Aviation Investigation Final Report

Location:	Santa Fe, New Mexico	**Accident Number:**	DEN06LA113
Date & Time:	August 12, 2006, 08:21 Local	**Registration:**	N245TB
Aircraft:	Piper PA-23-160	**Aircraft Damage:**	Substantial
Defining Event:		**Injuries:**	2 None
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

Prior to takeoff, the run-up revealed no anomalies. After the pilot received takeoff clearance for runway 2 (8,342 feet long by 150 feet wide), he applied full power and checked the propeller controls to confirm they were full forward. The pilot reported, "After a few seconds of full power, it seemed the aircraft was sluggish to develop airspeed in order to reach rotation speed of 64 knots indicated airspeed (KIAS). [The pilot] assumed it was due to the density altitude and full fuel." After rotation at "red line Vx speed," the pilot lowered the airplane's nose in an attempt to obtain "blue line" airspeed; however, the airplane would not accelerate beyond Vx speed. The pilot felt "the engines were not producing full power." Subsequently, the pilot elected to abort the takeoff and attempted to land back on the remaining runway. The aircraft landed on the runway with the gear retracted. The pilot noted no anomalies on the engine instruments during the attempted takeoff. Examination of the airframe and engines revealed no anomalies. The calculated density altitude was 8,180 feet mean sea level. According to the NTSB Pilot Aircraft Accident Report (NTSB Form 6120.1), Recommendation (How could this accident have been prevented) section, the pilot reported, "Should have aborted take off earlier on ground roll."

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: the pilot's improper decision to continue the attempted takeoff when Vx airspeed was not obtained, and failure to abort the takeoff during ground roll which resulted in an impact on the remaining runway with the landing gear retracted. A contributing factor was the high density altitude.

Findings

Occurrence #1: IN FLIGHT COLLISION WITH TERRAIN/WATER
Phase of Operation: TAKEOFF - ABORTED

Findings
1. (F) WEATHER CONDITION - HIGH DENSITY ALTITUDE
2. (C) PLANNING/DECISION - IMPROPER - PILOT IN COMMAND
3. (C) ABORTED TAKEOFF - DELAYED - PILOT IN COMMAND
4. LANDING GEAR - NOT USED - PILOT IN COMMAND
5. TERRAIN CONDITION - RUNWAY

Factual Information

On August 12, 2006, at 0821 mountain daylight time, a Piper PA-23-160 twin-engine airplane, N245TB, sustained substantial damage during an aborted take-off at Santa Fe Municipal Airport (SAF), Santa Fe, New Mexico. The commercial pilot and passenger were not injured. The airplane was registered to and operated by the pilot. Visual meteorological conditions prevailed at the time of the accident. The personal flight was being conducted on an instrument flight rules (IFR) flight plan under the provisions of Title 14 Code of Federal Regulations Part 91. The cross-country flight was originating at the time of the accident and was en route to Ponca City, Oklahoma.

On July 8, 2006, the pilot and passenger traveled to Page, Arizona, to inspect the accident airplane that they were considering purchasing. They met with the airplane's owner, and the airplane "was sound and flew well." They then decided to purchase the airplane.

The pilot's multi-engine currency lapsed and he decided to hire an instructor to review the airplane systems and fly the airplane back to Ohio, the pilot's state of residence. On July 23, 2006, the pilot and passenger met the instructor in Page. They agreed to depart for Ohio the following day. Approximately 5 minutes into the flight to Ohio on July 24th, the right engine oil temperature exceeded red line at 253 degrees. They elected to return to Page and troubleshoot the problem. An inspection revealed that the right air intake was partially blocked. An engine run-up was performed and everything checked out fine. They departed Page again, and approximately 5 minutes into the flight, both engine oil temperatures exceeded redline over 250 degrees. They returned to Page again the pilot called the previous owner to discuss the problem. The previous owner reported that he never experience any overheating problems. On July 27th, the previous owner and the pilot test flew the airplane with no problems noted. The previous owner and his mechanic determined that the problem was the instructor's "improper pilot operation of the Ray_Jay Turbo systems..." The instructor stated he used turbo operations for fuel injected engines instead of carbureted engines.

The previous owner gave the pilot an airplane systems and flight check-out, which was approximately 7.5 hours. On July 28th, the pilot and passenger departed Page en route to Ohio. Approximately 2 hours into the flight, they could see ahead that they may encounter instrument meteorological conditions and they filed an IFR flight plan. Shortly thereafter, the airplane experience navigational equipment problems. They then elected to land at SAF in order to troubleshoot the problems. A maintenance facility at Santa Fe repaired the airplane and returned it to service on August 11, 2006. The pilot and passenger picked up the airplane on August 12th and prepared to continue the flight to Ohio.

