Aviation Investigation Final Report

Location:	ANTIMONY, Utah	**Accident Number:**	DEN01FA021
Date & Time:	December 8, 2000, 16:56 Local	**Registration:**	N8245P
Aircraft:	Piper PA-24-250	**Aircraft Damage:**	Destroyed
Defining Event:		**Injuries:**	2 Fatal
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The non-instrument rated private pilot did not obtain a weather briefing nor file a flight plan for the cross country flight. There were a snow advisory and an AIRMET in effect for low ceilings and snow along the airplane's route of flight. There were no known radio communications with the pilot. Radar data disclosed and tracked a VFR target in the vicinity of the accident location, descending from 14,900 feet msl to 9,800 feet. The target then reversed course, and then squawked 7700 (emergency) before disappearing. The airplane collided with mountainous terrain at 8,540 feet. Examination of the airplane revealed that it impacted the ground in a steep nose down attitude.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: the pilot's failure to maintain aircraft control while maneuvering. Contributing factors were the pilot's failure to obtain a preflight weather briefing, his VFR flight into IMC, lack of instrument certification, spatial disorientation, low ceiling, and snow.

Findings

Occurrence #1: IN FLIGHT ENCOUNTER WITH WEATHER
Phase of Operation: CRUISE - NORMAL

Findings
1. (F) PREFLIGHT BRIEFING SERVICE - NOT OBTAINED - PILOT IN COMMAND

2. (F) VFR FLIGHT INTO IMC - PERFORMED - PILOT IN COMMAND
3. (F) LACK OF CERTIFICATION - PILOT IN COMMAND
4. (F) WEATHER CONDITION - LOW CEILING
5. (F) WEATHER CONDITION - SNOW

Occurrence #2: LOSS OF CONTROL - IN FLIGHT
Phase of Operation: MANEUVERING - TURN TO REVERSE DIRECTION

Findings
6. (C) AIRCRAFT CONTROL - NOT MAINTAINED - PILOT IN COMMAND
7. (F) SPATIAL DISORIENTATION - PILOT IN COMMAND

Occurrence #3: IN FLIGHT COLLISION WITH TERRAIN/WATER
Phase of Operation: DESCENT - UNCONTROLLED

Findings
8. TERRAIN CONDITION - MOUNTAINOUS/HILLY

Factual Information

HISTORY OF FLIGHT

On December 8, 2000, at 1656 mountain standard time, a Piper PA-24-250, N8245P, registered to and operated by the pilot, was destroyed when it impacted mountainous terrain approximately 7 miles southeast of Antimony, Utah. The private pilot and his passenger were fatally injured. Instrument meteorological conditions prevailed at the accident site. No flight plan had been filed for the personal flight being conducted under Title 14 CFR Part 91. The flight originated at Provo, Utah, approximately 1535.

According to a family friend, the pilot had flown from Mesa, Arizona, to Provo earlier that day to meet his father. They were then going to return to Mesa. Approximately 1535, the pilot made a cellular telephone call to his wife while he was taxiing for takeoff, and told her they would be back in Mesa by 1830.

There was no known radio communication with the pilot. There is no record that he obtained a weather briefing or file a flight plan. The airplane impacted mountainous Salt Lake City Air Route Traffic Control Center (ARTCC) detected a VFR target in the vicinity of Antimony, flying north to south. The target squawked 7700 (emergency) once at 1656:18, then disappeared from radar (see TESTS AND RESEARCH). Shortly thereafter, emergency locator transmitter (ELT) signals were received by SARSAT (search and rescue satellite). An ALNOT (alert notice) was issued that evening at 2333. The wreckage was located on the morning of December 9, and the ALNOT was cancelled at 0438.

The accident occurred during the hours of daylight at a location of 38 degrees, 03.438 minutes north latitude, and 111 degrees, 54.373 minutes west longitude, at an elevation of 8,540 feet msl.

PERSONNEL (CREW) INFORMATION

The pilot, age 37, held a private pilot certificate with an airplane single engine land rating, issued August 14, 2000. He was not instrument rated. He also held a second class airman medical certificate, dated June 8, 2000, with no restrictions or limitations.

The pilot's logbook was never located. A family friend said the pilot had logged about 125 hours total time.

AIRCRAFT INFORMATION

N8245P, a PA-24-250 (s/n 24-3500), was manufactured by the Piper Aircraft Corporation in

March 1963, and was issued an FAA Standard Airworthiness Certificate on May 28, 1963. It was equipped with a Lycoming O-540-A1D5 engine (s/n L-9345-40), rated at 250 horsepower, and a Hartzell 2-blade, all-metal, constant speed propeller (m/n HC-A2YK-1). Friends said the pilot had owned the airplane for about six months.

