Aviation Investigation Final Report

Location:	Livermore, California	**Accident Number:**	WPR16CA077
Date & Time:	February 25, 2016, 11:30 Local	**Registration:**	N862C
Aircraft:	Stinson 108 3	**Aircraft Damage:**	Substantial
Defining Event:	Loss of control on ground	**Injuries:**	2 None
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

This report was modified on February 20, 2020. Please see the public docket for this accident to view the original report.

The pilot reported that during the landing on runway 25L in the tail-wheel equipped airplane, it touched down in a three-point landing attitude on the centerline. Shortly thereafter, it started to veer to the right. The pilot applied full left rudder and brake application; however, the airplane continued to veer off the right edge of the runway into tall grass and ground looped. The airplane sustained substantial damage to the left wing.

While taxiing the airplane back to the hangar, the pilot stated that he noticed that the wind was blowing from the northeast and that runway 7L was now in use. He also noticed that the left rudder/brake pedal required more travel distance than the right pedal, with reduced brake effectiveness on the left side.

The National Transportation Safety Board's (NTSB) postaccident examination of the brake system found no evidence of preimpact mechanical malfunctions or failures were revealed that would have precluded normal operation. Subsequent to the NTSB's examination, a mechanic examined the tailwheel unit and found that it was loosely mounted and that the steering springs were weak. The mechanic then disassembled the tailwheel unit and found that the mount hole was excessively large and that a dowel and compression spring were worn. The mechanic's findings were consistent with wear over time and not a sudden failure. Thus, the issues with the tailwheel assembly existed before the accident and likely contributed to the uncommanded right turn; however, with appropriate braking, the pilot should have been able to regain directional control and keep the airplane on the runway.

The airplane's last annual inspection before the accident occurred on August 20, 2015. The issues with the tailwheel assembly would have developed over a period of time that was much longer than the 6 months between the annual inspection and the accident. Thus, maintenance personnel should have detected the tailwheel assembly issues during the annual inspection.

Probable Cause and Findings

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

The pilot's failure to maintain directional control during the landing roll. Contributing to the accident was maintenance personnel's failure to detect the worn tailwheel assembly during the airplane's annual inspection.

Findings

Aircraft	Directional control - Not attained/maintained
Personnel issues	Aircraft control - Pilot
Aircraft	Nose/tail landing gear - Fatigue/wear/corrosion
Aircraft	Nose/tail landing gear - Failure
Aircraft	Nose/tail landing gear - Inadequate inspection
Personnel issues	Scheduled/routine inspection - Maintenance personnel

Factual Information

History of Flight

Landing-landing roll	Loss of control on ground (Defining event)
Landing-landing roll	Runway excursion

Pilot Information

Certificate:	Airline transport; Flight instructor	**Age:**	68,Male
Airplane Rating(s):	Multi-engine land	**Seat Occupied:**	Right
Other Aircraft Rating(s):	None	**Restraint Used:**	
Instrument Rating(s):	Airplane	**Second Pilot Present:**	Yes
Instructor Rating(s):	Airplane single-engine; Instrument airplane	**Toxicology Performed:**	No
Medical Certification:	Class 2 With waivers/limitations	**Last FAA Medical Exam:**	October 30, 2015
Occupational Pilot:	Yes	**Last Flight Review or Equivalent:**	October 30, 2015
Flight Time:	(Estimated) 17940 hours (Total, all aircraft), 1 hours (Total, this make and model), 15090 hours (Pilot In Command, all aircraft), 210 hours (Last 90 days, all aircraft), 67 hours (Last 30 days, all aircraft), 3 hours (Last 24 hours, all aircraft)		

Pilot Information

Certificate:	Airline transport; Flight instructor	**Age:**	67,Male
Airplane Rating(s):	Single-engine land; Multi-engine land	**Seat Occupied:**	Left
Other Aircraft Rating(s):	None	**Restraint Used:**	
Instrument Rating(s):	Airplane	**Second Pilot Present:**	Yes
Instructor Rating(s):	Airplane multi-engine; Airplane single-engine; Instrument airplane	**Toxicology Performed:**	No
Medical Certification:	Class 3 With waivers/limitations	**Last FAA Medical Exam:**	May 15, 2014
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	September 5, 2015
Flight Time:	22300 hours (Total, all aircraft), 45 hours (Total, this make and model), 17800 hours (Pilot In Command, all aircraft), 12 hours (Last 90 days, all aircraft), 10 hours (Last 30 days, all aircraft), 1 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Stinson	**Registration:**	N862C
Model/Series:	108 3 UNDESIGNAT	**Aircraft Category:**	Airplane
Year of Manufacture:	1947	**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	1083862
Landing Gear Type:	Tailwheel	**Seats:**	4
Date/Type of Last Inspection:	August 20, 2015 Annual	**Certified Max Gross Wt.:**	2450 lbs
Time Since Last Inspection:		**Engines:**	1 Reciprocating
Airframe Total Time:	1923 Hrs at time of accident	**Engine Manufacturer:**	FRANKLIN
ELT:	C91 installed, not activated	**Engine Model/Series:**	6A4165 SERIES
Registered Owner:	WHALEN FRANK and EPPERSON MARK	**Rated Power:**	165 Horsepower
Operator:	WHALEN FRANK and EPPERSON MARK	**Operating Certificate(s) Held:**	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	KLVK,393 ft msl	**Distance from Accident Site:**	0 Nautical Miles
Observation Time:	11:00 Local	**Direction from Accident Site:**	94°
Lowest Cloud Condition:	Clear	**Visibility**	10 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	10 knots /	**Turbulence Type Forecast/Actual:**	/ None
Wind Direction:		**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	30.15 inches Hg	**Temperature/Dew Point:**	18°C / 4°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	TRACY, CA (TCY)	**Type of Flight Plan Filed:**	None
Destination:	Livermore, CA (LVK)	**Type of Clearance:**	None
Departure Time:	11:00 Local	**Type of Airspace:**	Class D

Airport Information

Airport:	LIVERMORE MUNI LVK	**Runway Surface Type:**	Asphalt
Airport Elevation:	399 ft msl	**Runway Surface Condition:**	Dry
Runway Used:	25L	**IFR Approach:**	None
Runway Length/Width:	2699 ft / 75 ft	**VFR Approach/Landing:**	Straight-in

Wreckage and Impact Information

Crew Injuries:	2 None	**Aircraft Damage:**	Substantial
Passenger Injuries:		**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	2 None	**Latitude, Longitude:**	37.693332,-121.820274(est)

Administrative Information

Investigator In Charge (IIC):	Smith, Maja
Additional Participating Persons:	David Jensen; FSDO; Oakland, CA
Original Publish Date:	May 3, 2016
Last Revision Date:	
Investigation Class:	Class
Note:	This accident report documents the factual circumstances of this accident as described to the NTSB.
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=92795