

National Transportation Safety Board

Office of Aviation Safety

Washington, DC 20594



CEN23FA031

EXAMINATION SUMMARY

November 12, 2022

A. ACCIDENT

Location: Bignell, NE
Date: November 9, 2022
Time: 0934 CST
1534 UTC
Airplane: Piper PA46-500TP

B. PARTICIPANTS

IIC	Aaron Sauer NTSB Denver, CO
Investigator	Kevin Otterstrom NTSB Denver, CO
Party Coordinator	Jonathon Hirsch Piper Aircraft Company Vero Beach, FL

C. SUMMARY

On November 9, 2022, about 0934 central daylight time, a Piper PA4-500TP, N234PM, was destroyed when it was involved in an accident near Bignell, Nebraska. The pilot and passenger sustained fatal injuries. The airplane was operated as a Title 14 *Code of Federal Regulations* Part 91 business flight.

D. DETAILS OF THE EXAMINATION

1.0 Accident Site

Airplane wreckage came to rest on the bank/edge of irrigation pond about 3 miles east/southeast of LBF airport. Airplane structure was fragmented, and a majority of the fuselage was located in an impact crater. All debris was contained within about a 50 ft diameter of the main wreckage. Portions of nearby vegetation was damaged by a postimpact fire.

2.0 Airframe Examination

2.1 Fuselage

Destroyed and crushed forward to aft by nose down, high-energy impact sequence. Fuselage structure displayed evidence of postimpact thermal damage and severe fragmentation.

2.2 Empennage

Fragmented and destroyed. Remained partially attached to fuselage structure via control cables and damaged fuselage structure. Vertical stabilizer was separated and a majority consumed by thermal damage. Rudder control surface mainly consumed by thermal damage; a portion of the aft rudder control surface and trim tab were present. A portion of rudder control cable bellcrank remained present. Horizontal stabilizer partially consumed by thermal damage. Left horizontal stabilizer displayed leading edge damage and deformation by impact. Right horizontal stabilizer partially consumed by thermal damage. Elevator remained attached to horizontal stabilizer. Right portion of the elevator consumed by thermal damage. Elevator pitch trim tab remained attached to the elevator. Pitch trim actuator jackscrew present, Piper to determine trim position.

Flight control continuity established to rudder and elevator flight control surfaces and forward to where cables were cut for recovery purposes near the aft pressure bulkhead. Control cables intact through fuselage center section from aft bulkhead forward toward cockpit. Cable separations consistent with overload (impact) and recovery processes (cut). Cockpit control quadrants and sectors attached with two rudder and two elevator cables were present. Cables found continuous to forward wing spar.

2.3 Wings

Both wings separated from fuselage and displayed thermal damage. The right wing displayed thermal damage from root to tip, flap remained partially attached, and aileron was separated. Fuel cap not located. Leading edge to aft crush damage noted along entire leading edge.

The left wing displayed thermal damage from wing root and outboard about 6 ft. The flap was separated, and the aileron was attached. Leading edge to aft crush damage noted along entire leading edge. Fuel cap present and secure.

Flight control continuity established from aileron control surface bellcranks inboard to wing roots. Separated cable sections from the wing root/center fuselage were present. Cables from cockpit to separated center fuselage section were present.

All cable separations were consistent with overload (impact) and recovery processes (cut).

Pitot heat tube, which was separated from wing structure, was tested with a slave battery and cables. When battery power was applied to the pitot heat terminals, tube heated without issue.

Fractured flap system components were located within the fragmented debris. Fractured flap jackscrew present, Piper to determine flap position.

2.4 Landing Gear

Present within main wreckage. Gear appeared to be in the retracted position. Nose landing gear assembly found with the engine mount structure. Main landing gears found within the wing structure. All three gears exhibited impact and thermal damage.

2.5 Cockpit

Destroyed. All instruments and switches destroyed by impact and thermal damage. Significant forward to aft crush damage. Engine controls quadrant bent and deformed, all levers found in the full forward position. Flight control cables (aileron, rudder, and elevator) attached to respective fragmented control quadrants and sectors. Cables continuous to center fuselage. Cable separations consistent with overload (impact) and recovery processes (cut). Both forward seats were bent, deformed, and displayed thermal damage. Windscreens were fragmented and upper and center posts were located within the initial impact crater.

2.6 Survivability

N/A - high energy impact, not survivable.

2.7 Fuel/Fuel System

Destroyed. Evidence of fuel odor and fuel sheen on water noted at the scene.

3.0 Engine Examination

M/M: PT6A-42A; S/N: PCF-RM0209. Fragmented and contained within impact crater. All engine accessories crushed and destroyed. Both exhaust stacks displayed ductile crush damage. Torsional twist damage noted to engine power and compressor module housings. Compressor blades were "corn cobbled" at blade roots. Propeller assembly separated at front propeller shaft.

4.0 Propeller Examination

4-blade propeller assembly. Propeller hub fragmented and one blade separated from hub fragments. Blades displayed chordwise scratching, leading edge gouging, and twisting in direction of rotation.

5.0 Other Investigation Information

Remains of a damaged flight bag with a pilot logbook and other miscellaneous documents found in damaged fuselage structure (near center wing spar). Pilot logbook photographed. Aircraft records recovered from airplane hangar by FAA Lincoln FSDO inspectors.

Submitted by:

Aaron Sauer
Investigator-In-Charge