The last annual inspection was on September 8, 2000, at a tachometer time of 3,695.0 hours. The engine was factory overhauled on July 25, 1988. At the time of the last annual inspection, the engine had accrued 514.6 hours since factory overhaul. At the accident site, the tachometer read 3769.8 hours. At that time, the engine had accrued 589.4 hours since factory overhaul. The propeller was overhauled on August 10, 1999, and installed on N8245P at a tachometer time of 3,542.3 hours.

METEOROLOGICAL INFORMATION

At the time of the accident, the following weather alerts were in effect. The National Weather Service (NWS) issued a snow advisory for the southern and central mountains of Colorado and Utah due to an upper level disturbance that was expected to move eastward across northern Arizona. AIRMET (Airman's Meteorological Information) Sierra 3 (update) forecast the Utah mountains to be obscured by clouds and precipitation, and AIRMET Zulu 3 (update) called for light to occasional moderate rime/mixed icing in clouds and precipitation between 12,000 feet and FL (flight level) 200. NWS weather radar detected areas of light to moderate precipitation at the time and in the area of the accident.

The following weather observations were recorded at Bryce Canyon Airport (BCE), located 39 n.m. southwest of the accident site, and depict a fast moving weather front:

Special BCE 2341Z (1641 mst): Wind, calm; visibility, 10 s.m.; sky condition, 1,700 feet scattered; ceiling, 2,800 feet broken, 5,000 feet overcast; temperature, 2 degrees C. (35.6 degrees F.); dew point, 1 degree C. (33.8 degrees F.); altimeter, 30.01 inches of mercury.

Metar BCE 2353Z (1653 mst): Wind, calm; visibility, 10 s.m., unknown precipitation; sky condition, 1,500 feet scattered, ceiling, 2,600 feet broken, 4,900 feet overcast; temperature 2 degrees C. (35.6 F.); dew point, -1 degree C. (30.2 degrees F.); altimeter, 30.01 inches of mercury; remarks: rain began 42 minutes past the hour; rain ended 53 minutes past the hour; unknown precipitation began 53 minutes past the hour; sea level pressure, 1012.2 mb

ACCIDENT OCCURS AT 2356Z.

Special BCE 0010Z (1700 mst): Wind, calm; visibility, 3 s.m., light snow, mist; sky condition, 900 feet scattered, ceiling, 2,600 feet broken, 3,600 feet overcast; temperature, 1 degree C. (33.8 degrees F.); dew point, -1 degree C. (30.2 degrees F.); altimeter, 30.01 inches of mercury; remarks: snow began 4 minutes past the hour.

WRECKAGE AND IMPACT INFORMATION

The on-scene investigation commenced and terminated on December 18, 2000. The wreckage was found in mountainous terrain at an elevation of 8,540 feet msl.

Small scrub trees surrounded the impact area, but none of the trees had been struck. Rescuers reported finding the airplane impaled in the ground in a nose down attitude when they arrived. The aft cabin area and empennage were pulled down to afford access to the occupants. The aft fuselage was buckled just forward of the vertical stabilizer, and impact damage noted on the forward cabin roof matched the damage to the top leading edge of the vertical stabilizer and rudder counterweight. Full span leading edge compression damage was noted on both wings, more so on the left wing. The fuel bladders were both fragmented. Both ailerons and flaps remained attached, and aileron control continuity was established from the bellcrank to the aileron chain at the "T" bar. Rudder and elevator control continuity was also established. The elevator trim screw exposed 11 threads and 1.1 inches of a possible 1.3-inch extension. According to The New Piper Aircraft Corporation representative, this would equate to approximately 12 degrees nose up trim (full nose up trim is 15 degrees). The flap linkage was broken. The landing gear was retracted.

The engine remained attached to the airframe, but bore extensive damage to the front and left side. The crankshaft could not be turned. The vacuum pump was removed and disassembled. The drive shaft was intact, the rotor was cracked, and the vanes were shattered. The propeller was separated from the engine but was retrieved from the engine crater. One blade was relatively straight but bent forward slightly near the tip. The other blade was bent in an "S" fashion. Chordwise scratches were noted on the cambered surfaces of both blades.

