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## Turbulence injury, Boeing 767-232, September 29, 2004

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**Micro-summary:** This Boeing 767-232 encountered turbulence while in cruise, injuring a flight attendant.

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**Event Date:** 2004-09-29 at 1345 EDT


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

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

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  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!***
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		NTSB ID: MIA04LA134		Aircraft Registration Number: N109DL	
		Occurrence Date: 09/29/2004		Most Critical Injury: Serious	
		Occurrence Type: Accident		Investigated By: NTSB	
Location/Time					
Nearest City/Place Caribbean Sea		State	Zip Code	Local Time 1345	Time Zone EDT
Airport Proximity: Off Airport/Airstrip		Distance From Landing Facility:		Direction From Airport:	
Aircraft Information Summary					
Aircraft Manufacturer Boeing		Model/Series 767-232		Type of Aircraft Airplane	
Sightseeing Flight: No			Air Medical Transport Flight: No		
Narrative					
<p>Brief narrative statement of facts, conditions and circumstances pertinent to the accident/incident:</p> <p>On September 29, 2004, about 1345 eastern daylight time, a Boeing 767-232, N109DL, registered to and operated by Delta Air Lines Inc., as a Title 14 CFR Part 121 scheduled international air carrier passenger flight from Atlanta, Georgia, to Aruba, Netherlands Antilles, had an encounter with turbulence, while over the Caribbean Sea. Visual meteorological conditions prevailed, and an instrument flight rules flight plan was filed. The airline transport-rated pilot, first officer, 4 flight attendants, and 138 passengers were not injured. One flight attendant was seriously injured, and the airplane was not damaged. The flight originated in Atlanta, Georgia, the same day, about 1029.</p> <p>The captain stated that at the time of the accident they were in cruise flight at FL 370, in instrument meteorological conditions. He said they were about 130 miles north of Aruba, and the seat belt sign was illuminated, and in addition, he had made a public address informing the passengers of light choppy turbulence, and requested they stay seated with their seat belts securely fastened. He further stated that they then encountered very brief moderate turbulence, of about a 3-second duration, after which he called back to the cabin, and was told that a flight attendant had been injured.</p> <p>The first officer stated that he was the pilot-not-flying, and that prior to the turbulence event the captain had illuminated the seat belt sign, and had made a public address. The first officer said that he contacted the flight attendants via the interphone and told them that they should stay seated for a while. He said he then requested and received clearance to deviate around known weather ahead of their flight path. The first officer said that they did not penetrate any weather as seen on the airplane's display, but that they were in instrument meteorological conditions, and did not encounter turbulence. He said they returned to visual meteorological conditions momentarily, and then another cloud was in front of them, but there was no precipitation associated with that cloud on the radar display. He said there did not appear to be enough time to maneuver around this cloud, and was within the cloud for about 5 seconds at which time the turbulence occurred. He said they then received a call on the interphone that a flight attendant was in the aisle and appeared to be injured.</p> <p>One flight attendant stated that they were about 100 miles from landing the airplane encountered turbulence so strong that the cart in the aft galley toppled and injuries were suffered by three flight attendants. The flight attendant further stated that the time between the captains announcement to everyone to sit down and the actual turbulence was a mere few seconds.</p> <p>A second flight attendant stated that she along with two other flight attendants were in the aft galley when the seat belt light was turned on to indicate initial approach when about 20 minutes away from Aruba. She further stated that there was normal light chop as they prepared the galley for landing. In addition, all passengers were seated, when suddenly they encountered severe turbulence and the airplane dropped suddenly and jolted several times. She said that the other two</p>					
FACTUAL REPORT - AVIATION					
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National Transportation Safety Board

**FACTUAL REPORT**

**AVIATION**

SAFETY BOARD

NTSB ID: MIA04LA134

Occurrence Date: 09/29/2004


Occurrence Type: Accident


**Narrative** (Continued)

flight attendants were thrown toward the 2 left door, and she was thrown to the 2 right door.

A third flight attendant said that approximately 100 miles out from Aruba the captain turned on the seat belt sign and asked every one to be seated. She said the two flight attendants in the back were cleaning and stowing catering items and were not seated.

Examination of the flight data recorder showed multiple vertical acceleration cycles between about positive 1.8 and 0.0 Gs, associated with the event.

