



AVIATION



HIGHWAY



MARINE



RAILROAD



PIPELINE

Aviation Investigation Final Report

Location:	Brevard, North Carolina	Accident Number:	ERA19LA131
Date & Time:	March 13, 2019, 18:10 Local	Registration:	N8905X
Aircraft:	Cessna 182	Aircraft Damage:	Substantial
Defining Event:	Loss of control on ground	Injuries:	1 None
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The pilot performed a preflight inspection after the airplane had undergone maintenance and no anomalies were noted. He boarded the airplane, adjusted the seat, and then verified that it was locked in position. Shortly after beginning the takeoff roll, his seat slid backward. He was unable to reach the rudder pedals, and the airplane departed the left side of the runway, nosed over, and came to rest inverted. Examination revealed that the pilot seat's left front roller housing was disengaged from the seat rail. The seat rail exhibited scoring on top of the rail, which likely occurred during the accident sequence. No scoring was noted on the sides of the rail. The roller housing was not splayed or damaged, indicating that it did not pull off the rail during the accident sequence. Although the seat rail holes were slightly worn, the pin did not exhibit any anomalies.

The mechanic stated that he did not remove the pilot's seat to perform the maintenance that he completed before the accident flight; however, given the lack of side damage to the rails and the fact that the left front seat roller housing was not splayed, it is likely that the roller housing came off the rails during the maintenance and went unnoticed by both the mechanic and the pilot, which resulted in the seat sliding backward during takeoff.

Probable Cause and Findings

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

The mechanic's failure to notice that the left front seat left front roller housing disengaged from the seat rail during recent maintenance, and the pilot's failure to detect the disengaged roller housing during the preflight inspection, which resulted in the seat sliding backward during takeoff and a subsequent loss of airplane directional control.

Findings

Personnel issues	Replacement - Maintenance personnel
Personnel issues	Preflight inspection - Pilot
Aircraft	Seat/cargo attach fitting - Incorrect service/maintenance
Aircraft	Directional control - Attain/maintain not possible
Personnel issues	Aircraft control - Pilot

Factual Information

History of Flight

Takeoff	Miscellaneous/other
Takeoff	Loss of control on ground (Defining event)

On March 13, 2019, about 1810 eastern daylight time, a Cessna 182D, N8905X, was substantially damaged after it impacted terrain during takeoff from Transylvania Community Airport (3NR3), Brevard, North Carolina. The private pilot was not injured. Visual meteorological conditions prevailed, and no flight plan was filed for the personal flight, which was originating at the time of the accident. The flight was conducted under the provisions of Title 14 Code of Federal Regulations Part 91.

According to the pilot, he completed a preflight inspection with no anomalies noted. When he boarded the airplane, the pilot seat was in its aft most position, since that was how he would typically exit the airplane. The pilot then slid the seat forward until he "could see 3 holes" in the rail, which was his typical seating position. He then "rocked the seat back and forth" to verify it was locked in position, and then proceeded to start the engine, taxi, and perform an engine runup. He then taxied onto the runway and began the takeoff roll. About 4-5 seconds into the takeoff roll, his seat slid backwards. At that point, he was unable to reach the rudder pedals, and the airplane departed the left side of the runway, nosed over, and came to rest inverted.

According to a Federal Aviation Administration (FAA) inspector who responded to the accident location, the airplane sustained substantial damage to the wings and fuselage.

According to FAA airworthiness records, the airplane was manufactured in 1961 and registered to the pilot in January 2019. The airplane's most recent annual inspection was completed on August 18, 2018, at a total time of 4,251.8 hours. In addition, the annual inspection maintenance log entry indicated that an inspection in accordance with airworthiness directive (AD) 2011-10-09, associated with a seat rail inspection, had been completed. At the time of the accident, the airplane had accumulated 4,265 total hours.

In an interview with the FAA inspector, a mechanic was working on the airplane the day before the accident to replace the transponder. He stated that sometimes he does have to remove the front seats to perform the work, however, he did not have the left front seat out of the airplane during the maintenance work, he only had the right front seat out of the airplane.

An examination of the left front seat rails revealed that the housings remained engaged on the seat rails except the left forward roller housing, which was disengaged from the seat rail. The housing tangs were not worn, distorted, or splayed. The pin that engaged into the track had no anomalies, the pin spring had positive engaging forces, and the holes were slightly worn. The seat rail was not damaged along the sides of the rail; however, the top of the rail had scoring marks.

