



# Aviation Investigation Final Report

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<b>Location:</b>	Longmont, Colorado	<b>Accident Number:</b>	CEN21LA315
<b>Date &amp; Time:</b>	July 10, 2021, 08:45 Local	<b>Registration:</b>	N66NC
<b>Aircraft:</b>	Cessna 421C	<b>Aircraft Damage:</b>	Substantial
<b>Defining Event:</b>	Loss of control in flight	<b>Injuries:</b>	4 Minor
<b>Flight Conducted Under:</b>	Part 91: General aviation - Personal		

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## Analysis

The pilot reported that he performed the “before starting engine” and “starting engine” checklists and everything was normal before taking off in the twin-engine airplane. He performed an engine runup and then started his takeoff roll. The pilot reported that about halfway down the runway the airplane was not accelerating as fast as it should. He attempted to rotate the airplane; however, “the airplane mushed off the runway.” The airplane settled back onto the runway, then exited the departure end of the runway, where it sustained substantial damage to the wings and fuselage.

The airplane engine monitor data indicated the airplane’s engines were operating consistent with each other at takeoff power at the time of the accident.

Density altitude at the time of the accident was 7,170 ft and according to performance charts, there was adequate runway for takeoff. The reason for the loss of performance could not be determined.

## Probable Cause and Findings

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

The loss of performance for reasons that could not be determined.

## Findings

<b>Personnel issues</b>	Decision making/judgment - Pilot
<b>Personnel issues</b>	Aircraft control - Pilot
<b>Environmental issues</b>	High density altitude - Effect on equipment
<b>Aircraft</b>	Climb rate - Attain/maintain not possible

## Factual Information

### History of Flight

<b>Takeoff</b>	Miscellaneous/other
<b>Takeoff</b>	Loss of control in flight (Defining event)
<b>Takeoff-rejected takeoff</b>	Runway excursion

On July 10, 2021, about 0845 mountain daylight time, a Cessna 421C airplane, N66NC, was substantially damaged when it was involved in an accident near Longmont, Colorado. The pilot and three passengers received minor injuries. The airplane was operated as a Title 14 *Code of Federal Regulations* Part 91 personal flight.

The pilot reported that he performed the “before starting engine” and “starting engine” checklists and everything was normal. He performed an engine runup and then started his takeoff roll. The pilot reported that about halfway down the runway he sensed the airplane was not accelerating as fast as it should. He attempted to rotate; however, “the airplane mushed off the runway.” The airplane settled back onto the runway, then exited off the departure end of the runway. The airplane came to rest upright, and a post-crash fire ensued.

The airplane sustained substantial damage to both wings and the fuselage.

The airplane was equipped with a JPI EDM 760 engine monitor. The unit was retrieved from the airplane and the NVM (nonvolatile memory) downloaded. According to the engine manufacturer, the data indicated the airplane’s engines were operating consistent with each other at takeoff power until power was reduced for the rejected takeoff.

Referring to the Cessna 421C Pilot’s Operating Handbook, for the conditions at the time of the accident, the airplane’s normal takeoff distance would have been about 2,700 ft to clear a 50 ft obstacle. Density altitude at the time of the accident was 7,170 ft.

## Pilot Information

<b>Certificate:</b>	Commercial	<b>Age:</b>	39
<b>Airplane Rating(s):</b>	Single-engine land; Multi-engine land	<b>Seat Occupied:</b>	Left
<b>Other Aircraft Rating(s):</b>	None	<b>Restraint Used:</b>	3-point
<b>Instrument Rating(s):</b>	Airplane	<b>Second Pilot Present:</b>	
<b>Instructor Rating(s):</b>	Airplane single-engine; Instrument airplane	<b>Toxicology Performed:</b>	
<b>Medical Certification:</b>	Class 2 With waivers/limitations	<b>Last FAA Medical Exam:</b>	October 21, 2016
<b>Occupational Pilot:</b>	No	<b>Last Flight Review or Equivalent:</b>	June 12, 2021
<b>Flight Time:</b>	2801 hours (Total, all aircraft), 169 hours (Total, this make and model), 2584 hours (Pilot In Command, all aircraft), 32 hours (Last 90 days, all aircraft), 26 hours (Last 30 days, all aircraft)		

