

**NATIONAL TRANSPORTATION SAFETY BOARD
Office of Aviation Safety
Washington, DC 20594**

SUMMARY OF AIRCRAFT EXAMINATION

CEN22FA145

A. ACCIDENT

Location: Pond Creek, Oklahoma
Date: March 17, 2022
Time: 4:38 pm Central Daylight Time
Aircraft: Piper PA-30 (S/N 30-1504) N8357Y

B. PARTICIPANTS

David Bowling
Senior Air Safety Investigator
National Transportation Safety Board
Denver, Colorado

Jaime Pagan
Air Safety Inspector
Federal Aviation Administration
Oklahoma City, Oklahoma

Jonathon Hirsch
Air Safety Investigator
Piper Aircraft, Inc.
Vero Beach, Florida

David Harsanyi
Air Safety Investigator
Lycoming Engines
Williamsport, Pennsylvania

C. ACCIDENT SUMMARY

On March 17, 2022, about 1638 central daylight time, a Piper PA-30 airplane, N8357Y, was destroyed when it was involved in an accident near Pond Creek, Oklahoma. The pilot and 2

passengers were fatally injured. The airplane was operated as a Title 14 *Code of Federal Regulations* Part 91 personal flight.

Preliminary radar and Automatic Dependent Surveillance-Broadcast (ADS-B) data indicated the airplane first appeared at 1509 about 1.5 nautical miles west of the Mineral Wells Regional Airport (MWL), Mineral Wells, Texas. The airplane tracked north climbing initially to a cruise altitude of 8,500 ft and then later climbing to 16,500 ft. The airplane began descending after passing over Vance Air force Base (END), Enid, Oklahoma and turned momentarily eastbound. The airplane then turned westbound and back to the north while descending and decreasing in ground speed from over 200 knots to under 100 knots. Mode C position reporting data was lost followed by the loss of all track data about 1631. The airplane was about 5 nautical miles southwest of Pond Creek, when track data was lost.

The airplane was never in contact with Air Traffic Control.

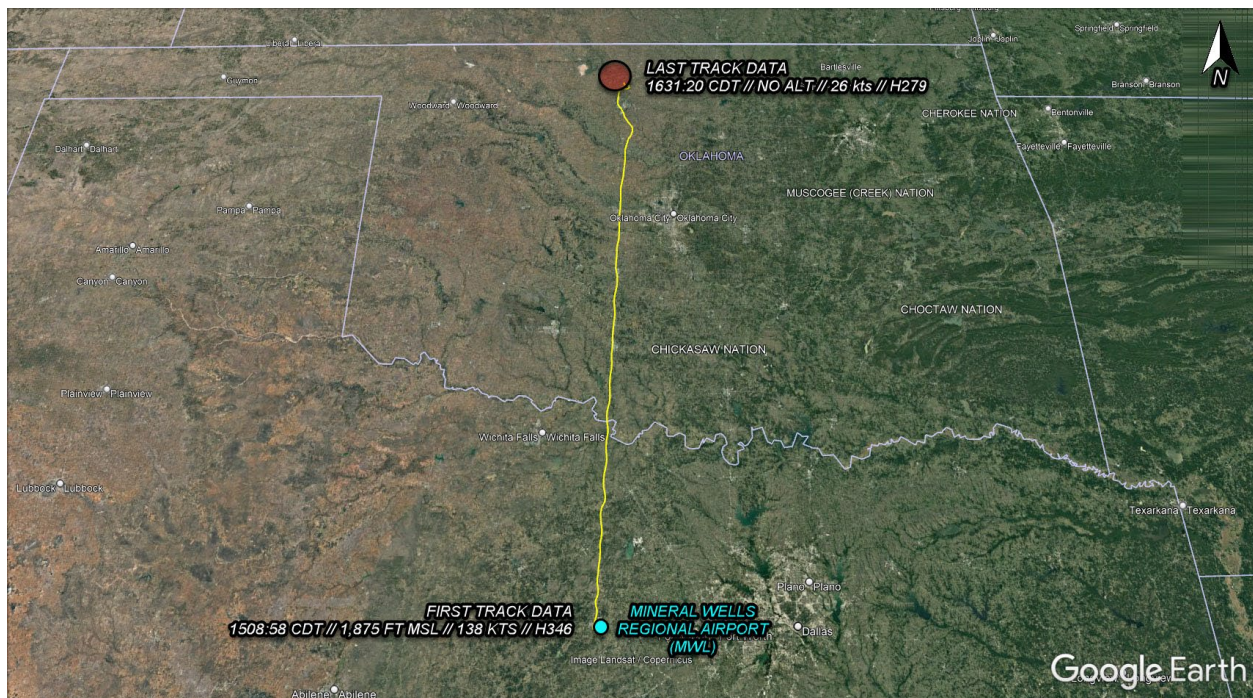


Figure 1. ADS-B Flight Track.

