



# National Transportation Safety Board Aviation Accident Final Report

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<b>Location:</b>	Phoenix, AZ	<b>Accident Number:</b>	WPR10LA044
<b>Date &amp; Time:</b>	11/02/2009, 0850 MST	<b>Registration:</b>	N909DA
<b>Aircraft:</b>	MCDONNELL DOUGLAS MD-90-30	<b>Aircraft Damage:</b>	Substantial
<b>Defining Event:</b>	Birdstrike	<b>Injuries:</b>	70 None
<b>Flight Conducted Under:</b>	Part 121: Air Carrier - Scheduled		

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## Analysis

The flight crew reported that during climb to cruise they heard a loud bang, followed by a "pop" in the pressurization and loud noise within the cockpit. The first officer stated that prior to the loud bang he observed "several black dots" directly in front of him. The flight crew declared an emergency and diverted to their departure airport, where they landed uneventfully.

Examination of the airplane by a Federal Aviation Administration inspector revealed an approximately 18 inch by 21 inch tear in fuselage skin located aft of the right side flight deck eyebrow window and structural damage to the upper portion of the fuselage. Bird residue and feathers were observed near the torn area of fuselage skin. The Smithsonian National Museum of Natural History Feather Identification Laboratory performed DNA analysis, microscopic examination, and whole feather comparisons with museum study skins on the recovered residue and feathers. The analysis identified the residue and feathers as the remains of a Western Grebe (*Aechmophorus occidentalis*). The weight range for the species complex is recorded from 906 to 1,429 grams, with an average weight of 3.3 pounds.

## Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: An in-flight collision with birds.

## Findings

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<b>Environmental issues</b>	Animal(s)/bird(s) - Effect on operation (Cause)
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## Factual Information

On November 2, 2009, about 0850 mountain standard time, a McDonnell Douglas MD-90-30, N909DA, was substantially damaged following an in-flight collision with birds during climb to cruise flight 25 miles northeast of the Phoenix Sky Harbor International Airport (PHX), Phoenix, Arizona. The airplane was registered to and operated by Delta Airlines Inc., Atlanta, Georgia, under the provisions of Title 14 Code of Federal Regulations Part 121 as flight 1232. The airline transport rated captain and first officer, three cabin attendants, and 65 passengers were not injured. Visual meteorological conditions prevailed and an instrument flight rules (IFR) flight plan was filed for the scheduled passenger flight. The cross-country flight originated from PHX at 0841 with an intended destination of Salt Lake City, Utah.

The captain reported that while climbing through about 12,000 feet, he heard a large bang with a "pop" in the pressurization. Subsequently, the captain noticed that the noise level was very loud within the cockpit. After a brief discussion with the first officer, the flight crew "decided it was a bird strike." The first officer reported that prior to the loud bang; he noticed "several black dots directly ahead of me." The flight crew declared an emergency and returned to PHX. The flight landed uneventfully about 10 minutes later.

Examination of the airplane by a Federal Aviation Administration inspector revealed an approximate 18 inch by 21 inch tear in fuselage skin located aft of the right side flight deck eyebrow window and structural damage to the upper portion of the fuselage. Bird residue and feathers were observed near the torn area of fuselage skin. Additional damage and bird residue was noted on the lower right side of fuselage.

The Smithsonian National Museum of Natural History Feather Identification Laboratory performed DNS analysis, microscopic examination, and whole feather comparisons with museum study skins on the recovered residue and feathers. The analysis identified the residue and feathers as the remains of a Western Grebe (*Aechmophorus occidentalis*). The weight range for the species complex is recorded from 906 to 1429 grams, with an average weight of 3.3 pounds.

## History of Flight

Enroute-climb to cruise

Birdstrike (Defining event)

## Pilot Information

<b>Certificate:</b>	Airline Transport; Flight Engineer	<b>Age:</b>	50, Male
<b>Airplane Rating(s):</b>	Multi-engine Land; Single-engine Land	<b>Seat Occupied:</b>	Left
<b>Other Aircraft Rating(s):</b>	None	<b>Restraint Used:</b>	Seatbelt, Shoulder harness
<b>Instrument Rating(s):</b>	Airplane	<b>Second Pilot Present:</b>	Yes
<b>Instructor Rating(s):</b>	None	<b>Toxicology Performed:</b>	No
<b>Medical Certification:</b>	Class 1 Without Waivers/Limitations	<b>Last Medical Exam:</b>	09/16/2009
<b>Occupational Pilot:</b>	Yes	<b>Last Flight Review or Equivalent:</b>	05/20/2009
<b>Flight Time:</b>	11178 hours (Total, all aircraft), 2870 hours (Total, this make and model), 149 hours (Last 90 days, all aircraft), 3 hours (Last 24 hours, all aircraft)		

