



Aviation Investigation Final Report

Location:	Lancaster, Pennsylvania	Accident Number:	ERA16LA318
Date & Time:	September 16, 2016, 11:05 Local	Registration:	N224MH
Aircraft:	Cessna P210	Aircraft Damage:	Substantial
Defining Event:	Landing gear collapse	Injuries:	2 None
Flight Conducted Under:	Part 91: General aviation - Instructional		

Analysis

During an instructional flight in a retractable landing gear airplane, the flight instructor and pilot under instruction performed multiple landings uneventfully. As the airplane entered the downwind traffic pattern, the pilot under instruction lowered the landing gear; both pilots confirmed that the landing gear was in the down and locked position. During landing, the airplane initially touched down in a 5-knot right crosswind and then momentarily lifted off; as it did so, the landing gear warning horn sounded. The flight instructor then took the controls and set the airplane down on the right main landing gear. As the airplane decelerated, the nosewheel touched down and a right yaw developed, the left wing settled onto the runway, and the airplane slid to a stop. The airframe incurred substantial damage during the landing. Postaccident examination and functional testing of the landing gear did not reveal any evidence of preimpact mechanical malfunctions or failures that would have precluded normal operation, although the testing was limited in scope due to damage incurred to the nose landing gear during the accident. Thus, the reason for the landing gear collapse could not be determined.

Probable Cause and Findings

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

A landing gear collapse during landing for reasons that could not be determined because postaccident examination and testing of the landing gear did not reveal any evidence of preimpact mechanical malfunctions or failures that would have precluded normal operation.

Findings

Not determined

(general) - Unknown/Not determined

Factual Information

History of Flight

Landing-flare/touchdown	Landing gear collapse (Defining event)
Landing-flare/touchdown	Abnormal runway contact

On September 16, 2016, at 1105 eastern daylight time, a Cessna P210, N224MH, operated by Ridge View Air, was substantially damaged following collapse of the main landing gear during landing at Lancaster Airport (LNS), Lancaster, Pennsylvania. The flight instructor and pilot receiving instruction were not injured. Visual meteorological conditions prevailed, and no flight plan was filed for the instructional flight, which was conducted under the provisions of 14 Code of Federal Regulations Part 91. The flight departed Chester County G O Carlson Airport (MQS), Coatesville, Pennsylvania, about 1045.

According to the flight instructor, the purpose of the flight was to conduct a training session for the pilot under instruction, who was pursuing high-performance and complex airplane endorsements. The first flight leg originated from LNS, and flew to MQS, where six uneventful full-stop landings were performed which included exercising the landing gear. The second and final leg of the flight was the return to LNS. Upon arrival, the pilot receiving instruction lowered the landing gear as the airplane entered a downwind traffic pattern leg for runway 08. Subsequently, both pilots twice confirmed the landing gear was in the down and locked position. During landing, the airplane initially touched down and then momentarily lifted off, and as it did so, the landing gear warning horn sounded. The flight instructor then took the controls and set the airplane down on the right main landing gear. As the airplane decelerated, the nose wheel touched down and a right yaw developed, the left wing settled onto the runway, and the airplane slid to a stop.

Examination of the accident scene by a Federal Aviation Administration (FAA) inspector revealed that the airplane came to rest upright on the right side of the runway oriented on heading of about 230 degrees magnetic. The airplane was resting on the left wingtip, fuselage, and nose wheel. Both main landing gear were collapsed and near their respective "up" positions, while the nose gear was in the down position and canted toward the right. A set of two tire marks about 350 feet long was found on the runway extending west from the airplane toward the approach end of the runway. A third tire mark extended about 150 feet west from the location of the nose wheel. The left horizontal stabilizer, left elevator, and left aileron were substantially damaged.

The airplane was examined again by FAA inspectors following its recovery to a hangar. The examination revealed that the right main landing gear lock mechanism was engaged, while the left main landing gear lock mechanism was disengaged. The airplane was then jacked and balanced such that all three landing gear were off the ground. The right main landing gear was manually unlocked, and hydraulic and electrical power applied to the airplane. As power was applied the gear unsafe horn sounded. The landing gear lever was moved to the extend position, and both main landing gear moved to the down and locked position. The main landing rear locks were manually released, and the procedure

repeated two additional times, with the same results. The landing gear was not retracted during the test, due to the damage to the nose wheel assembly. The landing gear indicating system, unsafe warning horn, operating lever and main landing gear lock system all functioned properly. The hydraulic reservoir level was about 1/16 inch above the "add" line. The examination and tests did not reveal any preimpact mechanical malfunctions.

