



Aviation Investigation Final Report

Location:	PULLMAN, Washington	Accident Number:	SEA91LA068
Date & Time:	March 16, 1991, 16:53 Local	Registration:	N2455N
Aircraft:	CESSNA 140	Aircraft Damage:	Substantial
Defining Event:		Injuries:	1 None
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

THE PILOT OF THE CESSNA 140 STATED THAT HE ENCOUNTERED WAKE TURBULENCE ON SHORT FINAL. THE AIRCRAFT ROLLED TO THE RIGHT. HE ATTEMPTED A RECOVERY, BUT THE AIRCRAFT SUSTAINED A HARD LANDING, COLLAPSING THE RIGHT MAIN LANDING GEAR, RESULTING IN A GROUND-LOOP TO THE RIGHT. A SWEARINGEN COMMUTER AIRCRAFT HAD LANDED ON THE RUNWAY A FEW MINUTES EARLIER.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: THE PILOT'S ENCOUNTER WITH WAKE TURBULENCE SHORTLY BEFORE TOUCHDOWN, RESULTING IN A HARD LANDING.

Findings

Occurrence #1: VORTEX TURBULENCE ENCOUNTERED
Phase of Operation: APPROACH - VFR PATTERN - FINAL APPROACH

Findings

1. (C) WAKE TURBULENCE - ENCOUNTERED
 2. REMEDIAL ACTION - ATTEMPTED - PILOT IN COMMAND
 3. REMEDIAL ACTION - INADEQUATE
 4. WAKE TURBULENCE - MISJUDGED - PILOT IN COMMAND
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Occurrence #2: HARD LANDING
Phase of Operation: LANDING

Factual Information

Pilot Information

Certificate:	Private	Age:	41, Male
Airplane Rating(s):	Single-engine land	Seat Occupied:	Unknown
Other Aircraft Rating(s):	None	Restraint Used:	
Instrument Rating(s):	None	Second Pilot Present:	No
Instructor Rating(s):		Toxicology Performed:	No
Medical Certification:	Class 2 Valid Medical--no waivers/lim.	Last FAA Medical Exam:	July 26, 1989
Occupational Pilot:	UNK	Last Flight Review or Equivalent:	
Flight Time:	235 hours (Total, all aircraft), 111 hours (Total, this make and model), 181 hours (Pilot In Command, all aircraft), 5 hours (Last 90 days, all aircraft), 5 hours (Last 30 days, all aircraft), 2 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	CESSNA	Registration:	N2455N
Model/Series:	140 140	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	
Airworthiness Certificate:		Serial Number:	12708
Landing Gear Type:	Tailwheel	Seats:	2
Date/Type of Last Inspection:	Unknown	Certified Max Gross Wt.:	1500 lbs
Time Since Last Inspection:	0 Hrs	Engines:	1 Reciprocating
Airframe Total Time:		Engine Manufacturer:	CONTINENTAL
ELT:	Installed, activated	Engine Model/Series:	C-85-12
Registered Owner:	CHARLES F. ROPER	Rated Power:	85 Horsepower
Operator:	CHARLES F. ROPER	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:	Scattered / 5000 ft AGL	Visibility	20 miles
Lowest Ceiling:	Unknown	Visibility (RVR):	
Wind Speed/Gusts:	3 knots /	Turbulence Type Forecast/Actual:	/
Wind Direction:	300°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:		Temperature/Dew Point:	-18°C / -18°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	ROSALIA, WA (72S)	Type of Flight Plan Filed:	None
Destination:		Type of Clearance:	None
Departure Time:	14:30 Local	Type of Airspace:	

Airport Information

Airport:	PULLMAN/MOSCOW REG. PUW	Runway Surface Type:	Asphalt
Airport Elevation:	2551 ft msl	Runway Surface Condition:	Dry
Runway Used:	5	IFR Approach:	None
Runway Length/Width:	6731 ft / 100 ft	VFR Approach/Landing:	Touch and go

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:	46.720344,-117.180541(est)

Administrative Information

Investigator In Charge (IIC):	Stockhill, Michael
Additional Participating Persons:	STEVE FRANKLIN; RENTON , WA
Original Publish Date:	May 5, 1993
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.nts.gov/Docket?ProjectID=41401

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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](#).