Aviation Investigation Final Report

Location:	St. Louis, Missouri	**Accident Number:**	DCA24LA051
Date & Time:	December 19, 2023, 17:30 Local	**Registration:**	N8514F
Aircraft:	Boeing 737	**Aircraft Damage:**	Substantial
Defining Event:	Birdstrike	**Injuries:**	107 None
Flight Conducted Under:	Part 121: Air carrier - Scheduled		

Analysis

Southwest Airlines flight 2217 struck a bird while climbing though 6,000 ft. after departure from the St. Louis Lambert International Airport (STL), St. Louis, Missouri.

According to the flight crew, during the climb they saw a “quick flash” pass diagonally from right to left across the nose of the airplane, followed by a “thud” sound. Which they surmised was a bird that had impacted the nose or belly area of the airplane. After confirming that the flight controls, engines, and pressurization system were operating normally, they decided to continue to their destination.

They advised the company of a possible bird strike via an aircraft communicating and reporting system (ACARS) message to coordinate with maintenance for an inspection and damage assessment upon landing. The flight continued normally with no change in the performance or operation of the airplane and landed without further incident.

After landing the crew performed a post-flight walk around to search for any evidence of a bird strike, when they discovered impact damage to the leading edge of the left horizontal stabilizer (see figure 1). Maintenance personnel subsequently discovered a crack, about 12 inches long, in the left horizonal stabilizer lower spar chord. Although the bird impact caused substantial damage to the left horizontal stabilizer, the flight crew was able to control the airplane and the captain reported that “the flight controls and everything felt normal”.

Figure 1 – Photo of the left horizontal stabilizer leading edge showing the location of the bird impact. (Source: Southwest Airlines)

A review of pilot reports near the time and location of the event revealed that no prior information about bird activity had been reported.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be:

A bird strike during climbout.

Findings

Environmental issues	Animal(s)/bird(s) - Effect on equipment

Factual Information

History of Flight

Enroute-climb to cruise	Birdstrike (Defining event)

Pilot Information

Certificate:	Airline transport	**Age:**	54,Male
Airplane Rating(s):	Single-engine land; Multi-engine land	**Seat Occupied:**	Left
Other Aircraft Rating(s):	None	**Restraint Used:**	5-point
Instrument Rating(s):	Airplane	**Second Pilot Present:**	Yes
Instructor Rating(s):	None	**Toxicology Performed:**	
Medical Certification:	Class 1 With waivers/limitations	**Last FAA Medical Exam:**	August 21, 2023
Occupational Pilot:	Yes	**Last Flight Review or Equivalent:**	April 16, 2023
Flight Time:	21561 hours (Total, all aircraft), 9460 hours (Total, this make and model), 3304 hours (Pilot In Command, all aircraft), 123 hours (Last 90 days, all aircraft), 26 hours (Last 30 days, all aircraft)		

Co-pilot Information

Certificate:	Airline transport	**Age:**	26,Male
Airplane Rating(s):	Single-engine land; Multi-engine land	**Seat Occupied:**	Right
Other Aircraft Rating(s):	None	**Restraint Used:**	5-point
Instrument Rating(s):	Airplane	**Second Pilot Present:**	Yes
Instructor Rating(s):	Airplane single-engine; Instrument airplane	**Toxicology Performed:**	
Medical Certification:	Class 1 Without waivers/limitations	**Last FAA Medical Exam:**	August 1, 2023
Occupational Pilot:	Yes	**Last Flight Review or Equivalent:**	September 27, 2023
Flight Time:	1923 hours (Total, all aircraft), 222 hours (Total, this make and model), 1012 hours (Pilot In Command, all aircraft), 222 hours (Last 90 days, all aircraft), 64 hours (Last 30 days, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Boeing	**Registration:**	N8514F
Model/Series:	737 800	**Aircraft Category:**	Airplane
Year of Manufacture:	2016	**Amateur Built:**	
Airworthiness Certificate:	Transport	**Serial Number:**	36975
Landing Gear Type:	Retractable - Tricycle	**Seats:**	182
Date/Type of Last Inspection:	December 13, 2023 Continuous airworthiness	**Certified Max Gross Wt.:**	174700 lbs
Time Since Last Inspection:		**Engines:**	2 Turbo fan
Airframe Total Time:	23092 Hrs at time of accident	**Engine Manufacturer:**	CFM INTL
ELT:	C126 installed, not activated	**Engine Model/Series:**	CFM56-7B27E/F
Registered Owner:	SOUTHWEST AIRLINES CO	**Rated Power:**	27300 Lbs thrust
Operator:	SOUTHWEST AIRLINES CO	**Operating Certificate(s) Held:**	Flag carrier (121)

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Dusk
Observation Facility, Elevation:	KSTL,531 ft msl	**Distance from Accident Site:**	0 Nautical Miles
Observation Time:	16:51 Local	**Direction from Accident Site:**	325°
Lowest Cloud Condition:		**Visibility**	10 miles
Lowest Ceiling:	Broken / 24000 ft AGL	**Visibility (RVR):**	
Wind Speed/Gusts:	9 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	140°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	30.25 inches Hg	**Temperature/Dew Point:**	4°C / -8°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	St. Louis, MO	**Type of Flight Plan Filed:**	IFR
Destination:	Chicago, IL (MDW)	**Type of Clearance:**	IFR
Departure Time:		**Type of Airspace:**	Class B

Wreckage and Impact Information

Crew Injuries:	6 None	**Aircraft Damage:**	Substantial
Passenger Injuries:	101 None	**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	107 None	**Latitude, Longitude:**	38.747222,-90.361389(est)

Administrative Information

Investigator In Charge (IIC):	Brazy, Douglass
Additional Participating Persons:	Dave Keenan; FAA/AVP110; Washington, DC
Original Publish Date:	March 12, 2024
Last Revision Date:	
Investigation Class:	Class 4
Note:	The NTSB did not travel to the scene of this accident.
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=193561