Aviation Investigation Final Report

Location:	Elko, Nevada	**Accident Number:**	WPR23LA282
Date & Time:	July 20, 2023, 09:40 Local	**Registration:**	N4149J
Aircraft:	Piper PA-28-140	**Aircraft Damage:**	Substantial
Defining Event:	Collision during takeoff/land	**Injuries:**	2 Minor
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The pilot reported that the density altitude conditions were increasing but were within takeoff performance limits. During taxi to his planned departure runway, he was informed that the runway was closed, so he chose to depart from a different runway about 4,400 ft shorter than originally planned for. During takeoff the airplane did not have the performance necessary to attain rotation speed before the end of the runway, but the pilot did not abort the takeoff. He rotated the airplane 5-10 knots too slow and was unable to clear a fence off the departure end of the runway. The airplane sustained substantial damage to the wings and fuselage. The pilot reported there were no preaccident mechanical malfunctions or failures that would preclude normal operation.

Probable Cause and Findings

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

The pilot's failure to ensure adequate airplane performance before taking off from a significantly shorter runway than originally planned for.

Findings

Personnel issues	Performance calculations - Pilot
Environmental issues	High density altitude - Contributed to outcome
Aircraft	Takeoff distance - Capability exceeded
Personnel issues	Incorrect action selection - Pilot

Factual Information

History of Flight

Prior to flight	Preflight or dispatch event
Takeoff	Collision during takeoff/land (Defining event)

Pilot Information

Certificate:	Private	**Age:**	61,Male
Airplane Rating(s):	Single-engine land	**Seat Occupied:**	Left
Other Aircraft Rating(s):	None	**Restraint Used:**	Lap only
Instrument Rating(s):	None	**Second Pilot Present:**	No
Instructor Rating(s):	None	**Toxicology Performed:**	
Medical Certification:	Class 3 Without waivers/limitations	**Last FAA Medical Exam:**	March 12, 2020
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	September 1, 2022
Flight Time:	263 hours (Total, all aircraft), 142 hours (Total, this make and model), 180 hours (Pilot In Command, all aircraft), 4 hours (Last 90 days, all aircraft), 2 hours (Last 30 days, all aircraft)		

Passenger Information

Certificate:		**Age:**	Male
Airplane Rating(s):		**Seat Occupied:**	Right
Other Aircraft Rating(s):		**Restraint Used:**	Lap only
Instrument Rating(s):		**Second Pilot Present:**	No
Instructor Rating(s):		**Toxicology Performed:**	
Medical Certification:		**Last FAA Medical Exam:**	
Occupational Pilot:	UNK	**Last Flight Review or Equivalent:**	
Flight Time:			

Aircraft and Owner/Operator Information

Aircraft Make:	Piper	**Registration:**	N4149J
Model/Series:	PA-28-140	**Aircraft Category:**	Airplane
Year of Manufacture:	1966	**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	28-22474
Landing Gear Type:	Tricycle	**Seats:**	4
Date/Type of Last Inspection:	May 1, 2023 Annual	**Certified Max Gross Wt.:**	2440 lbs
Time Since Last Inspection:	48 Hrs	**Engines:**	1 Reciprocating
Airframe Total Time:	4697 Hrs at time of accident	**Engine Manufacturer:**	Lycoming
ELT:	Installed, not activated	**Engine Model/Series:**	O-320-E2A
Registered Owner:	Elko Aviation Group, LLC	**Rated Power:**	150 Horsepower
Operator:	On file	**Operating Certificate(s) Held:**	None
Operator Does Business As:	self	**Operator Designator Code:**	

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	KEKO,5054 ft msl	**Distance from Accident Site:**	0 Nautical Miles
Observation Time:	09:56 Local	**Direction from Accident Site:**	104°
Lowest Cloud Condition:	Clear	**Visibility**	10 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	3 knots /	**Turbulence Type Forecast/Actual:**	None /
Wind Direction:	40°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	30.27 inches Hg	**Temperature/Dew Point:**	26°C / 12°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Elko, NV	**Type of Flight Plan Filed:**	None
Destination:	Elko, NV	**Type of Clearance:**	VFR
Departure Time:		**Type of Airspace:**	Class E

Airport Information

Airport:	Elko Regional Airport KEKO	**Runway Surface Type:**	Asphalt
Airport Elevation:	5140 ft msl	**Runway Surface Condition:**	Dry
Runway Used:	30	**IFR Approach:**	None
Runway Length/Width:	3015 ft / 60 ft	**VFR Approach/Landing:**	None

Wreckage and Impact Information

Crew Injuries:	2 Minor	**Aircraft Damage:**	Substantial
Passenger Injuries:		**Aircraft Fire:**	None
Ground Injuries:		**Aircraft Explosion:**	None
Total Injuries:	2 Minor	**Latitude, Longitude:**	40.824999,-115.79133

Administrative Information

Investigator In Charge (IIC):	Blum, Contessa
Additional Participating Persons:	Tom Wainscoat; FAA; Reno, NV
Original Publish Date:	November 2, 2023
Last Revision Date:	
Investigation Class:	Class 4
Note:	The NTSB did not travel to the scene of this accident.
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=192686