
Birdstrike, McDonnell Douglas DC-9-82, September 16, 2004

Micro-summary: This McDonnell-Douglas DC-9-82 collided with a flock of birds on takeoff, damaging the left engine fan module and a fuel line to the fuel-oil cooler, causing an engine fire.


Event Date: 2004-09-16 at 1413 CDT


Investigative Body: National Transportation Safety Board (NTSB), USA


Investigative Body's Web Site: <http://www.nts.gov/>

Cautions:

1. Accident reports can be and sometimes are revised. Be sure to consult the investigative agency for the latest version before basing anything significant on content (e.g., thesis, research, etc).
 2. Readers are advised that each report is a glimpse of events at specific points in time. While broad themes permeate the causal events leading up to crashes, and we can learn from those, the specific regulatory and technological environments can and do change. ***Your company's flight operations manual is the final authority as to the safe operation of your aircraft!***
 3. Reports may or may not represent reality. Many many non-scientific factors go into an investigation, including the magnitude of the event, the experience of the investigator, the political climate, relationship with the regulatory authority, technological and recovery capabilities, etc. It is recommended that the reader review all reports analytically. Even a "bad" report can be a very useful launching point for learning.
 4. Contact us before reproducing or redistributing a report from this anthology. Individual countries have very differing views on copyright! We can advise you on the steps to follow.
-

		NTSB ID: CHI04IA260		Aircraft Registration Number: N253AA	
		Occurrence Date: 09/16/2004		Most Critical Injury: None	
		Occurrence Type: Incident		Investigated By: NTSB	
Location/Time					
Nearest City/Place Chicago		State IL	Zip Code 60666	Local Time 1413	Time Zone CDT
Airport Proximity: Off Airport/Airstrip		Distance From Landing Facility: 5		Direction From Airport: 60	
Aircraft Information Summary					
Aircraft Manufacturer McDonnell Douglas		Model/Series DC-9-82		Type of Aircraft Airplane	
Sightseeing Flight: No			Air Medical Transport Flight: No		
Narrative					
<p>Brief narrative statement of facts, conditions and circumstances pertinent to the accident/incident:</p> <p>On September 16, 2004, at 1413 central daylight time, a McDonnell-Douglas DC-9-82, N253AA, operated by American Airlines as flight 1374, encountered a flock of birds after takeoff from runway 4L (7,500 feet by 150 feet, concrete) at Chicago O'Hare International Airport (ORD), Chicago, Illinois. The domestic air carrier flight was conducted under 14 CFR Part 121 while on an instrument flight rules flight plan. Visual meteorological conditions prevailed at the time of the incident. No injuries were reported by the 5 crew members and 107 passengers. The flight departed ORD with an intended destination of Philadelphia International Airport (PHL), Philadelphia, Pennsylvania.</p> <p>The flight crew reported that the flight took off and turned to a heading of 090 degrees as assigned by air traffic control. Approximately 5 miles from the airport and passing through 3,000 feet mean sea level, the captain noticed a flock of birds in the aircraft's flight path. The first officer, who was the pilot flying, was unsuccessful in avoiding them.</p> <p>The first officer stated: "The flock separated and passed on both sides of the aircraft. We felt and heard the impact. The left engine immediately seized and a fire warning ensued." The crew reportedly completed the engine fire and before landing checklists and returned to ORD for an emergency landing. The flight landed without further incident on runway 32L (13,000 feet by 200 feet, concrete) at 1419.</p> <p>Responding units from the Chicago Fire Department reported that the fire was extinguished by the time they observed the aircraft on landing rollout.</p> <p>Engine fragments were recovered from the residential area located under the aircraft's flight path northeast of the airport. In addition, a dead bird located within the debris path was also recovered. It was identified as a double-crested cormorant. It was estimated to weigh about 5 pounds intact, with a wing span of 52 inches and a length of 32 inches. Examination of bird debris subsequently recovered from the engine confirmed that at least two birds had been ingested.</p> <p>A detailed examination of the left engine was conducted. The engine exhibited fire damage in the area of the fuel/oil cooler. The outboard side of the cowling was burned through. Portions of the compressor blades were eroded and missing. The fan case was circumferentially fractured. The fan module was rotated approximately 45-degrees during the event. The fuel line from the fuel/oil cooler was pulled loose.</p> <p>Federal Aviation Administration certification standard for the engine required that it be able to withstand the impact of one 4-pound bird.</p>					
FACTUAL REPORT - AVIATION					
Page 1					

