Aviation Investigation Final Report

Location:	West Chester, Pennsylvania	**Accident Number:**	NYC07LA227
Date & Time:	September 14, 2007, 10:49 Local	**Registration:**	N5073T
Aircraft:	Beech A23-24	**Aircraft Damage:**	Substantial
Defining Event:		**Injuries:**	1 Serious, 1 Minor
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The airplane touched down more than halfway beyond the approach end of runway 9; a 3,347-foot-long, 50-foot-wide, asphalt runway. The pilot applied heavy braking, and the airplane veered off the right side of the runway. Examination of the wreckage revealed that the left brake disc had separated from its housing. The right brake disc had cracked, but remained attached to its housing. The left and right brake discs exhibited corrosion. The airplane's most recent annual inspection was completed about 4 months prior to the accident. The mechanic that performed the annual inspection stated that he did not observe corrosion on the brakes at that time. Airworthiness Directive (AD) 71-06-08 addressed repetitive brake disc inspections and replacements; however, the make and model brake disk on the accident airplane was not included on the AD. The reported weather at an airport near the accident site, about the time of the accident, included winds from 160 degrees at 8 knots, varying between 120 degrees and 200 degrees.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The total failure of the left brake disc due to corrosion.

Findings

Occurrence #1: LOSS OF CONTROL - ON GROUND/WATER
Phase of Operation: LANDING

Findings
1. (C) LANDING GEAR,NORMAL BRAKE SYSTEM - CORRODED

Occurrence #2: ON GROUND/WATER ENCOUNTER WITH TERRAIN/WATER
Phase of Operation: LANDING - ROLL

Findings
2. TERRAIN CONDITION - BERM

Factual Information

On September 14, 2007, at 1049 eastern daylight time, a Beech A23-24, N5073T, was substantially damaged while landing at Brandywine Airport (OQN), West Chester, Pennsylvania. The certificated private pilot sustained minor injuries, and the passenger was seriously injured. Visual meteorological conditions prevailed for the flight that departed Sussex County Airport (GED), Georgetown, Delaware, about 0930. No flight plan was filed for the local personal flight conducted under 14 Code of Federal Regulations Part 91.

The airplane landed on runway 9; a 3,347-foot-long, 50-foot-wide, asphalt runway. The pilot reported that the airplane touched down on centerline. He then retracted the flaps and checked the brakes. The pilot let the airplane roll out, and applied continuous braking near the last one-third of the runway. While braking, the left pedal "went away," and the airplane turned right. The airplane traveled off the right side of the runway, down a berm, and came to rest next to a building. The airplane sustained substantial damage to the firewall area, and all three landing gear had separated from the airframe.

The pilot reported a total flight experience of 1,260 hours; of which, 570 hours were in the same make and model as the accident airplane. He flew 6 hours during the 90 days preceding the accident. The pilot estimated the winds were from the east-southeast at 9 knots, gusting to 14 knots.

A Federal Aviation Administration (FAA) inspector stated that he interviewed a witness, who reported that the accident airplane had to go-around during the first landing attempt, as it was "high and fast."

The FAA inspector also viewed a surveillance video that captured the landing accident. The video revealed that the airplane touched down more than halfway down the runway, the pilot applied "heavy" braking, and the airplane veered off the right side of the runway.

The FAA inspector added that examination of the wreckage revealed that the left brake disk had separated from its housing. The right brake disc had cracked, but remained attached to its housing. The left and right brake discs exhibited corrosion. The airplane's most recent annual inspection was completed on May 24, 2007. The FAA inspector interviewed the mechanic that performed that inspection, who stated that he did not observe corrosion on the brakes at that time.

The FAA inspector further stated that airworthiness directive (AD) 71-06-08 addressed repetitive brake disc inspections and replacements; however, the make and model brake disk on the accident airplane was not included in the AD.

Review of the AD revealed a requirement to inspect the brake discs for cracks, or other obvious defects, using a 10-power glass or equivalent. If any defects were found, the brake discs needed to be replaced with a specified new model brake disc. In addition, the inspection needed to be repeated after every 50 hours of operation, or until the specified new brake discs were installed.

The inspector subsequently filed a malfunction or defect report (similar to a service difficulty report) to bring awareness to the situation and have the make and model brake disc added to the AD.

The reported weather at an airport located about 15 miles south of the accident site, at 1054, was: wind from 160 degrees at 8 knots, varying between 120 degrees and 200 degrees; visibility 10 miles; few clouds at 3,000 feet; broken ceiling at 4,900 feet; broken ceiling at 6,000 feet; temperature 22 degrees Celsius (C); dew point 16 degrees C; altimeter 30.14 inches of mercury.

Pilot Information

Certificate:	Private	**Age:**	71,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:	Class 3 With waivers/limitations	**Last FAA Medical Exam:**	July 1, 2007
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	October 1, 2006
Flight Time:	1260 hours (Total, all aircraft), 570 hours (Total, this make and model), 1040 hours (Pilot In Command, all aircraft), 6 hours (Last 90 days, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Beech	**Registration:**	N5073T
Model/Series:	A23-24	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	MA-319
Landing Gear Type:	Tricycle	**Seats:**	6
Date/Type of Last Inspection:	May 1, 2007 Annual	**Certified Max Gross Wt.:**	2550 lbs
Time Since Last Inspection:	8 Hrs	**Engines:**	1 Reciprocating
Airframe Total Time:	2300 Hrs at time of accident	**Engine Manufacturer:**	Lycoming
ELT:	Installed, activated, did not aid in locating accident	**Engine Model/Series:**	IO-360
Registered Owner:	Warren B Knowles	**Rated Power:**	200 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:	PTW,309 ft msl	**Distance from Accident Site:**	15 Nautical Miles
Observation Time:	10:54 Local	**Direction from Accident Site:**	180°
Lowest Cloud Condition:	Few / 3000 ft AGL	**Visibility**	10 miles
Lowest Ceiling:	Broken / 4900 ft AGL	**Visibility (RVR):**	
Wind Speed/Gusts:	8 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	160°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	30.13 inches Hg	**Temperature/Dew Point:**	22°C / 16°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Georgetown, DE (GED)	**Type of Flight Plan Filed:**	None
Destination:	West Chester, PA (OQN)	**Type of Clearance:**	None
Departure Time:	09:30 Local	**Type of Airspace:**	

Airport Information

Airport:	Brandywinde Airport OQN	**Runway Surface Type:**	Asphalt
Airport Elevation:	466 ft msl	**Runway Surface Condition:**	Dry
Runway Used:	9	**IFR Approach:**	None
Runway Length/Width:	3347 ft / 50 ft	**VFR Approach/Landing:**	Full stop;Traffic pattern

Wreckage and Impact Information

Crew Injuries:	1 Minor	**Aircraft Damage:**	Substantial
Passenger Injuries:	1 Serious	**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	1 Serious, 1 Minor	**Latitude, Longitude:**	39.990276,-75.581947

Administrative Information

Investigator In Charge (IIC):	Gretz, Robert
Additional Participating Persons:	Ed Coudon; FAA/FSDO; Philadelphia, PA
Original Publish Date:	May 28, 2008
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=66670