## Aircraft and Owner/Operator Information

<b>Aircraft Make:</b>	Cessna	<b>Registration:</b>	N66NC
<b>Model/Series:</b>	421C	<b>Aircraft Category:</b>	Airplane
<b>Year of Manufacture:</b>	1978	<b>Amateur Built:</b>	
<b>Airworthiness Certificate:</b>	Normal	<b>Serial Number:</b>	421C0519
<b>Landing Gear Type:</b>	Retractable - Tricycle	<b>Seats:</b>	8
<b>Date/Type of Last Inspection:</b>	August 18, 2020 Annual	<b>Certified Max Gross Wt.:</b>	
<b>Time Since Last Inspection:</b>		<b>Engines:</b>	2 Reciprocating
<b>Airframe Total Time:</b>	5476 Hrs as of last inspection	<b>Engine Manufacturer:</b>	Continental
<b>ELT:</b>	C91 installed, not activated	<b>Engine Model/Series:</b>	GTSIO-520
<b>Registered Owner:</b>	On file	<b>Rated Power:</b>	
<b>Operator:</b>	On file	<b>Operating Certificate(s) Held:</b>	None

## Meteorological Information and Flight Plan

<b>Conditions at Accident Site:</b>	Visual (VMC)	<b>Condition of Light:</b>	Day
<b>Observation Facility, Elevation:</b>	KLMO,5056 ft msl	<b>Distance from Accident Site:</b>	0 Nautical Miles
<b>Observation Time:</b>	09:15 Local	<b>Direction from Accident Site:</b>	98°
<b>Lowest Cloud Condition:</b>	Clear	<b>Visibility</b>	10 miles
<b>Lowest Ceiling:</b>	None	<b>Visibility (RVR):</b>	
<b>Wind Speed/Gusts:</b>	3 knots /	<b>Turbulence Type Forecast/Actual:</b>	None / None
<b>Wind Direction:</b>	140°	<b>Turbulence Severity Forecast/Actual:</b>	N/A / N/A
<b>Altimeter Setting:</b>	30.31 inches Hg	<b>Temperature/Dew Point:</b>	26°C / 9°C
<b>Precipitation and Obscuration:</b>	No Obscuration; No Precipitation		
<b>Departure Point:</b>	Longmont, CO	<b>Type of Flight Plan Filed:</b>	None
<b>Destination:</b>	Aspen, CO (KASE)	<b>Type of Clearance:</b>	None
<b>Departure Time:</b>		<b>Type of Airspace:</b>	Class G

## Airport Information

<b>Airport:</b>	Vance Brand Airport LMO	<b>Runway Surface Type:</b>	Concrete
<b>Airport Elevation:</b>	5055 ft msl	<b>Runway Surface Condition:</b>	
<b>Runway Used:</b>	29	<b>IFR Approach:</b>	None
<b>Runway Length/Width:</b>	4799 ft / 75 ft	<b>VFR Approach/Landing:</b>	None

## Wreckage and Impact Information

<b>Crew Injuries:</b>	1 Minor	<b>Aircraft Damage:</b>	Substantial
<b>Passenger Injuries:</b>	3 Minor	<b>Aircraft Fire:</b>	On-ground
<b>Ground Injuries:</b>		<b>Aircraft Explosion:</b>	None
<b>Total Injuries:</b>	4 Minor	<b>Latitude, Longitude:</b>	40.16726,-105.16927(est)

## Administrative Information

<b>Investigator In Charge (IIC):</b>	Hatch, Craig		
<b>Additional Participating Persons:</b>	Derek Smith; FAA FSDO; Denver, CO		
<b>Original Publish Date:</b>	September 14, 2023	<b>Investigation Class:</b>	3
<b>Note:</b>	The NTSB did not travel to the scene of this accident.		
<b>Investigation Docket:</b>	<a href="https://data.nts.gov/Docket?ProjectID=103460">https://data.nts.gov/Docket?ProjectID=103460</a>		

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](#).