



# Aviation Investigation Final Report

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<b>Location:</b>	Elko, Nevada	<b>Accident Number:</b>	WPR23LA233
<b>Date &amp; Time:</b>	June 16, 2023, 15:02 Local	<b>Registration:</b>	N8223A
<b>Aircraft:</b>	Cessna 170B	<b>Aircraft Damage:</b>	Substantial
<b>Defining Event:</b>	Loss of control in flight	<b>Injuries:</b>	1 None
<b>Flight Conducted Under:</b>	Part 91: General aviation - Personal		

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## Analysis

The pilot of the tailwheel-equipped airplane reported that the winds at the airport were light and variable each of the three times he checked before takeoff. He performed a three-point takeoff, and as soon as he applied back pressure to the yoke, he observed a dust devil to the right and in front of the airplane. The airplane rolled aggressively left and he applied corrective control inputs as the airplane drifted to the left side of the runway. The main gear impacted vegetation, the airplane rolled, and came to rest inverted. The airplane sustained substantial damage to the wings and fuselage.

The pilot reported that there were no preaccident mechanical failures or malfunctions with the airplane that would have precluded normal operation. A review of the Federal Aviation Administration Aviation (FAA) Weather Handbook (FAA-H-8083-28) and the FAA Aeronautical Information Manual found no detailed information listed about dust devils or the potential hazards of flying through dust devils.

## Probable Cause and Findings

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

The pilot's loss of control after encountering a dust devil during takeoff.

## Findings

<b>Environmental issues</b>	Dust devil/whirlwind - Contributed to outcome
<b>Aircraft</b>	Directional control - Attain/maintain not possible

## Factual Information

### History of Flight

<b>Takeoff</b>	Other weather encounter
<b>Takeoff</b>	Loss of control in flight (Defining event)

### Pilot Information

<b>Certificate:</b>	Airline transport; Commercial; Flight instructor; Military; Private	<b>Age:</b>	37, Male
<b>Airplane Rating(s):</b>	Single-engine land; Single-engine sea	<b>Seat Occupied:</b>	Left
<b>Other Aircraft Rating(s):</b>	None	<b>Restraint Used:</b>	4-point
<b>Instrument Rating(s):</b>	Airplane	<b>Second Pilot Present:</b>	
<b>Instructor Rating(s):</b>	Airplane multi-engine; Airplane single-engine; Instrument airplane	<b>Toxicology Performed:</b>	
<b>Medical Certification:</b>	Class 1 Without waivers/limitations	<b>Last FAA Medical Exam:</b>	February 8, 2023
<b>Occupational Pilot:</b>	UNK	<b>Last Flight Review or Equivalent:</b>	February 8, 2023
<b>Flight Time:</b>	4638 hours (Total, all aircraft), 11 hours (Total, this make and model), 1806 hours (Pilot In Command, all aircraft), 105 hours (Last 90 days, all aircraft), 52 hours (Last 30 days, all aircraft), 7 hours (Last 24 hours, all aircraft)		

## Aircraft and Owner/Operator Information

<b>Aircraft Make:</b>	Cessna	<b>Registration:</b>	N8223A
<b>Model/Series:</b>	170B	<b>Aircraft Category:</b>	Airplane
<b>Year of Manufacture:</b>	1952	<b>Amateur Built:</b>	
<b>Airworthiness Certificate:</b>	Normal	<b>Serial Number:</b>	25075
<b>Landing Gear Type:</b>	Tailwheel	<b>Seats:</b>	4
<b>Date/Type of Last Inspection:</b>	May 15, 2023 Annual	<b>Certified Max Gross Wt.:</b>	2200 lbs
<b>Time Since Last Inspection:</b>		<b>Engines:</b>	1 Reciprocating
<b>Airframe Total Time:</b>	4580 Hrs as of last inspection	<b>Engine Manufacturer:</b>	Continental
<b>ELT:</b>	C91 installed, not activated	<b>Engine Model/Series:</b>	O-300D
<b>Registered Owner:</b>	On file	<b>Rated Power:</b>	145 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>	KBAM,4532 ft msl	<b>Distance from Accident Site:</b>	59 Nautical Miles
<b>Observation Time:</b>	15:15 Local	<b>Direction from Accident Site:</b>	250°
<b>Lowest Cloud Condition:</b>	Clear	<b>Visibility</b>	10 miles
<b>Lowest Ceiling:</b>		<b>Visibility (RVR):</b>	
<b>Wind Speed/Gusts:</b>	3 knots / 14 knots	<b>Turbulence Type Forecast/Actual:</b>	None /
<b>Wind Direction:</b>	360°	<b>Turbulence Severity Forecast/Actual:</b>	/
<b>Altimeter Setting:</b>	30.12 inches Hg	<b>Temperature/Dew Point:</b>	25°C / 0°C
<b>Precipitation and Obscuration:</b>			
<b>Departure Point:</b>	Elko, NV (ELK)	<b>Type of Flight Plan Filed:</b>	None
<b>Destination:</b>	Weiser, ID (S87)	<b>Type of Clearance:</b>	None
<b>Departure Time:</b>	15:02 Local	<b>Type of Airspace:</b>	Class G

## Airport Information

<b>Airport:</b>	Elko Regional Airport EKO	<b>Runway Surface Type:</b>	Asphalt
<b>Airport Elevation:</b>	5140 ft msl	<b>Runway Surface Condition:</b>	Dry
<b>Runway Used:</b>	30	<b>IFR Approach:</b>	None
<b>Runway Length/Width:</b>	3015 ft / 60 ft	<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>	N/A	<b>Aircraft Fire:</b>	None
<b>Ground Injuries:</b>		<b>Aircraft Explosion:</b>	None
<b>Total Injuries:</b>	1 None	<b>Latitude, Longitude:</b>	40.824999,-115.79133

## Administrative Information

<b>Investigator In Charge (IIC):</b>	Blum, Contessa
<b>Additional Participating Persons:</b>	Ryan Branch; Reno FSDO; Reno, NV
<b>Original Publish Date:</b>	October 26, 2023
<b>Last Revision Date:</b>	
<b>Investigation Class:</b>	<a href="#">Class 4</a>
<b>Note:</b>	The NTSB did not travel to the scene of this accident.
<b>Investigation Docket:</b>	<a href="https://data.ntsb.gov/Docket?ProjectID=192407">https://data.ntsb.gov/Docket?ProjectID=192407</a>

The National Transportation Safety Board (NTSB) is an independent federal agency charged by Congress with investigating every civil aviation accident in the United States and significant events in other modes of transportation—railroad, transit, highway, marine, pipeline, and commercial space. We determine the probable causes of the accidents and events we investigate, and issue safety recommendations aimed at preventing future occurrences. In addition, we conduct transportation safety research studies and offer information and other assistance to family members and survivors for each accident or event we investigate. We also serve as the appellate authority for enforcement actions involving aviation and mariner certificates issued by the Federal Aviation Administration (FAA) and US Coast Guard, and we adjudicate appeals of civil penalty actions taken by the FAA.

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](#).