



Aviation Investigation Final Report

Location:	Newton, Kansas	Accident Number:	GAA15CA178
Date & Time:	July 4, 2015, 11:15 Local	Registration:	N7985P
Aircraft:	Piper PA 24-250	Aircraft Damage:	Substantial
Defining Event:	Sys/Comp malf/fail (non-power)	Injuries:	2 None
Flight Conducted Under:	Part 91: General aviation - Instructional		

Analysis

During a local instructional flight, the flight instructor reported that while on final approach at their destination airport, the landing gear did not illuminate down and locked. He reported that he tried to cycle the gear with the electric landing gear handle, but the down and locked green light would not illuminate. When the power was reduced to idle, the flight instructor reported that the audible gear unsafe horn sounded as well. The flight instructor performed a go-around, and the pilot receiving instruction reported that he began the manual gear extension checklist according to the "SureCheck" checklist.

During the manual gear extension procedure, both pilots reported that a "spring tension" prevented the emergency gear handle from extending to the full forward position. Subsequently, the flight instructor reported that he reset the motor release arm and attempted to extend the landing gear again with the electric gear handle, but the landing gear electric motor circuit breaker popped and the motor release arm jammed.

After receiving confirmation from ground personnel that the landing gear was only partially extended, the flight instructor performed an emergency landing. During touchdown, the landing gear collapsed and the airplane skidded to a stop on the runway. The fuselage was substantially damaged in the accident.

During a postaccident examination, a Federal Aviation Administration aviation safety inspector found that the right main landing gear down-lock micro switch was operating intermittently within the electrical actuating system. According to the inspector, an intermittent micro switch on this landing gear can result in gear unsafe warnings and continuous electrical motor operation. Additionally, the SureCheck checklist used did not include instructions provided in the Pilot's Operating Handbook stating, "Do not re-engage landing gear operating motor in flight." The SureCheck checklist does contain a warning stating "this product is not a substitute for any operation manual which coincides with each specific aircraft."

The flight instructor reported that he had two hours of flight time in this make and model airplane, and the pilot receiving instruction reported that he had no previous experience in this make and model airplane.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The failure of the right main landing gear down-lock micro switch, which resulted in a landing gear collapse during landing, and the pilot/owner's unfamiliarity with the emergency landing gear extension procedure. Contributing to the accident was the flight instructor's lack of experience in this make and model airplane and unfamiliarity with the emergency landing gear extension procedure.

Findings

Aircraft	Gear extension and retract sys - Failure
Personnel issues	Use of equip/system - Pilot
Personnel issues	Total experience w/ equipment - Instructor/check pilot

Factual Information

History of Flight

Approach-VFR pattern final	Sys/Comp malf/fail (non-power) (Defining event)
Landing	Off-field or emergency landing
Landing	Landing gear collapse
Landing	Abnormal runway contact

Flight instructor Information

Certificate:	Airline transport; Commercial; Flight instructor	Age:	59
Airplane Rating(s):	Single-engine land; Multi-engine land	Seat Occupied:	Right
Other Aircraft Rating(s):	None	Restraint Used:	Lap only
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 13, 2014
Occupational Pilot:	Yes	Last Flight Review or Equivalent:	April 25, 2015
Flight Time:	(Estimated) 4800 hours (Total, all aircraft), 2 hours (Total, this make and model), 4150 hours (Pilot In Command, all aircraft), 9 hours (Last 90 days, all aircraft), 6 hours (Last 30 days, all aircraft), 1 hours (Last 24 hours, all aircraft)		

Pilot Information

Certificate:	Private	Age:	57
Airplane Rating(s):	Single-engine land	Seat Occupied:	Left
Other Aircraft Rating(s):	None	Restraint Used:	Lap only
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:	October 16, 2014
Occupational Pilot:	No	Last Flight Review or Equivalent:	June 10, 2010
Flight Time:	(Estimated) 170 hours (Total, all aircraft), 0 hours (Total, this make and model), 100 hours (Pilot In Command, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Piper	Registration:	N7985P
Model/Series:	PA 24-250 250	Aircraft Category:	Airplane
Year of Manufacture:	1962	Amateur Built:	
Airworthiness Certificate:	Normal	Serial Number:	24-3223
Landing Gear Type:	Retractable - Tricycle	Seats:	4
Date/Type of Last Inspection:	June 30, 2014 Annual	Certified Max Gross Wt.:	2900 lbs
Time Since Last Inspection:		Engines:	1 Reciprocating
Airframe Total Time:	4443 Hrs as of last inspection	Engine Manufacturer:	LYCOMING
ELT:	Installed, not activated	Engine Model/Series:	O-540 SERIES
Registered Owner:	On file	Rated Power:	250 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:	KEWK, 1533 ft msl	Distance from Accident Site:	0 Nautical Miles
Observation Time:	15:55 Local	Direction from Accident Site:	0°
Lowest Cloud Condition:	Few / 2700 ft AGL	Visibility	10 miles
Lowest Ceiling:		Visibility (RVR):	
Wind Speed/Gusts:	6 knots /	Turbulence Type Forecast/Actual:	/ None
Wind Direction:	150°	Turbulence Severity Forecast/Actual:	/ N/A
Altimeter Setting:	30.04 inches Hg	Temperature/Dew Point:	26°C / 17°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	AUGUSTA, KS (3AU)	Type of Flight Plan Filed:	None
Destination:	Newton, KS (EWK)	Type of Clearance:	None
Departure Time:	10:00 Local	Type of Airspace:	Class E

Airport Information

Airport:	NEWTON-CITY-COUNTY EWK	Runway Surface Type:	Asphalt
Airport Elevation:	1533 ft msl	Runway Surface Condition:	Dry
Runway Used:	17	IFR Approach:	None
Runway Length/Width:	7003 ft / 100 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:	N/A	Aircraft Explosion:	None
Total Injuries:	2 None	Latitude, Longitude:	38.055831,-97.27639(est)

Administrative Information

Investigator In Charge (IIC):	Gerhardt, Adam
Additional Participating Persons:	Daniel R Osborn; Wichita FSDO (FAA); Witchita, KS
Original Publish Date:	September 11, 2015
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.nts.gov/Docket?ProjectID=91552

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](#).