According to the airplane owner's manual, the before engine start checklist stated, "Adjust seat to a comfortable position, check to see the seat locking mechanism is secure, and fasten safety belt."

Pilot Information

Certificate:	Private	Age:	60, Male
Airplane Rating(s):	Single-engine land	Seat Occupied:	Left
Other Aircraft Rating(s):	None	Restraint Used:	Unknown
Instrument Rating(s):	None	Second Pilot Present:	No
Instructor Rating(s):	None	Toxicology Performed:	No
Medical Certification:	Class 3 With waivers/limitations	Last FAA Medical Exam:	July 6, 2017
Occupational Pilot:	No	Last Flight Review or Equivalent:	April 18, 2018
Flight Time:	294 hours (Total, all aircraft), 294 hours (Total, this make and model), 240 hours (Pilot In Command, all aircraft), 14 hours (Last 90 days, all aircraft), 1 hours (Last 30 days, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Cessna	Registration:	N8905X
Model/Series:	182 D	Aircraft Category:	Airplane
Year of Manufacture:	1961	Amateur Built:	
Airworthiness Certificate:	Normal	Serial Number:	18253305
Landing Gear Type:	Tricycle	Seats:	4
Date/Type of Last Inspection:	August 18, 2018 Annual	Certified Max Gross Wt.:	2348 lbs
Time Since Last Inspection:	13 Hrs	Engines:	1 Reciprocating
Airframe Total Time:	4265 Hrs at time of accident	Engine Manufacturer:	Continental
ELT:	Installed, activated, did not aid in locating accident	Engine Model/Series:	O-470 SERIES
Registered Owner:		Rated Power:	230 Horsepower
Operator:	On file	Operating Certificate(s) Held:	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	Condition of Light:	Day
Observation Facility, Elevation:	AVL,2162 ft msl	Distance from Accident Site:	11 Nautical Miles
Observation Time:	17:54 Local	Direction from Accident Site:	45°
Lowest Cloud Condition:	Clear	Visibility	10 miles
Lowest Ceiling:	None	Visibility (RVR):	
Wind Speed/Gusts:	8 knots /	Turbulence Type Forecast/Actual:	/
Wind Direction:	140°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	30.21 inches Hg	Temperature/Dew Point:	14°C / 0°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Brevard, NC (3NR3)	Type of Flight Plan Filed:	None
Destination:	Asheville, NC (AVL)	Type of Clearance:	None
Departure Time:	18:10 Local	Type of Airspace:	Class G

Airport Information

Airport:	Transylvania Community 3NR3	Runway Surface Type:	Asphalt
Airport Elevation:	2110 ft msl	Runway Surface Condition:	Dry
Runway Used:	27	IFR Approach:	None
Runway Length/Width:	2903 ft / 50 ft	VFR Approach/Landing:	None

Wreckage and Impact Information

Crew Injuries:	1 None	Aircraft Damage:	Substantial
Passenger Injuries:		Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	1 None	Latitude, Longitude:	35.269721,-82.643608(est)

Administrative Information

Investigator In Charge (IIC):	Kemner, Heidi		
Additional Participating Persons:	David Vandebroek; FAA/FSDO; Charlotte, NC		
Original Publish Date:	December 3, 2020	Investigation Class:	3
Note:	The NTSB did not travel to the scene of this accident.		
Investigation Docket:	https://data.nts.gov/Docket?ProjectID=99139		

The National Transportation Safety Board (NTSB), established in 1967, is an independent federal agency mandated by Congress through the Independent Safety Board Act of 1974 to investigate transportation accidents, determine the probable causes of the accidents, issue safety recommendations, study transportation safety issues, and evaluate the safety effectiveness of government agencies involved in transportation. The NTSB makes public its actions and decisions through accident reports, safety studies, special investigation reports, safety recommendations, and statistical reviews.

The Independent Safety Board Act, as codified at 49 U.S.C. Section 1154(b), precludes the admission into evidence or use of any part of an NTSB report related to an incident or accident in a civil action for damages resulting from a matter mentioned in the report. A factual report that may be admissible under 49 U.S.C. § 1154(b) is available [here](#).