



# Aviation Investigation Final Report

<b>Location:</b>	Helena, Montana	<b>Accident Number:</b>	WPR20CA066
<b>Date &amp; Time:</b>	January 8, 2020, 16:00 Local	<b>Registration:</b>	N1428P
<b>Aircraft:</b>	Piper PA 23	<b>Aircraft Damage:</b>	Substantial
<b>Defining Event:</b>	Collision during takeoff/land	<b>Injuries:</b>	1 None
<b>Flight Conducted Under:</b>	Part 91: General aviation - Instructional		

## Analysis

The flight instructor reported that, during an instructional flight in a twin-engine airplane, which included feathering and unfeathering the left engine in flight, the left engine would not restart. The airplane was unable to maintain altitude and reach the destination airport, so he landed the airplane on a field about 1/2 mile from the airport. After the instructor successfully started the engine on the ground, the student pilot walked back to the airport, while the instructor decided to attempt an off-airport departure from the frozen ground with 4-inch-tall alfalfa stubble. He chose a takeoff path that didn't have any visible obstructions, which he estimated would allow for a 3,000-ft-long ground roll. He then taxied to the edge of the field, held the brakes, applied full power to the engines, and released the brakes, and the airplane began to move. About 700 ft into the ground roll, the airplane impacted a shallow rut from an irrigation pivot, and the nose landing gear collapsed, which resulted in substantial damage to the forward fuselage. The pilot reported that his decision to take off from the field was poor because he made it without first walking the takeoff terrain.

## Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be:

The pilot's improper decision to attempt an off-airport departure from rough terrain without inspecting the takeoff area, which resulted in a collision with a shallow rut during takeoff and the nose landing gear collapsing.

## Findings

<b>Personnel issues</b>	Decision making/judgment - Pilot
<b>Personnel issues</b>	(general) - Pilot
<b>Environmental issues</b>	Rough terrain - Effect on operation

## Factual Information

### History of Flight

<b>Prior to flight</b>	Miscellaneous/other
<b>Takeoff</b>	Collision during takeoff/land (Defining event)
<b>Takeoff</b>	Landing gear collapse

### Pilot Information

<b>Certificate:</b>	Airline transport; Flight instructor	<b>Age:</b>	61, Male
<b>Airplane Rating(s):</b>	Single-engine land; Multi-engine land	<b>Seat Occupied:</b>	Left
<b>Other Aircraft Rating(s):</b>	None	<b>Restraint Used:</b>	Lap only
<b>Instrument Rating(s):</b>	Airplane	<b>Second Pilot Present:</b>	No
<b>Instructor Rating(s):</b>	Airplane multi-engine; Airplane single-engine	<b>Toxicology Performed:</b>	No
<b>Medical Certification:</b>	Class 3 With waivers/limitations	<b>Last FAA Medical Exam:</b>	August 30, 2018
<b>Occupational Pilot:</b>	Yes	<b>Last Flight Review or Equivalent:</b>	August 31, 2018
<b>Flight Time:</b>	8174 hours (Total, all aircraft), 1874 hours (Total, this make and model), 7939 hours (Pilot In Command, all aircraft), 294 hours (Last 90 days, all aircraft), 98 hours (Last 30 days, all aircraft), 7 hours (Last 24 hours, all aircraft)		

## Aircraft and Owner/Operator Information

<b>Aircraft Make:</b>	Piper	<b>Registration:</b>	N1428P
<b>Model/Series:</b>	PA 23 Undesignat	<b>Aircraft Category:</b>	Airplane
<b>Year of Manufacture:</b>	1956	<b>Amateur Built:</b>	
<b>Airworthiness Certificate:</b>	Normal	<b>Serial Number:</b>	23-484
<b>Landing Gear Type:</b>	Retractable - Tricycle	<b>Seats:</b>	4
<b>Date/Type of Last Inspection:</b>	December 16, 2019 Annual	<b>Certified Max Gross Wt.:</b>	3501 lbs
<b>Time Since Last Inspection:</b>	12 Hrs	<b>Engines:</b>	2 Reciprocating
<b>Airframe Total Time:</b>	5051 Hrs at time of accident	<b>Engine Manufacturer:</b>	Lycoming
<b>ELT:</b>	C91 installed, not activated	<b>Engine Model/Series:</b>	O-320
<b>Registered Owner:</b>	On file	<b>Rated Power:</b>	150 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>	3877 ft msl	<b>Distance from Accident Site:</b>	
<b>Observation Time:</b>	15:53 Local	<b>Direction from Accident Site:</b>	
<b>Lowest Cloud Condition:</b>	Few / 7000 ft AGL	<b>Visibility</b>	10 miles
<b>Lowest Ceiling:</b>		<b>Visibility (RVR):</b>	
<b>Wind Speed/Gusts:</b>	7 knots / None	<b>Turbulence Type Forecast/Actual:</b>	/
<b>Wind Direction:</b>	230°	<b>Turbulence Severity Forecast/Actual:</b>	/
<b>Altimeter Setting:</b>	29.54 inches Hg	<b>Temperature/Dew Point:</b>	4°C / -6°C
<b>Precipitation and Obscuration:</b>	No Obscuration; No Precipitation		
<b>Departure Point:</b>	Helena, MT (HLN )	<b>Type of Flight Plan Filed:</b>	None
<b>Destination:</b>	Helena, MT (HLN )	<b>Type of Clearance:</b>	None
<b>Departure Time:</b>	16:15 Local	<b>Type of Airspace:</b>	Class D

## Airport Information

<b>Airport:</b>	Helena Rgnl HLN	<b>Runway Surface Type:</b>	Grass/turf
<b>Airport Elevation:</b>	3877 ft msl	<b>Runway Surface Condition:</b>	Holes;Rough;Vegetation
<b>Runway Used:</b>		<b>IFR Approach:</b>	None
<b>Runway Length/Width:</b>		<b>VFR Approach/Landing:</b>	None

## 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>	46.606945,-111.983055(est)

## Administrative Information

**Investigator In Charge (IIC):** Stein, Stephen

**Additional Participating Persons:**

**Original Publish Date:** June 16, 2020

**Last Revision Date:**

**Investigation Class:** [Class](#)

**Note:** This accident report documents the factual circumstances of this accident as described to the NTSB.

**Investigation Docket:** <https://data.nts.gov/Docket?ProjectID=100820>

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