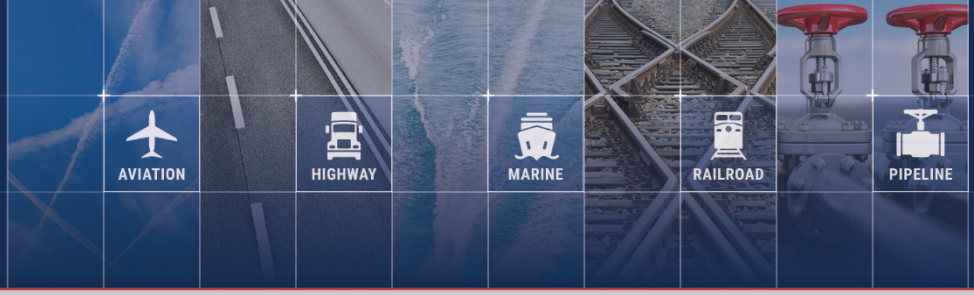

Aviation Investigation Final Report

Location:	Tacoma, Washington	**Accident Number:**	SEA06CA018
Date & Time:	November 2, 2005, 17:00 Local	**Registration:**	N1959P
Aircraft:	Piper PA-24-250	**Aircraft Damage:**	Substantial
Defining Event:		**Injuries:**	3 None
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

After making contact with the tower, and being cleared for a left base entry, the pilot completed his before landing check and lowered the landing gear. He then tried to call the tower to report he was entering the base leg, but realized that his radio was not transmitting. The aircraft subsequently experienced a complete loss of electrical power, and the pilot was therefore unable to confirm the gear was down and locked, as the green Gear Down lights were unable to illuminate. The pilot then flew low over the runway until he felt the main wheels touch the runway surface, and then he executed a go-around. After completing the go-around, the pilot went around the pattern and executed what he thought was going to be a normal full stop landing. But just after the aircraft touched down, the landing gear folded back up into the wheel wells, and the aircraft skidded down the runway on its belly. The investigation later determined that the gear had not fully extended because of the loss of electrical power. It was also determined that although the aircraft's battery and alternator were capable of operating normally, the voltage regulating system had malfunctioned, thus allowing the battery to become almost fully discharged. The pilot did not use the emergency gear extension system/sequence to make sure of the position and condition of the landing gear, but instead trusted the gear to be fully down and locked just because he felt the tires touch the runway surface during the low pass.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The collapse of the landing gear due to the pilot's failure to use the emergency gear extension system after his aircraft experienced a complete loss of electrical power. Factors include the

malfunction of the voltage regulating system, which lead to the almost total discharge of the battery.

Findings

Occurrence #1: AIRFRAME/COMPONENT/SYSTEM FAILURE/MALFUNCTION
Phase of Operation: CRUISE

Findings
1. (F) ELECTRICAL SYSTEM - MALFUNCTION

Occurrence #2: GEAR COLLAPSED
Phase of Operation: LANDING - ROLL

Findings
2. (C) GEAR EXTENSION - NOT VERIFIED - PILOT IN COMMAND

Factual Information

On November 2, 2005, approximately 1700 Pacific standard time, a Piper PA-24-250, N1959P, experienced a collapse of all three landing gear during the landing roll at Tacoma Narrows Airport, Tacoma, Washington. The private pilot and his two passengers were not injured, but the aircraft, which is owned and operated by the pilot, sustained substantial damage. The 14 CFR Part 91 personal pleasure flight, which departed Pierce County Airport, Puyallup, Washington, about 15 minutes prior to the accident, was being operated in visual meteorological conditions. No flight plan had been filed.

According to the pilot, after making contact with Tacoma Narrows Tower, and being cleared for a left base entry, he completed his before landing check and lowered the landing gear. He then tried to call the tower to report he was entering the base leg, but realized that his radio was not transmitting. The aircraft subsequently experienced a complete loss of electrical power, and the pilot was therefore unable to confirm the gear was down and locked, as the green Gear Down lights were unable to illuminate. The pilot then flew low over the runway until he felt the main wheels touch the runway surface, and then he executed a go-around. After completing the go-around, the pilot went around the pattern and executed what he thought was going to be a normal full stop landing. But just after the aircraft touched down, the landing gear folded back up into the wheel wells, and the aircraft skidded down the runway on its belly. The investigation later determined that the gear had not fully extended because of the loss of electrical power. It was also determined that although the aircraft's battery and alternator were capable of operating normally, the voltage regulating system had malfunctioned, thus allowing the battery to become almost fully discharged.

During the investigation, the pilot told the Investigator-In-charge that he now realized that he should not have trusted the gear to be fully down and locked just because he felt the tires touch the runway surface, but instead should have used the emergency gear extension system/sequence to make sure of their position and condition.

Pilot Information

Certificate:	Private	**Age:**	66,Male
Airplane Rating(s):	Single-engine land; Multi-engine land	**Seat Occupied:**	
Other Aircraft Rating(s):	None	**Restraint Used:**	
Instrument Rating(s):	Airplane	**Second Pilot Present:**	
Instructor Rating(s):		**Toxicology Performed:**	No
Medical Certification:	Class 3	**Last FAA Medical Exam:**	April 1, 2005
Occupational Pilot:		**Last Flight Review or Equivalent:**	
Flight Time:	769 hours (Total, all aircraft), 98 hours (Total, this make and model)		

Aircraft and Owner/Operator Information

Aircraft Make:	Piper	**Registration:**	N1959P
Model/Series:	PA-24-250	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	24419
Landing Gear Type:	Retractable - Tricycle	**Seats:**	
Date/Type of Last Inspection:		**Certified Max Gross Wt.:**	
Time Since Last Inspection:		**Engines:**	1 Reciprocating
Airframe Total Time:		**Engine Manufacturer:**	Lycoming
ELT:		**Engine Model/Series:**	O-540-A1A5
Registered Owner:	Ronald G. Moore	**Rated Power:**	
Operator:		**Operating Certificate(s) Held:**	None
Operator Does Business As:	Comanche Air, Inc.	**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:		**Visibility**	
Lowest Ceiling:		**Visibility (RVR):**	
Wind Speed/Gusts:	/	**Turbulence Type Forecast/Actual:**	/
Wind Direction:		**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:		**Temperature/Dew Point:**	
Precipitation and Obscuration:			
Departure Point:	Spanaway, WA (1S0)	**Type of Flight Plan Filed:**	None
Destination:	Tacoma, WA (TIW)	**Type of Clearance:**	None
Departure Time:		**Type of Airspace:**	

Wreckage and Impact Information

Crew Injuries:	1 None	**Aircraft Damage:**	Substantial
Passenger Injuries:	2 None	**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	
Total Injuries:	3 None	**Latitude, Longitude:**	47.268054,-122.578056

Administrative Information

Investigator In Charge (IIC):	Anderson, Orrin
Additional Participating Persons:	
Original Publish Date:	March 28, 2006
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.ntsb.gov/Docket?ProjectID=62860