



Aviation Investigation Final Report

Location:	RENO, Nevada	Accident Number:	LAX02LA052
Date & Time:	December 18, 2001, 13:30 Local	Registration:	N5172R
Aircraft:	Cessna 185F	Aircraft Damage:	Substantial
Defining Event:		Injuries:	2 None
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The left wing and horizontal stabilizer sustained substantial damage when they contacted the ground during the landing roll. The landing was uneventful until the pilot lowered the tail to the ground, and the airplane suddenly veered to the right. The pilot locked up the left wheel brake, but the airplane continued to the right. Just before the airplane stopped, the left wing and horizontal stabilizer contacted the ground. The pilot said that on several previous occasions the tail wheel seemed to stick initially and cause the airplane to deviate from the selected track, but would free up and track straight. Post accident examination revealed that the tail wheel rotated freely until moved to its maximum left deflection limit, and the tail wheel locked in this position. A mechanic detected wear on both sides of the thrust plate spacers (part number 3407-00). He suspected that the tail wheel springs (part number 3233-00) were binding on the thrust plates. He recommended replacement of the thrust plates whenever they showed wear on either side.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: Wear on the tail wheel thrust plate spacers resulted in the compression springs binding on the thrust plates and the tail wheel sticking, so that the pilot could not maintain directional control.

Findings

Occurrence #1: LOSS OF CONTROL - ON GROUND/WATER
Phase of Operation: LANDING - ROLL

Findings

1. (C) LANDING GEAR, TAILWHEEL ASSEMBLY - WORN
2. (C) LANDING GEAR, TAILWHEEL ASSEMBLY - BINDING (MECHANICAL)
3. DIRECTIONAL CONTROL - NOT AVAILABLE - PILOT IN COMMAND

Factual Information

On December 18, 2001, about 1330 Pacific standard time, a Cessna 185F, N5172R, ground looped on landing at Reno, Nevada. The commercial pilot/owner was operating the airplane under the provisions of 14 CFR Part 91. The pilot and one passenger were not injured; the airplane sustained substantial damage. The personal cross-country flight departed Carson City, Nevada, about 1315. Day visual meteorological conditions prevailed, and no flight plan had been filed.

The pilot stated the landing was uneventful until he lowered the tail to the ground. The airplane suddenly veered to the right. The pilot locked up the left wheel brake, but the airplane continued to the right. Just before the airplane stopped, the left wing and horizontal stabilizer contacted the ground.

The Federal Aviation Administration inspector completed a preliminary examination of the airplane. The pilot told him that on several previous occasions the tail wheel seemed to stick initially and cause the airplane to deviate from the selected track, but would free up and track straight. The inspector determined the tail wheel rotated freely until he moved it to its maximum left deflection limit, and the tail wheel locked in this position.

A mechanic examined the tail wheel and filed a report with the inspector. The mechanic felt that the tail wheel stuck right of center. He detected wear on both sides of the thrust plate spacers (part number 3407-00). He suspected that the tail wheel springs (part number 3233-00) were binding on the thrust plates. He recommended replacement of the thrust plates whenever they showed wear on either side.

Pilot Information

Certificate:	Commercial; Flight instructor	Age:	59, Male
Airplane Rating(s):	Single-engine land; Multi-engine land	Seat Occupied:	Left
Other Aircraft Rating(s):	Glider	Restraint Used:	
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 2 Valid Medical-w/ waivers/lim	Last FAA Medical Exam:	February 28, 2001
Occupational Pilot:	UNK	Last Flight Review or Equivalent:	March 3, 2001
Flight Time:	2900 hours (Total, all aircraft), 50 hours (Total, this make and model), 2700 hours (Pilot In Command, all aircraft), 50 hours (Last 90 days, all aircraft), 15 hours (Last 30 days, all aircraft), 2 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Cessna	Registration:	N5172R
Model/Series:	185F	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	
Airworthiness Certificate:	Normal	Serial Number:	18503012
Landing Gear Type:	Tailwheel	Seats:	4
Date/Type of Last Inspection:	August 10, 2001 Annual	Certified Max Gross Wt.:	3350 lbs
Time Since Last Inspection:	14 Hrs	Engines:	1 Reciprocating
Airframe Total Time:	4240 Hrs as of last inspection	Engine Manufacturer:	Continental
ELT:	Installed, not activated	Engine Model/Series:	IO-520
Registered Owner:	AMERICAN HOME COMPANION, INC.	Rated Power:	300 Horsepower
Operator:		Operating Certificate(s) Held:	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	Condition of Light:	Day
Observation Facility, Elevation:	RNO,4412 ft msl	Distance from Accident Site:	
Observation Time:	13:56 Local	Direction from Accident Site:	
Lowest Cloud Condition:	Few / 5500 ft AGL	Visibility	10 miles
Lowest Ceiling:	Broken / 20000 ft AGL	Visibility (RVR):	
Wind Speed/Gusts:	6 knots / 0 knots	Turbulence Type Forecast/Actual:	/
Wind Direction:		Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	30.11 inches Hg	Temperature/Dew Point:	11°C / -11°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	CARSON CITY, NV (CXP)	Type of Flight Plan Filed:	None
Destination:	RENO, NV (RNO)	Type of Clearance:	None
Departure Time:	13:15 Local	Type of Airspace:	Class C

Airport Information

Airport:	RENO RNO	Runway Surface Type:	Concrete
Airport Elevation:	4412 ft msl	Runway Surface Condition:	Dry
Runway Used:	16R	IFR Approach:	None
Runway Length/Width:	10000 ft / 150 ft	VFR Approach/Landing:	Full stop

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:	39.480022,-119.739456(est)

Administrative Information

Investigator In Charge (IIC):	Plagens, Howard
Additional Participating Persons:	DON MORGAN; FAA-RNO-FSDO; RENO, NV
Original Publish Date:	June 25, 2003
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.nts.gov/Docket?ProjectID=53938

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](#).