



Aviation Investigation Final Report

Location:	Bozeman, Montana	Accident Number:	SEA04LA061
Date & Time:	March 31, 2004, 09:45 Local	Registration:	N5210G
Aircraft:	Cessna 305A	Aircraft Damage:	Substantial
Defining Event:		Injuries:	1 None
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The flare, touchdown, and initial part of the landing roll in the tail wheel equipped aircraft were normal and uneventful. But as the aircraft slowed, it suddenly swerved to the left, and the pilot's attempts to realign it with the runway were not successful. The aircraft therefore exited the left side of the runway and entered a ground loop. During the ground loop sequence, the right main gear leg partially folded under, and the right wing collided with the terrain. A post accident inspection of the aircraft's braking system, rudder system, and tail wheel did not reveal any evidence of a malfunction or anomaly that would have contributed to a loss of directional control.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The pilot's failure to maintain directional control during the landing roll in the tail wheel-equipped aircraft, leading to an inadvertent ground-loop, during which the aircraft's wing impacted the ground.

Findings

Occurrence #1: LOSS OF CONTROL - ON GROUND/WATER
Phase of Operation: LANDING - ROLL

Findings

1. (C) DIRECTIONAL CONTROL - NOT MAINTAINED - PILOT IN COMMAND

Occurrence #2: ON GROUND/WATER ENCOUNTER WITH TERRAIN/WATER
Phase of Operation: LANDING - ROLL

Findings

2. (C) GROUND LOOP/SWERVE - INADVERTENT - PILOT IN COMMAND

Factual Information

On Wednesday, March 31, 2004, approximately 0945 mountain standard time, a Cessna 305A (L-19), N5210G, impacted the terrain during an inadvertent landing roll ground-loop at Bozeman Municipal Airport, Bozeman, Montana. The private pilot, who was the sole occupant, was not injured, but the aircraft, which is owned and operated by a family member of the pilot, sustained substantial damage. The 14 CFR Part 91 personal pleasure flight, which departed Helena, Montana, about 45 minutes earlier, was in visual meteorological conditions at the time of the accident. No flight plan had been filed. There was no report of an ELT activation.

According to the pilot, the flare, touchdown, and initial part of the landing roll in the tail wheel-equipped aircraft were normal and uneventful. But as the aircraft slowed, it suddenly swerved to the left, and the pilot's attempts to realign it with the runway were not successful. The aircraft therefore exited the left side of the runway and entered a ground loop. During the ground loop sequence, the right main gear leg partially folded under, and the right wing collided with the terrain.

A post accident inspection of the aircraft's braking system, rudder system, and tail wheel did not reveal any evidence of a malfunction or anomaly that would have contributed to a loss of directional control.

Pilot Information

Certificate:	Private	Age:	56, Male
Airplane Rating(s):	Single-engine land	Seat Occupied:	Front
Other Aircraft Rating(s):	None	Restraint Used:	
Instrument Rating(s):	None	Second Pilot Present:	No
Instructor Rating(s):	None	Toxicology Performed:	No
Medical Certification:	Class 3 Valid Medical--w/ waivers/lim	Last FAA Medical Exam:	February 3, 2003
Occupational Pilot:	UNK	Last Flight Review or Equivalent:	July 4, 2002
Flight Time:	264 hours (Total, all aircraft), 125 hours (Total, this make and model), 169 hours (Pilot In Command, all aircraft), 15 hours (Last 90 days, all aircraft), 10 hours (Last 30 days, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Cessna	Registration:	N5210G
Model/Series:	305A	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	
Airworthiness Certificate:	Normal	Serial Number:	22186
Landing Gear Type:	Tailwheel	Seats:	2
Date/Type of Last Inspection:	December 6, 2003 Annual	Certified Max Gross Wt.:	2300 lbs
Time Since Last Inspection:	6 Hrs	Engines:	1 Reciprocating
Airframe Total Time:	11347 Hrs at time of accident	Engine Manufacturer:	Continental
ELT:	Installed, not activated	Engine Model/Series:	O-470-15
Registered Owner:	Eugene Graf III	Rated Power:	213 Horsepower
Operator:		Operating Certificate(s) Held:	None

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	10 miles
Lowest Ceiling:	None	Visibility (RVR):	
Wind Speed/Gusts:	3 knots /	Turbulence Type Forecast/Actual:	/
Wind Direction:	350°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:		Temperature/Dew Point:	7°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Helena, MT (HLN)	Type of Flight Plan Filed:	None
Destination:	Bozeman, MT (BZN)	Type of Clearance:	VFR
Departure Time:	09:00 Local	Type of Airspace:	Class D

Airport Information

Airport:	Gallatin Field BZN	Runway Surface Type:	Asphalt
Airport Elevation:	4474 ft msl	Runway Surface Condition:	Dry
Runway Used:	30	IFR Approach:	None
Runway Length/Width:	9003 ft / 150 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:	45.669101,-111.140113(est)

Administrative Information

Investigator In Charge (IIC):	Anderson, Orrin
Additional Participating Persons:	Ed Warmoth; Helena FSDO; Helena, MT
Original Publish Date:	June 30, 2004
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=58982

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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](#).