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## Turbulence injury, Boeing 757-223, April 7, 1996

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**Micro-summary:** This Boeing 757-223 experienced turbulence in cruise, breaking a flight attendant's leg.

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**Event Date:** 1996-04-07 at 2000 EDT


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


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


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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.
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| <br><b>National Transportation Safety Board</b><br><b>FACTUAL REPORT</b><br><b>AVIATION</b>   |  | NTSB ID: IAD96LA058             |                                  | Aircraft Registration Number: N653A |                  |
|  |  | Occurrence Date: 04/07/1996     |                                  | Most Critical Injury: Serious       |                  |
|  |  | Occurrence Type: Accident       |                                  | Investigated By: NTSB               |                  |
| <b>Location/Time</b>   |  |                                 |                                  |                                     |                  |
| Nearest City/Place<br>ATLANTIC OCEAN   |  | State<br>AO                     | Zip Code<br>00000                | Local Time<br>2000                  | Time Zone<br>EDT |
| Airport Proximity: Off Airport/Airstrip  |  | Distance From Landing Facility: |                                  | Direction From Airport:             |                  |
| <b>Aircraft Information Summary</b>  |  |                                 |                                  |                                     |                  |
| Aircraft Manufacturer<br>Boeing  |  | Model/Series<br>757-200         |                                  | Type of Aircraft<br>Airplane        |                  |
| Sightseeing Flight: No   |  |                                 | Air Medical Transport Flight: No |                                     |                  |
| <b>Narrative</b>   |  |                                 |                                  |                                     |                  |
| <p>Brief narrative statement of facts, conditions and circumstances pertinent to the accident/incident:</p> <p>On April 7, 1996 at about 2000 eastern daylight time, a Boeing 757-223, N653A, operated by American Airlines as Flight 935, encountered severe turbulence while in cruise flight at 31,000 feet mean sea level (msl,) approximately 300 miles west southwest of Bermuda. The airplane sustained no damage, and the two pilots, four flight attendants and 187 passengers reported no injuries. One flight attendant received a serious injury. The airplane diverted to Bermuda and landed without further incident. The international passenger flight was being operated under 14 CFR Part 121, and operated on an IFR flight plan. The flight originated from John F. Kennedy International Airport, in New York, New York, at 1903, with an intended destination of Caracas, Venezuela.</p> <p>The pilots reported that the flight had been uneventful and smooth, until the unexpected encounter with severe turbulence. Company personnel indicated that during the brief encounter with turbulence, one of the aisle carts became airborne and struck a flight attendant's leg when it came back down to the floor. The flight attendant received a leg fracture. There were no other reported injuries. There was no forecast for turbulence for the planned route of flight.</p> |  |                                 |                                  |                                     |                  |
| FACTUAL REPORT - AVIATION  |  |                                 |                                  |                                     |                  |

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| <br><b>National Transportation Safety Board</b><br><b>FACTUAL REPORT</b><br><b>AVIATION</b> |                                     | NTSB ID: IAD96LA058                            |                                |                        |              |
|  |                                     | Occurrence Date: 04/07/1996                    |                                |                        |              |
|  |                                     | Occurrence Type: Accident                      |                                |                        |              |
| <b>Landing Facility/Approach Information</b>   |                                     |  |                                |                        |              |
| Airport Name   | Airport ID:                         | Airport Elevation<br>Ft. MSL                   | Runway Used<br>0               | Runway Length          | Runway Width |
| Runway Surface Type:   |                                     |  |                                |                        |              |
| Runway Surface Condition:  |                                     |  |                                |                        |              |
| Type Instrument Approach: NONE   |                                     |  |                                |                        |              |
| VFR Approach/Landing: None   |                                     |  |                                |                        |              |
| <b>Aircraft Information</b>  |                                     |  |                                |                        |              |
| Aircraft Manufacturer<br>Boeing  |                                     | Model/Series<br>757-200                        |                                | Serial Number<br>24611 |              |
| Airworthiness Certificate(s): Transport  |                                     |  |                                |                        |              |
| Landing Gear Type: Retractable - Tricycle  |                                     |  |                                |                        |              |
| Homebuilt Aircraft? No   | Number of Seats: 197                | Certified Max Gross Wt.                        | 240000 LBS                     | Number of Engines: 2   |              |
| Engine Type:<br>Turbo Fan  | Engine Manufacturer:<br>Rolls-Royce | Model/Series:<br>RB211-535E4B                  | Rated Power:<br>43100 LBS      |                        |              |
| - Aircraft Inspection Information  |                                     |  |                                |                        |              |
| Type of Last Inspection<br>Continuous Airworthiness  | Date of Last Inspection             | Time Since Last Inspection<br>Hours            | Airframe Total Time<br>Hours   |                        |              |
| - Emergency Locator Transmitter (ELT) Information  |                                     |  |                                |                        |              |
| ELT Installed?   | ELT Operated?                       | ELT Aided in Locating Accident Site?           |                                |                        |              |
| <b>Owner/Operator Information</b>  |                                     |  |                                |                        |              |
| Registered Aircraft Owner<br>AMERICAN AIRLINES   |                                     | Street Address<br>P.O. BOX 619616              |                                |                        |              |
|  |                                     | City<br>DFW AIRPORT                            | State<br>TX                    | Zip Code<br>75261      |              |
| Operator of Aircraft<br>Same as Reg'd Aircraft Owner   |                                     | Street Address<br>Same as Reg'd Aircraft Owner |                                |                        |              |
|  |                                     | City   | State                          | Zip Code               |              |
| Operator Does Business As:   |                                     |  | Operator Designator Code: AALA |                        |              |
| - 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; International; Passenger Only   |                                     |  |                                |                        |              |
| FACTUAL REPORT - AVIATION  |                                     |  |                                |                        |              |

