



National Transportation Safety Board Aviation Accident Final Report

Location:	Roanoke, TX	Accident Number:	CEN12LA204
Date & Time:	03/02/2012, 1420 CST	Registration:	N373JT
Aircraft:	PIPER PA-30	Aircraft Damage:	Substantial
Defining Event:	Landing gear collapse	Injuries:	1 None
Flight Conducted Under:	Part 91: General Aviation - Personal		

Analysis

The pilot said he was on a cross-country flight and he noticed that the alternators were producing about 9 volts. He tried to troubleshoot the problem, and he switched the alternators off and on a “number” of times, but he was unable to get them to indicate more than 8 to 9 volts (the pilot used the term "alternator" and "generator" interchangeably in his statement). He said that he heard a “squeal” coming through the headset, and when the right alternator was switched off, the noise would stop. He said that he eventually lost radio communication capability while en route to his destination, and he diverted to an alternate airport. The pilot lowered the landing gear on the downwind leg, and he observed that the nose landing gear was extended by its reflection in the spinner. The landing roll was “normal” until the right main landing gear collapsed, and then the left main landing gear collapsed.

A postaccident examination of the landing gear did not disclose any evidence of a mechanical malfunction. The pilot reported that he lost all electrical power due to a loss of one or both alternators. It is likely that the right alternator failed, so when the pilot turned off the right failed alternator, the noise stopped; however, the left alternator could not put out enough voltage to power the radios and other electrical demands. By the time the gear was lowered, there was not enough power to lock the left and right main landing gears in place, so they both collapsed during the landing roll. Had the pilot realized that he had lost electrical power and followed the emergency checklist, he could have verified the locked status of the landing gear and followed the emergency landing gear procedures to extend the gear.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The pilot’s failure to follow the published emergency procedures to lower the landing gear following a loss of electrical power.

Findings

Aircraft	DC generation system - Failure
Personnel issues	Use of equip/system - Pilot (Cause)

Factual Information

On March 2, 2012, about 1420 central standard time, a Piper PA-30, N373JT, had its main landing gear collapse during landing on runway 36 at the Northwest Regional Airport (52F), near Roanoke, Texas. The private pilot, who was the sole occupant, reported no injuries. The airplane sustained substantial spar damage. The airplane was registered to and operated by the pilot under the provisions of 14 Code of Federal Regulations Part 91 as a personal flight. Day visual flight rules (VFR) conditions prevailed for the flight, which did not operate on a VFR flight plan. The flight originated from the Crystal City Municipal Airport, near Crystal City, Texas, about 1300, and was destined for the Denton Municipal Airport (DTO), near Denton, Texas, when it diverted to 52F with electrical system issues.

According to a pilot statement, during the flight the alternators were producing approximately nine volts of output. He switched the generators off and on a “number” of times and was unable to get them to indicate more than eight to nine volts. The pilot had intermittent global positioning system operation, heard a “squeal” in his radio. He observed that when the right alternator was switched off, the noise would stop. The pilot eventually lost radio communication capability while en-route to DTO. He diverted to 52F and lowered the landing gear on downwind. The pilot observed that the nose landing gear was extended by its reflection in the spinner. The landing roll out was “normal” until the right main landing gear collapsed. The left main landing gear then collapsed. The pilot’s comments, in part, stated:

It is obvious that at least one alternator failed, probably the right one, and the other alternator could not put out enough voltage to carry the radios, GPS, autopilot, lights and other electrical demands and by the time that gear was lowered there was not enough power in the battery to lock the gear in place and/or the gear failed to lock in place.

The PA-30 flight manual contained an emergency procedure referencing emergency landing gear extension. As part of the procedure, the pilot is instructed to slow the airplane to an airspeed “not to exceed 100 mph.” The full travel of the extension handle or a green light on the instrument panel indicate the landing gear is extended. An operational note indicated that “reducing power and rocking gear extension handle will aid in manually extending the landing gear.”

According to a Federal Aviation Administration inspector, there was no evidence of mechanical malfunctions or failures that would have precluded normal landing gear operation.

History of Flight

Landing-flare/touchdown

Landing gear collapse (Defining event)

Pilot Information

Certificate:	Private	Age:	78, Male
Airplane Rating(s):	Multi-engine Land	Seat Occupied:	Left
Other Aircraft Rating(s):	None	Restraint Used:	Seatbelt, Shoulder harness
Instrument Rating(s):	None	Second Pilot Present:	No
Instructor Rating(s):	None	Toxicology Performed:	No
Medical Certification:	Class 3	Last Medical Exam:	
Occupational Pilot:		Last Flight Review or Equivalent:	
Flight Time:	12000 hours (Total, all aircraft), 12000 hours (Pilot In Command, all aircraft), 40 hours (Last 90 days, all aircraft), 15 hours (Last 30 days, all aircraft), 1 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Manufacturer:	PIPER	Registration:	N373JT
Model/Series:	PA-30	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	No
Airworthiness Certificate:	Normal	Serial Number:	30-850
Landing Gear Type:	Retractable - Tricycle	Seats:	4
Date/Type of Last Inspection:	Annual	Certified Max Gross Wt.:	
Time Since Last Inspection:		Engines:	2 Reciprocating
Airframe Total Time:		Engine Manufacturer:	LYCOMING
ELT:	C91 installed, not activated	Engine Model/Series:	IO-320 SERIES
Registered Owner:	On file	Rated Power:	150 hp
Operator:	On file	Air Carrier Operating Certificate:	None

Meteorological Information and Flight Plan

Observation Facility, Elevation:	AFW, 722 ft msl	Observation Time:	1453 CST
Distance from Accident Site:	6 Nautical Miles	Condition of Light:	Day
Direction from Accident Site:	230°	Conditions at Accident Site:	Visual Conditions
Lowest Cloud Condition:	Clear	Temperature/Dew Point:	18° C / 4° C
Lowest Ceiling:	None	Visibility	10 Miles
Wind Speed/Gusts, Direction:	12 knots/ 17 knots, 360°	Visibility (RVR):	
Altimeter Setting:	29.79 inches Hg	Visibility (RVV):	
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	CRYSTAL CITY, TX (20R)	Type of Flight Plan Filed:	VFR
Destination:	Denton, TX (DTO)	Type of Clearance:	None
Departure Time:	1300 CST	Type of Airspace:	

Airport Information

Airport:	Northwest Regional Airport (52F)	Runway Surface Type:	Asphalt
Airport Elevation:	643 ft	Runway Surface Condition:	Dry
Runway Used:	36	IFR Approach:	None
Runway Length/Width:	3500 ft / 40 ft	VFR Approach/Landing:	Full Stop

Wreckage and Impact Information

Crew Injuries:	1 None	Aircraft Damage:	Substantial
Passenger Injuries:	N/A	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	1 None		

Administrative Information

Investigator In Charge (IIC):	Edward F Malinowski	Adopted Date:	08/29/2013
Additional Participating Persons:	Keith Hoffman; Federal Aviation Administration; Fort Worth, TX		
Publish Date:	08/29/2013		
Investigation Docket:	http://dms.nts.gov/pubdms/search/dockList.cfm?mKey=83221		

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