

NATIONAL TRANSPORTATIONS SAFETY BOARD
Office of Aviation Safety
Washington, DC 20594

SUMMARY OF AIRCRAFT EXAMINATION

-- CEN22FA299 --

A. ACCIDENT

Location: Mt. Pleasant, Texas
Date: July 3, 2022
Time: 2243 central daylight time
Aircraft: Piper PA-32-300, N1403X

B. PARTICIPANTS

Timothy Sorensen
Senior Aviation Accident Investigator
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C. ACCIDENT SUMMARY

On July 3, 2022, at 2243 central daylight time, a Piper PA-32-300 airplane, N1403X, was destroyed when it was involved in an accident near Mt. Pleasant, Texas. The pilot and two passengers were seriously injured. The pilot-rated passenger was fatally injured. The airplane was operated as a Title 14 *Code of Federal Regulations* Part 91 personal flight.

Summary of Aircraft Examination

D. DETAILS OF AIRCRAFT EXAMINATION

Post-accident airframe and engine examinations were conducted at the accident site on July 5th and 6th, 2022. The Federal Aviation Administration, Piper Aircraft, and Lycoming Engines provided technical support as parties to the NTSB investigation.

E. DESCRIPTION OF ACCIDENT SITE

The accident site consisted of a tree line and an open grass area along the final approach to the runway. The airplane impacted trees about 0.41 nm from the runway 17 approach threshold. A ground impact path began about 160 ft from the initial tree strike and extended to the main wreckage. The main wreckage was located about 320 ft from the initial tree strike at approximate coordinates 33.11° / -94.96°. This was about 0.34 nm from the runway. The accident site and runway elevations were about 385 ft and 364 ft, respectively.

The main wreckage consisted of the fuselage, empennage, left wing, engine, and propeller. The right wing was separated. The outboard 4-foot section was suspended in a tree about 50 ft above ground level, and the wing tip was resting on the ground near the tree. Tree branches exhibiting fresh breaks were also near the initial tree strike. The remaining inboard section of the right wing was separated at the root and located along the debris path.

F. SUMMARY OF AIRCRAFT EXAMINATION¹

Airframe – Piper PA-32-300 (s/n 32-7540154)

The fuselage was inverted and resting on the left wing. The right-side window frame posts had been cut by first responders. The forward cabin door remained attached to a fragment of the fuselage by its hinges. The forward baggage compartment door was separated from the fuselage and located in the debris field. The aft cabin door and aft baggage door remained attached by their hinges. The left front (pilot) seat remained attached to the seat rails. The right front (co-pilot) seat was partially separated from the seat rails. Two passenger seats were located in the aft cabin, and both were separated from their mounts.

The lower fuselage structure was deformed consistent with impact. The fuel selector handle was damaged and the position at impact could not be determined. The fuel strainer bowl was intact, and the screen was free of debris or sediment. The fuel lines from the right wing remained attached to the fuel selector valve. Small amounts of fluid consistent in color and odor with 100 low lead aviation fuel were recovered from the fuel lines. The sample was tested for the presence of water; none was detected.

The left wing was most separated from the fuselage at the wing root and remained attached by the aileron cables, flap rod assembly, and fuel lines. The aileron and flap remained attached to the wing. The wing tip fuel tank cap was in place in the filler neck opening. However, the fiberglass tank was breached consistent with impact forces, and no fuel was observed in the tip tank. The left-wing main tank appeared intact, and the fuel cap was in place in the filler neck opening. The cap was removed and liquid, consistent in

¹ Directions related to accident site placement and component damage/deformation are with respect to an intact airframe unless otherwise noted.

Summary of Aircraft Examination

odor and color with 100LL aviation gasoline was observed in the tank. The liquid level was up to the filler neck opening in the main tank. The left main landing gear was separated from the wing and located beneath it. The pitot mast was partially displaced from its mount. The lift detector remained installed in the leading edge and was encased in earth and grass.

