



AVIATION



HIGHWAY



MARINE



RAILROAD



PIPELINE

Aviation Investigation Final Report

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|--------------------------------|--------------------------------------|-------------------------|-------------|
| Location: | Ann Arbor, Michigan | Accident Number: | CEN24LA058 |
| Date & Time: | December 10, 2023, 16:11 Local | Registration: | N90ZZ |
| Aircraft: | Piper PA46-500TP | Aircraft Damage: | Substantial |
| Defining Event: | Other weather encounter | Injuries: | 3 None |
| Flight Conducted Under: | Part 91: General aviation - Personal | | |

Analysis

The pilot reported that he was flying the RNAV (GPS) approach to runway 24 and experienced turbulence about 1,500 ft mean sea level (msl), which was about 700 ft above ground level (agl). He continued the approach with an airspeed between 95 and 100 kts. He stated that about 50 ft agl and short of the runway, the airplane encountered wind shear that violently forced the airplane to the ground. The airplane impacted the ground in a wings level attitude and continued onto the runway. The left main landing gear separated, the airplane veered off the left side of the runway, then came to rest in the grass facing 180° from the direction of travel. Postaccident photos of the airplane revealed substantial damage to the right wing. The pilot reported no preimpact mechanical malfunctions or failures that would have precluded normal operation.

The pilot stated to the responding fire department that there was a 30 kt crosswind on final approach. The recorded wind data around the time of the accident showed the wind was from 250° to 260° and 7 to 11 kts.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be:

The airplane's encounter with unexpected wind shear during final approach, which resulted in a hard landing short of the runway.

Findings

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|-----------------------------|-----------------------------------------|
| Environmental issues | Windshear - Effect on operation |
| Aircraft | Altitude - Attain/maintain not possible |

Factual Information

History of Flight

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|----------|------------------------------------------|
| Approach | Other weather encounter (Defining event) |
|----------|------------------------------------------|

Pilot Information

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|---------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|-------------------|
| Certificate: | Commercial | Age: | 63,Male |
| Airplane Rating(s): | Single-engine land; Multi-engine land | Seat Occupied: | Left |
| Other Aircraft Rating(s): | None | Restraint Used: | |
| Instrument Rating(s): | Airplane | Second Pilot Present: | No |
| Instructor Rating(s): | None | Toxicology Performed: | |
| Medical Certification: | Class 2 Without waivers/limitations | Last FAA Medical Exam: | November 21, 2022 |
| Occupational Pilot: | No | Last Flight Review or Equivalent: | |
| Flight Time: | 1304 hours (Total, all aircraft), 219 hours (Total, this make and model), 1155 hours (Pilot In Command, all aircraft), 40 hours (Last 90 days, all aircraft), 15 hours (Last 30 days, all aircraft), 0 hours (Last 24 hours, all aircraft) | | |

Aircraft and Owner/Operator Information

| | | | |
|-------------------------------|--------------------------------|--------------------------------|-----------------|
| Aircraft Make: | Piper | Registration: | N90ZZ |
| Model/Series: | PA46-500TP | Aircraft Category: | Airplane |
| Year of Manufacture: | 2005 | Amateur Built: | |
| Airworthiness Certificate: | Normal | Serial Number: | 4697223 |
| Landing Gear Type: | Retractable - Tricycle | Seats: | 6 |
| Date/Type of Last Inspection: | June 19, 2023 Annual | Certified Max Gross Wt.: | 5134 lbs |
| Time Since Last Inspection: | | Engines: | 1 Turbo prop |
| Airframe Total Time: | 2475.5 Hrs at time of accident | Engine Manufacturer: | Pratt & Whitney |
| ELT: | Installed, not activated | Engine Model/Series: | PT6A |
| Registered Owner: | CAHOOTS AIR LLC | Rated Power: | |
| Operator: | CAHOOTS AIR LLC | Operating Certificate(s) Held: | None |

