



# Aviation Investigation Final Report

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<b>Location:</b>	Larned, Kansas	<b>Accident Number:</b>	CEN21LA129
<b>Date &amp; Time:</b>	February 5, 2021, 12:00 Local	<b>Registration:</b>	N115FP
<b>Aircraft:</b>	COLUMBIA AIRCRAFT MFG LC42-550FG	<b>Aircraft Damage:</b>	Substantial
<b>Defining Event:</b>	Fire/smoke (non-impact)	<b>Injuries:</b>	2 None
<b>Flight Conducted Under:</b>	Part 91: General aviation - Personal		

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## Analysis

The pilot attempted two consecutive takeoffs from opposite runways. Both takeoffs were aborted because the airplane would not lift off from the runway. The pilot reported that the engine and flight controls were operating normally during both takeoff attempts. During the second aborted takeoff, the pilot reported that the brakes “faded,” and the airplane departed the end of the runway and entered a dry grassy area. The pilot then noticed that the left and right main landing gear were on fire; the fire resulted in structural damage to the left wing.

Postaccident examination of the wheel and brake assemblies revealed no mechanical anomalies. Flight control continuity was established from the cockpit to all flight control surfaces, and the airplane was under its maximum gross takeoff weight. Thus, the reason that the airplane did not lift off during the pilot’s two attempted takeoffs could not be determined from the available evidence for this accident.

The fire appeared to originate from the wheel brakes. The time between the two attempted takeoffs was about 15 minutes. The pilot reported that he applied intermittent braking during the first aborted takeoffs. Thus, the brakes likely faded during the second aborted takeoff because they were hot from the consecutive aborted takeoffs and did not have enough time to cool. The fire was most likely caused by the hot wheel brakes entering a dry grassy area after the runway excursion.

## Probable Cause and Findings

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

The pilot's failure to allow sufficient time for the brakes to cool after a previous aborted takeoff, resulting in a runway excursion during a second aborted takeoff due to degraded braking performance. Contributing to the accident was the contact of the hot brakes with a dry grassy area during the second aborted takeoff.

## Findings

<b>Aircraft</b>	Brake - Damaged/degraded
<b>Personnel issues</b>	Use of equip/system - Pilot

## Factual Information

### History of Flight

Takeoff-rejected takeoff	Fire/smoke (non-impact) (Defining event)
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On February 5, 2021, about 1445 central standard time, a Columbia LC42-550FG airplane, N115FP, was substantially damaged when it was involved in an accident at Pawnee County Airport (LQR), Larned, Kansas. The private pilot and the pilot-rated passenger were not injured. The airplane was operated as a Title 14 *Code of Federal Regulations* Part 91 personal flight.

After conducting a preflight check, the pilot (who was the owner of the airplane) started the engine about 1415, taxied on the airplane to runway 35, and began the takeoff about 1430. After the airplane reached liftoff speed, the pilot felt a “strong” gust of wind and sensed a “stickiness of the plane on the runway.” The pilot stated that this situation was “not normal” and unlike anything that he had experienced while operating the airplane. The pilot decided to abort the takeoff with intermittent braking and reduce thrust to idle.

After the aborted takeoff, the pilot taxied the airplane to the runup area for runway 17 and checked the airplane’s flight controls and systems. The pilot reported that “everything inside the cockpit, and what I could see outside appeared and felt normal.” About 1445, the pilot began a takeoff roll on runway 17. The pilot noticed that the airplane was again “sticking to the runway,” so he decided to abort the takeoff. He applied intermittent braking and stated that, about 10 to 20 yards from the departure end of runway 17, the brakes “faded.” The airplane then rolled into a dry grassy area south of the runway. The airplane came to a stop, and the pilot smelled and saw smoke rising behind the right wing. The pilot advanced the throttle enough to move the airplane into a field beyond the runway and shut down the engine.

The pilot exited the airplane and saw that the left and right main landing gear were on fire. The passenger then exited the airplane, and the pilot used onboard fire extinguishers to try to contain the fire. Fire trucks arrived and extinguished the fire on the airplane and the nearby grass.

The pilot reported that the engine and flight controls were operating normally during both takeoff attempts. The airplane came to rest on a 156° magnetic heading about 250 ft southeast of the end of runway 17. Both main landing gear wheel assemblies, brakes, wheel pants, strut coverings, and brake lines sustained severe fire damage. The underside of the left wing and fuselage were scorched, as shown in the figure below, resulting in structural damage to the left wing.



Figure. Fire damage to the main wheel assemblies and underside of the left wing (Source: Federal Aviation Administration).

