



National Transportation Safety Board Aviation Accident Final Report

Location:	SANTA FE, NM	Accident Number:	DEN00LA030
Date & Time:	12/16/1999, 1515 MST	Registration:	N919RD
Aircraft:	Piper PA-31T1	Aircraft Damage:	Substantial
Defining Event:		Injuries:	1 Serious
Flight Conducted Under:	Part 91: General Aviation - Personal		

Analysis

On takeoff during the initiation of a cross-country flight, the pilot raised the landing gear following liftoff and the aircraft settled back onto the ground off the end of the runway. According to the pilot and the FAA inspector who examined the aircraft, both engines were producing normal power. The elevator trim was set at 12 degrees nose up vice 3-6 degrees required, and the aircraft was within weight and balance limits. The pilot lowered the landing gear prior to impact. According to information provided by the aircraft manufacturer, induced drag increases during landing gear retraction and extension due to the landing gear doors being extended into the air stream as the landing gear cycles.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The pilot initiating lift off at an airspeed insufficient to maintain flight and retracting the landing gear prematurely resulting in a stall mush. A factor was the pilot incorrectly setting the elevator trim.

Findings

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

Findings

1. (C) AIRSPEED(VLO) - LOW - PILOT IN COMMAND
2. (C) GEAR RETRACTION - PREMATURE - PILOT IN COMMAND
3. STALL/MUSH - ENCOUNTERED - PILOT IN COMMAND
4. (F) ELEVATOR TRIM - INCORRECT - PILOT IN COMMAND
5. TERRAIN CONDITION - ROUGH/UNEVEN

Factual Information

On December 16, 1999, at 1515 mountain standard time, a Piper PA-31T1, N919RD, impacted terrain when it failed to climb following takeoff from Santa Fe, New Mexico. The private pilot received serious injuries and the aircraft sustained substantial damage. Visual meteorological conditions prevailed and a visual flight rules (VFR) flight plan was filed for this cross-country flight to Olathe, Kansas. The flight was operating under Title 14 CFR Part 91.

According to the pilot, the takeoff was conducted on runway 33 and the takeoff roll appeared normal with both engines producing desired power output. The takeoff seemed "normal at which point I retracted the landing gear. Immediately upon initiating retraction of the landing gear, instead of continuing its climb, the aircraft started to settle towards the ground. Engine gauges still appeared normal and the nose indicated 3 to 4 degrees up." The pilot indicated in his narrative there was no yaw to either side during the event. He said he thought he had encountered low level wind shear.

The pilot said he altered the heading about 10 degrees to the right to avoid some ditches and mounds and extended the landing gear. According to the pilot he "crash landed" the airplane and emergency services transported him to medical facilities with serious back injuries.

An FAA Airworthiness Inspector examined the aircraft and the accident scene. He reported both engines/propellers bore signatures of producing power at the time of impact and found propeller strike marks from both propellers beginning approximately 1,000 feet prior to the end of the runway. He also found the elevator trim set at 12 degrees nose up and research provided information the normal trim setting was 3-6 degrees nose up, the aircraft was within proper weight and balance. The landing gear was in the down position at impact.

A witness observed the aircraft after having his attention attracted by hearing a scraping or banging noise. The witness related the aircraft was "at an altitude of about 50 feet and the landing gear was in the up position. He said he then observed the landing gear extending as the aircraft leveled off and entered a shallow left turn to the northwest. The aircraft then disappeared over the horizon followed by a cloud of dust."

At 1453, about 22 minutes before the accident, the Santa Fe airport observed wind was from 360 degrees magnetic heading at 17 knots. There were no reported gusts and no reports of microburst/wind shear activity. (The Santa Fe airport is not equipped with low-level wind shear {LLWAS} detection equipment).

Inquiry of Piper Aircraft produced information that induced drag increases during landing gear retraction and extension due to landing gear doors being extended into the air stream as the landing gear cycles. According to the information provided, under low speed conditions, acceleration can be interrupted during cycling of the landing gear, and if the aircraft is on or behind the power curve, deceleration and settling can occur.

Pilot Information

Certificate:	Private	Age:	58, Male
Airplane Rating(s):	Multi-engine Land; Single-engine Land	Seat Occupied:	Left
Other Aircraft Rating(s):		Restraint Used:	Seatbelt, Shoulder harness
Instrument Rating(s):	Airplane	Second Pilot Present:	No
Instructor Rating(s):	None	Toxicology Performed:	No
Medical Certification:	Class 2 Valid Medical--w/ waivers/lim.	Last FAA Medical Exam:	05/27/1998
Occupational Pilot:	Last Flight Review or Equivalent:		
Flight Time:	1098 hours (Total, all aircraft), 401 hours (Total, this make and model), 885 hours (Pilot In Command, all aircraft), 24 hours (Last 90 days, all aircraft), 13 hours (Last 30 days, all aircraft), 1 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Piper	Registration:	N919RD
Model/Series:	PA-31T1 PA-31T1	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	No
Airworthiness Certificate:	Normal	Serial Number:	31T-8104037
Landing Gear Type:	Retractable - Tricycle	Seats:	8
Date/Type of Last Inspection:	05/26/1999, Annual	Certified Max Gross Wt.:	8750 lbs
Time Since Last Inspection:		Engines:	2 Turbo Prop
Airframe Total Time:	3558 Hours	Engine Manufacturer:	P&W
ELT:	Installed, activated, did not aid in locating accident	Engine Model/Series:	PT-6A-11
Registered Owner:	ROBERT J. DENISON	Rated Power:	500 hp
Operator:	ROBERT J. DENISON	Operating Certificate(s) Held:	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual Conditions	Condition of Light:	Day
Observation Facility, Elevation:	SAF, 6344 ft msl	Distance from Accident Site:	1 Nautical Miles
Observation Time:	1453 MST	Direction from Accident Site:	150°
Lowest Cloud Condition:	Clear / 0 ft agl	Visibility	10 Miles
Lowest Ceiling:	None / 0 ft agl	Visibility (RVR):	0 ft
Wind Speed/Gusts:	17 knots /	Turbulence Type Forecast/Actual:	/
Wind Direction:	360°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	30 inches Hg	Temperature/Dew Point:	7° C / -9° C
Precipitation and Obscuration:			
Departure Point:	(SAF)	Type of Flight Plan Filed:	VFR
Destination:	OLATHE, KS (OJC)	Type of Clearance:	VFR
Departure Time:	1515 MST	Type of Airspace:	Class E

Airport Information

Airport:	SANTA FE MUNICIPAL (SAF)	Runway Surface Type:	Asphalt
Airport Elevation:	6344 ft	Runway Surface Condition:	Dry
Runway Used:	33	IFR Approach:	
Runway Length/Width:	6307 ft / 150 ft	VFR Approach/Landing:	None

Wreckage and Impact Information

Crew Injuries:	1 Serious	Aircraft Damage:	Substantial
Passenger Injuries:	N/A	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	1 Serious	Latitude, Longitude:	

Administrative Information

Investigator In Charge (IIC):	NORMAN F WIEMEYER	Report Date:	08/13/2001
Additional Participating Persons:	KARRY D RAY; ALBUQUERQUE, NM		
Publish Date:			
Investigation Docket:	NTSB accident and incident dockets serve as permanent archival information for the NTSB's investigations. Dockets released prior to June 1, 2009 are publicly available from the NTSB's Record Management Division at pubinq@ntsb.gov , or at 800-877-6799. Dockets released after this date are available at http://dms.nts.gov/pubdms/ .		

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