



National Transportation Safety Board Aviation Accident Final Report

Location:	POTTSTOWN, PA	Accident Number:	IAD96LA133
Date & Time:	08/14/1996, 0708 EDT	Registration:	N163SA
Aircraft:	Piper PA-31T	Aircraft Damage:	Substantial
Defining Event:		Injuries:	3 None
Flight Conducted Under:	Part 135: Air Taxi & Commuter - Non-scheduled		

Analysis

During an attempted takeoff, the airplane collided with a taxiway sign, a fence, a light pole and came to rest between two buildings. According to the pilot in command (seated in the right seat), a preflight and run-up inspection was completed successfully. He stated that a pilot rated passenger (in the left front seat) was following along with a placard checklist. He stated that the airplane was accelerated for takeoff on runway 7, and at 500 feet down the 2700 foot long runway with the airspeed at redline, rotation was initiated and the airplane veered to the right. He stated that shortly thereafter the right engine surged and he noted the matched power levers, but he did not record the engine power instruments. A passenger (seated in a forward facing seat behind the pilot in command) reported that the pilot rated passenger's hand was on the throttle (yellow-knobbed handles) at the time of the accident. The reported visibility was 1/8 mile in fog. The prescribed takeoff minimums for that airport is 400 feet and 1 mile visibility. Postaccident examination of the engines and their systems revealed no evidence of preimpact mechanical malfunction. The pilot reported that there was no mechanical malfunction.

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 directional control during takeoff/ground run resulting in in-flight collision with a fence. Related factors were the pilot's poor planning/decision making, and the fog.

Findings

Occurrence #1: LOSS OF CONTROL - ON GROUND/WATER
Phase of Operation: TAKEOFF - ROLL/RUN

Findings

1. (F) WEATHER CONDITION - FOG
2. (C) DIRECTIONAL CONTROL - NOT MAINTAINED - PILOT IN COMMAND
3. (F) PLANNING/DECISION - POOR - PILOT IN COMMAND

Occurrence #2: ON GROUND/WATER COLLISION WITH OBJECT
Phase of Operation: TAKEOFF - ROLL/RUN

Findings

4. (F) OBJECT - FENCE

Factual Information

On August 14, 1996, at 0708 eastern daylight time (EDT), a Piper PA-31T, N163SA, operated by Basco Flying Service Inc., of Reading, Pennsylvania, collided with a taxiway sign, a fence and a light pole during the attempted takeoff at Pottstown Municipal Airport, in Pottstown, Pennsylvania. The airplane sustained substantial damage. The certificated airline transport pilot, the pilot rated passenger and the one passenger were not injured. Instrument meteorological conditions prevailed and a flight plan was not filed. The revenue flight was conducted under 14 CFR Part 135. The flight originated at Pottstown, Pennsylvania, about 0707 EDT. The intended destination was Philadelphia International Airport, in Philadelphia, Pennsylvania.

The pilot (seated in the right front seat) reported that he satisfactorily completed a preflight and run-up inspection. The pilot stated: "...departing runway 07, power was applied (1100 lbs of torque per side noted) ITT temp.=650 degrees per side was noted...the aircraft was accelerating rapidly after brake release...around 900 lbs of torque...no flaps used...after 800 feet down the runway...rotation was initiated...the aircraft veered sharply to the right. The power levers were noted as matched, the engine power instruments were not noted at this time as directional control was the primary concern. Suddenly, power developed or surged on the right side...the airplane was mushing and the power brought back - there was somewhat of a directional control but the airspeed was dropping and the plane settled to the ground...aimed at a 45 degree turn to the runway. The area was clear ahead - aimed between buildings. The final 500 feet or so, the aircraft was in an uncontrolled slide... ."

According to a Federal Aviation Administration (FAA) Safety Inspector, the airplane was on the takeoff roll on runway 7, when it veered off the right side of the runway and collided with a taxiway sign. The airplane then impacted a chain link fence, a light pole and a power distribution transformer on the left hand side of the runway before it came to a stop.

According to the passenger seated in a forward facing seat in the second row behind the pilot in command, "...I had limited vision forward through the cockpit window at takeoff, as well as through the window at my right. Other than what took place in the cockpit, my view was mainly out the left rear window(s) along the wing..." He stated that the pilot rated passenger's hand was on the throttle (yellow-knobbed handles) at the time of the accident. According to the passenger, the left wing tip dragged along the surface of the ground. He stated that as he looked back at the cockpit, the pilot in command's left hand swung down abruptly on top of the pilot rated passenger's hand "I believe to be the throttle (yellow-knobbed handles, lowest on the console), and pulled down... ." The passenger reported that there was light fog/haze over the area. He stated that he had his parking lights on for safety as he was driving to the airport.

The 0650 hour surface weather observation for Reading Regional Airport about 17 miles northwest of the accident site was as follows:

Sky condition, 4,000 feet scattered; visibility, one eighth of a mile in fog; temperature, 15 degrees Celsius(C); dew point, 15 degrees C; winds calm; and altimeter, 30.05 inches Hg. The published instrument takeoff minimums for Pottstown Airport for runway 7 is 400 feet and one mile visibility.

Postaccident examination revealed no evidence of preimpact airframe or engine anomaly. According to the Pratt & Whitney investigator, the left engine nacelle was intact and airframe

to engine connections were intact and continuous. The reduction gear box housing and propeller flange were intact. The shaft and propeller beta ring were displaced aft. The reduction gearbox mounted controls and accessories were intact. The exhaust duct displayed light compressional and torsional deformation. The gas generator case mounted controls and accessories were intact. The accessory gearbox housing was intact. The accessory gearbox mounted controls and accessories were intact. The airframe related starter generator was fractured from its mounting pad. The power control and reversing linkage were intact and continuous from the propeller reversing linkage to the fuel control input lever. All connections and safeties were intact. The airframe input rod-end lockwire was fractured. The connection was intact.

