



Aviation Investigation Final Report

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|--------------------------------|---|-------------------------|-------------|
| Location: | Seymore, Tennessee | Accident Number: | ERA23LA271 |
| Date & Time: | June 18, 2023, 08:00 Local | Registration: | N12395 |
| Aircraft: | Cessna 172 | Aircraft Damage: | Substantial |
| Defining Event: | Collision during takeoff/land | Injuries: | 3 Minor |
| Flight Conducted Under: | Part 91: General aviation - Instructional | | |

Analysis

The flight instructor stated that he was teaching the student pilot a soft-field takeoff technique on a 2,300-ft-long turf runway, with a passenger in the back seat. The flight instructor further stated that student pilot lifted off the airplane at 52 knots, but it settled back to the runway as the wind shifted from a headwind to a tailwind. The airplane then traveled about 100 ft beyond the departure end of the runway and struck bushes, coming to rest upright. The flight instructor added that there were no preimpact mechanical malfunctions with the airplane. Examination of the wreckage by a Federal Aviation Administration inspector revealed substantial damage to the left wing and fuselage. The inspector noted that the flaps were in the fully retracted position and asked the flight instructor why he did not perform the accident takeoff with 10° flap extension, per the owner's manual. The flight instructor replied that was always how he performed soft-field takeoffs. The recorded wind speed about the time of the accident was 3 knots.

Probable Cause and Findings

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

The flight instructor's failure to properly configure the wing flaps for a soft-field takeoff on a short runway, which resulted in a runway overrun and collision with trees.

Findings

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| Personnel issues | Incorrect action selection - Instructor/check pilot |
| Aircraft | Trailing edge flaps - Incorrect use/operation |

Factual Information

History of Flight

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| Takeoff | Collision during takeoff/land (Defining event) |
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Flight instructor Information

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|---------------------------|---|-----------------------------------|------------------|
| Certificate: | Airline transport; Commercial; Flight engineer; Flight instructor; Military | Age: | 74,Male |
| Airplane Rating(s): | Single-engine land; Multi-engine land | Seat Occupied: | Front |
| Other Aircraft Rating(s): | None | Restraint Used: | Lap only |
| Instrument Rating(s): | Airplane | Second Pilot Present: | Yes |
| Instructor Rating(s): | Airplane multi-engine; Airplane single-engine; Instrument airplane | Toxicology Performed: | |
| Medical Certification: | Class 1 With waivers/limitations | Last FAA Medical Exam: | December 1, 2022 |
| Occupational Pilot: | Yes | Last Flight Review or Equivalent: | May 20, 2023 |
| Flight Time: | 30000 hours (Total, all aircraft), 15000 hours (Total, this make and model), 20000 hours (Pilot In Command, all aircraft), 100 hours (Last 90 days, all aircraft), 30 hours (Last 30 days, all aircraft), 3 hours (Last 24 hours, all aircraft) | | |

Student pilot Information

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|---------------------------|---|-----------------------------------|----------|
| Certificate: | Student | Age: | Female |
| Airplane Rating(s): | None | Seat Occupied: | Left |
| Other Aircraft Rating(s): | None | Restraint Used: | Lap only |
| Instrument Rating(s): | | Second Pilot Present: | Yes |
| Instructor Rating(s): | None | Toxicology Performed: | |
| Medical Certification: | Class 3 Without waivers/limitations | Last FAA Medical Exam: | |
| Occupational Pilot: | No | Last Flight Review or Equivalent: | |
| Flight Time: | 52 hours (Total, all aircraft), 48 hours (Total, this make and model), 8 hours (Pilot In Command, all aircraft), 9 hours (Last 90 days, all aircraft), 5 hours (Last 30 days, all aircraft) | | |

Aircraft and Owner/Operator Information

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|--------------------------------------|-----------|---------------------------------------|-----------------|
| Aircraft Make: | Cessna | Registration: | N12395 |
| Model/Series: | 172 M | Aircraft Category: | Airplane |
| Year of Manufacture: | 1973 | Amateur Built: | |
| Airworthiness Certificate: | Normal | Serial Number: | 17261968 |
| Landing Gear Type: | Tricycle | Seats: | 4 |
| Date/Type of Last Inspection: | Annual | Certified Max Gross Wt.: | 2300 lbs |
| Time Since Last Inspection: | | Engines: | 1 Reciprocating |
| Airframe Total Time: | | Engine Manufacturer: | Lycoming |
| ELT: | Installed | Engine Model/Series: | O-320 |
| Registered Owner: | On file | Rated Power: | 150 Horsepower |
| Operator: | On file | 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: | TYS,970 ft msl | Distance from Accident Site: | 10 Nautical Miles |
| Observation Time: | 07:53 Local | Direction from Accident Site: | 272° |
| Lowest Cloud Condition: | | Visibility | 8 miles |
| Lowest Ceiling: | Broken / 25000 ft AGL | Visibility (RVR): | |
| Wind Speed/Gusts: | 3 knots / | Turbulence Type Forecast/Actual: | None / None |
| Wind Direction: | 70° | Turbulence Severity Forecast/Actual: | N/A / N/A |
| Altimeter Setting: | 29.94 inches Hg | Temperature/Dew Point: | 18°C / 14°C |
| Precipitation and Obscuration: | No Obscuration; No Precipitation | | |
| Departure Point: | Seymore, TN | Type of Flight Plan Filed: | None |
| Destination: | Seymore, TN | Type of Clearance: | None |
| Departure Time: | | Type of Airspace: | Class G |

Airport Information

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| Airport: | Seymour Air Park TN20 | Runway Surface Type: | Grass/turf |
| Airport Elevation: | 1000 ft msl | Runway Surface Condition: | Dry |
| Runway Used: | 25 | IFR Approach: | None |
| Runway Length/Width: | 2300 ft / 100 ft | VFR Approach/Landing: | None |

Wreckage and Impact Information

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|----------------------------|---------|-----------------------------|---------------------------|
| Crew Injuries: | 2 Minor | Aircraft Damage: | Substantial |
| Passenger Injuries: | 1 Minor | Aircraft Fire: | None |
| Ground Injuries: | | Aircraft Explosion: | None |
| Total Injuries: | 3 Minor | Latitude, Longitude: | 35.812279,-83.774642(est) |

Administrative Information

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| Investigator In Charge (IIC): | Gretz, Robert |
| Additional Participating Persons: | Steven Sinclair ; FAA/FSDO; Nashville, TN |
| Original Publish Date: | September 8, 2023 |
| 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=192401 |

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](#).