

---

## TCAS Resolution Advisory injury involving a Boeing 727-200 and NASA T-38A, March 9, 1993

---

**Micro-summary:** This Boeing 727-200 received a resolution advisory from TCAS during an encounter with a T-38A, seriously injuring a passenger in the aft galley.

---

**Event Date:** 1993-03-09 at 1400 CST


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

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

---

### **Cautions:**

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.
  4. Contact us before reproducing or redistributing a report from this anthology. Individual countries have very differing views on copyright! We can advise you on the steps to follow.
-

		NTSB ID: FTW93FA100		Aircraft Registration Number: N79754	
		Occurrence Date: 03/09/1993		Most Critical Injury: Serious	
		Occurrence Type: Accident		Investigated By: NTSB	
Location/Time					
Nearest City/Place HOUSTON		State TX	Zip Code 77032	Local Time 1400	Time Zone CST
Airport Proximity: Off Airport/Airstrip		Distance From Landing Facility: 0		Direction From Airport: 0	
Aircraft Information Summary					
Aircraft Manufacturer BOEING		Model/Series 727-200		Type of Aircraft Airplane	
Sightseeing Flight: No			Air Medical Transport Flight: No		
Narrative					
Brief narrative statement of facts, conditions and circumstances pertinent to the accident/incident:					
<p>HISTORY OF FLIGHT:</p> <p>On March 9, 1993, at approximately 1400 central standard time, a passenger on Continental Airlines Flight (COA) 1080 sustained serious injury during cruise at flight level 350. The airplane, a Boeing 727 200, N79754, departed from Merida, Mexico, enroute to Houston, Texas, with 38 passengers and a crew of eight. The crew initiated a climb when the Traffic Alert and Collision Avoidance System (TCAS) resolution advisory (RA) indicated traffic closing rapidly. The aircraft did not sustain damage. Visual meteorological conditions prevailed for the international flight.</p> <p>The traffic airplane was identified as National Aeronautics and Space Administration (NASA) flight 920, a Northrup T 38A airplane. The pilot of NASA 920 was conducting a functional check flight (FCF). Interviews conducted by the investigator in charge with NASA personnel and the pilot revealed the following information. The FCF profile (included as a part of this report) may be accomplished in a sequence established by the pilot, but must include all profile items. During the flight procedure stall sequence, the airplane must be maintained in the stall configuration until a 6,000 foot per minute rate of descent has been reached. (Included as a part of this report is the flight procedures manual for the stall sequence.) The pilot initiated the stall sequence above flight level 350 and completed the maneuver below flight level 350. NASA 920 was operating under a Letter of Agreement between Houston ARTCC and NASA. The agreement permitted NASA airplanes to operate under visual flight rules in international airspace. The agreement was originally signed on August 17, 1989.</p> <p>During interviews conducted by the investigator in charge (IIC) with company personnel and the controller, the following information was revealed. The flight crew of COA 1080, operating under instrument flight rules, reported on frequency with the controller at approximately 1326 and reported at flight level 350. The pilot of NASA 920, operating under visual flight rules with traffic advisories, had been advised by the controller to stay above flight level 350.</p> <p>An interview conducted by the investigator in charge with the captain of COA 1080 and the enclosed statements submitted by the COA 1080 flight crew revealed the following information. Traffic at the twelve o'clock position was showing as 7,800 feet below the Boeing 727 200 and closing rapidly. TCAS called for a climb of 1,500 feet per minute. The flight engineer turned on the seat belt sign as the captain and first officer initiated a climb. Initial climb was at 1,500 feet per minute and then increased to 2,500 feet per minute. A flight attendant reported that a passenger had broken her leg. The flight landed without further incident.</p> <p>The witness reported to the company and the Board that she was standing near the back of the airplane when the "plane engines sounded so loud all of a sudden." She "fell backwards" and was on the floor. The passenger remained on the floor until the airplane had landed.</p>					
FACTUAL REPORT - AVIATION					
					Page 1

National Transportation Safety Board

## FACTUAL REPORT

AVIATION

NTSB ID: FTW93FA100

Occurrence Date: 03/09/1993

Occurrence Type: Accident

## Narrative (Continued)

PERSONNEL INFORMATION: All flight crew members held airline transport pilot certificates and several thousand hours of flight time. The entire COA 1080 flight crew had received recurrent TCAS training in accordance with the approved procedures manual. Company personnel for COA 1080 revealed to the Board that emergency training did not require the crew to report a non life threatening injury to air traffic control.

## COMMUNICATIONS:

A review of the air traffic data by the investigator in charge revealed the following summary of transmission between the controller and pilots. All times have been converted to central standard time. The air traffic control group chairman's factual report is enclosed.

1358:10 NASA 920 was advised by the controller that numerous traffic was in the area and that he could not call out each individual traffic. The controller suggested that NASA 920 remain above flight level 350.

1359:09 The controller requested that the pilot of NASA 920 say his altitude.

1359:12 The pilot of NASA 920 reported to the controller that he was at flight level 335 and climbing back up above flight level 350.

1359:15 The controller advised the pilot of NASA 920 to get above flight level 350 and issued traffic as nine o'clock and three miles at flight level 350.

1359:31 The controller issued traffic to COA 1080 as twelve o'clock and three miles a NASA T 38 under visual flight rules climbing rapidly out of flight level 340.


1359:50 The controller advised the pilot of NASA 920 that the traffic was twelve o'clock less than a mile and to verify that the T 38 was "staying at" flight level 340.


1359:56 The pilot of NASA 920 reported to the controller that he was out of flight level 348.

1400:04 The crew of COA 1080 advised the controller that they had responded to a TCAS alert for a climb and had climbed to flight level 358. COA 1080 was cleared to descend to flight level 350 and advised that the NASA 920 was level at flight level 340.

