



# Aviation Investigation Final Report

<b>Location:</b>	PLENTYWOOD, Montana	<b>Accident Number:</b>	SEA99LA083
<b>Date &amp; Time:</b>	June 9, 1999, 11:58 Local	<b>Registration:</b>	N5309P
<b>Aircraft:</b>	Piper PA-24-250	<b>Aircraft Damage:</b>	Substantial
<b>Defining Event:</b>		<b>Injuries:</b>	2 None
<b>Flight Conducted Under:</b>	Part 91: General aviation - Personal		

## Analysis

The pilot reported it took three landing gear extension attempts to obtain a gear-down indication. The landing was onto a turf runway. He stated that when 'I thought I heard the mains touch, I eased the nose forward to pin it down and then the airplane was stopping awful fast and then the propeller stopped horizontally and it was bent back.' He reported that no mechanical malfunction or failure was involved in the accident, and recommended 'double check[ing] gear handle & gear light' as a way to prevent the accident. An individual who responded to the airport to 'help extend the gear' after the accident stated that when he looked under the aircraft, 'the main gear was out of the gear well and the gear doors were out about an inch.' This individual further stated that when he removed packed mud and dirt from the nose wheel well, all three gear fell into the down and locked position. The aircraft owner's manual landing check list directs pilots to check landing gear down by ensuring the green gear-down indicator light is on, the gear warning horn is off, and the gear emergency handle is in forward position.

## Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The pilot's failure to ensure that the landing gear were properly down and locked for landing.

## Findings

Occurrence #1: WHEELS UP LANDING  
Phase of Operation: LANDING

Findings

1. (C) LANDING GEAR - NOT VERIFIED - PILOT IN COMMAND

## Factual Information

On June 9, 1999, at 1158 mountain daylight time, a Piper PA-24-250 airplane, N5309P, was substantially damaged during landing on runway 16 at Plentywood, Montana. The private pilot-in-command and one passenger were not injured in the accident. The pilot reported that visual meteorological conditions existed, and that no flight plan had been filed for the 14 CFR 91 local personal flight from Plentywood.

The pilot reported that the green landing gear "down" indicator light did not illuminate until his third attempt to lower the landing gear (NOTE: the PA-24 is equipped with a single green indicator light to indicate that all three gear are down and locked.) He stated he got a green landing gear "down" indication on the third attempt. The pilot stated that after checking the airport wind sock (which he stated was indicating "south-southwest half limp") he elected to land on turf runway 16 (1,995 by 80 feet, according to the Montana Department of Aeronautics state airport directory) rather than paved runway 12 (3,900 by 75 feet). The pilot reported he landed with "the third notch of flaps" set (full [27 degrees] flaps, which is the recommended flap setting for landing by the aircraft owner's manual [AOM]) and with an approach speed of 85 MPH (the recommended normal approach speed, according to the AOM.) He stated that "[a] couple hundred feet" after crossing the runway 16 threshold (Runway 12 crosses runway 16 at approximately the runway 16 approach end), "I thought I heard the mains touch so I eased the nose forward to pin it down and then the airplane was stopping awful fast and then the propeller stopped horizontally and it was bent back." The pilot reported winds at the time as being from 210 degrees at 10 knots, gusting to 13 knots. The pilot reported on his NTSB accident report that no mechanical malfunction or failure was involved in the accident. On his NTSB accident report, the pilot indicated "double checked gear handle & gear light" as a means by which the accident could have been prevented.

An individual who helped recover the aircraft after the accident provided a statement to an inspector at the FAA's Helena, Montana, Flight Standards District Office (FSDO), in which he stated he responded to the Plentywood airport after receiving a phone call "about the gear up landing", in order to "help extend the gear" of the accident aircraft after the accident. This individual reported that while preparing to respond to the airport to assist with the situation, he instructed the pilot to ensure the landing gear switch was in the "off" or "up" position prior to turning on the master switch (in order to avoid damage to the landing gear drive mechanism), but that the pilot replied he had already turned on the master switch with the landing gear switch in the "down" position and could hear the landing gear motor running. The individual reported that before lifting the aircraft, he looked under the aircraft and observed that the main gear was out of the gear well and the gear doors were open about 1 inch. He stated that after lifting the aircraft, an attempt was made to extend the gear by normal extension means, and that the electric gear motor ran but the gear did not extend since the casting holding the landing gear motor in place was broken. He reported that when he removed mud and dirt that

was packed into the nose wheel well, all three landing gear fell into the down and locked position.

The PA-24 AOM landing check list contains a step directing pilots to check landing gear down as follows: under 150 MPH, check green light on, warning horn off, and gear emergency handle in forward position.