Detailed examination of the airplane showed that both main landing gear brake and wheel assemblies had severe fire damage. The fire appeared to originate from the wheel brakes. Both brake and wheel assemblies were examined and found to be mechanically intact with no anomalies (other than the severe fire damage). The parking brake was not engaged. Flight control continuity was confirmed from the cockpit to all flight control surfaces. The airplane was determined to be under its maximum gross takeoff weight.

## Pilot Information

<b>Certificate:</b>	Private	<b>Age:</b>	77, Male
<b>Airplane Rating(s):</b>	Single-engine land	<b>Seat Occupied:</b>	Left
<b>Other Aircraft Rating(s):</b>	None	<b>Restraint Used:</b>	4-point
<b>Instrument Rating(s):</b>	None	<b>Second Pilot Present:</b>	Yes
<b>Instructor Rating(s):</b>	None	<b>Toxicology Performed:</b>	
<b>Medical Certification:</b>	BasicMed With waivers/limitations	<b>Last FAA Medical Exam:</b>	November 12, 2019
<b>Occupational Pilot:</b>	No	<b>Last Flight Review or Equivalent:</b>	
<b>Flight Time:</b>	(Estimated) 1200 hours (Total, all aircraft), 978 hours (Total, this make and model), 15 hours (Last 90 days, all aircraft), 5 hours (Last 30 days, all aircraft), 1 hours (Last 24 hours, all aircraft)		

## Aircraft and Owner/Operator Information

<b>Aircraft Make:</b>	COLUMBIA AIRCRAFT MFG	<b>Registration:</b>	N115FP
<b>Model/Series:</b>	LC42-550FG	<b>Aircraft Category:</b>	Airplane
<b>Year of Manufacture:</b>	2007	<b>Amateur Built:</b>	
<b>Airworthiness Certificate:</b>	Normal	<b>Serial Number:</b>	42552
<b>Landing Gear Type:</b>	Tricycle	<b>Seats:</b>	4
<b>Date/Type of Last Inspection:</b>	October 31, 2020 Annual	<b>Certified Max Gross Wt.:</b>	
<b>Time Since Last Inspection:</b>		<b>Engines:</b>	1 Reciprocating
<b>Airframe Total Time:</b>	978 Hrs at time of accident	<b>Engine Manufacturer:</b>	CONT MOTOR
<b>ELT:</b>	Installed, not activated	<b>Engine Model/Series:</b>	IO-550-N
<b>Registered Owner:</b>	On file	<b>Rated Power:</b>	310 Horsepower
<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>	KGBD,1880 ft msl	<b>Distance from Accident Site:</b>	15 Nautical Miles
<b>Observation Time:</b>	11:56 Local	<b>Direction from Accident Site:</b>	47°
<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>	14 knots / 19 knots	<b>Turbulence Type Forecast/Actual:</b>	None / None
<b>Wind Direction:</b>	270°	<b>Turbulence Severity Forecast/Actual:</b>	N/A / N/A
<b>Altimeter Setting:</b>	29.9 inches Hg	<b>Temperature/Dew Point:</b>	8°C / -6°C
<b>Precipitation and Obscuration:</b>	No Obscuration; No Precipitation		
<b>Departure Point:</b>	Larned, KS	<b>Type of Flight Plan Filed:</b>	None
<b>Destination:</b>	Garden City, KS (GCK)	<b>Type of Clearance:</b>	None
<b>Departure Time:</b>		<b>Type of Airspace:</b>	Class E

## Airport Information

<b>Airport:</b>	Pawnee County Airport LQR	<b>Runway Surface Type:</b>	
<b>Airport Elevation:</b>	2012 ft msl	<b>Runway Surface Condition:</b>	Dry
<b>Runway Used:</b>	17	<b>IFR Approach:</b>	None
<b>Runway Length/Width:</b>	4201 ft / 75 ft	<b>VFR Approach/Landing:</b>	None

## Wreckage and Impact Information

<b>Crew Injuries:</b>	1 None	<b>Aircraft Damage:</b>	Substantial
<b>Passenger Injuries:</b>	1 None	<b>Aircraft Fire:</b>	On-ground
<b>Ground Injuries:</b>		<b>Aircraft Explosion:</b>	None
<b>Total Injuries:</b>	2 None	<b>Latitude, Longitude:</b>	38.1806,-99.0987(est)

## Administrative Information

<b>Investigator In Charge (IIC):</b>	Lemishko, Alexander
<b>Additional Participating Persons:</b>	Robert Nash; FAA FSDO ; Wichita, KS Ricardo Asenio; Cessna; Wichita, KS
<b>Original Publish Date:</b>	February 7, 2023
<b>Last Revision Date:</b>	
<b>Investigation Class:</b>	<a href="#">Class 3</a>
<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=102635">https://data.nts.gov/Docket?ProjectID=102635</a>

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](#).