Aviation Investigation Final Report

Location:	BATTLEGROUND, Washington	**Accident Number:**	SEA98LA168
Date & Time:	August 12, 1998, 16:00 Local	**Registration:**	N77017
Aircraft:	Cessna 140	**Aircraft Damage:**	Substantial
Defining Event:		**Injuries:**	1 None
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The pilot, a certificated flight instructor who operated a mountain/back country flight instruction service, was landing on a 2,100-foot-long dry grass runway. She stated she landed into the wind, which was less than 5 knots. She touched down in a normal, full-stall, three point landing, and that when the main wheels touched down, the airplane nosed over despite her efforts to hold the tail down. She also stated that the aircraft's right brake, a retrofitted Cleveland model 30-63, was locked at touchdown. Aircraft maintenance records indicated that the right brake master cylinder had been removed and replaced for maintenance two months before the accident, and that the right brake had been bled and checked three times since that work was performed. An FAA inspector who checked the right brake at the accident site reported he found the right brake to be functional and that the right main wheel rolled properly on its axle.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: Nose Over for undetermined reasons.

Findings

Occurrence #1: NOSE OVER
Phase of Operation: LANDING

Findings
1. (C) REASON FOR OCCURRENCE UNDETERMINED

Factual Information

On August 12, 1998, approximately 1600 Pacific daylight time, a Cessna 140, N77017, was substantially damaged in a nose over on landing at the Parkside Airpark, a private airport near Battle Ground, Washington. The commercial pilot-in-command, the aircraft's sole occupant, was not injured. Visual meteorological conditions existed and no flight plan was filed for the 14 CFR 91 personal flight from Troutdale, Oregon.

The pilot reported:

...The weather was VMC with no clouds, no ceiling, and a light wind (less than 5 knots) out of the west....[I landed] into the wind on runway 25. The airport has a paved runway and a grass runway, and I landed on the grass. I flew a normal approach and touched down in a normal, full-stall, three point landing. When the main wheels touched down, it felt as if the brakes were on, the tail of the airplane rose abruptly, and the nose began to pitch toward the ground. I kept full back elevator and was leaning back to try and keep the tail down, but it continued to rise and the prop struck the grass. The airplane skidded on the nose for about 15 feet, during which time I felt the tail continuing to rise....the airplane [then] rolled upside down and to the right....

The pilot reported that following the accident, "There was a skid mark in the grass where the right wheel had slid about 12 feet before the prop struck." The pilot indicated on her NTSB accident reported that the landing surface was dry. She stated on her NTSB accident report that "It was apparent that the right brake was locked when the aircraft touched down."

According to copies of the aircraft records furnished by the pilot, the airplane was retrofitted with Cleveland model 30-63 brakes (identical to those used on certain Cessna 150 aircraft) in 1972. The airplane, which had 3,490 hours total time, received its last annual inspection on December 1, 1997, 8 1/2 months and 85 flight hours before the accident. The aircraft records indicated that the aircraft's brakes were inspected and serviced on June 3, 1997, and were serviced during the December 1, 1997, annual inspection. Additionally, according to the aircraft records, the right brake master cylinder was removed on June 15, 1998. The mechanic also recorded on this entry that he replaced the stem roll shear pin, then reassembled, installed and bled the system and that the system checked good. The right brake was subsequently bled and checked on July 2, 1998, July 8, 1998, and August 7, 1998.

An FAA inspector examined the aircraft's right brake system at the accident site and found it to be functional, and found that the right main landing gear wheel rolled properly on its axle.

The pilot was a certificated flight instructor who operated a mountain/back country flight instruction service out of McCall, Idaho. She reported her total time as 2,982 hours, including

2,892 hours of pilot-in-command time and 800 hours (all pilot-in-command) in make and model. She reported 1,560 instructor hours, including 110 instructor hours in make and model.

The east-west runway at Parkside Airpark is 2,100 feet long. The runway has pavement 25 feet wide, with a 50-foot-wide turf section on the north side of the paved section.

Pilot Information

Certificate:	Commercial; Flight instructor	**Age:**	36,Female
Airplane Rating(s):	Single-engine land; Multi-engine land	**Seat Occupied:**	Left
Other Aircraft Rating(s):	None	**Restraint Used:**	
Instrument Rating(s):	Airplane	**Second Pilot Present:**	No
Instructor Rating(s):	Airplane single-engine; Instrument airplane	**Toxicology Performed:**	No
Medical Certification:	Class 2 Valid Medical--w/ waivers/lim	**Last FAA Medical Exam:**	June 4, 1998
Occupational Pilot:	Yes	**Last Flight Review or Equivalent:**	
Flight Time:	2982 hours (Total, all aircraft), 800 hours (Total, this make and model), 2892 hours (Pilot In Command, all aircraft), 178 hours (Last 90 days, all aircraft), 69 hours (Last 30 days, all aircraft), 1 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Cessna	**Registration:**	N77017
Model/Series:	140 140	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	11463
Landing Gear Type:	Tailwheel	**Seats:**	2
Date/Type of Last Inspection:	December 1, 1997 Annual	**Certified Max Gross Wt.:**	1450 lbs
Time Since Last Inspection:	85 Hrs	**Engines:**	1 Reciprocating
Airframe Total Time:	3490 Hrs	**Engine Manufacturer:**	Continental
ELT:	Installed, activated, did not aid in locating accident	**Engine Model/Series:**	O-200-A
Registered Owner:	AMY L. HOOVER	**Rated Power:**	100 Horsepower
Operator:		**Operating Certificate(s) Held:**	None
Operator Does Business As:		**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:	Clear	**Visibility**	25 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	5 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	250°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	30 inches Hg	**Temperature/Dew Point:**	28°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	TROUTDALE , OR (TTD)	**Type of Flight Plan Filed:**	None
Destination:		**Type of Clearance:**	None
Departure Time:	15:10 Local	**Type of Airspace:**	Class G

Airport Information

Airport:	PARKSIDE AIRPARK WA87	**Runway Surface Type:**	Grass/turf
Airport Elevation:	275 ft msl	**Runway Surface Condition:**	
Runway Used:	25	**IFR Approach:**	None
Runway Length/Width:	2100 ft / 50 ft	**VFR Approach/Landing:**	Full stop

Wreckage and Impact Information

Crew Injuries:	1 None	**Aircraft Damage:**	Substantial
Passenger Injuries:		**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	1 None	**Latitude, Longitude:**	45.800193,-122.47953(est)

Administrative Information

Investigator In Charge (IIC):	Nesemeier, Gregg
Additional Participating Persons:	RICK CLARK; HILLSBORO , OR
Original Publish Date:	January 11, 2000
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=43741