### Pilot Information

<b>Certificate:</b>	Private	<b>Age:</b>	20, Male
<b>Airplane Rating(s):</b>	Single-engine land	<b>Seat Occupied:</b>	Left
<b>Other Aircraft Rating(s):</b>	None	<b>Restraint Used:</b>	
<b>Instrument Rating(s):</b>	None	<b>Second Pilot Present:</b>	No
<b>Instructor Rating(s):</b>	None	<b>Toxicology Performed:</b>	No
<b>Medical Certification:</b>	Class 3 Valid Medical--w/ waivers/lim	<b>Last FAA Medical Exam:</b>	April 21, 1997
<b>Occupational Pilot:</b>	UNK	<b>Last Flight Review or Equivalent:</b>	
<b>Flight Time:</b>	150 hours (Total, all aircraft), 61 hours (Total, this make and model), 88 hours (Pilot In Command, all aircraft), 18 hours (Last 90 days, all aircraft), 7 hours (Last 30 days, all aircraft), 1 hours (Last 24 hours, all aircraft)		

### Aircraft and Owner/Operator Information

<b>Aircraft Make:</b>	Piper	<b>Registration:</b>	N5309P
<b>Model/Series:</b>	PA-24-250 PA-24-250	<b>Aircraft Category:</b>	Airplane
<b>Year of Manufacture:</b>		<b>Amateur Built:</b>	
<b>Airworthiness Certificate:</b>	Normal	<b>Serial Number:</b>	24-350
<b>Landing Gear Type:</b>	Retractable - Tricycle	<b>Seats:</b>	4
<b>Date/Type of Last Inspection:</b>	November 15, 1998 Annual	<b>Certified Max Gross Wt.:</b>	2800 lbs
<b>Time Since Last Inspection:</b>	74 Hrs	<b>Engines:</b>	1 Reciprocating
<b>Airframe Total Time:</b>	5169 Hrs	<b>Engine Manufacturer:</b>	Lycoming
<b>ELT:</b>	Installed, not activated	<b>Engine Model/Series:</b>	O-540-A1A5
<b>Registered Owner:</b>	CARLSON AERIAL INC.	<b>Rated Power:</b>	250 Horsepower
<b>Operator:</b>	JOEL CARLSON	<b>Operating Certificate(s) Held:</b>	None
<b>Operator Does Business As:</b>		<b>Operator Designator Code:</b>	

## Meteorological Information and Flight Plan

<b>Conditions at Accident Site:</b>	Visual (VMC)	<b>Condition of Light:</b>	Day
<b>Observation Facility, Elevation:</b>		<b>Distance from Accident Site:</b>	
<b>Observation Time:</b>		<b>Direction from Accident Site:</b>	
<b>Lowest Cloud Condition:</b>	Scattered / 7000 ft AGL	<b>Visibility</b>	10 miles
<b>Lowest Ceiling:</b>	None	<b>Visibility (RVR):</b>	
<b>Wind Speed/Gusts:</b>	10 knots / 13 knots	<b>Turbulence Type Forecast/Actual:</b>	/
<b>Wind Direction:</b>	210°	<b>Turbulence Severity Forecast/Actual:</b>	/
<b>Altimeter Setting:</b>	29 inches Hg	<b>Temperature/Dew Point:</b>	21°C
<b>Precipitation and Obscuration:</b>	No Obscuration; No Precipitation		
<b>Departure Point:</b>	PLENTYWOOD , MT (PWD )	<b>Type of Flight Plan Filed:</b>	None
<b>Destination:</b>		<b>Type of Clearance:</b>	None
<b>Departure Time:</b>	11:00 Local	<b>Type of Airspace:</b>	Class G

## Airport Information

<b>Airport:</b>	PLENTYWOOD PWD	<b>Runway Surface Type:</b>	Grass/turf
<b>Airport Elevation:</b>	2250 ft msl	<b>Runway Surface Condition:</b>	
<b>Runway Used:</b>	16	<b>IFR Approach:</b>	None
<b>Runway Length/Width:</b>	1995 ft / 80 ft	<b>VFR Approach/Landing:</b>	Full stop

## Wreckage and Impact Information

<b>Crew Injuries:</b>	1 None	<b>Aircraft Damage:</b>	Substantial
<b>Passenger Injuries:</b>	1 None	<b>Aircraft Fire:</b>	None
<b>Ground Injuries:</b>	N/A	<b>Aircraft Explosion:</b>	None
<b>Total Injuries:</b>	2 None	<b>Latitude, Longitude:</b>	48.719055,-104.569679(est)

## Administrative Information

<b>Investigator In Charge (IIC):</b>	Nesemeier, Gregg
<b>Additional Participating Persons:</b>	GARY POLLAK; HELENA , MT
<b>Original Publish Date:</b>	March 31, 2000
<b>Last Revision Date:</b>	
<b>Investigation Class:</b>	<a href="#">Class</a>
<b>Note:</b>	
<b>Investigation Docket:</b>	<a href="https://data.ntsb.gov/Docket?ProjectID=46610">https://data.ntsb.gov/Docket?ProjectID=46610</a>

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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](#).