 <b>National Transportation Safety Board</b> <b>FACTUAL REPORT</b> <b>AVIATION</b>		NTSB ID: MIA04LA134				
		Occurrence Date: 09/29/2004				
		Occurrence Type: Accident				
<b>Landing Facility/Approach Information</b>						
Airport Name		Airport ID:	Airport Elevation	Runway Used	Runway Length	Runway Width
Aruba, Netherlands Antilles		AUA	Ft. MSL	NA		
Runway Surface Type:						
Runway Surface Condition:						
Type Instrument Approach: Unknown						
VFR Approach/Landing: Unknown						
<b>Aircraft Information</b>						
Aircraft Manufacturer		Model/Series		Serial Number		
Boeing		767-232		22221		
Airworthiness Certificate(s): Transport						
Landing Gear Type: Retractable - Tricycle						
Homebuilt Aircraft? No		Number of Seats: 213	Certified Max Gross Wt. 300000 LBS		Number of Engines: 2	
Engine Type:		Engine Manufacturer:		Model/Series:	Rated Power:	
Turbo Fan		General Electric		CF6-80A2	48000 LBS	
- Aircraft Inspection Information						
Type of Last Inspection		Date of Last Inspection	Time Since Last Inspection		Airframe Total Time	
Continuous Airworthiness		08/2004	Hours		67045.5 Hours	
- Emergency Locator Transmitter (ELT) Information						
ELT Installed? No		ELT Operated? No		ELT Aided in Locating Accident Site? No		
<b>Owner/Operator Information</b>						
Registered Aircraft Owner		Street Address				
		Hartsfield Atlanta International Airport				
Delta Air Lines Inc.		City		State	Zip Code	
		Atlanta		GA	30320	
Operator of Aircraft		Street Address				
		Same as Reg'd Aircraft Owner				
Same as Reg'd Aircraft Owner		City		State	Zip Code	
Operator Does Business As:				Operator Designator Code: DALA		
- 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						

 <p><b>National Transportation Safety Board</b> <b>FACTUAL REPORT</b> <b>AVIATION</b></p>	NTSB ID: MIA04LA134
	Occurrence Date: 09/29/2004
	Occurrence Type: Accident

**First Pilot Information**

Name On File	City On File	State On File	Date of Birth On File	Age 47
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Sex: M	Seat Occupied: Left	Principal Profession: Occupational Pilot	Certificate Number: On File
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Certificate(s): Airline Transport; Flight Engineer

Airplane Rating(s): Multi-engine Land

Rotorcraft/Glider/LTA:

Instrument Rating(s): Airplane

Instructor Rating(s): None

Type Rating/Endorsement for Accident/Incident Aircraft? Yes	Current Biennial Flight Review? 09/2004
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Medical Cert.: Class 1	Medical Cert. Status: Valid Medical--no waivers/lim.	Date of Last Medical Exam: 07/2004
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- 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	5924	4087								
Pilot In Command(PIC)										
Instructor										
Last 90 Days	221	221								
Last 30 Days										
Last 24 Hours	3	3								

Seatbelt Used? Yes	Shoulder Harness Used? Yes	Toxicology Performed? No	Second Pilot? Yes
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**Flight Plan/Itinerary**

Type of Flight Plan Filed: IFR

Departure Point Atlanta	State GA	Airport Identifier KATL	Departure Time 1029	Time Zone EDT
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Destination Oranjestad	State	Airport Identifier TNCA	
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Type of Clearance: IFR

Type of Airspace:

**Weather Information**

Source of Briefing:

Method of Briefing:

 <p><b>National Transportation Safety Board</b> <b>FACTUAL REPORT</b> <b>AVIATION</b></p>	NTSB ID: MIA04LA134
	Occurrence Date: 09/29/2004
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**Weather Information**

WOF ID	Observation Time	Time Zone	WOF Elevation	WOF Distance From Accident Site	Direction From Accident Site
TNCA	1800		Ft. MSL	NM	Deg. Mag.
Sky/Lowest Cloud Condition: Scattered			1800 Ft. AGL	Condition of Light: Day	
Lowest Ceiling: Overcast		30000 Ft. AGL		Visibility: 10 SM	Altimeter: 29.77 "Hg
Temperature: 31 °C	Dew Point: 24 °C	Wind Direction: 70		Density Altitude: Ft.	
Wind Speed: 11	Gusts:	Weather Conditions at Accident Site: Visual Conditions			
Visibility (RVR): Ft.	Visibility (RVV) SM	Intensity of Precipitation:			
Restrictions to Visibility:					
Type of Precipitation:					

**Accident Information**

Aircraft Damage: None	Aircraft Fire: None	Aircraft Explosion: None
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**Classification:**

- 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				138	138
- TOTAL ABOARD -		1		144	145
Other Ground					
- GRAND TOTAL -		1		144	145

National Transportation Safety Board

**FACTUAL REPORT**

**AVIATION**



NTSB ID: MIA04LA134

Occurrence Date: 09/29/2004

Occurrence Type: Accident

Administrative Information

Investigator-In-Charge (IIC)

John W. Lovell

Additional Persons Participating in This Accident/Incident Investigation:

Jason A Ragogna  
Flight Safety Investigator  
Delta Air Lines, Inc.  
P.O. Box 20706  
Atlanta, GA 30320

Javier Rodriguez  
FAA International Office  
Miami, FL 33166