



Aviation Investigation Final Report

Location:	Collegeville, Pennsylvania	Accident Number:	NYC07LA175
Date & Time:	July 25, 2007, 14:48 Local	Registration:	N3900X
Aircraft:	Aero Commander 100	Aircraft Damage:	Substantial
Defining Event:		Injuries:	1 Minor
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The purpose of the accident flight was to test fly the airplane following the completion of an annual inspection. The pilot stated that after performing two takeoffs and landings, during the initial climb of the third takeoff, about 60 to 70 feet above the ground the engine lost partial power. After unsuccessfully attempting to remedy the problem, the pilot realized that the airplane would not clear the trees beyond the departure end of the runway, so he retarded the throttle and extended the flaps fully. The airplane subsequently impacted a tree, where it came to rest. A flight instructor and a student observed the accident airplane as it flew in the airport traffic pattern, and witnessed the accident. They took off, and watched as the accident airplane taxied, departed behind them, and also remained in the airport traffic pattern. The instructor and the student watched the airplane as it landed for a third time. Everything about the approach appeared normal, until the accident airplane flared, and "ballooned." The nose of the airplane then came down and the airplane ballooned again at about the mid-field point, before it ballooned a third time. The airplane's nose then "abruptly" pitched down, the airplane touched down "hard," bounced, departed the end of the runway, and struck trees. Another witness described that she saw the airplane bouncing down the runway, before it departed the end of the runway, while still on the ground, and "came up into the air a little" before striking trees. Examination of the airplane following the accident revealed no evidence of any obvious mechanical deficiencies of the engine.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The pilot's inadequate recovery from a bounced landing.

Findings

Occurrence #1: LOSS OF CONTROL - IN FLIGHT

Phase of Operation: LANDING

Findings

1. (C) RECOVERY FROM BOUNCED LANDING - INADEQUATE - PILOT IN COMMAND

Occurrence #2: IN FLIGHT COLLISION WITH OBJECT

Phase of Operation: LANDING

Findings

2. OBJECT - TREE(S)

Factual Information

On July 25, 2007, about 1448 eastern daylight time, an Aero Commander 100, N3900X, was substantially damaged when it impacted trees near Perkiomen Valley Airport (N10), Colledgeville, Pennsylvania. The certificated private pilot incurred minor injuries. Visual meteorological conditions prevailed, and no flight plan was filed for the local personal flight, which was conducted under 14 Code of Federal Regulations Part 91.

Perkiomen Valley Airport was comprised of a single, asphalt runway that was 2,880 feet long by 40 feet wide. A single parallel taxiway ran along the north side of the runway, extending from the mid-field point to near the departure end of runway 9.

During a telephone interview, and in a written statement, the pilot stated that the purpose of the flight was to test fly the airplane following the completion of an annual inspection. He performed a preflight inspection of the airplane and performed a run-up check of the engine, with no discrepancies noted. He then took off from runway 9, and remained in the airport traffic pattern, before landing and taxiing back for another takeoff. The pilot initially stated that the accident occurred during the second takeoff, but later recalled that it actually occurred during the third takeoff, following a touch-and-go landing. During the initial climb of the third takeoff, about 60 to 70 feet above the ground, the engine lost partial power. The pilot applied the carburetor heat, and confirmed that the throttle was in the full forward position. He then realized that the airplane would not clear the trees beyond the departure end of the runway, so he retarded the throttle and extended the flaps fully. The airplane subsequently impacted a tree, where it came to rest.

A flight instructor and a student observed the accident airplane as it flew in the airport traffic pattern, and witnessed the accident. During separate telephone interviews, they each recounted a similar series of events. According to the flight instructor, he and his student had flown to N10 in order to practice short and soft field takeoffs and landings. After entering the traffic pattern, they performed a full stop landing, due to the "short" length of the runway. They then taxied back, took off, and watched as the accident airplane taxied, departed behind them, and also remained in the airport traffic pattern. The flight instructor noted that he did not hear the accident pilot make any position announcements over the radio as he flew.

After landing for a second time, the flight instructor and the student again back-taxied on the runway for another takeoff. As they taxied, they noticed the accident airplane on final approach to the runway, and got the impression that the accident pilot was not going to abort his landing attempt. The flight instructor told the student to exit the runway, onto the grass, while the accident airplane landed. The flight instructor and student again departed, and remained in the airport traffic pattern, followed by the accident airplane.

After again landing and taxiing back, the flight instructor and the student sat on the taxiway and watched the accident airplane as it approached the runway. Everything about the approach appeared normal, until the accident airplane flared, and "ballooned." The nose of the airplane then came down and the airplane ballooned again at about the mid-field point, before it ballooned a third time. The airplane's nose then "abruptly" pitched down, the airplane touched down "hard," bounced, departed the end of the runway, and struck trees.

