



# National Transportation Safety Board Aviation Accident Final Report

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<b>Location:</b>	BOSTON, MA	<b>Accident Number:</b>	NYC00LA097
<b>Date &amp; Time:</b>	02/03/2000, 0800 EST	<b>Registration:</b>	N397US
<b>Aircraft:</b>	Boeing 737-300	<b>Aircraft Damage:</b>	None
<b>Defining Event:</b>		<b>Injuries:</b>	1 Serious, 59 None
<b>Flight Conducted Under:</b>	Part 121: Air Carrier - Scheduled		

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## Analysis

While in cruise flight, the airplane encountered turbulence, and the flight attendants returned to their seats. The turbulence continued, and a cart began to break free. A flight attendant attempted to push the cart with her foot, and suffered a fracture.

## Probable Cause and Findings

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

## Findings

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Occurrence #1: IN FLIGHT ENCOUNTER WITH WEATHER  
Phase of Operation: CRUISE

### Findings

1. (C) WEATHER CONDITION - TURBULENCE

## Factual Information

On February 3, 2000, about 0800 Eastern Standard Time, a Boeing 737-300, N397US, encountered turbulence after departure from General Edward Lawrence Logan International Airport, Boston, Massachusetts. There was no damage to the airplane, which was owned and operated by US Airways as flight 6509. There were no injuries to 4 crewmembers and 55 passengers, while 1 crewmember was seriously injured. Visual meteorological conditions prevailed for the flight destined for Ronald Regan Washington National Airport, Washington, DC. An instrument flight rules flight plan was filed for the air carrier flight conducted under 14 CFR part 121.

The manager of Flight Safety at US Airways stated:

"The flight was dispatched with MEL No. 22-3, yaw damper inop. After level off and during initial passenger service the flight began to encounter turbulence that became progressively worse. The flight attendant returned the serving cart to its stowage bin and then strapped into her jumpseat. During the continued turbulence the cart began to break free. On instinct the flight attendant put up her foot to hold the cart; however, it pushed her foot backwards. At first, the flight attendant assumed her foot was just bruised and would get better on its own, it did not. She visited her own doctor who diagnosed that she had fractured the 5th metatarsal base of her left foot."

## Pilot Information

<b>Certificate:</b>	Airline Transport	<b>Age:</b>	47, Male
<b>Airplane Rating(s):</b>	Multi-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 Valid Medical--no waivers/lim.	<b>Last FAA Medical Exam:</b>	11/05/1999
<b>Occupational Pilot:</b>		<b>Last Flight Review or Equivalent:</b>	
<b>Flight Time:</b>	13000 hours (Total, all aircraft), 4700 hours (Total, this make and model), 150 hours (Last 90 days, all aircraft)		

## Aircraft and Owner/Operator Information

Aircraft Make:	Boeing	Registration:	N397US
Model/Series:	737-300 737-300	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	No
Airworthiness Certificate:	Transport	Serial Number:	23319
Landing Gear Type:	Retractable - Tricycle	Seats:	
Date/Type of Last Inspection:	Unknown	Certified Max Gross Wt.:	138500 lbs
Time Since Last Inspection:		Engines:	2 Turbo Jet
Airframe Total Time:		Engine Manufacturer:	Cfm
ELT:	Installed, not activated	Engine Model/Series:	CFM56-3B2
Registered Owner:	US AIRWAYS	Rated Power:	20000 lbs
Operator:	US AIRWAYS	Operating Certificate(s) Held:	Flag carrier (121)
Operator Does Business As:		Operator Designator Code:	USAA

## Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual Conditions	Condition of Light:	Day
Observation Facility, Elevation:	BOS, 20 ft msl	Distance from Accident Site:	0 Nautical Miles
Observation Time:	0754 EST	Direction from Accident Site:	0°
Lowest Cloud Condition:	Unknown / 0 ft agl	Visibility	10 Miles
Lowest Ceiling:	Broken / 16000 ft agl	Visibility (RVR):	0 ft
Wind Speed/Gusts:	13 knots /	Turbulence Type Forecast/Actual:	/
Wind Direction:	280°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	29 inches Hg	Temperature/Dew Point:	-8° C / -18° C
Precipitation and Obscuration:			
Departure Point:	, MA (BOS)	Type of Flight Plan Filed:	IFR
Destination:	WASHINGTON, DC (DCA)	Type of Clearance:	IFR
Departure Time:	0723 EST	Type of Airspace:	Class A

## Airport Information

Airport:	LOGAN INT'L AIRPORT (BOS)	Runway Surface Type:	
Airport Elevation:	20 ft	Runway Surface Condition:	
Runway Used:	0	IFR Approach:	None
Runway Length/Width:		VFR Approach/Landing:	None

## Wreckage and Impact Information

<b>Crew Injuries:</b>	1 Serious, 4 None	<b>Aircraft Damage:</b>	None
<b>Passenger Injuries:</b>	55 None	<b>Aircraft Fire:</b>	None
<b>Ground Injuries:</b>	N/A	<b>Aircraft Explosion:</b>	None
<b>Total Injuries:</b>	1 Serious, 59 None	<b>Latitude, Longitude:</b>	

## Administrative Information

<b>Investigator In Charge (IIC):</b>	ROBERT J GRETZ	<b>Report Date:</b>	11/29/2000
<b>Additional Participating Persons:</b>	JOHN DONAHUE; BOSTON, MA		
<b>Publish Date:</b>			
<b>Investigation Docket:</b>	NTSB accident and incident dockets serve as permanent archival information for the NTSB's investigations. Dockets released prior to June 1, 2009 are publicly available from the NTSB's Record Management Division at <a href="mailto:pubinq@ntsb.gov">pubinq@ntsb.gov</a> , or at 800-877-6799. Dockets released after this date are available at <a href="http://dms.nts.gov/pubdms/">http://dms.nts.gov/pubdms/</a> .		

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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](#).