



# Aviation Investigation Final Report

<b>Location:</b>	Charlotte, North Carolina	<b>Accident Number:</b>	DCA17CA197
<b>Date &amp; Time:</b>	September 13, 2017, 15:45 Local	<b>Registration:</b>	N261PS
<b>Aircraft:</b>	BOMBARDIER INC CL 600 2B19	<b>Aircraft Damage:</b>	Substantial
<b>Defining Event:</b>	Ground collision	<b>Injuries:</b>	1 Serious, 34 None
<b>Flight Conducted Under:</b>	Part 121: Air carrier - Scheduled		

## Analysis

On September 13, 2017, at 3:45 pm eastern daylight time, PSA Airlines flight 5233, a Bombardier CRJ-200, N261PS, collided with a TLD Jet-16 baggage tug operated by Piedmont Airlines while taxiing at Charlotte-Douglas International Airport (KCLT), Charlotte, North Carolina. The airplane received substantial damage to the left wing and the tug canopy section was damaged. The tug driver was seriously injured and there were no injuries to the 34 passengers and crew onboard the CRJ-200. Weather was daytime visual meteorological conditions.

After landing on runway 18R, the airplane was instructed to taxi to Gate E4. While taxiing in a narrow alleyway near the north end of concourse E, between the concourse and the baggage transfer point, the ground tug impacted the left wingtip.

The tug was driving on non-movement area of the terminal ramp. The baggage tug was slightly in front of the aircraft at about a 10 o'clock position to the captain of the aircraft. A terminal road crosses the taxi alleyway from near Gate E38 to the beginning of area designated as the baggage transfer point. The transfer point is located outside the alleyway and is lined with concrete barriers. Airplane taxi within the alleyway and ground equipment travel perpendicular to aircraft movement when accessing the transfer point. As the tug turned onto the service road and began to cross the roadway he noticed the airplane taxiing in the alley. The driver indicated that, in order to avoid a collision, he tightened his right turn in the opposite direction the airplane was traveling before colliding with the left hand wing. The canopy of the baggage tug was sheared off and the leading edge and winglet of the airplane was substantially damaged. The final resting place of the tug was just behind the trailing edge of the wing. There were skid marks from the airplane tires consistent with maximum braking starting when the airplane made contact with the baggage tug. According to airline ground movement procedures, an airplane on the non-movement area always has the right of way.

## Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: the tug operator's initiation of a right turn onto the perpendicular terminal road in proximity to the airplane.

### Findings

Personnel issues	Incorrect action performance - Ground crew
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## Factual Information

### History of Flight

Taxi-from runway	Ground collision (Defining event)
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### Pilot Information

Certificate:	Airline transport; Commercial; Flight instructor	Age:	34
Airplane Rating(s):	Multi-engine land	Seat Occupied:	Left
Other Aircraft Rating(s):	None	Restraint Used:	5-point
Instrument Rating(s):	Airplane	Second Pilot Present:	Yes
Instructor Rating(s):	Airplane multi-engine	Toxicology Performed:	No
Medical Certification:	Class 1	Last FAA Medical Exam:	
Occupational Pilot:	Yes	Last Flight Review or Equivalent:	
Flight Time:	6837 hours (Total, all aircraft), 192 hours (Total, this make and model)		

### Co-pilot Information

Certificate:	Airline transport; Commercial; Flight instructor	Age:	
Airplane Rating(s):	Single-engine land; Multi-engine land	Seat Occupied:	Right
Other Aircraft Rating(s):		Restraint Used:	5-point
Instrument Rating(s):		Second Pilot Present:	Yes
Instructor Rating(s):		Toxicology Performed:	No
Medical Certification:	Class 1	Last FAA Medical Exam:	
Occupational Pilot:	Yes	Last Flight Review or Equivalent:	
Flight Time:	29440 hours (Total, all aircraft), 1025 hours (Total, this make and model)		

