



Aviation Investigation Final Report

Location:	Beaumont, Kansas	Accident Number:	CEN19LA046
Date & Time:	December 15, 2018, 08:30 Local	Registration:	N2496N
Aircraft:	Cessna 120	Aircraft Damage:	Substantial
Defining Event:	Sys/Comp malf/fail (non-power)	Injuries:	2 None
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The private pilot was conducting a personal cross-country flight. He reported that, upon landing the airplane on a turf runway, the airplane began to pull right. He applied left rudder to try to keep the airplane going straight. As the airplane continued to pull right, the pilot applied full left rudder and full aft elevator and tried applying the left brake. The empennage rose up, so he stopped using the left brake and just used the left rudder. Subsequently, the airplane nosed over, which resulted in substantial damage to the airplane. The pilot stated that the right brake was locked during the landing. The brake was subsequently unlocked to facilitate moving the airplane from the runway.

An examination of the turf runway revealed surface witness marks consistent with a locked right brake. However, during examination of the airplane, no anomalies were found that would have caused the right brake to lock; therefore, the reason the right brake was locked upon landing could not be determined. Given the available evidence, the airplane likely nosed over during the landing roll as the pilot attempted to compensate for the locked right brake.

Probable Cause and Findings

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

The right brake being locked during the landing roll on the turf runway for reasons that could not be determined during postaccident examinations, which resulted in a noseover.

Findings

Aircraft	Brake - Malfunction
Not determined	(general) - Unknown/Not determined

Factual Information

History of Flight

Landing-landing roll	Loss of control on ground
Landing-landing roll	Attempted remediation/recovery
Landing-landing roll	Sys/Comp malf/fail (non-power) (Defining event)
Landing-landing roll	Nose over/nose down

On December 15, 2018, about 0830 central standard time, a Cessna 120 airplane, N2496N, nosed over during a landing at the Beaumont Hotel Airport (07S), near Beaumont, Kansas. The private pilot and his passenger were uninjured. The airplane sustained substantial wing and empennage damage. The airplane was registered to and operated by the pilot as a Title 14 *Code of Federal Regulations Part 91* personal flight. Day visual meteorological conditions prevailed in the area about the time of the accident, and the flight was not operated on a flight plan. The flight originated from a private airstrip near Emporia, Kansas, about 0800, and was destined for 07S.

According to a statement from the pilot, the airplane began to pull right after touchdown on the dry turf runway. He applied a "lot" of left rudder to try and keep the airplane going straight. As the airplane continued to pull right, with full left rudder and full aft elevator, the pilot tried "tapping" the left brake. The empennage rose up, so he stopped using the left brake and just used the left rudder. The airplane nosed over as it approached the west edge of the runway markers. The pilot indicated that the right brake was locked during the landing. The brake was subsequently unlocked to facilitate moving the airplane from the runway.

A Federal Aviation Administration (FAA) inspector examined the runway and reported that it exhibited surface witness marks consistent with a locked brake on turf. He also examined the airplane. However, the brakes were not locked when he conducted the examination and a reason for a locked brake could not be determined.

The pilot, who is also an airplane mechanic, was asked if there were any anomalies found with the brake system after the accident. He indicated that he did not find anything definitive wrong with the brake system. He believed that something in the master cylinder caused the brake to lock. However, further inspection of the master cylinder did not reveal any anomalies. Additionally, the brake lines and wheel cylinder checked out "good" with no evidence of blockage, kinks, or bends.

A review of FAA airworthiness documents showed that the brakes were modified from the original brakes to Cleveland Brakes on March 28, 1993 in accordance with Supplemental Type Certificate SA13GL.

Pilot Information

Certificate:	Private	Age:	37,Male
Airplane Rating(s):	Single-engine land	Seat Occupied:	Left
Other Aircraft Rating(s):	None	Restraint Used:	4-point
Instrument Rating(s):	None	Second Pilot Present:	No
Instructor Rating(s):	None	Toxicology Performed:	No
Medical Certification:	BasicMed Without waivers/limitations	Last FAA Medical Exam:	December 31, 2017
Occupational Pilot:	No	Last Flight Review or Equivalent:	September 27, 2017
Flight Time:	1065 hours (Total, all aircraft), 480 hours (Total, this make and model), 1000 hours (Pilot In Command, all aircraft), 17.8 hours (Last 90 days, all aircraft), 6 hours (Last 30 days, all aircraft), 2 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Cessna	Registration:	N2496N
Model/Series:	120 No Series	Aircraft Category:	Airplane
Year of Manufacture:	1947	Amateur Built:	
Airworthiness Certificate:	Normal	Serial Number:	12749
Landing Gear Type:	Tailwheel	Seats:	2
Date/Type of Last Inspection:	November 23, 2018	Certified Max Gross Wt.:	1450 lbs
Time Since Last Inspection:		Engines:	1 Reciprocating
Airframe Total Time:	4277.9 Hrs at time of accident	Engine Manufacturer:	Teledyne Continental Motors
ELT:	C91 installed, not activated	Engine Model/Series:	C90-12F
Registered Owner:		Rated Power:	90 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:	EQA,1379 ft msl	Distance from Accident Site:	15 Nautical Miles
Observation Time:	08:35 Local	Direction from Accident Site:	297°
Lowest Cloud Condition:	Clear	Visibility	10 miles
Lowest Ceiling:	None	Visibility (RVR):	
Wind Speed/Gusts:	/	Turbulence Type Forecast/Actual:	/
Wind Direction:		Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	30.2 inches Hg	Temperature/Dew Point:	-1°C / -5°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Emporia, KS	Type of Flight Plan Filed:	None
Destination:	Beaumont, KS (07S)	Type of Clearance:	None
Departure Time:	08:00 Local	Type of Airspace:	Class G

Airport Information

Airport:	Beaumont Hotel 07S	Runway Surface Type:	Grass/turf
Airport Elevation:	1600 ft msl	Runway Surface Condition:	Dry
Runway Used:	18	IFR Approach:	None
Runway Length/Width:	2400 ft / 80 ft	VFR Approach/Landing:	Traffic pattern

Wreckage and Impact Information

Crew Injuries:	1 None	Aircraft Damage:	Substantial
Passenger Injuries:	1 None	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	2 None	Latitude, Longitude:	37.659168,-96.527778(est)

Administrative Information

Investigator In Charge (IIC):	Malinowski, Edward
Additional Participating Persons:	William Thornton; Federal Aviation Administration; Wichita, KS
Original Publish Date:	April 13, 2020
Note:	The NTSB did not travel to the scene of this accident.
Investigation Docket:	https://data.nts.gov/Docket?ProjectID=98791

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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](#).