



Aviation Investigation Final Report

Location:	Kenosha, Wisconsin	Accident Number:	CEN18LA360
Date & Time:	August 30, 2018, 19:00 Local	Registration:	N64604
Aircraft:	Stearman A75N1(PT17)	Aircraft Damage:	Substantial
Defining Event:	Sys/Comp malf/fail (non-power)	Injuries:	1 None
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The airline transport pilot had performed three touch-and-go maneuvers without braking. On the fourth and last planned landing roll about 30 mph, the airplane experienced an excessive tailwheel shimmy. About 25 mph, the airplane nosed over and came to rest inverted. Postaccident examination of the airplane revealed that the left main wheel/brake assembly was locked; thus, the wheel/tire could not be rotated. Partial disassembly of the wheel/brake assembly revealed a failed retaining bolt for the brake backing plate and a crack in the backing plate. The bolt likely broke off and became lodged in the assembly; thus, it is likely the failed retaining bolt and cracked backing plate resulted in a shift of the brake lining to contact the brake drum and led to a subsequent wheel lock when the brakes were applied.

Probable Cause and Findings

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

The failed retaining bolt and cracked backing plate, which resulted in a shift of the brake lining to contact the brake drum and a subsequent wheel lock when the brakes were applied.

Findings

Aircraft	Landing gear brakes system - Failure
Aircraft	(general) - Attain/maintain not possible

Factual Information

History of Flight

Landing-landing roll	Sys/Comp malf/fail (non-power) (Defining event)
Landing-landing roll	Nose over/nose down

On August 30, 2018, about 1900 central daylight time, a Stearman A75N1 (PT17) airplane, sustained substantial damage when nosed over during the landing roll at the Kenosha Regional Airport (ENW), Kenosha, Wisconsin. The airline transport pilot, who was the sole occupant, was not injured, and the airplane sustained substantial damage to the rudder. The airplane was registered to and operated by a private individual as a Title 14 *Code of Federal Regulations* Part 91 personal flight. Visual meteorological conditions prevailed at the time of the accident, and a flight plan was not filed. The local flight departed ENW about 1830.

According to the pilot, he had performed three touch and go maneuvers without the use of any braking. On the fourth and last planned landing roll out about 30 mph, the airplane experienced an excessive tail wheel shimmy due to a left brake assembly issue. About 25 mph, the airplane nosed over and came to rest inverted.

Postaccident examination of the airplane by a Federal Aviation Administration inspector revealed the left main wheel/brake assembly was locked, and the wheel/tire could not be rotated. Partial disassembly of the wheel/brake assembly revealed a failed retaining bolt for the brake backing plate, and a crack in the backing plate.

The pilot reported the specified brake lining to drum clearance was .008/.010 inches. The most recent annual inspection was completed on September 1, 2017, about 20 hours prior to the accident.

Pilot Information

Certificate:	Airline transport; Flight engineer; Flight instructor	Age:	58,Male
Airplane Rating(s):	Single-engine land; Single-engine sea; Multi-engine land	Seat Occupied:	Rear
Other Aircraft Rating(s):	None	Restraint Used:	3-point
Instrument Rating(s):	Airplane	Second Pilot Present:	No
Instructor Rating(s):	Airplane multi-engine; Airplane single-engine; Instrument airplane	Toxicology Performed:	No
Medical Certification:	Class 1 With waivers/limitations	Last FAA Medical Exam:	June 1, 2018
Occupational Pilot:	No	Last Flight Review or Equivalent:	May 8, 2018
Flight Time:	(Estimated) 22000 hours (Total, all aircraft), 100 hours (Total, this make and model), 16000 hours (Pilot In Command, all aircraft), 220 hours (Last 90 days, all aircraft), 80 hours (Last 30 days, all aircraft), 0.5 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Stearman	Registration:	N64604
Model/Series:	A75N1(PT17) 3	Aircraft Category:	Airplane
Year of Manufacture:	1942	Amateur Built:	
Airworthiness Certificate:	Aerobatic	Serial Number:	75-6811
Landing Gear Type:	Tailwheel	Seats:	2
Date/Type of Last Inspection:	September 1, 2017 Annual	Certified Max Gross Wt.:	2950 lbs
Time Since Last Inspection:		Engines:	1 Reciprocating
Airframe Total Time:	5561 Hrs at time of accident	Engine Manufacturer:	Continental
ELT:	C91 installed, activated, did not aid in locating accident	Engine Model/Series:	W670-6A
Registered Owner:		Rated Power:	220 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:	ENW,742 ft msl	Distance from Accident Site:	5 Nautical Miles
Observation Time:	18:00 Local	Direction from Accident Site:	170°
Lowest Cloud Condition:	Clear	Visibility	10 miles
Lowest Ceiling:	None	Visibility (RVR):	
Wind Speed/Gusts:	7 knots /	Turbulence Type Forecast/Actual:	None / None
Wind Direction:	70°	Turbulence Severity Forecast/Actual:	N/A / N/A
Altimeter Setting:	29.97 inches Hg	Temperature/Dew Point:	24°C / 10°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Kenosha, WI (ENW)	Type of Flight Plan Filed:	None
Destination:	Kenosha, WI (ENW)	Type of Clearance:	VFR
Departure Time:	18:30 Local	Type of Airspace:	Class D

Airport Information

Airport:	Kenosha Regional Airport ENW	Runway Surface Type:	Asphalt
Airport Elevation:	742 ft msl	Runway Surface Condition:	Dry
Runway Used:	07R	IFR Approach:	None
Runway Length/Width:	3302 ft / 75 ft	VFR Approach/Landing:	Traffic pattern

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:	42.597221,-87.929443(est)

Administrative Information

Investigator In Charge (IIC):	Sauer, Aaron
Additional Participating Persons:	Connie Martin; FAA; Milwaukee, WI
Original Publish Date:	November 19, 2019
Note:	The NTSB did not travel to the scene of this accident.
Investigation Docket:	https://data.nts.gov/Docket?ProjectID=98209

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