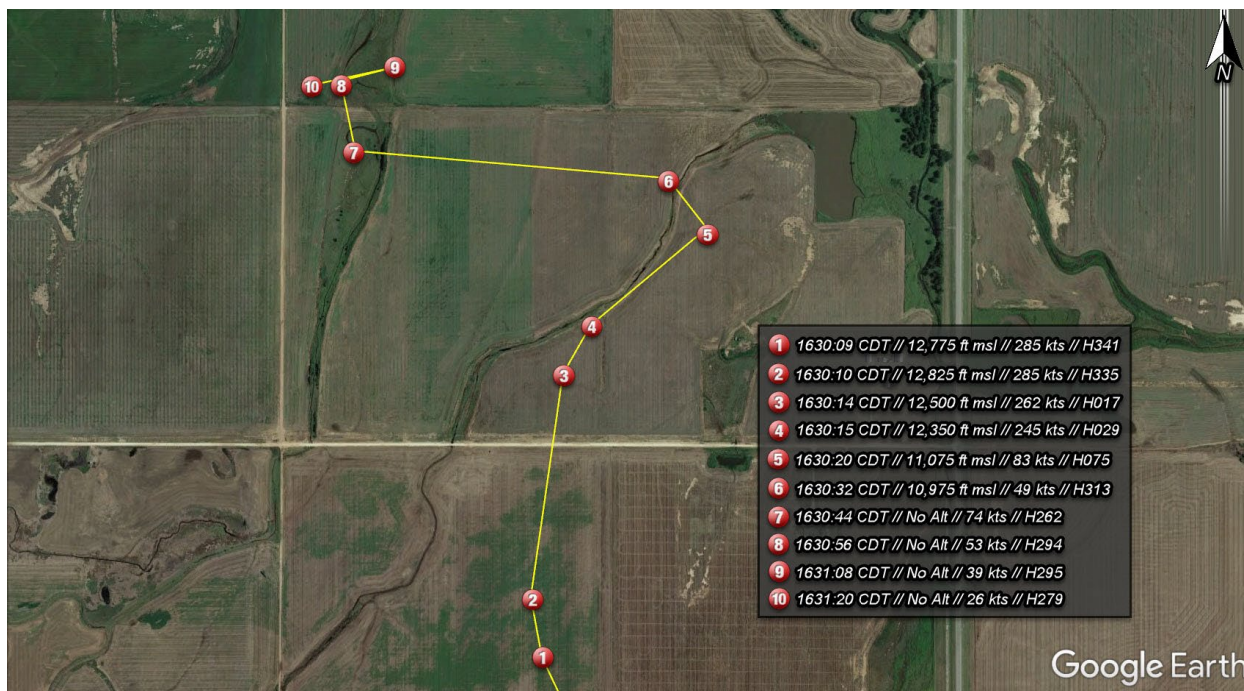


Figure 2. Radar Depiction of the End of the Flight Track.

A witness in the area reported he heard what sounded like engines revving. He looked up, saw the airplane coming straight down and videoed the airplane's last 8 seconds before it impacted terrain. The airplane was in a right-hand nose down spin. The video showed the airplane up to within moments of impact with the terrain when it went behind tall grass. In the video, the airplane's aft fuselage and empennage were separated.

The Automated Surface Observing System (ASOS) located at Enid Woodring Regional Airport (WDG), Enid, Oklahoma, located about 17 miles south-southeast of the accident location, at 1645 reported 5,000 ft scattered clouds, 7,000 ft scattered clouds, and 9,000 ft overcast ceiling, 10 miles visibility with temperature 70° F, dew point 45° F, wind 190° at 4 knots, and altimeter 29.64 in. HG.

