

National Transportation Safety Board  
Washington, DC 20594

Brief of Accident

Adopted 12/20/2005

DCA02MA026  
File No. 19072                      03/09/2002                      Dulles Airport, VA                      Aircraft Reg No. N622BR                      Time (Local): 10:15

Make/Model:	Canadair / CL-600-2B19	Fatal	0	Serious	0	Minor/None	3
Engine Make/Model:	General Electric / CF34B	Crew	0				
Aircraft Damage:	Substantial	Pass	0	0	0	50	
Number of Engines:	2						
Operating Certificate(s):	Flag Carrier/Domestic						
Name of Carrier:	ATLANTIC COAST AIRLINES						
Type of Flight Operation:	Scheduled; Domestic; Passenger Only						
Reg. Flight Conducted Under:	Part 121: Air Carrier						

Last Depart. Point:	Dulles Airport, VA	Condition of Light:	Day
Destination:	NY	Weather Info Src:	Pilot
Airport Proximity:	On Airport/Airstrip	Basic Weather:	Visual Conditions
Airport Name:	Dulles International Airport	Lowest Ceiling:	
Runway Identification:	30	Visibility:	9.00 SM
Runway Length/Width (Ft):	Unk/Nr	Wind Dir/Speed:	Calm
Runway Surface:	Asphalt	Temperature (°C):	14
Runway Surface Condition:	Dry	Precip/Obscuration:	

Pilot-in-Command Age:

Flight Time (Hours)

Certificate(s)/Rating(s)

Airline Transport; Commercial; Multi-engine Land; Single-engine Land

Total All Aircraft: Unk/Nr

Last 90 Days: Unk/Nr

Total Make/Model: Unk/Nr

Total Instrument Time: Unk/Nr

Instrument Ratings

DCA02MA026

On March 9, 2002, about 1015 eastern standard time, a Bombardier CL-600-2B19, N622BR, operating as Atlantic Coast Airlines (ACA) flight 7682, struck two wild turkeys while initiating a takeoff from runway 30 at Washington Dulles International Airport (IAD). None of the 3 crewmembers or 50 passengers on board was injured. The airplane sustained damage to the number-two engine inlet, the first officer's windshield, and a 14- by 4-inch section of fuselage skin just below the windshield seal on the first officer's side. Flight 7682 was operating on an instrument flight rules flight plan under the provisions of 14 Code of Federal Regulations (CFR) Part 121 as a regularly scheduled passenger flight from IAD to LaGuardia International Airport, New York, New York. Visual meteorological conditions prevailed at the time of the accident.

The captain reported that the airplane was on departure roll and had accelerated past 80 knots when a flock of birds began to fly south over the runway. The airplane was traveling at approximately 110 knots when one of the birds hit the airplane, cracking the first officer's windshield and causing a few shards of glass to fall into the cockpit and onto the first officer. The captain immediately rejected the takeoff and stopped on the runway to assess the damage. The first

officer notified air traffic control (ATC) of the rejected takeoff. The flight crew determined that the only damage appeared to be to the windshield, so the captain taxied clear of the runway. The flight crew then notified ATC, ACA operations, and ACA maintenance about the reason for the rejected takeoff and informed them that they were returning to the gate.

A postflight inspection by ACA maintenance personnel revealed that the airplane had struck two wild turkeys. One turkey hit the intake of the number-two engine, slightly damaging the forward lip of the engine intake cowl. No bird remains went through the engine. The other turkey hit just below the first officer's windshield, where a turkey leg and foot were still lodged. Closer examination of the airplane revealed that the second turkey hit the nose sheet metal at the base of the first officer's windshield, bending the windshield support structure and causing the windshield to crack upward from that location. The second turkey penetrated the area beneath the lower support structure, went through the pressure bulkhead, and entered the back of the instrument panel but did not penetrate either the windshield or its supporting structure.

Title 14 CFR 25.775(b) states,

Windshield panes directly in front of the pilots in the normal conduct of their duties, and the supporting structures for these panes, must withstand, without penetration, the impact of a four-pound bird when the velocity of the airplane (relative to the bird along the airplane's flight path) is equal to the value of  $V_c$ , at sea level. [ $V_c$  equals design cruising speed.]

Bombardier Aerospace Company, the manufacturer of the airplane, impact-tested the windshield for a 4-pound bird at 330 knots. The wild turkey that hit the accident airplane was estimated to have weighed roughly 15 pounds, and the impact velocity was approximately 110 knots. Using the kinetic energy equation to calculate the equivalent energy for this mass and speed, investigators determined that the windshield would have been able to withstand the impact of a bird more than twice as large as the turkey that hit the accident aircraft. In this accident, the wild turkey did not penetrate the windshield or its support structure but instead penetrated an area beneath the windshield support structure.

At the time of the accident, IAD had an annual wildlife management plan that included provisions for dispersing and removing wildlife from areas surrounding the aircraft operating area. The United States Department of Agriculture, Animal and Plant Health Inspection Service, Wildlife Services, assessed IAD wildlife hazards for the period from September 2000 to August 2001 [U.S. Department of Agriculture, Animal and Plant Health Inspection Service, Wildlife Services, Monitoring of Potential Wildlife Hazards at Washington Dulles International Airport: September 2000 through August 2001 (Moseley, Virginia)]. The assessment report indicated that, during that time, Wildlife Services took 719 control actions against 36 species, dispersing a total of 19,000 animals (including 3 wild turkeys) and killing a total of 799 animals. The assessment report concluded that birds and mammals continued to present a high risk to aviation safety at IAD and listed several recommendations to reduce the risk, which IAD has implemented. To help eliminate the wild turkey threat, IAD allows airport personnel to hunt wild turkeys within the airport perimeter during the Commonwealth of Virginia's two annual turkey hunting seasons.

The National Transportation Safety Board determines the probable cause(s) of this accident as follows.  
The airplane's collision with two wild turkeys.