



# Aviation Investigation Final Report

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<b>Location:</b>	Yamhill, Oregon	<b>Accident Number:</b>	WPR11CA358
<b>Date &amp; Time:</b>	July 31, 2011, 08:30 Local	<b>Registration:</b>	N30456
<b>Aircraft:</b>	MCDONALD LYNN B AVID FLYER MARK IV	<b>Aircraft Damage:</b>	Substantial
<b>Defining Event:</b>	Sys/Comp malf/fail (non-power)	<b>Injuries:</b>	1 None
<b>Flight Conducted Under:</b>	Part 91: General aviation - Personal		

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## Analysis

The pilot reported that his approach to, and landing on, the private airstrip in his amateur-built, experimental, conventional gear airplane were normal. During rollout in the calm wind condition, the airplane began an uncommanded right turn. The pilot attempted to correct his loss of directional control by application of rudder and engine power. However, the tail wheel had unlocked and was evidently in a castoring mode. Despite his efforts to straighten the airplane's path, the airplane veered off the runway and impacted a ditch. During the impact sequence one propeller blade broke, and the left wingtip and a wing rib were broken. The pilot reported that he built and maintained the experimental airplane. He opined that the accident could have been prevented had the angle of the tail wheel assembly been correct. After years of use, the tail wheel spring-to-empennage attachment assembly flattened. The incorrect angle altered the tail wheel's pivot point. This event, combined with the vibration induced during rollout on the gravel runway, allowed the tail wheel to unlock.

## Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The pilot's loss of directional control during landing rollout due to an unlocked tail wheel that was caused by a degradation of the tailwheel assembly mounting angle.

## Findings

<b>Aircraft</b>	Nose/tail landing gear - Damaged/degraded
<b>Aircraft</b>	Directional control - Not attained/maintained
<b>Environmental issues</b>	(general) - Contributed to outcome

## Factual Information

### History of Flight

<b>Landing-landing roll</b>	Sys/Comp malf/fail (non-power) (Defining event)
<b>Landing-landing roll</b>	Loss of control on ground
<b>Landing-landing roll</b>	Runway excursion
<b>Landing-landing roll</b>	Collision with terr/obj (non-CFIT)

### Pilot Information

<b>Certificate:</b>	Private	<b>Age:</b>	76, 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 With waivers/limitations	<b>Last FAA Medical Exam:</b>	June 10, 2010
<b>Occupational Pilot:</b>	No	<b>Last Flight Review or Equivalent:</b>	June 18, 2011
<b>Flight Time:</b>	2413 hours (Total, all aircraft), 1540 hours (Total, this make and model), 14 hours (Last 90 days, all aircraft), 6 hours (Last 30 days, all aircraft), 0 hours (Last 24 hours, all aircraft)		

## Aircraft and Owner/Operator Information

<b>Aircraft Make:</b>	MCDONALD LYNN B	<b>Registration:</b>	N30456
<b>Model/Series:</b>	AVID FLYER MARK IV	<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>	1279D
<b>Landing Gear Type:</b>	Tailwheel	<b>Seats:</b>	2
<b>Date/Type of Last Inspection:</b>	August 22, 2010 Condition	<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>	1541 Hrs at time of accident	<b>Engine Manufacturer:</b>	BOMBARDIER
<b>ELT:</b>	C91A installed, not activated	<b>Engine Model/Series:</b>	ROTAX (ALL)
<b>Registered Owner:</b>	On file	<b>Rated Power:</b>	65 Horsepower
<b>Operator:</b>	On file	<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>		<b>Distance from Accident Site:</b>	
<b>Observation Time:</b>		<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>	/	<b>Turbulence Type Forecast/Actual:</b>	/
<b>Wind Direction:</b>		<b>Turbulence Severity Forecast/Actual:</b>	/
<b>Altimeter Setting:</b>	30.04 inches Hg	<b>Temperature/Dew Point:</b>	18°C
<b>Precipitation and Obscuration:</b>	No Obscuration; No Precipitation		
<b>Departure Point:</b>	Independence, OR (S75 )	<b>Type of Flight Plan Filed:</b>	None
<b>Destination:</b>	Yamhill, OR (OR05)	<b>Type of Clearance:</b>	None
<b>Departure Time:</b>	08:00 Local	<b>Type of Airspace:</b>	

## Airport Information

<b>Airport:</b>	Flying M OR05	<b>Runway Surface Type:</b>	Gravel
<b>Airport Elevation:</b>	448 ft msl	<b>Runway Surface Condition:</b>	Dry;Rough
<b>Runway Used:</b>	07	<b>IFR Approach:</b>	None
<b>Runway Length/Width:</b>	1200 ft / 40 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>	45.361389,-123.353057(est)

## Administrative Information

<b>Investigator In Charge (IIC):</b>	Pollack, Wayne
<b>Additional Participating Persons:</b>	Dean Singleton; Federal Aviation Administration; Portland, OR
<b>Original Publish Date:</b>	October 17, 2011
<b>Last Revision Date:</b>	
<b>Investigation Class:</b>	<a href="#">Class</a>
<b>Note:</b>	This accident report documents the factual circumstances of this accident as described to the NTSB.
<b>Investigation Docket:</b>	<a href="https://data.nts.gov/Docket?ProjectID=81358">https://data.nts.gov/Docket?ProjectID=81358</a>

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