



National Transportation Safety Board Aviation Accident Final Report

Location:	Keene, NH	Accident Number:	ERA16LA174
Date & Time:	04/30/2016, 1615 EDT	Registration:	N85510
Aircraft:	AMERICAN CHAMPION AIRCRAFT 7AC	Aircraft Damage:	Substantial
Defining Event:	Loss of control on ground	Injuries:	2 None
Flight Conducted Under:	Part 91: General Aviation - Personal		

Analysis

The sport pilot of the tailwheel-equipped airplane had completed one touch-and-go landing uneventfully on a 6,201-ft-long, 100-ft-wide asphalt runway. During the second landing, the tailwheel began to "shimmy." Rather than apply forward control stick pressure to reduce weight on the tailwheel and alleviate the shimmy, the pilot held the control stick fully aft as the airplane departed the left side of the runway and impacted an approach path indicator light. Examination of the tailwheel locking mechanism revealed that it was worn and had unlocked during touchdown. The pilot should have been able to compensate for a tailwheel shimmy at touchdown by reducing the weight on the tailwheel. The condition of the tailwheel locking mechanism should have been checked during the last annual inspection; however, it is possible that the locking mechanism could have worn further during the 7 months between the most recent inspection and the accident flight.

Probable Cause and Findings

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

The disengagement of the tailwheel locking mechanism during the landing roll due to wear, and a subsequent loss of directional control. Contributing was the pilot's inadequate remedial action, which resulted in a runway excursion.

Findings

Aircraft	Landing gear steering system - Fatigue/wear/corrosion (Cause)
Personnel issues	Aircraft control - Pilot (Factor)

Factual Information

On April 30, 2015, about 1615 eastern daylight time, an American Champion Aircraft 7AC, N85510, was substantially damaged while landing at Dillant-Hopkins Airport (EEN), Keene, New Hampshire. The sport pilot and passenger were not injured. The airplane was privately owned and operated. The personal flight conducted under the provisions of 14 Code of Federal Regulations Part 91. Visual meteorological conditions prevailed and no flight plan was filed for the local flight, which originated from EEN about 1610.

The sport pilot reported that he had completed one touch-and-go landing uneventfully at EEN and was planning a second landing to a full stop. He performed a three-point touchdown on runway 2, a 6,201-foot-long, 100-foot-wide, asphalt runway. The pilot added that during the touchdown, he held the control stick completely aft, when the tailwheel began to "shimmy" and the airplane departed the left side of the runway. The airplane traveled over grass and impacted an approach light indicator, before coming to rest upright. The pilot further stated that the tailwheel on that particular model was supposed to remain locked during landing, but had unlocked at touchdown.

The sport pilot had accumulated a total flight experience of 115 hours; of which, 85 hours were in the same make and model as the accident airplane. He had flown 2.5 hours during the 90-day period preceding accident, and those hours were in the same make and model as the accident airplane.

The two-seat tandem, high-wing, tailwheel airplane was manufactured in 1946. It was powered by a Continental Motors, C-85, 85-horsepower engine. The airplane's most recent annual inspection was completed on September 19, 2015. At that time, the airplane had accumulated 3,715 total hours of operation. The engine had accumulated 2,345 total hours of operation; of which, 545 hours were since its last major overhaul. The airplane had flown about 7 hours from the time of the last annual inspection, until the accident.

Examination of the wreckage by a Federal Aviation Administration inspector revealed damage to the fuselage and right wing. The inspector also observed that the tailwheel locking mechanism appeared worn. The inspector added that the condition of the tailwheel locking mechanism should have been checked during the last annual inspection, but that the locking mechanism could have worn during the 7-month period from the time of the most recent annual inspection, until the accident.

The recorded weather at EEN, at 1615, included wind from 210 degrees at 7 knots, visibility 10 miles, and clear sky.

History of Flight

Landing-landing roll	Loss of control on ground (Defining event) Runway excursion Collision with terr/obj (non-CFIT)
----------------------	--

Pilot Information

Certificate:	Sport Pilot	Age:	52, Male
Airplane Rating(s):	Single-engine Land	Seat Occupied:	Front
Other Aircraft Rating(s):	None	Restraint Used:	3-point
Instrument Rating(s):	None	Second Pilot Present:	No
Instructor Rating(s):	None	Toxicology Performed:	No
Medical Certification:	Sport Pilot	Last FAA Medical Exam:	
Occupational Pilot:	No	Last Flight Review or Equivalent:	10/15/2015
Flight Time:	115 hours (Total, all aircraft), 85 hours (Total, this make and model), 20 hours (Pilot In Command, all aircraft), 3 hours (Last 90 days, all aircraft), 1 hours (Last 30 days, all aircraft), 0 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	AMERICAN CHAMPION AIRCRAFT	Registration:	N85510
Model/Series:	7AC NO SERIES	Aircraft Category:	Airplane
Year of Manufacture:	1946	Amateur Built:	No
Airworthiness Certificate:	Normal	Serial Number:	7AC-4250
Landing Gear Type:	Tailwheel	Seats:	2
Date/Type of Last Inspection:	09/19/2015, Annual	Certified Max Gross Wt.:	1300 lbs
Time Since Last Inspection:	7 Hours	Engines:	1 Reciprocating
Airframe Total Time:	3715 Hours as of last inspection	Engine Manufacturer:	Continental
ELT:	C126 installed, not activated	Engine Model/Series:	C85-12F
Registered Owner:	On file	Rated Power:	85 hp
Operator:	On file	Operating Certificate(s) Held:	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual Conditions	Condition of Light:	Day
Observation Facility, Elevation:	EEN, 488 ft msl	Distance from Accident Site:	0 Nautical Miles
Observation Time:	1615 EDT	Direction from Accident Site:	0°
Lowest Cloud Condition:	Clear	Visibility	10 Miles
Lowest Ceiling:	None	Visibility (RVR):	
Wind Speed/Gusts:	7 knots /	Turbulence Type Forecast/Actual:	/ None
Wind Direction:	210°	Turbulence Severity Forecast/Actual:	/ N/A
Altimeter Setting:	30.14 inches Hg	Temperature/Dew Point:	18° C / 1° C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Keene, NH (EEN)	Type of Flight Plan Filed:	None
Destination:	Keene, NH (EEN)	Type of Clearance:	None
Departure Time:	1610 EDT	Type of Airspace:	

Airport Information

Airport:	Dillant-Hopkins Airport (EEN)	Runway Surface Type:	Asphalt
Airport Elevation:	488 ft	Runway Surface Condition:	Dry
Runway Used:	2	IFR Approach:	None
Runway Length/Width:	6201 ft / 100 ft	VFR Approach/Landing:	Full Stop; 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:	42.898333, -72.270833 (est)

Administrative Information

Investigator In Charge (IIC):	Robert J Gretz	Report Date:	01/26/2017
Additional Participating Persons:	Jim Edwards; FAA/FSDO; Portland, ME		
Publish Date:	01/26/2017		
Note:	The NTSB did not travel to the scene of this accident.		
Investigation Docket:	http://dms.ntsb.gov/pubdms/search/dockList.cfm?mKey=93091		

The National Transportation Safety Board (NTSB), established in 1967, is an independent federal agency mandated by Congress through the Independent Safety Board Act of 1974 to investigate transportation accidents, determine the probable causes of the accidents, issue safety recommendations, study transportation safety issues, and evaluate the safety effectiveness of government agencies involved in transportation. The NTSB makes public its actions and decisions through accident reports, safety studies, special investigation reports, safety recommendations, and statistical reviews.

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](#).