



# Aviation Investigation Final Report

<b>Location:</b>	Troutdale, Oregon	<b>Accident Number:</b>	SEA03LA145
<b>Date &amp; Time:</b>	July 16, 2003, 16:15 Local	<b>Registration:</b>	N732E
<b>Aircraft:</b>	Andelin (Pitts) S1E	<b>Aircraft Damage:</b>	Substantial
<b>Defining Event:</b>		<b>Injuries:</b>	1 None
<b>Flight Conducted Under:</b>	Part 91: General aviation - Personal		

## Analysis

The pilot of the tail wheel equipped Andelin (Pitts) S1E reported that after a local flight he returned to his airport of departure and set up for an approach to runway 25. He made a 3-point touchdown and as the aircraft decelerated through about 40 miles per hour the aircraft began to drift right of centerline. The pilot attempted to correct with the application of left rudder but the aircraft continued to the right at which time he applied left brake. The aircraft's lower left wingtip then contacted the runway and the aircraft decelerated to a stop coming to rest on its nose and right wingtip. Post-crash examination of the aircraft's braking system revealed a piece of hose lining material within the left brake line at the caliper fitting which completely obstructed the left brake line. This condition would have resulted in asymmetrical braking.

## Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The pilot's inability to maintain directional control due to an obstruction of the left brake line by foreign material resulting in asymmetrical braking.

## Findings

Occurrence #1: AIRFRAME/COMPONENT/SYSTEM FAILURE/MALFUNCTION  
Phase of Operation: LANDING - ROLL

Findings

1. (C) HYDRAULIC SYSTEM,LINE - OBSTRUCTED
2. LANDING GEAR,NORMAL BRAKE SYSTEM - ASYMMETRICAL

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Occurrence #2: LOSS OF CONTROL - ON GROUND/WATER

Phase of Operation: LANDING - ROLL

Findings

3. DIRECTIONAL CONTROL - NOT POSSIBLE

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Occurrence #3: NOSE DOWN

Phase of Operation: LANDING - ROLL

## Factual Information

On July 16, 2003, approximately 1615 Pacific daylight time, a tail wheel equipped Andelin (Pitts) S1E experimental aircraft, N732E, registered to and being flown by an airline transport rated pilot, sustained substantial damage during a loss of control and nose down event during the landing roll at the Portland-Troutdale airport, Troutdale, Oregon. The pilot was uninjured. Visual meteorological conditions prevailed and no flight plan had been filed. The flight, which was personal, was operated under 14 CFR 91, and originated from Troutdale, earlier in the afternoon.

The pilot reported that after a local flight he returned and set up for an approach to runway 25 at he Troutdale airport. He made a 3-point touchdown and as the aircraft decelerated through about 40 miles per hour the aircraft began to drift right of centerline. The pilot reported that he applied left rudder but the aircraft continued to the right at which time he applied left brake. The aircraft's lower left wingtip contacted the runway. The aircraft decelerated to a stop coming to rest on its nose and right wingtip.

The pilot reported that the Troutdale air traffic control tower advised of variable winds at six knots. The 1653 surface weather observation taken at Troutdale airport reported winds as variable at three knots.

Post-crash examination of the aircraft's braking system revealed a piece of hose lining material within the left brake line at the caliper fitting which completely obstructed the left brake line (refer to Attachment M-I and photograph 1).

## Pilot Information

<b>Certificate:</b>	Airline transport; Flight instructor	<b>Age:</b>	51, Male
<b>Airplane Rating(s):</b>	Single-engine land; Multi-engine land	<b>Seat Occupied:</b>	Front
<b>Other Aircraft Rating(s):</b>	None	<b>Restraint Used:</b>	
<b>Instrument Rating(s):</b>	Airplane	<b>Second Pilot Present:</b>	No
<b>Instructor Rating(s):</b>	Airplane multi-engine; Airplane single-engine; Instrument airplane	<b>Toxicology Performed:</b>	No
<b>Medical Certification:</b>	Class 1 Valid Medical-w/ waivers/lim	<b>Last FAA Medical Exam:</b>	May 6, 2003
<b>Occupational Pilot:</b>	Yes	<b>Last Flight Review or Equivalent:</b>	March 6, 2003
<b>Flight Time:</b>	18613 hours (Total, all aircraft), 260 hours (Total, this make and model), 17684 hours (Pilot In Command, all aircraft), 139 hours (Last 90 days, all aircraft), 52 hours (Last 30 days, all aircraft)		

