



AVIATION



HIGHWAY



MARINE



RAILROAD



PIPELINE

Aviation Investigation Final Report

Location:	Phoenix, Arizona	Accident Number:	DCA18CA289
Date & Time:	September 10, 2018, 21:00 Local	Registration:	N950NN
Aircraft:	Boeing 737	Aircraft Damage:	None
Defining Event:	Aircraft wake turb encounter	Injuries:	1 Serious, 2 None
Flight Conducted Under:	Part 121: Air carrier - Scheduled		

Analysis

On September 10, 2018, at 9:00 pm Mountain Standard Time (MST), American Airlines flight 2197, a Boeing 737-800, N950NN, encountered wake turbulence while descending through 3,100 feet on approach to the Phoenix Sky Harbor International Airport (KPHX), Phoenix, Arizona. A flight attendant was securing items in the galley and was seriously injured as a result of the turbulence. There were no injuries to the other passengers or crew, and the airplane was not damaged. The flight was operating under 14 CFR Part 121 as a regularly scheduled passenger flight from Seattle-Tacoma International Airport (KSEA), Seattle, Washington, to KPHX.

According to the flight crew, the seat belt sign was on, and the "prepare for landing" announcement was made to the flight attendants. The airplane was approximately three miles behind a narrow body Airbus, in landing configuration when the turbulence occurred. After landing, the flight crew were notified that one of the flight attendants had been injured. Paramedics met the flight at the gate and the flight attendant was transported to the hospital where she was diagnosed with a broken left rib.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: an inadvertent encounter with wake turbulence.

Findings

Environmental issues	Wake turbulence - Effect on personnel
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Factual Information

History of Flight

Approach	Aircraft wake turb encounter (Defining event)
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Information

Certificate:	Age:
Airplane Rating(s):	Seat Occupied:
Other Aircraft Rating(s):	Restraint Used:
Instrument Rating(s):	Second Pilot Present:
Instructor Rating(s):	Toxicology Performed:
Medical Certification:	Last FAA Medical Exam:
Occupational Pilot:	Last Flight Review or Equivalent:
Flight Time:	

Aircraft and Owner/Operator Information

Aircraft Make:	Boeing	Registration:	N950NN
Model/Series:	737 823	Aircraft Category:	Airplane
Year of Manufacture:	2014	Amateur Built:	
Airworthiness Certificate:	Transport; Utility	Serial Number:	31194
Landing Gear Type:	Retractable - Tricycle	Seats:	169
Date/Type of Last Inspection:	August 28, 2018	Certified Max Gross Wt.:	174200 lbs
Time Since Last Inspection:		Engines:	2
Airframe Total Time:	14425 Hrs at time of accident	Engine Manufacturer:	Cfm Intl
ELT:	C126 installed, not activated	Engine Model/Series:	CFM56-7B24E
Registered Owner:		Rated Power:	
Operator:		Operating Certificate(s) Held:	Flag carrier (121)

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	Condition of Light:	Night
Observation Facility, Elevation:	KPHX	Distance from Accident Site:	
Observation Time:	03:51 Local	Direction from Accident Site:	88°
Lowest Cloud Condition:	Clear	Visibility	
Lowest Ceiling:		Visibility (RVR):	
Wind Speed/Gusts:	/	Turbulence Type Forecast/Actual:	/
Wind Direction:		Turbulence Severity Forecast/Actual:	/
Altimeter Setting:		Temperature/Dew Point:	
Precipitation and Obscuration:			
Departure Point:	Seattle, WA (SEA)	Type of Flight Plan Filed:	IFR
Destination:	Phoenix, AZ (PHX)	Type of Clearance:	IFR
Departure Time:	18:48 Local	Type of Airspace:	Class B

Airport Information

Airport:	Phoenix Sky Harbor Intl PHX	Runway Surface Type:	Concrete
Airport Elevation:	1134 ft msl	Runway Surface Condition:	Unknown
Runway Used:	26	IFR Approach:	Visual
Runway Length/Width:	11489 ft / 150 ft	VFR Approach/Landing:	None

Wreckage and Impact Information

Crew Injuries:	1 Serious, 2 None	Aircraft Damage:	None
Passenger Injuries:		Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	1 Serious, 2 None	Latitude, Longitude:	33.440555,-111.835556

Administrative Information

Investigator In Charge (IIC): English, William

Additional Participating Persons:

Original Publish Date: April 22, 2020

Note: This accident report documents the factual circumstances of this accident as described to the NTSB.

Investigation Docket: <https://data.nts.gov/Docket?ProjectID=98336>

The National Transportation Safety Board (NTSB), established in 1967, is an independent federal agency mandated by Congress through the Independent Safety Board Act of 1974 to investigate transportation accidents, determine the probable causes of the accidents, issue safety recommendations, study transportation safety issues, and evaluate the safety effectiveness of government agencies involved in transportation. The NTSB makes public its actions and decisions through accident reports, safety studies, special investigation reports, safety recommendations, and statistical reviews.

The Independent Safety Board Act, as codified at 49 U.S.C. Section 1154(b), precludes the admission into evidence or use of any part of an NTSB report related to an incident or accident in a civil action for damages resulting from a matter mentioned in the report. A factual report that may be admissible under 49 U.S.C. § 1154(b) is available [here](#).