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|  <p><b>National Transportation Safety Board</b><br/><b>FACTUAL REPORT</b><br/><b>AVIATION</b></p> | NTSB ID: IAD96LA058         |
|  | Occurrence Date: 04/07/1996 |
|  | Occurrence Type: Accident   |

**First Pilot Information**

|                 |                 |                  |                          |           |
|-----------------|-----------------|------------------|--------------------------|-----------|
| Name<br>On File | City<br>On File | State<br>On File | Date of Birth<br>On File | Age<br>46 |
|-----------------|-----------------|------------------|--------------------------|-----------|

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

Certificate(s): Airline Transport

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

Rotorcraft/Glider/LTA: None

Instrument Rating(s): Airplane

Instructor Rating(s): None

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

|                        |  |                                    |
|------------------------|--|------------------------------------|
| Medical Cert.: Class 1 | Medical Cert. Status: Valid Medical--no waivers/lim. | Date of Last Medical Exam: 02/1996 |
|------------------------|--|------------------------------------|

| - 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            | 5243    | 2726                |                        |                       |       |            |           |            |        |                  |
| Pilot In Command(PIC) |         |                     |                        |                       |       |            |           |            |        |                  |
| 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<br>NEW YORK | State<br>NY | Airport Identifier<br>JFK | Departure Time<br>1903 | Time Zone<br>EDT |
|-----------------------------|-------------|---------------------------|------------------------|------------------|

|                        |             |                           |  |
|------------------------|-------------|---------------------------|--|
| Destination<br>CARACAS | State<br>OF | Airport Identifier<br>CCS |  |
|------------------------|-------------|---------------------------|--|


Type of Clearance: IFR

Type of Airspace: Class A

**Weather Information**

Source of Briefing:  
Company

Method of Briefing:

|  |                             |
|--|-----------------------------|
|  <p><b>National Transportation Safety Board</b><br/><b>FACTUAL REPORT</b><br/><b>AVIATION</b></p> | NTSB ID: IAD96LA058         |
|  | Occurrence Date: 04/07/1996 |
|  | Occurrence Type: Accident   |

**Weather Information**

|                                     |                       |                                      |               |                                 |                              |
|-------------------------------------|-----------------------|--------------------------------------|---------------|---------------------------------|------------------------------|
| WOF ID                              | Observation Time      | Time Zone                            | WOF Elevation | WOF Distance From Accident Site | Direction From Accident Site |
|                                     | 0000                  |                                      | 0 Ft. MSL     | 0 NM                            | 0 Deg. Mag.                  |
| Sky/Lowest Cloud Condition: Unknown |                       |                                      | 0 Ft. AGL     | Condition of Light: Night/Dark  |                              |
| Lowest Ceiling: Unknown             |                       |                                      | 0 Ft. AGL     | Visibility: 0 SM                | Altimeter: "Hg               |
| Temperature: °C                     | Dew Point: °C         | Wind Direction:                      |               | Density Altitude: Ft.           |                              |
| Wind Speed:                         | Gusts:                | Weather Conditions at Accident Site: |               |                                 |                              |
| Visibility (RVR): 0 Ft.             | Visibility (RVV) 0 SM | Intensity of Precipitation: Unknown  |               |                                 |                              |
| Restrictions to Visibility:         |                       |                                      |               |                                 |                              |
| Type of Precipitation: None         |                       |                                      |               |                                 |                              |

**Accident Information**

|                       |                     |                          |
|-----------------------|---------------------|--------------------------|
| Aircraft Damage: None | Aircraft Fire: None | 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        |       | 1       |       | 4    | 5     |
| Other Crew              |       |         |       |      |       |
| Passengers              |       |         |       | 187  | 187   |
| - TOTAL ABOARD -        |       | 1       |       | 193  | 194   |
| Other Ground            | 0     | 0       | 0     |      | 0     |
| - GRAND TOTAL -         | 0     | 1       | 0     | 193  | 194   |

National Transportation Safety Board

**FACTUAL REPORT**

**AVIATION**



NTSB ID: IAD96LA058

Occurrence Date: 04/07/1996

Occurrence Type: Accident

Administrative Information

Investigator-In-Charge (IIC)

JODI L. REEVES

Additional Persons Participating in This Accident/Incident Investigation:

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DFW AIRPORT, TX 75261