 National Transportation Safety Board FACTUAL REPORT AVIATION		NTSB ID: CHI04IA260			
		Occurrence Date: 09/16/2004			
		Occurrence Type: Incident			
Landing Facility/Approach Information					
Airport Name	Airport ID:	Airport Elevation	Runway Used	Runway Length	Runway Width
Chicago O'Hare Intl	ORD	668 Ft. MSL	32L	13000	200
Runway Surface Type: Concrete					
Runway Surface Condition: Dry					
Type Instrument Approach: Visual					
VFR Approach/Landing: Full Stop					
Aircraft Information					
Aircraft Manufacturer		Model/Series		Serial Number	
McDonnell Douglas		DC-9-82		49286	
Airworthiness Certificate(s): Transport					
Landing Gear Type: Retractable - Tricycle					
Homebuilt Aircraft? No	Number of Seats: 137	Certified Max Gross Wt. LBS		Number of Engines: 2	
Engine Type:	Engine Manufacturer:	Model/Series:	Rated Power:		
Turbo Fan	Pratt & Whitney	JT8D-217C	20000 LBS		
- Aircraft Inspection Information					
Type of Last Inspection	Date of Last Inspection	Time Since Last Inspection	Airframe Total Time		
Continuous Airworthiness	09/2004	3 Hours	59803 Hours		
- Emergency Locator Transmitter (ELT) Information					
ELT Installed? Yes	ELT Operated? No	ELT Aided in Locating Accident Site? No			
Owner/Operator Information					
Registered Aircraft Owner		Street Address			
American Airlines Inc		P.O. Box 619616			
		City	State	Zip Code	
		DFW Airport	TX	75261	
Operator of Aircraft		Street Address			
Same as Reg'd Aircraft Owner		Same as Reg'd Aircraft Owner			
		City	State	Zip Code	
Operator Does Business As:			Operator Designator Code: AALR		
- Type of U.S. Certificate(s) Held:					
Air Carrier Operating Certificate(s): Flag Carrier/Domestic					
Operating Certificate:			Operator Certificate:		
Regulation Flight Conducted Under: Part 121: Air Carrier					
Type of Flight Operation Conducted: Scheduled; Domestic; Passenger Only					
FACTUAL REPORT - AVIATION					

 <p>National Transportation Safety Board FACTUAL REPORT AVIATION</p>	NTSB ID: CHI04IA260
	Occurrence Date: 09/16/2004
	Occurrence Type: Incident

First Pilot Information

Name On File	City On File	State On File	Date of Birth	Age
-----------------	-----------------	------------------	---------------	-----

Sex: M	Seat Occupied: Left	Principal Profession: Civilian Pilot	Certificate Number: On File
--------	---------------------	--------------------------------------	-----------------------------

Certificate(s): Airline Transport; Flight Instructor; Flight Engineer

Airplane Rating(s): Multi-engine Land; Single-engine Land

Rotorcraft/Glider/LTA: None

Instrument Rating(s): Airplane

Instructor Rating(s): Airplane Multi-engine; Airplane Single-engine; Instrument Airplane

Type Rating/Endorsement for Accident/Incident Aircraft?	Current Biennial Flight Review?
---	---------------------------------

Medical Cert.: Class 1	Medical Cert. Status: Valid Medical--no waivers/lim.	Date of Last Medical Exam: 04/2004
------------------------	--	------------------------------------

- Flight Time Matrix	All A/C	This Make and Model	Airplane Single Engine	Airplane Multi-Engine	Night	Instrument		Rotorcraft	Glider	Lighter Than Air
						Actual	Simulated			
Total Time	12000	5772								
Pilot In Command(PIC)	8220	4700								
Instructor										
Last 90 Days										
Last 30 Days										
Last 24 Hours										

Seatbelt Used? Yes	Shoulder Harness Used? Yes	Toxicology Performed? No	Second Pilot? Yes
--------------------	----------------------------	--------------------------	-------------------

Flight Plan/Itinerary

Type of Flight Plan Filed: IFR

Departure Point Chicago	State IL	Airport Identifier ORD	Departure Time 1410	Time Zone CDT
----------------------------	-------------	---------------------------	------------------------	------------------

Destination Philadelphia	State PA	Airport Identifier PHL	
-----------------------------	-------------	---------------------------	--


Type of Clearance: IFR

Type of Airspace: Class B

Weather Information

Source of Briefing: Company

Method of Briefing: Teletype

 <p>National Transportation Safety Board FACTUAL REPORT AVIATION</p>	NTSB ID: CHI04IA260
	Occurrence Date: 09/16/2004
	Occurrence Type: Incident

Weather Information

WOF ID	Observation Time	Time Zone	WOF Elevation	WOF Distance From Accident Site	Direction From Accident Site
ORD	1456	CDT	668 Ft. MSL	4 NM	240 Deg. Mag.

Sky/Lowest Cloud Condition: Few 3500 Ft. AGL Condition of Light: Day

Lowest Ceiling: None Ft. AGL Visibility: 10 SM Altimeter: 30.00 "Hg

Temperature: 23 °C Dew Point: 10 °C Wind Direction: 10 Density Altitude: Ft.

Wind Speed: 7 Gusts: Weather Conditions at Accident Site: Visual Conditions

Visibility (RVR): Ft. Visibility (RVV) SM Intensity of Precipitation:

Restrictions to Visibility: None

Type of Precipitation: None

Accident Information

Aircraft Damage: Minor Aircraft Fire: In-flight Aircraft Explosion: None

Classification: U.S. Registered/U.S. Soil

- Injury Summary Matrix	Fatal	Serious	Minor	None	TOTAL
First Pilot				1	1
Second Pilot				1	1
Student Pilot					
Flight Instructor					
Check Pilot					
Flight Engineer					
Cabin Attendants				3	3
Other Crew					
Passengers				107	107
- TOTAL ABOARD -				112	112
Other Ground					
- GRAND TOTAL -				112	112

National Transportation Safety Board

FACTUAL REPORT

AVIATION



NTSB ID: CHI04IA260

Occurrence Date: 09/16/2004

Occurrence Type: Incident

Administrative Information

Investigator-In-Charge (IIC)

Tim Sorensen

Additional Persons Participating in This Accident/Incident Investigation:

Theodore R Willis
Airworthiness Inspector
FAA-O'Hare FSDO
9950 W. Lawrence Avenue -- Suite 400
Schiller Park, IL 60176