



Aviation Investigation Final Report

Location:	Seiling, Oklahoma	Accident Number:	CEN20LA321
Date & Time:	August 1, 2020, 01:30 Local	Registration:	N9765C
Aircraft:	Piper PA28R	Aircraft Damage:	Substantial
Defining Event:	Runway excursion	Injuries:	4 None
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The pilot planned to depart from a 2,435-ft-long runway, and reported that, with the three passengers and the amount of fuel onboard, the airplane was about 127 lbs below the maximum takeoff weight and required 1,700 to 1,800 ft of runway for takeoff. The pilot began the takeoff roll about 117 ft from the takeoff end of the runway with the wing flaps retracted for a normal takeoff. During the takeoff roll, the pilot noticed a sound and vibration from the engine, then about 5 seconds and 668 ft later he reduced engine power to abort the takeoff. He was unable to stop the airplane on the remaining runway and it continued off the end of the runway, over a road, and into trees. The airplane sustained substantial damage to the left wing.

Postaccident performance calculations revealed that the takeoff roll was greater than that calculated by the pilot; about 2,100 ft. A postaccident examination of the engine and airframe did not reveal any mechanical malfunctions or anomalies that would have precluded normal operation. The recorded engine and GPS data did not reveal any anomalies. The data showed that the pilot likely began to abort the takeoff, about 547 ft from the end of the runway, and likely only applied the brakes and began to significantly slow the airplane about 304 ft from the end of the runway, which was not sufficient distance to stop the airplane before exiting the runway surface.

Probable Cause and Findings

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

The pilot's incorrect takeoff performance calculations and delayed aborted takeoff, which resulted in a runway excursion and collision with trees.

Findings

Personnel issues	Performance calculations - Pilot
Personnel issues	Delayed action - Pilot
Aircraft	Takeoff distance - Capability exceeded

Factual Information

History of Flight

Takeoff-rejected takeoff	Runway excursion (Defining event)
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On August 1, 2020, about 0130 central daylight time, a Piper PA28R airplane, N9765C, was substantially damaged when it was involved in an accident at Seiling Airport (1S4), Seiling, Oklahoma. The pilot and three passengers were not injured. The airplane was operated as a Title 14 *Code of Federal Regulations* Part 91 personal flight.

The pilot reported that he arrived with the same three passengers earlier that day for a rodeo event. After the rodeo, they returned to the airplane about 0100 and prepared to depart. The pilot confirmed that the takeoff weight was 2,622.8 lbs (maximum takeoff weight is 2,750 lbs) and that the airplane had 25 to 26 gallons of fuel onboard. He calculated that the airplane required 1,700 to 1,800 ft for takeoff from the 2,435-ft-long runway. He elected not to perform a short field departure and kept the flaps retracted. He added that he “still made the decision to spare every inch of runway” when he taxied the airplane into position at the end of the runway. He held the brakes and advanced the throttle, mixture, and propeller controls full forward. “When the engine was up to speed,” he let off the brakes and began the takeoff roll. He reported that during the takeoff roll, when the airspeed was about 60 knots, he noticed a sound and vibration from the engine, so he aborted the takeoff. He was unable to stop the airplane and it continued off the end of the runway, over a road, and into trees.

The responding Federal Aviation Administration inspector reported that the airplane sustained substantial damage to the left wing. A postaccident examination of the engine and airplane did not reveal any mechanical malfunctions or anomalies that would have precluded normal operation. The inspector completed takeoff performance calculations based on the accident conditions and determined that the airplane would have required about 2,000 to 2,100 ft for takeoff. He added that the pilot’s preflight performance calculations underestimated the amount of runway needed to complete the takeoff.

NTSB performance calculations determined that the takeoff roll would have been about 2,100 ft based on the accident conditions.