E. DETAILS OF THE EXAMINATION

A post-accident examination was conducted at the accident site by the NTSB investigator-in-charge with the assistance of the Federal Aviation Administration and technical representatives from Piper Aircraft and Lycoming Engines as parties to the investigation. Following the examination, the airplane was recovered by Dodson International, Rantoul, Kansas.

F. DESCRIPTION OF THE ACCIDENT SITE

The accident site was located across several fields about 6 miles southwest of Pond Creek. The airplane main wreckage was located on the west side of a creek bed in a field 176 yards east of N2870 Road and 0.46 miles north of E0280 Road in Grant County. The elevation of the accident site was about 1,100 ft and the terrain was predominately flat and consisted of tall

grass. The airplane impacted in a near vertical attitude and rested inverted on a 047° heading at approximate coordinates of 37°36'53"N and 097° 54'30"W.

The debris field covered an area starting with the right outboard stabilizer and elevator, located 0.3 miles west-northwest of the main wreckage to where the nose wheel came to rest, about 0.18 miles east-southeast of the main wreckage. Some pieces of left wing skin, the engine cowlings and the nose of the airplane were found further out. Overall, the debris area encompassed an area 0.5 miles wide from northwest to southeast and 0.25 miles wide from northeast to southwest. All the departed pieces of the airplane rested on top of vegetation in the nearby fields. The airplane's right engine was buried in mud underneath the airplane's right wing. The airplane's left engine was found out of the ground, however in front of the engine was a 3' by 3' square hole measuring 13 in deep. In the hole was broken pieces of engine cowling and oil.

G. SUMMARY OF AIRCRAFT EXAMINATION

Airframe – Piper PA30 (s/n 30-1504)

The forward fuselage was crushed and broken aft and fragmented. The nose of the airplane was crushed down and aft. The nose landing gear strut was up and crushed up and aft against the instrument panel. The top of the cabin was crushed downward and aft. The windscreen and all the cabin windows were broken out and fragmented. The cabin door was broken out and the window frame was bent and broken. The door bayonet was in the closed and locked position as was the door handle. The instrument panel was crushed aft and broken. The airspeed indicator showed a needle slap mark on the face at 105 knots. The left and right tachometers were broken inward but displayed the engine tachometer times. The left engine time was 375.0 hours. The right engine time was 375.6 hours. The throttle, propeller, and mixture control levers were bent in the console. The throttles were near idle, the propeller levers were aft toward feather, and the mixture knobs were aft of midway toward lean. The control yokes were broken with the cables still attached. The forward cabin floor was bent upward. The rudder pedals on both sides of the front cabin were broken aft. All 4 cabin seat backs were broken aft. All of the lap belts were intact. The baggage compartment was intact. The baggage door was broken out and the top of the fuselage in that area was crushed. The fuselage aft of the baggage compartment was broken and twisted clockwise. Flight control and trim cables coming out of that area remained attached to the fractured aft fuselage and empennage. They were twisted into a single bundle. The remainder of the aft fuselage with the empennage was crushed flat and broken. Both the left and right horizontal stabilizers were broken off at mid-span. Fractures at the separations showed upward and aft bending prior to separation. The vertical stabilizer was bent to the left. The leading edge of the stabilizer showed several impact dents and a tear near the top of the stabilizer. The rotating beacon was broken out. The rudder remained attached and was bent in several places. The top 7 inches of the rudder was broken off.

Approximately 9 ft of both wings with the nacelles and engines, remained with the cabin and fuselage. The left wing, 5 ft outboard of the engine nacelle, was bent and broken upward. The wing spar showed an upward and aft fracture indicative of an overload failure. The leading

G. SUMMARY OF AIRCRAFT EXAMINATION (CONTINUED)

edge of the wing section was crushed aft, and the inboard and outboard fuel bladders were broken

open. The fuel cap was located on the ground in front of the wing. The smell of fuel was prevalent in the bladders and wing structure. The left engine nacelle was crushed inward and bent aft. The left engine was bent downward at the firewall. Most of the cowling was broken out and separated. The left wing inboard of the nacelle to the root was crushed aft and broken. The left flap was in the up position and intact.