The right wing was separated at the root and damaged consistent with impact forces. The wing tip fuel tank was separated and compromised. No fuel remained in the tank. The fuel cap was securely installed. The inboard portion of the wing, including the flap, was located along the debris path. The main landing gear remained attached. The main fuel tank cap was securely installed, and some blue staining was observed consistent with leakage while the wing section inverted. Fluid consistent in both odor and color with 100LL aviation gasoline was observed in the tank. The tank appeared to be approximately one-third full.

The vertical stabilizer remained attached to the aft fuselage, and the rudder to the stabilizer. The left side of the stabilator appeared intact. The right side of the stabilator exhibited leading edge impact damage and the outboard portion, beyond the trim tab was separated and located along the debris path. The rudder and stabilator stops were intact and unremarkable. The stabilator trim jack screw was extension was approximately 0.75" with about 6 threads exposed.²

The forward aileron cable chain segment was displaced from the control column sprockets. The chain segment turnbuckle was intact, and the chain remained attached to the aileron cables. The left aileron cable was continuous to left aileron bellcrank. The right aileron cable was continuous to the wing root where it was separated. The cable separation was frayed consistent with overload. The stabilator cables remained attached to the cockpit tee-bar and were continuous to the stabilator balance tube in the aft fuselage. The rudder cables remained attached to the rudder pedal torque tubes and were continuous to the rudder horn.

The fuel line from the right-wing tip tank contained a fluid consistent in appearance and odor to 100 low lead aviation fuel. The sample was tested for water, and none was detected.

The recording tachometer indicated 4,218.73 hours at the time of the examination. The altimeter was set at 29.98".

Engine – Lycoming IO-540-K1A5 (s/n L-13229-48A)

The engine assembly was partially separated from the airframe. The engine mount was damaged. The engine crankcase and cylinders appeared intact. Internal engine and accessory section continuity were confirmed via crankshaft rotation. Compression and suction were obtained on all cylinders. The spark plugs were intact. The spark plug electrodes appeared worn but operational.

The magnetos remained attached to the engine and appeared undamaged. Magneto timing was approximately 20° before top dead center consistent with the specification for

² The airframe manufacturer stated that the stabilator trim position corresponded to a neutral setting.

Summary of Aircraft Examination

the engine. Both magnetos produced a spark at all terminals. The ignition harness appeared intact and was secured at each spark plug and at each magneto.

The engine oil filter was secure and appeared undamaged. The filter element was intact; no debris was observed within the element. Minor debris was observed consistent with opening the housing and accessing the filter element. The oil suction screen was intact and clear of any visible debris.

The fuel servo remained attached to the engine. Fluid consistent in appearance and odor to 100 low lead aviation fuel was present at the inlet line. The fuel screen was intact and unobstructed. The throttle butterfly valve appeared intact and was free to rotate by hand. Throttle and mixture control cables remained attached to the input control levers.

The fuel flow divider was secured to the engine and all fuel lines appeared secure and intact. The fuel injector nozzles were securely installed and were not removed. Fluid consistent in appearance and odor to 100 low lead aviation fuel was present in the flow divider and the diaphragm and spring were intact.

The engine-driven fuel pump was secure and appeared intact. The input drive spline was undamaged, and the pump was free to rotate by hand. A small amount of fluid consistent in appearance and odor to 100 low lead aviation fuel was present at the pump interface.

The propeller governor was secure and appeared undamaged. The propeller control cable remained secured to the input control arm/lever. The gasket and screen appeared undamaged.

The intake air housing, alternate air, and filter appeared intact. The induction and exhaust systems were damaged consistent with impact forces.

The vacuum pump was secure and undamaged. The drive was input drive coupling intact, and the pump was free to rotate by hand.

Propeller – Hartzell HC-C2YK-1BF (s/n CH37178B)³

The propeller assembly remained secured to the engine. The propeller hub was undamaged and both blades were retained. The first blade was bent aft about 90° over the span. The blade was twisted and exhibited chordwise scratches. The second blade was curled aft near the blade tip and was twisted. It also exhibited chordwise scratching and a leading-edge gouge. The spinner was secure and appeared undamaged.

----- *end of summary* -----

³ Noted propeller serial number as engraved on hub. Propeller serial number noted in maintenance records as CH11755.