



Aviation Investigation Final Report

Location:	Memphis, Tennessee	Accident Number:	MIA02LA023
Date & Time:	November 20, 2001, 00:27 Local	Registration:	N277FE
Aircraft:	Boeing 727-233	Aircraft Damage:	Substantial
Defining Event:		Injuries:	5 None
Flight Conducted Under:	Part 121: Air carrier - Non-scheduled		

Analysis

The flightcrew reported that while on final approach for runway 9 at Memphis, at between 1,700 and 2,000 feet agl, at 250 knots, they encountered a flock of large birds. A bird penetrated the airplane under the captain's windshield and bird remains entered the cockpit. They continued to Memphis and landed without further incident. Inspection of the airplane by an FAA inspector after landing showed damage to the area below the captain's windshield and two areas of damage on the right inboard wing area, due to bird strikes. Radar data from the FAA, Memphis Air Route Traffic Control Center, showed the flight was at about position 35 degrees, 3 minutes, 34 seconds North latitude, and 90 degrees, 4 minutes, 59 seconds West longitude, or about 6 nautical miles west of Memphis International Airport, at the time of the encounter. The FAA, Memphis Approach Control, personnel stated that the Automatic Terminal Information Service, information Romeo was in effect at the time of the accident which contained the 2353 surface weather observation, and that there was no bird activity reported in this information. Examination of feathers recovered from the cockpit and wing area of the aircraft was performed by personnel at The Smithsonian Institute, Washington, D.C. The feathers were identified as coming from a Snow Goose, with an average weight for this species of 2,450 grams.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The inadvertent collision with birds while on final approach to land resulting in substantial damage to the airplane.

Findings

Occurrence #1: IN FLIGHT COLLISION WITH OBJECT

Phase of Operation: APPROACH - IAF TO FAF/OUTER MARKER (IFR)

Findings

1. OBJECT - BIRD(S)
2. (C) MISCELLANEOUS - INADVERTENT

Factual Information

On November 20, 2001, about 0027 central standard time, a Boeing 727-233, N277FE, registered to and operated by Federal Express Corporation, as flight 2287, a 14 CFR Part 121 domestic cargo flight from Colorado Springs, Colorado, to Memphis, Tennessee, collided with a flock of birds while on approach to land at Memphis International Airport. Visual meteorological conditions prevailed at the time and an instrument flight rules flight plan was filed. The airplane received substantial damage, and the airline transport-rated captain, first officer, flight engineer, and two passengers were not injured. The flight originated from Colorado Springs, on November 19, 2001, at 2247.

The flightcrew reported that while on final approach for runway 9 at Memphis, at between 1,700 and 2,000 feet agl., at 250 knots, they encountered a flock of large birds. A bird penetrated the airplane under the captain's windshield and bird remains entered the cockpit. They continued to Memphis and landed without further incident.

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Examination of feathers recovered from the cockpit and wing area of the aircraft was performed by Carla Dove, Smithsonian Institute, Washington, D.C. The feathers were identified as coming from Snow Goose (*Chen caerulescens*), with an average weight for this species of 2,450 grams. (See attached email from Carla Dove.)

Pilot Information

Certificate:	Airline transport; Flight engineer	Age:	41, Male
Airplane Rating(s):	Single-engine land; Multi-engine land	Seat Occupied:	Left
Other Aircraft Rating(s):	None	Restraint Used:	
Instrument Rating(s):	Airplane	Second Pilot Present:	Yes
Instructor Rating(s):	None	Toxicology Performed:	No
Medical Certification:	Class 1 Valid Medical--no waivers/lim.	Last FAA Medical Exam:	November 6, 2001
Occupational Pilot:	Yes	Last Flight Review or Equivalent:	January 12, 2001
Flight Time:	2280 hours (Total, all aircraft), 2280 hours (Total, this make and model), 490 hours (Pilot In Command, all aircraft), 72 hours (Last 90 days, all aircraft), 34 hours (Last 30 days, all aircraft), 2 hours (Last 24 hours, all aircraft)		

Co-pilot Information

Certificate:	Airline transport; Flight engineer	Age:	54, Male
Airplane Rating(s):	Single-engine land; Multi-engine land	Seat Occupied:	Right
Other Aircraft Rating(s):	None	Restraint Used:	
Instrument Rating(s):	Airplane	Second Pilot Present:	Yes
Instructor Rating(s):	None	Toxicology Performed:	No
Medical Certification:	Class 1 Valid Medical--no waivers/lim.	Last FAA Medical Exam:	March 7, 2001
Occupational Pilot:	Yes	Last Flight Review or Equivalent:	June 19, 2001
Flight Time:	1285 hours (Total, all aircraft), 1285 hours (Total, this make and model), 96 hours (Last 90 days, all aircraft), 34 hours (Last 30 days, all aircraft), 4 hours (Last 24 hours, all aircraft)		

