Aviation Investigation Final Report

Location:	Friendswood, Texas	**Accident Number:**	CEN18TA330
Date & Time:	August 13, 2018, 11:00 Local	**Registration:**	N42218
Aircraft:	Piper J3C	**Aircraft Damage:**	Substantial
Defining Event:	Loss of control on ground	**Injuries:**	1 None
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

During the personal flight, the commercial pilot completed several uneventful touch-and-go landings at two nearby airports, then returned and landed on the runway with a right crosswind at 9 knots. As the airplane slowed on the runway, it weathervaned into the wind and veered to the right. The pilot was unable to steer with the tailwheel, and the airplane exited the right side of the runway and collided with a tree.

A postaccident examination of the airplane revealed that the tailwheel locking mechanism pins were worn and degraded. The locking mechanism could not withstand even a small amount of side pressure; as pressure was applied to the tailwheel, the locking mechanism would unlock and the tailwheel would swivel out of alignment.

It is likely that, due to the degraded locking pins, the tailwheel became unlocked before the final landing and was out of alignment during the landing roll, which precluded the pilot from regaining directional control. It is the pilot's responsibility to ensure that the airplane is in a safe condition for flight; in this case, the pilot did not ensure that the tailwheel locking mechanism was in good working condition before he decided to conduct the flight.

Probable Cause and Findings

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

The pilot's decision to conduct a flight in an airplane that had a tailwheel with degraded locking pins, which allowed the tailwheel to unlock and swivel out of alignment and precluded the pilot from regaining directional control on the ground during a crosswind landing.

Findings

Personnel issues	Decision making/judgment - Pilot
Aircraft	Nose/tail landing gear - Damaged/degraded
Aircraft	Directional control - Attain/maintain not possible
Environmental issues	Crosswind - Effect on operation
Personnel issues	Aircraft control - Pilot
Environmental issues	Tree(s) - Contributed to outcome

Factual Information

History of Flight

Prior to flight	Aircraft maintenance event
Landing-landing roll	Loss of control on ground (Defining event)
Landing-landing roll	Landing gear not configured
Landing-landing roll	Runway excursion
Landing-landing roll	Collision with terr/obj (non-CFIT)

On August 13, 2018, about 1100 central daylight time, a Piper J3C-65 airplane, N42218, experienced a runway excursion during landing at Polly Ranch Airport (7XS0), Friendswood, Texas. The commercial pilot was not injured and the airplane sustained substantial damage. The airplane was registered to and operated by the pilot under the provisions of Title 14 *Code of Federal Regulations* Part 91 as a personal flight. Visual meteorological conditions prevailed at the time of the accident and no flight plan had been filed. The local flight departed at 1024.

The responding Federal Aviation Administration (FAA) inspector spoke to the pilot who described the runway excursion. The pilot stated that the airplane touched down about 35 to 40 mph and as soon as the tail touched the runway the airplane veered to the right. The airplane continued off the runway into a tree.

The pilot reported that he departed 7XS0 and completed several uneventful touch-and-go landings at two nearby airports. He returned to 7XS0 and landed on runway 11 with a right crosswind at 9 knots. As the airplane slowed on the runway it weathervaned into the wind and he was unable to steer with the tailwheel. The airplane exited the right side of the runway and collided with a tree.

A postaccident examination of the airplane revealed that the Maule tailwheel locking mechanism pins were worn down and degraded. The locking mechanism could not withstand even a small amount of side pressure. As pressure was applied to the tailwheel, the locking mechanism would unlock and the tailwheel would swivel out of alignment (figure 1).

Figure 1 – Unlocked Tailwheel

Pilot Information

Certificate:	Commercial	**Age:**	64,Male
Airplane Rating(s):	Single-engine land; Multi-engine land	**Seat Occupied:**	Rear
Other Aircraft Rating(s):	None	**Restraint Used:**	Lap only
Instrument Rating(s):	Airplane	**Second Pilot Present:**	No
Instructor Rating(s):	None	**Toxicology Performed:**	No
Medical Certification:	Class 2 With waivers/limitations	**Last FAA Medical Exam:**	November 1, 2016
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	December 14, 2017
Flight Time:	3433 hours (Total, all aircraft), 365 hours (Total, this make and model), 3372 hours (Pilot In Command, all aircraft), 52 hours (Last 90 days, all aircraft), 22 hours (Last 30 days, all aircraft), 0.6 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Piper	**Registration:**	N42218
Model/Series:	J3C 65	**Aircraft Category:**	Airplane
Year of Manufacture:	1945	**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	14464
Landing Gear Type:	Tailwheel	**Seats:**	2
Date/Type of Last Inspection:	May 19, 2018 Annual	**Certified Max Gross Wt.:**	1220 lbs
Time Since Last Inspection:		**Engines:**	1 Reciprocating
Airframe Total Time:	1776 Hrs at time of accident	**Engine Manufacturer:**	Continental Motors
ELT:	Installed, activated, did not aid in locating accident	**Engine Model/Series:**	A75-8F
Registered Owner:		**Rated Power:**	75 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:	KLVJ,44 ft msl	**Distance from Accident Site:**	4 Nautical Miles
Observation Time:	10:53 Local	**Direction from Accident Site:**	284°
Lowest Cloud Condition:		**Visibility**	9 miles
Lowest Ceiling:	Broken / 3000 ft AGL	**Visibility (RVR):**	
Wind Speed/Gusts:	9 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	150°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	30.07 inches Hg	**Temperature/Dew Point:**	31°C / 24°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Friendswood, TX (7XS0)	**Type of Flight Plan Filed:**	None
Destination:	Friendswood, TX (7XS0)	**Type of Clearance:**	None
Departure Time:	10:24 Local	**Type of Airspace:**	Class E;Class G

Airport Information

Airport:	POLLY RANCH 7XS0	**Runway Surface Type:**	Asphalt
Airport Elevation:	24 ft msl	**Runway Surface Condition:**	Dry
Runway Used:	11	**IFR Approach:**	None
Runway Length/Width:	2700 ft / 22 ft	**VFR Approach/Landing:**	Full stop

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:**	29.504722,-95.175277(est)

Administrative Information

Investigator In Charge (IIC):	Lindberg, Joshua
Additional Participating Persons:	Michael Costallos; Federal Aviation Administration; Houston, TX
Original Publish Date:	September 27, 2019
Note:	The NTSB did not travel to the scene of this accident.
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=98067