## Aircraft and Owner/Operator Information

<b>Aircraft Make:</b>	Andelin (Pitts)	<b>Registration:</b>	N732E
<b>Model/Series:</b>	S1E	<b>Aircraft Category:</b>	Airplane
<b>Year of Manufacture:</b>		<b>Amateur Built:</b>	Yes
<b>Airworthiness Certificate:</b>	Experimental (Special)	<b>Serial Number:</b>	8-0120
<b>Landing Gear Type:</b>	Tailwheel	<b>Seats:</b>	1
<b>Date/Type of Last Inspection:</b>	September 2, 2002 Annual	<b>Certified Max Gross Wt.:</b>	1150 lbs
<b>Time Since Last Inspection:</b>	14 Hrs	<b>Engines:</b>	1 Reciprocating
<b>Airframe Total Time:</b>	682 Hrs at time of accident	<b>Engine Manufacturer:</b>	Lycoming
<b>ELT:</b>	Not installed	<b>Engine Model/Series:</b>	AEIO-360-B4A
<b>Registered Owner:</b>	Blessing, Robert L.	<b>Rated Power:</b>	180 Horsepower
<b>Operator:</b>		<b>Operating Certificate(s) Held:</b>	None

## Meteorological Information and Flight Plan

<b>Conditions at Accident Site:</b>	Visual (VMC)	<b>Condition of Light:</b>	Day
<b>Observation Facility, Elevation:</b>	TTD,39 ft msl	<b>Distance from Accident Site:</b>	0 Nautical Miles
<b>Observation Time:</b>	16:30 Local	<b>Direction from Accident Site:</b>	
<b>Lowest Cloud Condition:</b>	Clear	<b>Visibility</b>	10 miles
<b>Lowest Ceiling:</b>	None	<b>Visibility (RVR):</b>	
<b>Wind Speed/Gusts:</b>	7 knots /	<b>Turbulence Type Forecast/Actual:</b>	/
<b>Wind Direction:</b>	280°	<b>Turbulence Severity Forecast/Actual:</b>	/
<b>Altimeter Setting:</b>	30.06 inches Hg	<b>Temperature/Dew Point:</b>	26°C / 9°C
<b>Precipitation and Obscuration:</b>	No Obscuration; No Precipitation		
<b>Departure Point:</b>	Troutdale, OR (TTD )	<b>Type of Flight Plan Filed:</b>	None
<b>Destination:</b>	Troutdale, OR (TTD )	<b>Type of Clearance:</b>	Traffic advisory
<b>Departure Time:</b>	15:25 Local	<b>Type of Airspace:</b>	Class D

## Airport Information

<b>Airport:</b>	Portland-Troutdale Airport TTD	<b>Runway Surface Type:</b>	Asphalt
<b>Airport Elevation:</b>	39 ft msl	<b>Runway Surface Condition:</b>	Dry
<b>Runway Used:</b>	25	<b>IFR Approach:</b>	None
<b>Runway Length/Width:</b>	5399 ft / 150 ft	<b>VFR Approach/Landing:</b>	Full stop;Traffic pattern

## Wreckage and Impact Information

<b>Crew Injuries:</b>	1 None	<b>Aircraft Damage:</b>	Substantial
<b>Passenger Injuries:</b>		<b>Aircraft Fire:</b>	None
<b>Ground Injuries:</b>	N/A	<b>Aircraft Explosion:</b>	None
<b>Total Injuries:</b>	1 None	<b>Latitude, Longitude:</b>	45.548889,-122.398887

## Administrative Information

<b>Investigator In Charge (IIC):</b>	McCreary, Steven
<b>Additional Participating Persons:</b>	David Jourdan; FAA FSDO; Hillsboro, OR
<b>Original Publish Date:</b>	March 30, 2004
<b>Last Revision Date:</b>	
<b>Investigation Class:</b>	<a href="#">Class</a>
<b>Note:</b>	
<b>Investigation Docket:</b>	<a href="https://data.nts.gov/Docket?ProjectID=57523">https://data.nts.gov/Docket?ProjectID=57523</a>

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