## Aircraft and Owner/Operator Information

<b>Aircraft Make:</b>	BOMBARDIER INC	<b>Registration:</b>	N261PS
<b>Model/Series:</b>	CL 600 2B19 100	<b>Aircraft Category:</b>	Airplane
<b>Year of Manufacture:</b>	2004	<b>Amateur Built:</b>	
<b>Airworthiness Certificate:</b>	Transport	<b>Serial Number:</b>	7959
<b>Landing Gear Type:</b>	Retractable - Tricycle	<b>Seats:</b>	
<b>Date/Type of Last Inspection:</b>		<b>Certified Max Gross Wt.:</b>	43100 lbs
<b>Time Since Last Inspection:</b>		<b>Engines:</b>	2 Turbo fan
<b>Airframe Total Time:</b>		<b>Engine Manufacturer:</b>	GE
<b>ELT:</b>		<b>Engine Model/Series:</b>	CF34 SERIES
<b>Registered Owner:</b>		<b>Rated Power:</b>	9140 Horsepower
<b>Operator:</b>		<b>Operating Certificate(s) Held:</b>	Flag carrier (121)
<b>Operator Does Business As:</b>		<b>Operator Designator Code:</b>	VNAA

## Meteorological Information and Flight Plan

<b>Conditions at Accident Site:</b>	Visual (VMC)	<b>Condition of Light:</b>	Day
<b>Observation Facility, Elevation:</b>	CLT	<b>Distance from Accident Site:</b>	0 Nautical Miles
<b>Observation Time:</b>		<b>Direction from Accident Site:</b>	0°
<b>Lowest Cloud Condition:</b>	Unknown	<b>Visibility</b>	10 miles
<b>Lowest Ceiling:</b>	Broken	<b>Visibility (RVR):</b>	
<b>Wind Speed/Gusts:</b>	18 knots / 24 knots	<b>Turbulence Type Forecast/Actual:</b>	/ None
<b>Wind Direction:</b>	230°	<b>Turbulence Severity Forecast/Actual:</b>	/
<b>Altimeter Setting:</b>		<b>Temperature/Dew Point:</b>	27°C / 18°C
<b>Precipitation and Obscuration:</b>			
<b>Departure Point:</b>	Charleston, WV (CRW )	<b>Type of Flight Plan Filed:</b>	IFR
<b>Destination:</b>	Charlotte, NC (CLT )	<b>Type of Clearance:</b>	IFR
<b>Departure Time:</b>	14:22 Local	<b>Type of Airspace:</b>	Class B

## Airport Information

<b>Airport:</b>	CHARLOTTE/DOUGLAS INTL CLT	<b>Runway Surface Type:</b>	
<b>Airport Elevation:</b>	747 ft msl	<b>Runway Surface Condition:</b>	Unknown
<b>Runway Used:</b>		<b>IFR Approach:</b>	Unknown
<b>Runway Length/Width:</b>		<b>VFR Approach/Landing:</b>	Unknown

## Wreckage and Impact Information

<b>Crew Injuries:</b>	3 None	<b>Aircraft Damage:</b>	Substantial
<b>Passenger Injuries:</b>	31 None	<b>Aircraft Fire:</b>	None
<b>Ground Injuries:</b>	1 Serious	<b>Aircraft Explosion:</b>	None
<b>Total Injuries:</b>	1 Serious, 34 None	<b>Latitude, Longitude:</b>	35.130001,-80.559997(est)

## Administrative Information

<b>Investigator In Charge (IIC):</b>	English, William
<b>Additional Participating Persons:</b>	
<b>Original Publish Date:</b>	March 9, 2018
<b>Note:</b>	This accident report documents the factual circumstances of this accident as described to the NTSB.
<b>Investigation Docket:</b>	<a href="https://data.nts.gov/Docket?ProjectID=96040">https://data.nts.gov/Docket?ProjectID=96040</a>

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