



Aviation Investigation Final Report

Location:	SARATOGA, Wyoming	Accident Number:	FTW97LA337
Date & Time:	September 3, 1997, 08:35 Local	Registration:	N8731C
Aircraft:	Piper PA-22	Aircraft Damage:	Substantial
Defining Event:		Injuries:	2 None
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The pilot stated he took off on runway 23 at Saratoga, Wyoming, but the airplane would not climb. The airplane began descending and impacted terrain approximately one mile west of the airport. The pilot attributed the descent to 'winds spilling over the ridge.' At the time of the accident, recorded winds at Laramie, Wyoming (located 37 miles north-northwest of Saratoga) were from 220 degrees at 12 knots. The altimeter setting was 30.47 inches of mercury, and the temperature was 79 degrees F. Saratoga Airport is situated at an elevation of 6,987 feet msl (above mean sea level). Based on this meteorological information, density altitude at Saratoga was computed to be approximately 9,113 feet msl. The airplane manufacturer calculated that the airplane could achieve a 450 feet per minute rate of climb.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The pilot's failure to consult airplane performance data based upon the weather conditions that prevailed. Factors were terrain induced turbulence and high density altitude.

Findings

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

Findings

1. (F) WEATHER CONDITION - TURBULENCE, TERRAIN INDUCED

2. (F) WEATHER CONDITION - HIGH DENSITY ALTITUDE
3. (C) PERFORMANCE DATA - NOT USED - PILOT IN COMMAND

Factual Information

On September 3, 1997, approximately 0835 mountain daylight time, a Piper PA-22 (converted to a PA-20), N8731C, was substantially damaged when it collided with terrain shortly after takeoff from Saratoga, Wyoming. The private pilot and passenger were not injured. Visual meteorological conditions prevailed, and no flight plan was filed for the proposed personal flight being conducted under Title 14 CFR Part 91. The flight had just originated at the time of the accident.

According to the pilot, he was planning to fly from Saratoga to Sidney, Nebraska, with an eventual destination of Council Bluffs, Iowa. The pilot said he took off on runway 23, but the airplane would not climb. The airplane began descending and impacted terrain approximately 1 mile west of the airport. The pilot attributed the descent to "winds spilling over the ridge." At the time of the accident, recorded winds at Laramie, Wyoming (37 miles north-northwest of Saratoga), were from 220 degrees at 12 knots. The altimeter setting was 30.47 inches of mercury, and the temperature was 79 degrees F. Saratoga's Shively Field is situated at an elevation of 6,987 feet msl (above mean sea level). Based on this meteorological information, density altitude at Saratoga was computed to be approximately 9,113 feet msl.

The Piper Aircraft Corporation was asked to do a performance study for N8731C. Based on the airport data at Saratoga, the meteorological conditions at Rawlins, and a maximum gross weight assumption, it was calculated that the airplane could achieve a 450 feet per minute rate of climb.

The airplane was taken to Aircraft Fabrication and Repair, Guernsey, Wyoming. According to their mechanic, damage consisted of a sheared main landing gear, buckled firewall, and a twisted fuselage.

Pilot Information

Certificate:	Private	Age:	60, Male
Airplane Rating(s):	Single-engine land	Seat Occupied:	Left
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:	June 30, 1997
Occupational Pilot:	No	Last Flight Review or Equivalent:	
Flight Time:	539 hours (Total, all aircraft), 413 hours (Total, this make and model), 493 hours (Pilot In Command, all aircraft), 38 hours (Last 90 days, all aircraft), 17 hours (Last 30 days, all aircraft), 4 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Piper	Registration:	N8731C
Model/Series:	PA-22 PA-22	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	
Airworthiness Certificate:	Normal	Serial Number:	22-1383
Landing Gear Type:	Tailwheel	Seats:	4
Date/Type of Last Inspection:	June 30, 1997 Annual	Certified Max Gross Wt.:	1950 lbs
Time Since Last Inspection:	38 Hrs	Engines:	1 Reciprocating
Airframe Total Time:	1715 Hrs	Engine Manufacturer:	Lycoming
ELT:	Installed, not activated	Engine Model/Series:	O-290-D2
Registered Owner:	MERVIN D. RUTLEDGE	Rated Power:	135 Horsepower
Operator:		Operating Certificate(s) Held:	None
Operator Does Business As:		Operator Designator Code:	

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	Condition of Light:	Day
Observation Facility, Elevation:	RWL ,6813 ft msl	Distance from Accident Site:	37 Nautical Miles
Observation Time:	11:53 Local	Direction from Accident Site:	310°
Lowest Cloud Condition:	Scattered / 7000 ft AGL	Visibility	60 miles
Lowest Ceiling:	Broken / 15000 ft AGL	Visibility (RVR):	
Wind Speed/Gusts:	12 knots /	Turbulence Type Forecast/Actual:	/
Wind Direction:	220°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	30 inches Hg	Temperature/Dew Point:	26°C / 12°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	(SAA)	Type of Flight Plan Filed:	None
Destination:	SIDNEY , NE (SNY)	Type of Clearance:	None
Departure Time:	08:30 Local	Type of Airspace:	Class E

Airport Information

Airport:	SHIVELY AIRPORT SAA	Runway Surface Type:	
Airport Elevation:	6987 ft msl	Runway Surface Condition:	
Runway Used:	23	IFR Approach:	None
Runway Length/Width:	8403 ft / 75 ft	VFR Approach/Landing:	Forced landing

Wreckage and Impact Information

Crew Injuries:	1 None	Aircraft Damage:	Substantial
Passenger Injuries:	1 None	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	2 None	Latitude, Longitude:	41.450592,-106.809272(est)

Administrative Information

Investigator In Charge (IIC):	Scott, Arnold
Additional Participating Persons:	OWEN R JONES; CASPER , WY
Original Publish Date:	February 2, 1998
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.nts.gov/Docket?ProjectID=20336

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