Another witness, who was driving on a road that ran perpendicular to the departure end of the runway, stated that she saw the accident airplane as it was coming down the runway. She stated that the airplane was "bumping" down the runway. She recalled that the way the airplane bounced down the runway reminded her of a relative, who was a student pilot, and used to bounce landings. As the airplane traveled towards the end of the runway, she thought it was taking off because of the direction it was headed in, but that it would not clear the trees at the end of the runway. The airplane then departed the end of the runway, while still on the ground, then "came up into the air a little," but not enough to clear the trees. She could not hear any engine sounds as her windows were up and the air conditioning was on at the time.

After the airplane was recovered from a tree, it was examined by a Federal Aviation Administration (FAA) inspector. During the examination the inspector confirmed the continuity of the flight controls, and found that they were free to move and were properly connected. Additionally, the engine controls were also properly connected and free to move. Examination of fuel samples taken from both wing fuel tanks, and from the carburetor sump drain, revealed that they were absent of water or debris. Rotation of the engine crankshaft produced compression on all four cylinders. Six quarts of oil remained in the engine oil sump.

The pilot held a private pilot certificate with a rating for airplane single engine land. The pilot's most recent application for an FAA third class medical certificate was dated December 2004, and at that time he reported 250 total hours of flight experience.

The weather conditions reported at Pottstown Limerick Airport (PTW), Pottstown, Pennsylvania, about 6 nautical miles west of the accident site, at 1454, included winds from 200 degrees at 9 knots, 10 statute miles visibility, scattered clouds at 7,500 feet, temperature 29 degrees Celsius, dewpoint 16 degrees Celsius, and an altimeter setting of 30.15 inches of mercury.

Pilot Information

Certificate:	Private	Age:	77, 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:	Sport pilot Unknown	Last FAA Medical Exam:	December 1, 2005
Occupational Pilot:	No	Last Flight Review or Equivalent:	January 1, 2006
Flight Time:	950 hours (Total, all aircraft), 111 hours (Total, this make and model), 750 hours (Pilot In Command, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Aero Commander	Registration:	N3900X
Model/Series:	100	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	
Airworthiness Certificate:	Normal	Serial Number:	350
Landing Gear Type:	Tricycle	Seats:	4
Date/Type of Last Inspection:	July 1, 2007 Annual	Certified Max Gross Wt.:	2250 lbs
Time Since Last Inspection:		Engines:	1 Reciprocating
Airframe Total Time:		Engine Manufacturer:	Lycoming
ELT:	Installed, activated, did not aid in locating accident	Engine Model/Series:	O-320
Registered Owner:	On file	Rated Power:	150 Horsepower
Operator:	On file	Operating Certificate(s) Held:	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	Condition of Light:	Day
Observation Facility, Elevation:	PTW,309 ft msl	Distance from Accident Site:	6 Nautical Miles
Observation Time:	14:54 Local	Direction from Accident Site:	270°
Lowest Cloud Condition:	Scattered / 7500 ft AGL	Visibility	10 miles
Lowest Ceiling:	None	Visibility (RVR):	
Wind Speed/Gusts:	9 knots /	Turbulence Type Forecast/Actual:	/
Wind Direction:	200°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	30.14 inches Hg	Temperature/Dew Point:	29°C / 16°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Collegeville, PA (N10)	Type of Flight Plan Filed:	None
Destination:	(N10)	Type of Clearance:	None
Departure Time:		Type of Airspace:	

Airport Information

Airport:	Perkiomen Valley Airport N10	Runway Surface Type:	Asphalt
Airport Elevation:	277 ft msl	Runway Surface Condition:	Dry
Runway Used:	9	IFR Approach:	Unknown
Runway Length/Width:	2880 ft / 40 ft	VFR Approach/Landing:	Touch and go

Wreckage and Impact Information

Crew Injuries:	1 Minor	Aircraft Damage:	Substantial
Passenger Injuries:		Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	1 Minor	Latitude, Longitude:	40.203887,-75.43

Administrative Information

Investigator In Charge (IIC):	Diaz, Dennis
Additional Participating Persons:	Bill Collier; FAA/FSDO; Allentown, PA
Original Publish Date:	June 30, 2008
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.nts.gov/Docket?ProjectID=66302

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The NTSB does not assign fault or blame for an accident or incident; rather, as specified by NTSB regulation, “accident/incident investigations are fact-finding proceedings with no formal issues and no adverse parties ... and are not conducted for the purpose of determining the rights or liabilities of any person” (Title 49 *Code of Federal Regulations* section 831.4). Assignment of fault or legal liability is not relevant to the NTSB’s statutory mission to improve transportation safety by investigating accidents and incidents and issuing safety recommendations. In addition, statutory language prohibits the admission into evidence or use of any part of an NTSB report related to an accident in a civil action for damages resulting from a matter mentioned in the report (Title 49 *United States Code* section 1154(b)). A factual report that may be admissible under 49 *United States Code* section 1154(b) is available [here](#).