## Co-Pilot Information

<b>Certificate:</b>	Airline Transport; Commercial	<b>Age:</b>	41, Male
<b>Airplane Rating(s):</b>	Multi-engine Land; Single-engine Land	<b>Seat Occupied:</b>	Right
<b>Other Aircraft Rating(s):</b>	None	<b>Restraint Used:</b>	Seatbelt, Shoulder harness
<b>Instrument Rating(s):</b>	Airplane	<b>Second Pilot Present:</b>	Yes
<b>Instructor Rating(s):</b>	None	<b>Toxicology Performed:</b>	No
<b>Medical Certification:</b>	Class 1 Without Waivers/Limitations	<b>Last Medical Exam:</b>	01/21/2009
<b>Occupational Pilot:</b>	Yes	<b>Last Flight Review or Equivalent:</b>	07/24/2009
<b>Flight Time:</b>	2182 hours (Total, all aircraft), 1952 hours (Total, this make and model), 113 hours (Last 90 days, all aircraft), 3 hours (Last 24 hours, all aircraft)		

## Aircraft and Owner/Operator Information

<b>Aircraft Manufacturer:</b>	MCDONNELL DOUGLAS	<b>Registration:</b>	N909DA
<b>Model/Series:</b>	MD-90-30	<b>Aircraft Category:</b>	Airplane
<b>Year of Manufacture:</b>		<b>Amateur Built:</b>	No
<b>Airworthiness Certificate:</b>	Transport	<b>Serial Number:</b>	53389
<b>Landing Gear Type:</b>	Retractable - Tricycle	<b>Seats:</b>	158
<b>Date/Type of Last Inspection:</b>	10/31/2009, Continuous Airworthiness	<b>Certified Max Gross Wt.:</b>	161000 lbs
<b>Time Since Last Inspection:</b>		<b>Engines:</b>	2 Turbo Jet
<b>Airframe Total Time:</b>	38842 Hours	<b>Engine Manufacturer:</b>	IAE
<b>ELT:</b>	Installed, not activated	<b>Engine Model/Series:</b>	V2500SERIES
<b>Registered Owner:</b>	DELTA AIR LINES INC	<b>Rated Power:</b>	0 lbs
<b>Operator:</b>	DELTA AIR LINES INC	<b>Air Carrier Operating Certificate:</b>	Flag carrier (121)

## Meteorological Information and Flight Plan

<b>Observation Facility, Elevation:</b>	PHX, 1135 ft msl	<b>Observation Time:</b>	0851 MST
<b>Distance from Accident Site:</b>	23 Nautical Miles	<b>Condition of Light:</b>	Day
<b>Direction from Accident Site:</b>	30°	<b>Conditions at Accident Site:</b>	Visual Conditions
<b>Lowest Cloud Condition:</b>	Clear	<b>Temperature/Dew Point:</b>	19° C / -1° C
<b>Lowest Ceiling:</b>	None	<b>Visibility</b>	10 Miles
<b>Wind Speed/Gusts, Direction:</b>	3 knots, 90°	<b>Visibility (RVR):</b>	
<b>Altimeter Setting:</b>	30.11 inches Hg	<b>Visibility (RVV):</b>	
<b>Precipitation and Obscuration:</b>	No Obscuration; No Precipitation		
<b>Departure Point:</b>	Phoenix, AZ (PHX)	<b>Type of Flight Plan Filed:</b>	IFR
<b>Destination:</b>	Salt Lake City, UT (SLC)	<b>Type of Clearance:</b>	IFR
<b>Departure Time:</b>	0841 MST	<b>Type of Airspace:</b>	

## Wreckage and Impact Information

<b>Crew Injuries:</b>	5 None	<b>Aircraft Damage:</b>	Substantial
<b>Passenger Injuries:</b>	65 None	<b>Aircraft Fire:</b>	None
<b>Ground Injuries:</b>	N/A	<b>Aircraft Explosion:</b>	None
<b>Total Injuries:</b>	70 None		

## Administrative Information

**Investigator In Charge (IIC):** Joshua Cawthra **Adopted Date:** 05/06/2010

**Additional Participating Persons:** John Sill; Federal Aviation Administration; Scottsdale, AZ

**Publish Date:** 05/06/2010

**Investigation Docket:** <http://dms.nts.gov/pubdms/search/dockList.cfm?mKey=74997>

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