



# Aviation Investigation Final Report

<b>Location:</b>	LIMON, Colorado	<b>Accident Number:</b>	DEN99LA128
<b>Date &amp; Time:</b>	July 24, 1999, 09:00 Local	<b>Registration:</b>	N4540A
<b>Aircraft:</b>	Piper PA-22-150	<b>Aircraft Damage:</b>	Substantial
<b>Defining Event:</b>		<b>Injuries:</b>	2 None
<b>Flight Conducted Under:</b>	Part 91: General aviation - Personal		

## Analysis

One notch of flaps (half flaps) were used for the takeoff from runway 34. METAR wind was from 160 degrees at 6 knots. As the airplane passed over the departure end of the runway, it began to 'sag.' The pilot made a forced landing in a field. To avoid a ditch, he intentionally forced the airplane onto the ground, crossing the controls. Density altitude was computed to be 7,690 feet mean sea level.

## Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The pilot's selection of the wrong runway for takeoff. Factors were a direct tailwind and high density altitude that deteriorated the airplane's climb capability, and unsuitable terrain on which to make a forced landing.

## Findings

Occurrence #1: IN FLIGHT COLLISION WITH TERRAIN/WATER  
Phase of Operation: DESCENT

### Findings

1. (F) WEATHER CONDITION - TAILWIND
2. (C) WRONG RUNWAY - SELECTED - PILOT IN COMMAND
3. (F) WEATHER CONDITION - HIGH DENSITY ALTITUDE

4. (F) AIRCRAFT PERFORMANCE, CLIMB CAPABILITY - DETERIORATED
5. (F) TERRAIN CONDITION - NONE SUITABLE

## Factual Information

On July 24, 1999, approximately 0900 mountain daylight time, a Piper PA-22-150, N4540A, was substantially damaged when it collided with terrain shortly after taking off from Limon, Colorado. The private pilot was not injured but a private pilot-rated passenger, the operator of the airplane, received minor injuries. Visual meteorological conditions prevailed, and no flight plan had been filed for the business flight being conducted under Title 14 CFR Part 91. The flight had originated minutes before the accident.

According to the pilot's accident report, trip legs were swapped between the two pilots. The accident occurred on the leg during which the owner-operator was serving as a pilot-rated passenger. One notch of flaps (half flaps) were used for the takeoff from runway 34. As the airplane passed over the departure end of the runway, it began to "sag." He initiated a right turn to take "advantage of the [climb] prop[eller]." Airspeed and engine power dropped to 70 mph and 2,000 rpm, respectively, and the airplane began to sink. The pilot made a forced landing in a field. To avoid a ditch, he intentionally forced the airplane onto the ground crossing the controls. Upon exiting the airplane, the pilot noted "a 10 to 15 knot wind with gusts from the south. . . I suspect the 10 to 15 knot tailwind and gusts were the main factor, or maybe even a thermal."

In a telephone interview with the owner-operator, he said the engine sounded normal to him throughout the short flight, and he did not believe it had lost power.

According to the 0855 Limon METAR observation, the wind was from 160 degrees (direct tailwind) at 6 knots. The temperature was 28 degrees C. (82.4 degrees F.), and the altimeter setting was 30.20 inches of mercury. Limon Municipal Airport is 5,365 feet msl (above mean sea level). Pressure and density altitudes were computed to be 5,085 and 7,690 feet msl, respectively.