The pilot reported that prior to takeoff, he completed an engine run-up and "everything appeared to be fine." After the pilot received takeoff clearance for runway 2 (8,342 feet long by

150 feet wide), he applied full power and checked the propeller controls to confirm they were full forward. The pilot reported, "After a few seconds of full power, it seemed the aircraft was sluggish to develop airspeed in order to reach rotation speed of 64 knots indicated airspeed (KIAS). [The pilot] assumed it was due to the density altitude and full fuel." After rotation at "red line Vx speed," the pilot lowered the airplane's nose in an attempt to obtain "blue line" airspeed; however, the airplane would not accelerate beyond Vx speed. The pilot felt "the engines were not producing full power." Subsequently, the pilot elected to abort the takeoff and attempted to land back on the remaining runway. The airplane landed on the runway with the landing gear retracted and "skidded to a stop." The pilot noted no anomalies on the engine instruments during the attempted takeoff.

At 0820, the SAF automated surface observing system (ASOS) reported the wind from 340 degrees at 5 knots, 10 statute miles visibility, sky clear, temperature 18 degrees Celsius, dew point 13 degrees Celsius, and an altimeter setting of 30.15 inches of Mercury. The calculated density altitude was 8,180 feet mean sea level.

Examination of the airplane by airport personnel revealed the right wing and lower portion of the rudder were bent. Federal Aviation Administration inspectors examined the airframe and engines. The examination revealed no anomalies with the airframe and engines.

According to the NTSB Pilot Aircraft Accident Report (NTSB Form 6120.1), Recommendation (How could this accident have been prevented) section, the pilot reported, "Should have aborted take off earlier on ground roll."

Pilot Information

Certificate:	Commercial; Flight instructor	**Age:**	57,Male
Airplane Rating(s):	Single-engine land; Multi-engine land	**Seat Occupied:**	Left
Other Aircraft Rating(s):	None	**Restraint Used:**	
Instrument Rating(s):	Airplane	**Second Pilot Present:**	No
Instructor Rating(s):	Airplane single-engine; Instrument airplane	**Toxicology Performed:**	No
Medical Certification:	Class 3 With waivers/limitations	**Last FAA Medical Exam:**	January 1, 2006
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	July 1, 2006
Flight Time:	1486 hours (Total, all aircraft), 12 hours (Total, this make and model), 1227 hours (Pilot In Command, all aircraft), 36 hours (Last 90 days, all aircraft), 8 hours (Last 30 days, all aircraft), 0 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Piper	**Registration:**	N245TB
Model/Series:	PA-23-160	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	23-1390
Landing Gear Type:	Retractable - Tricycle	**Seats:**	4
Date/Type of Last Inspection:	June 1, 2006 Annual	**Certified Max Gross Wt.:**	4000 lbs
Time Since Last Inspection:		**Engines:**	2 Reciprocating
Airframe Total Time:	4600 Hrs	**Engine Manufacturer:**	Lycoming
ELT:	Installed, not activated	**Engine Model/Series:**	O-320
Registered Owner:	Wilbur Sever, Jr.	**Rated Power:**	160 Horsepower
Operator:		**Operating Certificate(s) Held:**	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	SAF,6348 ft msl	**Distance from Accident Site:**	
Observation Time:	08:20 Local	**Direction from Accident Site:**	
Lowest Cloud Condition:	Clear	**Visibility**	10 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	5 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	340°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	30.14 inches Hg	**Temperature/Dew Point:**	18°C / 13°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	SANTA FE, NM (SAF)	**Type of Flight Plan Filed:**	IFR
Destination:	PONCA CITY, OK (PNC)	**Type of Clearance:**	IFR
Departure Time:	08:21 Local	**Type of Airspace:**	

Airport Information

Airport:	SANTA FE COUNTY MUNI SAF	**Runway Surface Type:**	Asphalt
Airport Elevation:	6348 ft msl	**Runway Surface Condition:**	Dry
Runway Used:	2	**IFR Approach:**	None
Runway Length/Width:	8342 ft / 150 ft	**VFR Approach/Landing:**	Unknown

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:**	35.616943,-106.089447

Administrative Information

Investigator In Charge (IIC):	Sauer, Aaron
Additional Participating Persons:	J.D. Huss; Federal Aviation Administration; Albuquerque, NM
Original Publish Date:	February 26, 2007
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=64394