MEDICAL AND PATHOLOGICAL INFORMATION

An autopsy (R200001467) was performed by the Utah State Medical Examiner's Office (OME). FAA's Civil Aeromedical Institute (CAMI) and OME also conducted toxicological screens. OME reported no drugs or alcohol detected, but CAMI's report (#200000343001) reported 0.632 (ug/ml, ug/g) diphenhydramine detected in kidney tissue. The drug, also known as Benadryl, is an over-the-counter antihistamine with sedative effects, often used to treat allergy symptoms. In normal doses, the medication commonly results in drowsiness, and has measurable effects on performance of complex cognitive and motor tasks.

TESTS AND RESEARCH

NTAP (National Track Analysis Program) data was obtained from the Salt Lake City ARTCC. According to ARTCC, a target "squawking" a transponder code of 1200 was detected in the vicinity of the accident location between 2350:04Z (1650:04) and 2355:58Z (1655:56). At 2356:18Z (1656:18), the target "squawked" code 7700, EMERGENCY. Radar contact was then lost. The data was transferred to a text file with time and altitude data tags, then imported into the DeLorme Street Atlas USA v8.0 and printed, along with the accident site location.

The data shows the target proceeding southbound at 14,900 feet msl and descending. At 1652:06, when the target was at 13,800 feet, it made an abrupt right turn and flew north, on a reciprocal course and continued its descent. At 1653:37, the target's course began to waver. Between 1654:17 and 1654:47, the target flew in a northwest direction and descended to 11,200, then between 1655:07 and 1655:58 it flew in a west-southwesterly direction and descended to 9,800 feet (the last altitude recorded). At 1656:18, when the target squawked 7700, the target had turned to a northeasterly heading.

ADDITIONAL INFORMATION

The wreckage was released to the insurance company on December 18, 2000.

In addition to the Federal Aviation Administration, parties to the investigation included The New Piper Aircraft Corporation and Textron Lycoming.

Pilot Information

Certificate:	Private	**Age:**	37,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:**	Yes
Medical Certification:	Class 2 Valid Medical--no waivers/lim.	**Last FAA Medical Exam:**	June 8, 2000
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	
Flight Time:	125 hours (Total, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Piper	**Registration:**	N8245P
Model/Series:	PA-24-250 PA-24-250	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	24-3500
Landing Gear Type:	Retractable - Tricycle	**Seats:**	4
Date/Type of Last Inspection:	September 8, 2000 Annual	**Certified Max Gross Wt.:**	2800 lbs
Time Since Last Inspection:	75 Hrs	**Engines:**	1 Reciprocating
Airframe Total Time:	3770 Hrs	**Engine Manufacturer:**	Lycoming
ELT:	Installed, activated, aided in locating accident	**Engine Model/Series:**	O-540-A1D5
Registered Owner:	OWEN K. DINKINS	**Rated Power:**	250 Horsepower
Operator:		**Operating Certificate(s) Held:**	None
Operator Does Business As:		**Operator Designator Code:**	

Meteorological Information and Flight Plan

Conditions at Accident Site:	Instrument (IMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	BCE ,7586 ft msl	**Distance from Accident Site:**	39 Nautical Miles
Observation Time:	17:10 Local	**Direction from Accident Site:**	210°
Lowest Cloud Condition:	Scattered / 900 ft AGL	**Visibility**	3 miles
Lowest Ceiling:	Broken / 2600 ft AGL	**Visibility (RVR):**	
Wind Speed/Gusts:	/	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	0°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	30 inches Hg	**Temperature/Dew Point:**	1°C / -1°C
Precipitation and Obscuration:	Light - None - Snow		
Departure Point:	PROVO , UT (PVU)	**Type of Flight Plan Filed:**	None
Destination:	MESA , AZ (FFZ)	**Type of Clearance:**	
Departure Time:	15:35 Local	**Type of Airspace:**	Class G

Airport Information

Airport:		**Runway Surface Type:**	
Airport Elevation:		**Runway Surface Condition:**	
Runway Used:	0	**IFR Approach:**	
Runway Length/Width:		**VFR Approach/Landing:**	

Wreckage and Impact Information

Crew Injuries:	1 Fatal	**Aircraft Damage:**	Destroyed
Passenger Injuries:	1 Fatal	**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	2 Fatal	**Latitude, Longitude:**	38.09048,-111.99971(est)

Administrative Information

Investigator In Charge (IIC):	Scott, Arnold
Additional Participating Persons:	RICHARD C STEDNITZ; SALT LAKE CITY , UT
Original Publish Date:	July 17, 2001
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=51120