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## Turbulence encounter and in-flight upset, Boeing 757-200, C-FOOA, July 4, 1993

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**Micro-summary:** This Boeing 757 crew experienced control difficulties and a burning smell following an encounter with turbulence.

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**Event Date:** 1993-04-07 at 1255 CDT


**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!***
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		NTSB ID: FTW93IA118		Aircraft Registration Number: CFOOA	
		Occurrence Date: 04/07/1993		Most Critical Injury: None	
		Occurrence Type: Incident		Investigated By: NTSB	
Location/Time					
Nearest City/Place HOUSTON		State TX	Zip Code 77205	Local Time 1255	Time Zone CDT
Airport Proximity: Off Airport/Airstrip		Distance From Landing Facility: 0		Direction From Airport: 0	
Aircraft Information Summary					
Aircraft Manufacturer BOEING		Model/Series 757-200		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 April 7, 1993, at approximately 1255 central daylight time, a Boeing 757 200, Canadian registration CF00A, declared an emergency following a loss of control after encountering extreme turbulence while in cruise flight at FL 420, approximately 30 miles south of the Houston Intercontinental Airport (IAH), near Houston, Texas. The airplane, operating as Elite Flight 833, was owned and operated by Canada 3000 Airline Limited, as a charter flight from Vancouver, Canada, to San Jose, Costa Rica. There were no injuries to the 31 passengers or 9 crewmembers aboard the airplane. Instrument meteorological conditions prevailed throughout the area at the time of the incident.</p> <p>The captain had turned the fasten seat belt light on and ordered the cabin crew to secure the cabin as the airplane approached an area of forecasted convective activity. Radar vectors were provided around weather and traffic. The captain stated that their airborne weather radar was not displaying severe weather along their route of flight as the airplane encountered light to occasionally moderate turbulence. The airplane was configured for turbulence penetration with engine igniters on "continuous", and manual control of the throttles. A cell appeared ahead of their route of flight, and a 10 degree deviation was requested from ATC and granted.</p> <p>According to the captain, as the turn was initiated to comply with the requested deviation, severe turbulence was encountered, as the airspeed was observed decreasing below .68 MACH. The first officer, who was flying the airplane, "disconnected the auto pilot as both pilots pushed the nose down to prevent the airplane from stalling." The captain estimated a negative 2G force resulted as the attitude of the airplane was changed to an estimated 7 degree below the horizon. As the airplane continued in "moderate heavy" turbulence, both generators came off line and power was lost to all the flight, navigation, and engine instruments. The captain took over the controls and continued to fly the airplane by means of the emergency standby instruments, as he declared an emergency.</p> <p>The first officer started the APU and completed the emergency procedures to attempt to regain electrical power. The flight crew reported a strong electrical fire odor, and an "equipment overheat" message appeared on the ECAS. Approximately 5 minutes after losing the generators, they both came back on line. The airplane was vectored for an ILS approach to runway 14 at the Houston Intercontinental Airport. (breaking out of the weather at 600 feet AGL.) A post incident inspection of the airframe and engines failed to find any anomalies or damage.</p>					
FACTUAL REPORT - AVIATION					

 <b>National Transportation Safety Board</b> <b>FACTUAL REPORT</b> <b>AVIATION</b>		NTSB ID: FTW93IA118			
		Occurrence Date: 04/07/1993			
		Occurrence Type: Incident			
<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 757-200		Serial Number 23767	
Airworthiness Certificate(s): Transport					
Landing Gear Type: Retractable - Tricycle					
Homebuilt Aircraft? No	Number of Seats: 237	Certified Max Gross Wt.	219951 LBS	Number of Engines: 2	
Engine Type: Turbo Fan	Engine Manufacturer: Rolls-Royce	Model/Series: RB211-535E4	Rated Power: 41000 LBS		
- Aircraft Inspection Information					
Type of Last Inspection AAIP	Date of Last Inspection 03/1993	Time Since Last Inspection Hours	Airframe Total Time 28406 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 CANADA 3000 AIRLINE LTD		Street Address 27 FASKEN DRIVE			
		City TORONTO	State CD	Zip Code M9W1K6	
Operator of Aircraft Same as Reg'd Aircraft Owner		Street Address Same as Reg'd Aircraft Owner			
		City TORONTO	State CD	Zip Code M9W1K6	
Operator Does Business As:			Operator Designator Code: CDZF		
- Type of U.S. Certificate(s) Held:					
Air Carrier Operating Certificate(s): Supplemental					
Operating Certificate:			Operator Certificate:		
Regulation Flight Conducted Under: Part 129: Foreign					
Type of Flight Operation Conducted: Non-scheduled; International; Passenger Only					
FACTUAL REPORT - AVIATION					

 <p><b>National Transportation Safety Board</b> <b>FACTUAL REPORT</b> <b>AVIATION</b></p>	NTSB ID: FTW931A118
	Occurrence Date: 04/07/1993
	Occurrence Type: Incident

**First Pilot Information**

Name On File	City On File	State On File	Date of Birth On File	Age 33
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Sex: M	Seat Occupied: Left	Principal Profession: Civilian Pilot	Certificate Number: On File
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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?
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Medical Cert.: Class 1	Medical Cert. Status: Valid Medical--no waivers/lim.	Date of Last Medical Exam: 11/1992
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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	5700	2700	300	5400	1100				32	
Pilot In Command(PIC)	2800	800	80	2720						
Instructor										
Last 90 Days	150	150		80						
Last 30 Days	80	80								
Last 24 Hours	7	7		7						

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 VANCOUVER	State CD	Airport Identifier YVR	Departure Time 0704	Time Zone PDT
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Destination SAN JOSE	State CA	Airport Identifier SJO	
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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: FTW93IA118
	Occurrence Date: 04/07/1993
	Occurrence Type: Incident

<b>Weather Information</b>					
WOF ID	Observation Time	Time Zone	WOF Elevation	WOF Distance From Accident Site	Direction From Accident Site
IAH	1302	CDT	55 Ft. MSL	30 NM	360 Deg. Mag.
Sky/Lowest Cloud Condition: Unknown			600 Ft. AGL	Condition of Light: Day	
Lowest Ceiling: Overcast		600 Ft. AGL	Visibility: 2	SM	Altimeter: "Hg
Temperature: 16 °C	Dew Point: 16 °C	Wind Direction: 140		Density Altitude: Ft.	
Wind Speed: 7	Gusts:	Weather Conditions at Accident Site: Instrument Conditions			
Visibility (RVR): 0 Ft.	Visibility (RVV) 0	SM	Intensity of Precipitation: Moderate		
Restrictions to Visibility: Fog; Haze					
Type of Precipitation: Rain Showers					

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

Classification: Foreign 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					
Cabin Attendants				7	7
Other Crew					
Passengers				31	31
- TOTAL ABOARD -				40	40
Other Ground	0	0	0		0
- GRAND TOTAL -	0	0	0	40	40

National Transportation Safety Board

**FACTUAL REPORT**

**AVIATION**



NTSB ID: FTW93IA118

Occurrence Date: 04/07/1993

Occurrence Type: Incident

Administrative Information

Investigator-In-Charge (IIC)

HECTOR R. CASANOVA

Additional Persons Participating in This Accident/Incident Investigation:

ROBERT J IOZIA  
FAA FSDO  
HOUSTON, TX