## Pilot Information

<b>Certificate:</b>	Private	<b>Age:</b>	55, Male
<b>Airplane Rating(s):</b>	Single-engine land	<b>Seat Occupied:</b>	Left
<b>Other Aircraft Rating(s):</b>	Glider	<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 Valid Medical-w/ waivers/lim	<b>Last FAA Medical Exam:</b>	April 27, 1999
<b>Occupational Pilot:</b>	UNK	<b>Last Flight Review or Equivalent:</b>	
<b>Flight Time:</b>	2685 hours (Total, all aircraft), 394 hours (Total, this make and model), 2582 hours (Pilot In Command, all aircraft), 84 hours (Last 90 days, all aircraft), 47 hours (Last 30 days, all aircraft), 6 hours (Last 24 hours, all aircraft)		

## Aircraft and Owner/Operator Information

<b>Aircraft Make:</b>	Piper	<b>Registration:</b>	N4540A
<b>Model/Series:</b>	PA-22-150 PA-22-150	<b>Aircraft Category:</b>	Airplane
<b>Year of Manufacture:</b>		<b>Amateur Built:</b>	
<b>Airworthiness Certificate:</b>	Normal	<b>Serial Number:</b>	22-3849
<b>Landing Gear Type:</b>	Tricycle	<b>Seats:</b>	2
<b>Date/Type of Last Inspection:</b>	December 7, 1998 Annual	<b>Certified Max Gross Wt.:</b>	1950 lbs
<b>Time Since Last Inspection:</b>	80 Hrs	<b>Engines:</b>	1 Reciprocating
<b>Airframe Total Time:</b>	2300 Hrs	<b>Engine Manufacturer:</b>	Lycoming
<b>ELT:</b>	Installed, not activated	<b>Engine Model/Series:</b>	O-320-A2B
<b>Registered Owner:</b>	KEVIN T. MCDONALD	<b>Rated Power:</b>	150 Horsepower
<b>Operator:</b>		<b>Operating Certificate(s) Held:</b>	None
<b>Operator Does Business As:</b>		<b>Operator Designator Code:</b>	

## Meteorological Information and Flight Plan

<b>Conditions at Accident Site:</b>	Visual (VMC)	<b>Condition of Light:</b>	Day
<b>Observation Facility, Elevation:</b>	LIC ,5365 ft msl	<b>Distance from Accident Site:</b>	
<b>Observation Time:</b>	08:55 Local	<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>	6 knots /	<b>Turbulence Type Forecast/Actual:</b>	/
<b>Wind Direction:</b>	160°	<b>Turbulence Severity Forecast/Actual:</b>	/
<b>Altimeter Setting:</b>	30 inches Hg	<b>Temperature/Dew Point:</b>	28°C / 11°C
<b>Precipitation and Obscuration:</b>	No Obscuration; No Precipitation		
<b>Departure Point:</b>	, CO (LIC )	<b>Type of Flight Plan Filed:</b>	None
<b>Destination:</b>	LAMAR , CO (LAA )	<b>Type of Clearance:</b>	None
<b>Departure Time:</b>	09:00 Local	<b>Type of Airspace:</b>	Class G

## Airport Information

<b>Airport:</b>		<b>Runway Surface Type:</b>	
<b>Airport Elevation:</b>		<b>Runway Surface Condition:</b>	
<b>Runway Used:</b>	0	<b>IFR Approach:</b>	
<b>Runway Length/Width:</b>		<b>VFR Approach/Landing:</b>	Forced landing

## Wreckage and Impact Information

<b>Crew Injuries:</b>	1 None	<b>Aircraft Damage:</b>	Substantial
<b>Passenger Injuries:</b>	1 None	<b>Aircraft Fire:</b>	None
<b>Ground Injuries:</b>	N/A	<b>Aircraft Explosion:</b>	None
<b>Total Injuries:</b>	2 None	<b>Latitude, Longitude:</b>	39.259864,-103.679954(est)

## Administrative Information

<b>Investigator In Charge (IIC):</b>	Scott, Arnold
<b>Additional Participating Persons:</b>	JAMES S FINN; DENVER , CO
<b>Original Publish Date:</b>	October 13, 2000
<b>Last Revision Date:</b>	
<b>Investigation Class:</b>	<a href="#">Class</a>
<b>Note:</b>	
<b>Investigation Docket:</b>	<a href="https://data.nts.gov/Docket?ProjectID=46918">https://data.nts.gov/Docket?ProjectID=46918</a>

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