The right engine nacelle was intact and airframe to engine connections were intact and continuous. External examination of the right engine revealed that the reduction gearbox was intact. The propeller flange was intact, and the shaft and propeller beta ring displaced slightly aft. The reduction gearbox mounted controls and accessories were in place and intact. The exhaust duct displayed compressional and torsional deformation. The gas generator case displayed light compressional deformation at the approximate 5:00 position between the fuel nozzle ports and flange 'C'. The gas generator case mounted controls and accessories were in place and intact. The accessory gearbox housing was intact. The accessory gearbox mounted controls and accessories were in place and intact. The power control and reversing linkage were intact and continuous from the propeller reversing linkage to the fuel control input lever. All connections and safeties were intact. The P3 line was intact and continuous from the gas generator case fitting to the fuel control unit input fitting. The Py line was intact and continuous from the fuel control unit fitting to the propeller control unit fitting. All connections and lockwire were intact.

It was determined that both engines and their accessories should be shipped to Pratt & Whitney Canada Inc. at Longueuil, Quebec, Canada for further examination. Further examination was conducted on October 7 and 8, 1996, under the supervision of Transportation Safety Board of Canada. The examination of both left and right engines displayed rotational signatures to the engine internal components characteristic of the engines developing power at impact. The minimal compressional distortion to the engines external cases limit the severity of the rotational signatures, and preclude definitive assessment of the power level being produced by the engines at impact.

A copy of the summary of findings and conclusions is appended. The pilot reported that the visibility at the time of the accident was 2 statute miles, lower in certain areas with patches of ground fog. He reported that a larger airport would have prevented damage to the airplane as 4,000 feet of distance was used in the aborted takeoff. He also stated that there was no mechanical malfunction. There was no evidence of preimpact anomaly that would have precluded engine operation.

Pilot Information

Certificate:	Airline Transport	Age:	49, Male
Airplane Rating(s):	Multi-engine Land; Single-engine Land	Seat Occupied:	Right
Other Aircraft Rating(s):	None	Restraint Used:	Seatbelt, Shoulder harness
Instrument Rating(s):	Airplane	Second Pilot Present:	No
Instructor Rating(s):	Airplane Multi-engine; Airplane Single-engine; Instrument Airplane	Toxicology Performed:	No
Medical Certification:	Class 2 Valid Medical--no waivers/lim.	Last FAA Medical Exam:	06/27/1996
Occupational Pilot:		Last Flight Review or Equivalent:	
Flight Time:	15000 hours (Total, all aircraft), 1000 hours (Total, this make and model), 15000 hours (Pilot In Command, all aircraft), 100 hours (Last 90 days, all aircraft), 30 hours (Last 30 days, all aircraft), 2 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Piper	Registration:	N163SA
Model/Series:	PA-31T PA-31T	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	No
Airworthiness Certificate:	Normal	Serial Number:	31T-7920025
Landing Gear Type:	Retractable - Tricycle	Seats:	7
Date/Type of Last Inspection:	07/27/1996, Continuous Airworthiness	Certified Max Gross Wt.:	9050 lbs
Time Since Last Inspection:	10 Hours	Engines:	2 Turbo Prop
Airframe Total Time:	4993 Hours	Engine Manufacturer:	P&W
ELT:	Installed, not activated	Engine Model/Series:	PT6A-28
Registered Owner:	BASCO FLYING SERVICE INC&PA	Rated Power:	620 hp
Operator:	BASCO FLYING SERVICE INC&PA	Operating Certificate(s) Held:	On-demand Air Taxi (135)

Meteorological Information and Flight Plan

Conditions at Accident Site:	Instrument Conditions	Condition of Light:	Day
Observation Facility, Elevation:	RDG, 344 ft msl	Distance from Accident Site:	18 Nautical Miles
Observation Time:	0650 EDT	Direction from Accident Site:	310°
Lowest Cloud Condition:	Scattered / 4000 ft agl	Visibility	0.12 Miles
Lowest Ceiling:	Unknown / 0 ft agl	Visibility (RVR):	0 ft
Wind Speed/Gusts:	Calm /	Turbulence Type Forecast/Actual:	/
Wind Direction:		Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	30 inches Hg	Temperature/Dew Point:	15° C / 15° C
Precipitation and Obscuration:			
Departure Point:	, PA (N47)	Type of Flight Plan Filed:	None
Destination:	PHILADELPHIA, PA (PHL)	Type of Clearance:	None
Departure Time:	0700 EDT	Type of Airspace:	Class G

Airport Information

Airport:	POTTSTOWN MUNI ARPT (N47)	Runway Surface Type:	Asphalt
Airport Elevation:	250 ft	Runway Surface Condition:	Dry
Runway Used:	7	IFR Approach:	None
Runway Length/Width:	2704 ft / 75 ft	VFR Approach/Landing:	None

Wreckage and Impact Information

Crew Injuries:	1 None	Aircraft Damage:	Substantial
Passenger Injuries:	2 None	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	3 None	Latitude, Longitude:	

Administrative Information

Investigator In Charge (IIC):	BEVERLEY DRAKE-NURSE	Report Date:	02/02/1998
Additional Participating Persons:	MICHAEL IONATA; ALLENTOWN, PA ANDRE TURRENE; CANADA, OF THOMAS A BERTHE; LONGUEUIL, OF DAN V MC ANALLY; VERO BEACH, FL		
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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