Aviation Investigation Final Report

Location:	FAYETTEVILLE, Arkansas	**Accident Number:**	FTW00LA121
Date & Time:	April 9, 2000, 18:00 Local	**Registration:**	N1571X
Aircraft:	Piper PA-34-200T	**Aircraft Damage:**	Substantial
Defining Event:		**Injuries:**	5 None
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The pilot reported that upon touchdown, the airplane 'felt like it had a flat tire and started pulling hard right.' Subsequently, the airplane exited the runway surface, the landing gear collapsed, and the airplane came to a stop upright. Examination of the landing gear revealed that the inboard half of the right main landing gear wheel had fractured through approximately 120 degrees of the flange. The fracture surface was examined at the NTSB Materials Laboratory in Washington, D.C., and exhibited striations, crack arrest positions, and ratchet marks, all of which are typical of fatigue propagation. The origin of the fatigue could not be determined as a result of rubber deposits on the fracture surface.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The failure of the inboard half of the right main landing gear wheel as a result of fatigue.

Findings

Occurrence #1: GEAR COLLAPSED
Phase of Operation: LANDING - ROLL

Findings
1. (C) LANDING GEAR,WHEEL - FATIGUE
2. (C) LANDING GEAR,MAIN GEAR - FAILURE

Factual Information

On April 9, 2000, at 1800 central daylight time a Piper PA-34-200T multi-engine airplane, N1571X, was substantially damaged when the landing gear collapsed during the landing roll at Drake Field, Fayetteville, Arkansas. The airline transport pilot, who was the registered owner and operator of the airplane, and his four passengers were not injured. Visual meteorological conditions prevailed for the 14 Code of Federal Regulations Part 91 personal flight, for which no flight plan was filed. The cross-country flight originated from the Golden Triangle Regional Airport, Columbus, Mississippi, at 1630, and was destined for Fayetteville, Arkansas.

According to the pilot, upon touchdown on runway 34, the airplane "felt like it had a flat tire and started pulling hard right." Subsequently, the airplane exited the runway surface, the landing gear collapsed, and the airplane came to rest 50 feet east of the runway.

The FAA inspector reported that the left main landing gear drag brace was fractured and the downlock assembly was displaced and had punctured the upper wing skin. The inboard side of the right main landing gear trunnion was collapsed and separated from the airframe. Approximately 1/3 of the flange of the wheel half assembly (inner) had fractured and was not recovered from the accident site. The fracture surface extended into the tube well area of the wheel assembly.

The right main landing gear and wheel assembly was examined at the NTSB Materials Laboratory in Washington D.C., by an NTSB Metallurgist and the Investigator-In-Charge. The tire did not exhibit flat spots or punctures. The tire tube was extracted and was observed to be torn. The wheel cap and wheel half assembly (outer) were removed and were intact. The brake disc assembly was removed and was intact. The wheel half assembly (inner) was removed and exhibited a fracture surface along the flange. The fracture surface extended through approximately 120 degrees of the flange and contained dark material deposits, of which the texture was consistent with rubber. The fracture surface exhibited striations, crack arrest positions, and ratchet marks on differing planes, all of which are typical of fatigue propagation. The origin of the fatigue could not be determined due to the dark colored deposits along the fracture surface. No mechanical damage was observed on the remainder of the wheel half assembly (inner).

Pilot Information

Certificate:	Airline transport	**Age:**	50,Male
Airplane Rating(s):	Single-engine land; Multi-engine land	**Seat Occupied:**	Left
Other Aircraft Rating(s):		**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:**	July 2, 1998
Occupational Pilot:	UNK	**Last Flight Review or Equivalent:**	
Flight Time:	18900 hours (Total, all aircraft), 1593 hours (Total, this make and model), 18500 hours (Pilot In Command, all aircraft), 175 hours (Last 90 days, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Piper	**Registration:**	N1571X
Model/Series:	PA-34-200T PA-34-200T	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	34-7570291
Landing Gear Type:	Retractable - Tricycle	**Seats:**	5
Date/Type of Last Inspection:	July 1, 2000 Annual	**Certified Max Gross Wt.:**	4773 lbs
Time Since Last Inspection:	90 Hrs	**Engines:**	2 Reciprocating
Airframe Total Time:	4950 Hrs	**Engine Manufacturer:**	Continental
ELT:	Installed, not activated	**Engine Model/Series:**	TSIO-360-E
Registered Owner:	RAILROAD SALVAGE & RESTORATION	**Rated Power:**	200 Horsepower
Operator:		**Operating Certificate(s) Held:**	None
Operator Does Business As:		**Operator Designator Code:**	

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:		**Distance from Accident Site:**	
Observation Time:		**Direction from Accident Site:**	
Lowest Cloud Condition:	Clear	**Visibility**	10 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	8 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	220°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:		**Temperature/Dew Point:**	17°C / 9°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	COLUMBUS , MO (UNK)	**Type of Flight Plan Filed:**	None
Destination:	(FYV)	**Type of Clearance:**	VFR
Departure Time:	16:30 Local	**Type of Airspace:**	Class D

Airport Information

Airport:	DRAKE FIELD FYV	**Runway Surface Type:**	Asphalt
Airport Elevation:	1251 ft msl	**Runway Surface Condition:**	Dry
Runway Used:	34	**IFR Approach:**	None
Runway Length/Width:	6006 ft / 100 ft	**VFR Approach/Landing:**	Straight-in

Wreckage and Impact Information

Crew Injuries:	1 None	**Aircraft Damage:**	Substantial
Passenger Injuries:	4 None	**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	5 None	**Latitude, Longitude:**	36.06937,-94.150527(est)

Administrative Information

Investigator In Charge (IIC):	Ragogna, Jason
Additional Participating Persons:	CURTISS L WEEDMAN; LITTLE ROCK , AR
Original Publish Date:	July 17, 2001
Last Revision Date:	
Investigation Class:	Class
Note:	The NTSB traveled to the scene of this accident.
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=49034