Aviation Investigation Final Report

Location:	Independence, Oregon	**Accident Number:**	WPR19LA169
Date & Time:	June 12, 2019, 14:15 Local	**Registration:**	N73053
Aircraft:	Cessna 140	**Aircraft Damage:**	Substantial
Defining Event:	Landing gear collapse	**Injuries:**	2 None
Flight Conducted Under:	Part 91: General aviation - Instructional		

Analysis

According to the instructor, the accident landing was the second landing of the flight. As the tailwheel-equipped airplane was slowing down and they were exiting the runway, there was a loud "clunk." The airplane slid sideways, bounced, and then ground looped, resulting in substantial damage to the fuselage. The instructor reported that the right wheel assembly separated at the axle.

Examination of the fractured axle assembly revealed that the axle fractured at the transition radius between the longitudinal barrel (tube) portion and the plate portion. A fatigue crack emanated from multiple origins at the outer surface of the transition radius and extended circumferentially around the outer surface of the transition radius. The fracture features outside of the fatigue region showed features consistent with overstress separation. The maintenance history of the landing gear and axle could not be determined. The fatigue crack started at the transition radius most likely as the result of a hard landing or several hard landings. Once the fatigue crack started, the crack propagated during taxiing and additional takeoffs and landings.

Probable Cause and Findings

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

Fatigue failure of the right landing gear axle, which resulted in a loss of control during the landing roll.

Findings

Aircraft	Main gear strut/axle/truck - Fatigue/wear/corrosion
Aircraft	Directional control - Attain/maintain not possible

Factual Information

History of Flight

Landing-landing roll	Part(s) separation from AC
Landing-landing roll	Landing gear collapse (Defining event)

On June 12, 2019, about 1435 Pacific daylight time, a Cessna 140 airplane, N73053, sustained substantial damage when it was involved in an accident near Independence, Oregon. The flight instructor and student pilot were not injured. The airplane was operated as a Title 14 *Code of Federal Regulations* Part 91 instructional flight.

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The student pilot, who was the owner of the airplane, reported that he had purchased the airplane in April 2019 and was flying 1 to 3 times a week while working toward his private pilot certificate. During the previous flights, there had been no issues.

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Flight instructor Information

Certificate:	Commercial; Flight instructor	**Age:**	57,Male
Airplane Rating(s):	Single-engine land	**Seat Occupied:**	Right
Other Aircraft Rating(s):	None	**Restraint Used:**	4-point
Instrument Rating(s):	Airplane	**Second Pilot Present:**	Yes
Instructor Rating(s):	Airplane single-engine	**Toxicology Performed:**	No
Medical Certification:	Class 2 With waivers/limitations	**Last FAA Medical Exam:**	July 10, 2017
Occupational Pilot:	Yes	**Last Flight Review or Equivalent:**	September 22, 2017
Flight Time:	(Estimated) 1879 hours (Total, all aircraft), 25 hours (Total, this make and model), 1860 hours (Pilot In Command, all aircraft), 302 hours (Last 90 days, all aircraft), 68 hours (Last 30 days, all aircraft), 3 hours (Last 24 hours, all aircraft)		

Student pilot Information

Certificate:	Student	**Age:**	57,Male
Airplane Rating(s):	None	**Seat Occupied:**	Left
Other Aircraft Rating(s):	None	**Restraint Used:**	4-point
Instrument Rating(s):	None	**Second Pilot Present:**	Yes
Instructor Rating(s):	None	**Toxicology Performed:**	No
Medical Certification:	Class 3 With waivers/limitations	**Last FAA Medical Exam:**	February 18, 2019
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	
Flight Time:	(Estimated) 24 hours (Total, all aircraft), 24 hours (Total, this make and model), 24 hours (Last 90 days, all aircraft), 11 hours (Last 30 days, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Cessna	**Registration:**	N73053
Model/Series:	140 Undesignat	**Aircraft Category:**	Airplane
Year of Manufacture:	1946	**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	10265
Landing Gear Type:	Tailwheel	**Seats:**	2
Date/Type of Last Inspection:	August 7, 2018 100 hour	**Certified Max Gross Wt.:**	1451 lbs
Time Since Last Inspection:	33.6 Hrs	**Engines:**	1 Reciprocating
Airframe Total Time:	5494.9 Hrs at time of accident	**Engine Manufacturer:**	Lycoming
ELT:	C91A installed, not activated	**Engine Model/Series:**	O-235-C1
Registered Owner:	On file	**Rated Power:**	115 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:	KSLE,208 ft msl	**Distance from Accident Site:**	9 Nautical Miles
Observation Time:	13:56 Local	**Direction from Accident Site:**	75°
Lowest Cloud Condition:	Clear	**Visibility**	10 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	/	**Turbulence Type Forecast/Actual:**	None / None
Wind Direction:		**Turbulence Severity Forecast/Actual:**	N/A / N/A
Altimeter Setting:	29.86 inches Hg	**Temperature/Dew Point:**	33°C / 14°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Newport, OR (ONP)	**Type of Flight Plan Filed:**	None
Destination:	Independence, OR	**Type of Clearance:**	None
Departure Time:	13:45 Local	**Type of Airspace:**	Class G

Airport Information

Airport:	Independence State 7S5	**Runway Surface Type:**	Asphalt
Airport Elevation:	179 ft msl	**Runway Surface Condition:**	Dry
Runway Used:	34	**IFR Approach:**	None
Runway Length/Width:	3142 ft / 60 ft	**VFR Approach/Landing:**	Full stop;Traffic pattern

Wreckage and Impact Information

Crew Injuries:	2 None	**Aircraft Damage:**	Substantial
Passenger Injuries:		**Aircraft Fire:**	None
Ground Injuries:		**Aircraft Explosion:**	None
Total Injuries:	2 None	**Latitude, Longitude:**	44.867221,-123.19833(est)

Administrative Information

Investigator In Charge (IIC):	Cornejo, Tealeye
Additional Participating Persons:	Kevin Marpet; Federal Aviation Administration; Hillsboro, OR
Original Publish Date:	June 21, 2022
Last Revision Date:	
Investigation Class:	Class 3
Note:	The NTSB did not travel to the scene of this accident.
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=99607