Meteorological Information and Flight Plan

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|----------------------------------|-------------------------|-----------------------------------------|------------------|
| Conditions at Accident Site: | Visual (VMC) | Condition of Light: | Day |
| Observation Facility, Elevation: | KARB | Distance from Accident Site: | 0 Nautical Miles |
| Observation Time: | 16:33 Local | Direction from Accident Site: | |
| Lowest Cloud Condition: | Scattered / 1000 ft AGL | Visibility | 7 miles |
| Lowest Ceiling: | Broken / 1400 ft AGL | Visibility (RVR): | |
| Wind Speed/Gusts: | 7 knots / | Turbulence Type Forecast/Actual: | / |
| Wind Direction: | 250° | Turbulence Severity Forecast/Actual: | / |
| Altimeter Setting: | 29.92 inches Hg | Temperature/Dew Point: | 2°C / 1°C |
| Precipitation and Obscuration: | Light - None - Rain | | |
| Departure Point: | Columbus, OH (OSU) | Type of Flight Plan Filed: | IFR |
| Destination: | Ann Arbor, MI | Type of Clearance: | IFR |
| Departure Time: | 15:13 Local | Type of Airspace: | Class D |

Airport Information

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|----------------------|--------------------|---------------------------|----------|
| Airport: | ANN ARBOR MUNI ARB | Runway Surface Type: | Concrete |
| Airport Elevation: | 839 ft msl | Runway Surface Condition: | Dry |
| Runway Used: | 06/24 | IFR Approach: | RNAV |
| Runway Length/Width: | 3505 ft / 75 ft | VFR Approach/Landing: | |

Wreckage and Impact Information

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|---------------------|--------|-------------------------|----------------------|
| Crew Injuries: | 1 None | Aircraft Damage: | Substantial |
| Passenger Injuries: | 2 None | Aircraft Fire: | None |
| Ground Injuries: | N/A | Aircraft Explosion: | None |
| Total Injuries: | 3 None | Latitude, Longitude: | 42.226176,-83.738966 |

Administrative Information

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|------------------------------------------|---------------------------------------------------------------------------------------------------------|
| Investigator In Charge (IIC): | Lindberg, Joshua |
| Additional Participating Persons: | James Reif; Federal Aviation Administration; Belleville, MI |
| Original Publish Date: | February 8, 2024 |
| Last Revision Date: | |
| Investigation Class: | Class 4 |
| Note: | The NTSB did not travel to the scene of this accident. |
| Investigation Docket: | https://data.nts.gov/Docket?ProjectID=193503 |

The National Transportation Safety Board (NTSB) is an independent federal agency charged by Congress with investigating every civil aviation accident in the United States and significant events in other modes of transportation—railroad, transit, highway, marine, pipeline, and commercial space. We determine the probable causes of the accidents and events we investigate, and issue safety recommendations aimed at preventing future occurrences. In addition, we conduct transportation safety research studies and offer information and other assistance to family members and survivors for each accident or event we investigate. We also serve as the appellate authority for enforcement actions involving aviation and mariner certificates issued by the Federal Aviation Administration (FAA) and US Coast Guard, and we adjudicate appeals of civil penalty actions taken by the FAA.

The NTSB does not assign fault or blame for an accident or incident; rather, as specified by NTSB regulation, “accident/incident investigations are fact-finding proceedings with no formal issues and no adverse parties ... and are not conducted for the purpose of determining the rights or liabilities of any person” (Title 49 *Code of Federal Regulations* section 831.4). Assignment of fault or legal liability is not relevant to the NTSB’s statutory mission to improve transportation safety by investigating accidents and incidents and issuing safety recommendations. In addition, statutory language prohibits the admission into evidence or use of any part of an NTSB report related to an accident in a civil action for damages resulting from a matter mentioned in the report (Title 49 *United States Code* section 1154(b)). A factual report that may be admissible under 49 *United States Code* section 1154(b) is available [here](#).