## ADDITIONAL DATA:

The Safety Board never took possession of the airplane.

 <b>National Transportation Safety Board</b> <b>FACTUAL REPORT</b> <b>AVIATION</b>		NTSB ID: FTW93FA100			
		Occurrence Date: 03/09/1993			
		Occurrence Type: Accident			
<b>Landing Facility/Approach Information</b>					
Airport Name	Airport ID:	Airport Elevation Ft. MSL	Runway Used 0	Runway Length	Runway Width
Runway Surface Type: Not Applicable					
Runway Surface Condition:					
Type Instrument Approach: NONE					
VFR Approach/Landing: None					
<b>Aircraft Information</b>					
Aircraft Manufacturer BOEING		Model/Series 727-200		Serial Number 21363	
Airworthiness Certificate(s): Transport					
Landing Gear Type: Retractable - Tricycle					
Homebuilt Aircraft? No	Number of Seats: 159	Certified Max Gross Wt.	172500 LBS	Number of Engines: 3	
Engine Type: Turbo Fan	Engine Manufacturer: P&W	Model/Series: JT8D-9	Rated Power: 14500 LBS		
- Aircraft Inspection Information					
Type of Last Inspection Continuous Airworthiness	Date of Last Inspection 12/1991	Time Since Last Inspection 3480 Hours	Airframe Total Time 38828 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 FIRST SECURITY STATE BANK		Street Address 79 S. MAIN ST.			
		City SALT LAKE CITY	State UT	Zip Code 84111	
Operator of Aircraft CONTINENTAL AIRLINES, INC.		Street Address P. O. BOX 4607			
		City HOUSTON	State TX	Zip Code 77210	
Operator Does Business As:			Operator Designator Code: CALA		
- 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/Cargo					

 <p><b>National Transportation Safety Board</b> <b>FACTUAL REPORT</b> <b>AVIATION</b></p>	NTSB ID: FTW93FA100
	Occurrence Date: 03/09/1993
	Occurrence Type: Accident

**First Pilot Information**

Name On File	City On File	State On File	Date of Birth On File	Age 47
-----------------	-----------------	------------------	--------------------------	-----------

Sex: M	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): Airplane Multi-engine; Airplane Single-engine; Instrument Airplane

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

Medical Cert.: None	Medical Cert. Status: Valid Medical--no waivers/lim.	Date of Last Medical Exam: 12/1992
---------------------	--	------------------------------------

- 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	16000	4900	4000	12000	3500	600	900			
Pilot In Command(PIC)	10000	3000	3500	6500	1700	450	800			
Instructor	5000		1500	500	750	250	300			
Last 90 Days	240	240		120	20	10	15			
Last 30 Days	120	120			10	5	8			
Last 24 Hours	6	6		6						

Seatbelt Used? Yes	Shoulder Harness Used? No	Toxicology Performed? No	Second Pilot? Yes
--------------------	---------------------------	--------------------------	-------------------

**Flight Plan/Itinerary**

Type of Flight Plan Filed: IFR

Departure Point MERIDA,MEXICO	State OF	Airport Identifier MID	Departure Time 1235	Time Zone CST
----------------------------------	-------------	---------------------------	------------------------	------------------

Destination Same as Accident/Incident Location	State	Airport Identifier	
---	-------	--------------------	--


Type of Clearance: IFR

Type of Airspace: Class A; Class E

**Weather Information**

Source of Briefing:  
Company

Method of Briefing:

 <p><b>National Transportation Safety Board</b> <b>FACTUAL REPORT</b> <b>AVIATION</b></p>	NTSB ID: FTW93FA100
	Occurrence Date: 03/09/1993
	Occurrence Type: Accident

<b>Weather Information</b>					
WOF ID	Observation Time	Time Zone	WOF Elevation	WOF Distance From Accident Site	Direction From Accident Site
GLS	1350	CST	7 Ft. MSL	30 NM	350 Deg. Mag.
Sky/Lowest Cloud Condition: Clear			0 Ft. AGL	Condition of Light: Day	
Lowest Ceiling: None		0 Ft. AGL		Visibility: 15 SM	Altimeter: 30.00 "Hg
Temperature: 22 °C	Dew Point: 16 °C	Wind Direction: 150		Density Altitude: 1200 Ft.	
Wind Speed: 15	Gusts:	Weather Conditions at Accident Site: Visual Conditions			
Visibility (RVR): 0 Ft.	Visibility (RVV) 0 SM	Intensity of Precipitation: Unknown			
Restrictions to Visibility: None					
Type of Precipitation: None					

<b>Accident Information</b>		
Aircraft Damage: None	Aircraft Fire: None	Aircraft Explosion: None

Classification: U.S. Registered/U.S. Soil					
<b>- Injury Summary Matrix</b>	Fatal	Serious	Minor	None	TOTAL
First Pilot				1	1
Second Pilot				1	1
Student Pilot					
Flight Instructor					
Check Pilot					
Flight Engineer				1	1
Cabin Attendants				5	5
Other Crew					
Passengers		1		37	38
- TOTAL ABOARD -		1		45	46
Other Ground	0	0	0		0
- GRAND TOTAL -	0	1	0	45	46

National Transportation Safety Board

**FACTUAL REPORT**

**AVIATION**



NTSB ID: FTW93FA100

Occurrence Date: 03/09/1993

Occurrence Type: Accident

Administrative Information

Investigator-In-Charge (IIC)

JOYCE M. SMITH

Additional Persons Participating in This Accident/Incident Investigation:

NAT D POTTER  
FAA FSDO  
HOUSTON, TX

RICHARD J WENTWORTH  
NTSB  
WASHINGTON, DC