

**National Transportation Safety Board
Washington, DC 20594**

Brief of Accident

Adopted 08/10/2000

NYC99LA064

File No. 643 02/22/1999 COVINGTON, KY Aircraft Reg No. N682DA Time (Local): 14:55 EST

Make/Model:	Boeing / 757	Fatal	0	Serious	0	Minor/None	7
Engine Make/Model:	P&w / PW2037	Crew	0	Pass	0		125
Aircraft Damage:	Substantial						
Number of Engines:	2						
Operating Certificate(s):	Flag Carrier/Domestic						
Name of Carrier:	DELTA AIR LINES						
Type of Flight Operation:	Scheduled; Domestic; Passenger/Cargo						
Reg. Flight Conducted Under:	Part 121: Air Carrier						

Last Depart. Point:	Same as Accident/Incident Location	Condition of Light:	Day
Destination:	WASHINGTON, DC	Weather Info Src:	Weather Observation Facility
Airport Proximity:	On Airport/Airstrip	Basic Weather:	Visual Conditions
Airport Name:	CINCINNATI INTERNATIONAL	Lowest Ceiling:	None
Runway Identification:	18L	Visibility:	10.00 SM
Runway Length/Width (Ft):	10000 / 150	Wind Dir/Speed:	Variable / 004 Kts
Runway Surface:	Asphalt	Temperature (°C):	-1
Runway Surface Condition:	Dry	Precip/Obscuration:	

Pilot-in-Command Age: 55

Flight Time (Hours)

Certificate(s)/Rating(s)

Airline Transport; Multi-engine Land

Total All Aircraft: 18000

Last 90 Days: 156

Total Make/Model: 2771

Total Instrument Time: UnK/Nr

Instrument Ratings

Airplane

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On February 22, 1999, about 1455 eastern standard time, a Boeing 757, N682DA, operated by Delta Air Lines as flight 338, penetrated a flock of birds during takeoff from Cincinnati/Northern Kentucky International Airport, Covington, Kentucky. The airplane was substantially damaged. The 2 flight crewmembers, 5 flight attendants, and 125 passengers were not injured. Visual meteorological conditions prevailed, and an instrument flight rules flight plan had been filed for the scheduled passenger flight destined for Washington, District of Columbia. The flight was conducted under 14 CFR Part 121.

According to the captain, they pushed back from the gate, and taxied to runway 18L. While taxiing, he heard no mention of a bird hazard by another aircraft or ATC. After reaching the runway, the captain initiated the takeoff with the first officer at the controls. The takeoff roll was normal until passing approximately 150 knots; at that point, a flock of birds traveling from left to right passed in front of the airplane. The captain advised the first officer of the hazard and asked him to attempt to climb over the flock. The first officer increased pitch angle, but the airplane still penetrated the flock. At the time of penetration, the nose

wheel was in the air and the main landing gear was just becoming airborne. The captain advised ATC of the event, and was cleared to land.

After advising ATC, the flight crew performed left traffic for runway 18L, landed, and taxied to the gate without further incident. The captain observed no change in engine performance or flight characteristics during or after the event. He added that the birds were small and brown, with white spots.

A review of the flight data record revealed that approximately 1 second after the airplane's main landing gear transitioned from ground to flight, the N1 on the left engine dropped from 81.88 percent to 56.00 percent, and the right engine dropped from 81.25 to 71.63 percent. In both cases, throttle positions remained constant. In addition, pitch was 19.16 degrees nose up, and airspeed was 152.5 knots at the time of the event.

Examination of both engines by the operator, revealed damage to the first stage of the compressor sections on the number 1, and number 2 engines. The sections were changed, and the aircraft was returned to service.

On February 23 and 24, 1999, a Federal Aviation Administration Wildlife Biologist examined the airport operations area (AOA). In his report, he wrote, "The starlings [*Sturnus vulgaris*] involved in the strike appear to have been a random foraging flock. Careful inspection of the area where the starlings were just prior to the strike did not reveal any anomalies or anything remarkably different from virtually every other grassed area within the AOA."

He continued, "It is difficult to say with any degree of certainty whether or not the starlings involved in the strike had been roosting in the terminal area trees. In that part of the country, starlings will form large winter roost wherever they can find suitable habitat conditions. Some winter roost can contain several million birds. Winter roosting starlings will fly up to 50 miles (one-way) daily to feed. The starlings involved in the strike could have come from the terminal roost area or they could have come from a roost many miles from the airport."

The FAA publication titled Hazardous Wildlife Attractants On Or Near Airports, states that "All species of wildlife can pose a threat to aircraft safety." In addition, it stated that starlings comprised 5 percent of all damaging animal strikes to U.S. aircraft from 1993 to 1995.

The National Transportation Safety Board determines the probable cause(s) of this accident as follows.
A flock birds were ingested into both engines, resulting in substantial damage to the engines.