 28, 2023

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A. ACCIDENT

Location: Mertzson, Texas
Date: November 25, 2023
Time: 1835 Central Standard Time
Airplane: Piper PA-28-180

B. AIRFRAME AND ENGINE EXAMINATION REPORT

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FAA	Aspen Perrin Federal Aviation Administration Lubbock, Texas
Party Member	Kathryn Whitaker Piper Aircraft Vero Beach, Florida
Party Member	David Harsanyi Lycoming Engines Williamsport, Pennsylvania

C. SUMMARY

On November 25, 2023, about 1835 central standard time, a Piper PA-28-180 airplane, N7763W, was destroyed when it was involved in an accident near Mertzson, Texas. The pilot and two passengers were fatally injured. The airplane was operated as a title 14 *Code of Federal Regulations* Part 91 personal flight.

On November 26, 2023, the IIC travelled to San Angelo, Texas, with further travel to Mertzson, Texas to begin the on-scene examination. A Party Member from Lycoming Engines, Piper Aircraft, and the Federal Aviation Administration (FAA) attended the examination.

After the field examination was complete, the NTSB retained two iPads and one Sentry ADS-B/GPS device, Serial number: 8104086, for further examination. All other personal items were released to the Irion County Sheriff's Department for further release to the family. Three cell phones were recovered. One cell phone did not contain any information useful to the investigation. The other two cell phones were password protected and could not be opened. DETAILS OF THE EXAMINATION

1.0 Accident Site

See the Site Survey Report. Two 10th generation Apple iPads and a Sentry ADS-B Receiver were recovered from the accident site. Examination from the NTSB Recorders Laboratory revealed no usable data from any of the devices. In an email dated April 17, 2024, the author reported *"The iPads sustained heavy impact damage (IMG_0624.jpg, IMG_0626.jpg) rendering them inoperable. The Sentry was undamaged (IMG_0623.jpg), however, the particular model does not contain internal historical data. Therefore, no data were recovered."*

2.0 Airframe Examination

The airplane was a PA-28-180, serial number 28-1762 was manufactured in 1964 and purchased by the pilot and his wife on April 5, 2023. Both names were on the registration. The maintenance logbooks (airframe, engine, propeller) were located at the home of record for the pilot. The logbooks were shipped to the IIC who examined and photographed the pages. The logbooks were then returned to the family of the pilot.

2.1 Fuselage

The airplane travelled about 186 ft from the first point of probable impact to the final resting location and came to rest inverted, on a heading of about 299° magnetic. There were no indications of a fire.

The engine cowling area was destroyed to the firewall. The right side of the fuselage exhibited aft crushing damage from the firewall to the empennage, with crushed sheet metal and supporting structures underneath the sheet metal. The right door had separated from the fuselage and remained latched. The top of the fuselage was crushed downward. The windscreen was shattered.



Figure 1. N7763W, Front view.



Figure 2. N7763W, Underside view.

2.2 Empennage

The empennage remained attached to the fuselage and exhibited minor damage to the stabilator and stabilator trim. The vertical stabilizer remained secured to the fuselage and exhibited minor damage. The rudder exhibited substantial damage with bending of the metal.



Figure 3. Empennage right-side view.



Figure 4. Empennage, left-side view.

2.3 Wings

The right wing remained attached to the fuselage and exhibited aft crushing to the spar. The right flap remained secured at the hinges and exhibited substantial damage. The right flap remained attached to the wing, exhibited damage, and was positioned full up. The right-wing tip had been deposited in the debris field along with a long (about 5 ft) imprint of white paint transfer on rocks, consistent with the lower section of the right-wing contact. A section of the right wing, including the fuel tank area separated. The fuel cap remained secured and exhibited a good seal.



Figure 5. Right wing, underside view.



Figure 6. Right wing, top-side view.

The left wing separated from the fuselage at the root and fractured into several sections. The wing tip and aileron were deposited at the first point of probable impact, a juniper tree. Two sections of mid-wing were deposited in the debris field and made up the remainder of the wing. The root section was substantially damaged, and the fuel tank was breached.



Figure 7. Left wing tip and aileron.



Figure 8. Left wing, root section and flap.

2.4 Landing Gear

The nose gear separated from the lower fuselage at the oleo strut and was deposited in the debris area. The right main landing gear separated from the underside of the wing but remained attached via the brake line. The Left main landing gear separated from the underside of the left wing and was located near the wing root section. Both left and right wheel covers were in the debris area.



Figure 9. Nose wheel.



Figure 10. Right main landing gear.



Figure 11. Left wing Root section, with flap and left main landing gear.

2.5 Cockpit

The cockpit area was destroyed. Both pilot and front passenger seats were separated from their seat rails. One seat rail was deposited in an impact gouge in the ground. The instrument panel was fractured into several pieces. Many of the instruments were separated from the instrument panel.

2.5.1 Instruments

Attitude Indicator: Left bank, about 60°, Nose low, about 9°. Instrument was separated from instrument panel.

Airspeed: 160 knots indicated

RMI: needle separated

Tachometer: 1380 RPM: Hours: 3372.8X

Altimeter: 32,080 ft

Turn and Slip: Right bank

Avionics Master: Off

Strobe: On

Sub-panel:

Fuel pump: On

Navigation lights: Off

Landing Light: On

Rotating Beacon: On

Ignition Switch: Off

Throttle: Near full out

Cabin Hat: In



Figure 12. Instrument Panel.



Figure 13. Cockpit area.

2.6 Fuel/Fuel System

Both fuel tanks were breached and the gascolator bowl separated from the firewall. The carburetor was damaged and contained no fuel. The fuel pump was fractured but the manual pump lever moved.

2.7 Other Systems

The vacuum system exhibited minor damage. The vacuum pump exhibited normal condition. The turn and slip indicator was opened and exhibited rotational scoring on the gyro and the gyro housing.

3.0 Engine Examination

The engine was examined by a Party Member from Lycoming Engines. The engine remained attached to the damaged firewall. The engine rotated and held compression at all four cylinders. The lower spark plugs were removed and exhibited normal electrode appearance when compared to the Champion Check-A-Plug chart. Valve-train continuity was confirmed. Both magnetos exhibited spark at all leads. The

starter ring gear was separated and prevented timing of the engine. The oil strainer was free of debris.



Figure 14. Engine, Front view.



Figure 15. Engine, rear view.



Figure 16. Engine, Right-side view of rocker arms.



Figure 17. Engine, left-side view of rocker arms.



Figure 18. Spark plug, top and bottom.

4.0 Propeller Examination

The two-bladed fixed pitch aluminum propeller separated from the engine at the propeller flange. One blade exhibited slight aft bending but remained generally straight. The tip exhibited red paint transfer, consistent with the red paint of the fuselage. This blade exhibited some spanwise scoring near the tip. The other blade exhibited a near-90° bend near the tip that extended inward about 12 inches. This blade exhibited chordwise scoring and S-bending.



Figure 19. Propeller, rear view.



Figure 20. Propeller, forward view at bent tip.

Submitted by:

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