Flight engineer Information

Certificate:	Airline transport; Flight engineer	Age:	33, Male
Airplane Rating(s):	Single-engine land; Multi-engine land	Seat Occupied:	Rear
Other Aircraft Rating(s):	Glider	Restraint Used:	
Instrument Rating(s):	Airplane	Second Pilot Present:	Yes
Instructor Rating(s):	None	Toxicology Performed:	No
Medical Certification:	Class 1 Valid Medical--no waivers/lim.	Last FAA Medical Exam:	July 23, 2001
Occupational Pilot:	Yes	Last Flight Review or Equivalent:	
Flight Time:	497 hours (Total, this make and model), 4 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Boeing	Registration:	N277FE
Model/Series:	727-233	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	
Airworthiness Certificate:	Transport	Serial Number:	22042
Landing Gear Type:	Retractable - Tricycle	Seats:	5
Date/Type of Last Inspection:	August 18, 2001 AAIP	Certified Max Gross Wt.:	197000 lbs
Time Since Last Inspection:	188 Hrs	Engines:	3 Turbo fan
Airframe Total Time:	36168 Hrs at time of accident	Engine Manufacturer:	P&W
ELT:	Not installed	Engine Model/Series:	JT8-17Q
Registered Owner:	Federal Express Corporation	Rated Power:	16000 Lbs thrust
Operator:		Operating Certificate(s) Held:	Air cargo, Supplemental
Operator Does Business As:		Operator Designator Code:	FDEA

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	Condition of Light:	Night/dark
Observation Facility, Elevation:	MEM,332 ft msl	Distance from Accident Site:	6 Nautical Miles
Observation Time:	00:53 Local	Direction from Accident Site:	90°
Lowest Cloud Condition:	Clear	Visibility	10 miles
Lowest Ceiling:	None	Visibility (RVR):	
Wind Speed/Gusts:	10 knots / 16 knots	Turbulence Type Forecast/Actual:	/
Wind Direction:	10°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	30.27 inches Hg	Temperature/Dew Point:	8°C / -1°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Colorado Spring, CO (COS)	Type of Flight Plan Filed:	IFR
Destination:	Memphis, TN (MEM)	Type of Clearance:	IFR
Departure Time:	22:47 Local	Type of Airspace:	Class D

Airport Information

Airport:	Memphis International MEM	Runway Surface Type:	
Airport Elevation:		Runway Surface Condition:	Unknown
Runway Used:		IFR Approach:	ILS
Runway Length/Width:		VFR Approach/Landing:	

Wreckage and Impact Information

Crew Injuries:	3 None	Aircraft Damage:	Substantial
Passenger Injuries:	2 None	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	5 None	Latitude, Longitude:	35.059444,-90.083053

Administrative Information

Investigator In Charge (IIC):	Kennedy, Jeff
Additional Participating Persons:	Steven Brown; FAA FSDO; Memphis, TN
Original Publish Date:	February 20, 2002
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.nts.gov/Docket?ProjectID=53824

The National Transportation Safety Board (NTSB) is an independent federal agency charged by Congress with investigating every civil aviation accident in the United States and significant events in other modes of transportation—railroad, transit, highway, marine, pipeline, and commercial space. We determine the probable causes of the accidents and events we investigate, and issue safety recommendations aimed at preventing future occurrences. In addition, we conduct transportation safety research studies and offer information and other assistance to family members and survivors for each accident or event we investigate. We also serve as the appellate authority for enforcement actions involving aviation and mariner certificates issued by the Federal Aviation Administration (FAA) and US Coast Guard, and we adjudicate appeals of civil penalty actions taken by the FAA.

The NTSB does not assign fault or blame for an accident or incident; rather, as specified by NTSB regulation, “accident/incident investigations are fact-finding proceedings with no formal issues and no adverse parties ... and are not conducted for the purpose of determining the rights or liabilities of any person” (Title 49 *Code of Federal Regulations* section 831.4). Assignment of fault or legal liability is not relevant to the NTSB’s statutory mission to improve transportation safety by investigating accidents and incidents and issuing safety recommendations. In addition, statutory language prohibits the admission into evidence or use of any part of an NTSB report related to an accident in a civil action for damages resulting from a matter mentioned in the report (Title 49 *United States Code* section 1154(b)). A factual report that may be admissible under 49 *United States Code* section 1154(b) is available [here](#).