Review of maintenance records revealed that the airplane's most recent annual inspection occurred on December 4, 2015, at which time the airplane had accrued a total of 3,772 hours.

The recorded wind at LNS, at 1109, was from 160° at 5 knots.

Flight instructor Information

Certificate:	Airline transport; Flight instructor	Age:	28, Male
Airplane Rating(s):	Single-engine land; Multi-engine land	Seat Occupied:	Right
Other Aircraft Rating(s):		Restraint Used:	3-point
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:	August 2, 2016
Occupational Pilot:	Yes	Last Flight Review or Equivalent:	November 2, 2015
Flight Time:	4790 hours (Total, all aircraft), 35 hours (Total, this make and model), 4760 hours (Pilot In Command, all aircraft), 150 hours (Last 90 days, all aircraft), 46 hours (Last 30 days, all aircraft), 3 hours (Last 24 hours, all aircraft)		

Student pilot Information

Certificate:	Private	Age:	28, Male
Airplane Rating(s):	Single-engine land	Seat Occupied:	Left
Other Aircraft Rating(s):	None	Restraint Used:	3-point
Instrument Rating(s):	None	Second Pilot Present:	Yes
Instructor Rating(s):	None	Toxicology Performed:	No
Medical Certification:	Class 3 Unknown	Last FAA Medical Exam:	February 1, 2015
Occupational Pilot:	No	Last Flight Review or Equivalent:	November 23, 2015
Flight Time:	140 hours (Total, all aircraft), 12 hours (Total, this make and model), 110 hours (Pilot In Command, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Cessna	Registration:	N224MH
Model/Series:	P210 N	Aircraft Category:	Airplane
Year of Manufacture:	1978	Amateur Built:	
Airworthiness Certificate:	Normal	Serial Number:	P21000089
Landing Gear Type:	Retractable - Tricycle	Seats:	6
Date/Type of Last Inspection:	December 4, 2015 Annual	Certified Max Gross Wt.:	4000 lbs
Time Since Last Inspection:		Engines:	1 Reciprocating
Airframe Total Time:	3772 Hrs as of last inspection	Engine Manufacturer:	CONT MOTOR
ELT:	Installed, not activated	Engine Model/Series:	TSIO-520P5B
Registered Owner:	RIDGE VIEW AIR INC	Rated Power:	285 Horsepower
Operator:	RIDGE VIEW AIR INC	Operating Certificate(s) Held:	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	Condition of Light:	Day
Observation Facility, Elevation:	LNS,403 ft msl	Distance from Accident Site:	0 Nautical Miles
Observation Time:	11:09 Local	Direction from Accident Site:	171°
Lowest Cloud Condition:		Visibility	10 miles
Lowest Ceiling:	Overcast / 5500 ft AGL	Visibility (RVR):	
Wind Speed/Gusts:	5 knots /	Turbulence Type Forecast/Actual:	None / None
Wind Direction:	160°	Turbulence Severity Forecast/Actual:	N/A / N/A
Altimeter Setting:	30.31 inches Hg	Temperature/Dew Point:	21°C / 13°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	COATESVILLE, PA (MQS)	Type of Flight Plan Filed:	None
Destination:	Lancaster, PA (LNS)	Type of Clearance:	None
Departure Time:	10:30 Local	Type of Airspace:	Class D

Airport Information

Airport:	LANCASTER LNS	Runway Surface Type:	Asphalt
Airport Elevation:	402 ft msl	Runway Surface Condition:	Dry
Runway Used:	08	IFR Approach:	None
Runway Length/Width:	6933 ft / 150 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:	40.122222,-76.294441(est)

Administrative Information

Investigator In Charge (IIC):	Brazy, Douglass
Additional Participating Persons:	Daniel A Luke; FAA/FSDO; Harrisburg, PA
Original Publish Date:	June 25, 2019
Last Revision Date:	
Investigation Class:	Class
Note:	The NTSB did not travel to the scene of this accident.
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=94029

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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](#).