The right wing, 5 ft outboard of the engine nacelle was bent and broken upward and aft. The wing spar showed an upward and aft fracture indicative of an overload failure. The leading edge of the wing section was crushed aft, and the inboard and outboard fuel bladders were broken open. The fuel caps were secure. The smell of fuel was prevalent in the bladders and wing structure. The right engine nacelle was crushed inward, bent aft and partially separated. The left engine was bent downward at the firewall and buried in the ground beneath the right wing nacelle. All of the right engine cowling was broken out and separated. The right wing inboard of the nacelle to the root was crushed aft and broken. The left flap was in the up position and was bent upward at the outboard end, Both main landing gear were in the up position.

Pieces of the fuselage forward of the cabin were located in a field north-northeast of the airplane main wreckage. The airplane's nose cone or cowling was broken circumferentially and was located intact 150 yards away. Near the nose cone was a section of the bottom forward fuselage with one of the nose wheel doors. The section was torn out and broken. The airplane's nose wheel was separated from the strut and was located intact 322 yards east-southeast of the airplane main wreckage.

The right outboard wing section and fuel tip tank was located in a winter wheat field about 214 yards southeast of the airplane main wreckage on a 161° heading. The right aileron was broken out and located 270 yards northeast of the wing section. The tip tank was crushed inward and broken at the aft end. The fracture at the wing separation was longitudinal and upward, similar to the fracture on the wing section with the main wreckage. The wing surface was bent aft and bucked. The right aileron was torn out at the hinges. The bellcrank remained with the aileron. The surface was bent and buckled.

The left outboard wing fuel tip tank was located in the same field 300 yard east of the airplane main wreckage on a 098° heading. The tank was crushed inward and had separated longitudinally at the wing attach bolts.

The left outboard wing section was 381 yards west-northwest of the airplane main wreckage. The section was torn longitudinally where it separated from the airplane and where the tip fuel tank separated. The wing section was torn open and much of the top skin was separated and fragmented. The left aileron was broken out and was near the right aileron 650 yards east of the wing section. The aileron was separated at the hinges. The left and right outboard stabilator

G. SUMMARY OF AIRCRAFT EXAMINATION (CONTINUED)

pieces were both located in fields about 427 yards (left stab and elevator section) and 500 yards (right stab and elevator section) west and west-northwest of the airplane main wreckage. Both sections displayed similar longitudinal separations. The pieces were intact.

Partial flight control continuity was confirmed to both ailerons to the point where they separated from the airplane and their respective wing sections. Control continuity from the empennage to the control yokes and rudder pedals was visually confirmed, but because of the crush and bending of the cabin floor, manipulation of the cables could not be accomplished. The airplane wreckage is being retained for further examination.

Engines -- Lycoming IO-320 series

Due to the field conditions at the scene, and the near vertical impact of the airplane, the investigative team was unable to get the equipment needed to lift the airplane to conduct a detailed examination of the engines. The engines will be examined later at a secure facility following their recovery.

Propellers – Hartzell HC-E2YL-2BSF

The left propeller was broken at the hub and one blade broken out. The blade showed no damage. The second blade showed S-bending, chordwise scratches and trailing edge gouges. The blade also showed hexagonal bolt impressions on the rear side. Two inches of the blade's tip was broken off. The hub was attached to the flange and 3 inches of the left engine crankshaft. The piston was broken off at the threads. The spinner was broken and separated.

The right propeller was also attached to the flange and about 3 inches of the right engine crankshaft. Both blades were bent slightly forward and showed chordwise scratches and trailing edge gouges. The piston was broken off at the base threads at the front of the hub. Part of the spinner remained with the piston. The spinner piece was bent and torn open.

Both propellers will be further examined later at a secure facility following their recovery.

H. CERTIFICATION AND AGREEMENT

I certify that the notes presented reflect the observations and information made and collected during the time I was at the accident scene of N8357Y. The concurrency of the party members reflect only that these observations are true by the IIC and are open to continued discussion as the investigation continues.

SIGNED

DR. DAVID BOWLING
Investigator-in-Charge

H. CERTIFICATION AND AGREEMENT

National Transportation Safety Board

SIGNED

JAIME PAGAN
Air Safety Inspector
Federal Aviation Administration

SIGNED

JONATHON HIRSCH
Air Safety Investigator
Piper Aircraft, Incorporated

SIGNED

DAVID HARSANYI
Air Safety Investigator
Lycoming Engines