The airplane was equipped with an Electronics International Inc. MVP-50P engine monitor, which recorded engine and GPS data. A review of the recorded engine data revealed that the takeoff roll began about 117 ft from the takeoff end of the runway. The distance from the beginning of the takeoff roll until there was a noted reduction in engine rpm and fuel flow was 1,760 ft. The distance from the reduction in rpm and fuel flow until the first reduction in GPS speed was another 242 ft. From this point, the pilot only had 304 ft to stop the airplane before the end of the runway.

The pilot reported that he observed 60 knots on the airspeed indicator about the same time he felt the vibration then aborted the takeoff. The data showed that once the airplane achieved 60 knots, it continued down the runway another 5 seconds and 668 ft until the aborted takeoff was initiated.

The recorded engine and GPS data did not reveal any anomalies.

Pilot Information

Certificate:	Private	Age:	34, Male
Airplane Rating(s):	Single-engine land	Seat Occupied:	Left
Other Aircraft Rating(s):	None	Restraint Used:	Lap only
Instrument Rating(s):	None	Second Pilot Present:	No
Instructor Rating(s):	None	Toxicology Performed:	No
Medical Certification:	Class 3 Without waivers/limitations	Last FAA Medical Exam:	December 7, 2017
Occupational Pilot:	No	Last Flight Review or Equivalent:	December 19, 2019
Flight Time:	222.3 hours (Total, all aircraft), 10.8 hours (Total, this make and model), 178 hours (Pilot In Command, all aircraft), 67.8 hours (Last 90 days, all aircraft), 34.5 hours (Last 30 days, all aircraft), 1.2 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Piper	Registration:	N9765C
Model/Series:	PA28R 201	Aircraft Category:	Airplane
Year of Manufacture:	1978	Amateur Built:	
Airworthiness Certificate:	Normal	Serial Number:	28R-7837220
Landing Gear Type:	Retractable - Tricycle	Seats:	4
Date/Type of Last Inspection:	June 2, 2020 Annual	Certified Max Gross Wt.:	2750 lbs
Time Since Last Inspection:		Engines:	1 Reciprocating
Airframe Total Time:	7155.5 Hrs as of last inspection	Engine Manufacturer:	Continental Motors
ELT:	Installed, not activated	Engine Model/Series:	IO-360-C1C6
Registered Owner:	On file	Rated Power:	201 Horsepower
Operator:	On file	Operating Certificate(s) Held:	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	Condition of Light:	Night
Observation Facility, Elevation:	KJWG,1548 ft msl	Distance from Accident Site:	30 Nautical Miles
Observation Time:	01:15 Local	Direction from Accident Site:	125°
Lowest Cloud Condition:	Clear	Visibility	10 miles
Lowest Ceiling:	None	Visibility (RVR):	
Wind Speed/Gusts:	4 knots /	Turbulence Type Forecast/Actual:	/
Wind Direction:	310°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	30.06 inches Hg	Temperature/Dew Point:	18°C / 16°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Seiling, OK (1S4)	Type of Flight Plan Filed:	None
Destination:	Stillwater, OK (SWO)	Type of Clearance:	None
Departure Time:	01:30 Local	Type of Airspace:	Class E

Airport Information

Airport:	Seiling 1S4	Runway Surface Type:	Asphalt
Airport Elevation:	1746 ft msl	Runway Surface Condition:	Dry
Runway Used:	17	IFR Approach:	None
Runway Length/Width:	2435 ft / 38 ft	VFR Approach/Landing:	None

Wreckage and Impact Information

Crew Injuries:	1 None	Aircraft Damage:	Substantial
Passenger Injuries:	3 None	Aircraft Fire:	None
Ground Injuries:		Aircraft Explosion:	None
Total Injuries:	4 None	Latitude, Longitude:	36.15139,-98.933891(est)

Administrative Information

Investigator In Charge (IIC):	Lindberg, Joshua
Additional Participating Persons:	Adama Allmond; Federal Aviation Administration; Oklahoma City, OK
Original Publish Date:	May 6, 2022
Last Revision Date:	
Investigation Class:	Class 3
Note:	The NTSB did not travel to the scene of this accident.
Investigation Docket:	https://data.nts.gov/Docket?ProjectID=101724

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](#).