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## Failure of stabilizer control system, Boeing 767-200, November 20, 1999

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**Micro-summary:** The stabilizer control system of this Boeing 767-200 failed.

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**Event Date:** 1999-11-20 at 2107 EST


**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: NYC00IA036		Aircraft Registration Number: N610UA	
		Occurrence Date: 11/20/1999		Most Critical Injury: None	
		Occurrence Type: Incident		Investigated By: NTSB	
Location/Time					
Nearest City/Place JAMAICA		State NY	Zip Code 11430	Local Time 2107	Time Zone EST
Airport Proximity: Off Airport/Airstrip		Distance From Landing Facility: 5		Direction From Airport: 130	
Aircraft Information Summary					
Aircraft Manufacturer Boeing		Model/Series 767-200		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 November 20, 1999, at 2107 Eastern Standard Time, a Boeing 767-200, N610UA, operated by United Airlines as flight 20, experienced an inoperative stabilizer trim system while executing an approach to runway 31R at Kennedy International Airport (JFK), Jamaica, New York. The airplane was not damaged. The 2 flight crewmembers, 6 flight attendants, and 145 passengers were not injured. Night visual meteorological conditions prevailed, and an instrument flight rules flight plan was filed for the scheduled 14 CFR Part 121 passenger flight that departed the San Francisco International Airport, San Francisco, California.</p> <p>According to the captain, while at 1,400 feet, and on final for runway 31R at JFK, the first officer stated he was having trouble trimming the airplane. The captain checked the trim indicator and noticed it was approximately 12.5 degrees nose up. The captain then attempted to trim the airplane via his yoke switch and the manual trim handle, with no success. The captain advised ATC they needed a go-around, and requested a block altitude of 2,000 to 3,000 feet.</p> <p>After changing to departure control, the captain declared an emergency, and ran the unscheduled-stabilizer-trim-quick-reference checklist. The first officer flew the airplane and communicated with ATC. The captain completed the checklist, but control of the stabilizer trim was not regained. The captain then requested a phone patch to system aircraft maintenance control (SAMC) in San Francisco. While in communication with SAMC, the captain had the purser pull circuit breakers H11 and H20, and then reset them after a 30 second cool down period. The stabilizer trim was still inoperative. SAMC then requested that the trim cutout switches be reset. After resetting the switches twice, normal operation of the stabilizer trim was reestablished.</p> <p>The captain took control of the airplane and had a flight attendant advise the passengers that an unsafe indication necessitated the go-around, and that everything was "now normal." While at altitude, the captain performed a controllability check at approach speed, and then executed an approach to runway 31L at JFK without further incident.</p> <p>The captain added that during the emergency he and the first officer did not observed any warning indications, which made troubleshooting the problem more difficult.</p> <p>The first officer estimated that it required approximately 15 to 20 pounds of forward pressure on the yoke to keep the airplane level. In addition, he stated that the stabilizer trim indicator was 13 to 14 degrees nose up.</p> <p>According to data retrieved from the digital flight data recorder, the stabilizer was at 11.46 degrees nose up, during the emergency.</p> <p>According to the maintenance manual, stabilizer position and stabilizer trim control system faults are indicated in the flight compartment for the following reasons: Unscheduled stabilizer trim;</p>					
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National Transportation Safety Board

## FACTUAL REPORT

AVIATION

NTSB ID: NYC001A036

Occurrence Date: 11/20/1999


Occurrence Type: Incident


## Narrative (Continued)

faulty stabilizer trim drive rate; loss of power to the control stand stabilizer trim position indicators; loss of input signal to control stand stabilizer trim position indicators; and incorrect stabilizer position for takeoff.

Testing conducted by the operator of the stabilizer trim system found that the left stabilizer position transmitter, and the right stabilizer position transmitter were out of calibration. Also, the left stabilizer trim control module (STCM) was found to have a higher than normal leakage, and the connector for the corresponding shut-off valve was shorting across several of its pins due to skydrol incursion. The right STCM was also removed and tested ok.

According to the operator, the system should have operated at half rate with the above discrepancy, but did not. There has been no reports of difficulties with the airplane's stabilizer trim system since the initial event.

 <b>National Transportation Safety Board</b> <b>FACTUAL REPORT</b> <b>AVIATION</b>		NTSB ID: NYC001A036			
		Occurrence Date: 11/20/1999			
		Occurrence Type: Incident			
<b>Landing Facility/Approach Information</b>					
Airport Name	Airport ID:	Airport Elevation	Runway Used	Runway Length	Runway Width
JOHN F KENNEDY INTL	JFK	13 Ft. MSL	31L	14572	150
Runway Surface Type: Asphalt					
Runway Surface Condition:					
Type Instrument Approach: ILS-complete					
VFR Approach/Landing:					
<b>Aircraft Information</b>					
Aircraft Manufacturer		Model/Series		Serial Number	
Boeing		767-200		21871	
Airworthiness Certificate(s): Transport					
Landing Gear Type: Retractable - Tricycle					
Homebuilt Aircraft? No	Number of Seats: 179	Certified Max Gross Wt.	320000 LBS	Number of Engines: 2	
Engine Type:	Engine Manufacturer:	Model/Series:	Rated Power:		
Turbo Fan	P&W	JT9D-7R4D	47000 LBS		
- Aircraft Inspection Information					
Type of Last Inspection	Date of Last Inspection	Time Since Last Inspection	Airframe Total Time		
Unknown		Hours	Hours		
- Emergency Locator Transmitter (ELT) Information					
ELT Installed? No	ELT Operated?	ELT Aided in Locating Accident Site?			
<b>Owner/Operator Information</b>					
Registered Aircraft Owner		Street Address			
UNITED AIRLINES		1200 E ALGONQUIN			
		City	State	Zip Code	
		ELKGROVE TWP	IL	6007	
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: UALA		
- Type of U.S. Certificate(s) Held:					
Air Carrier Operating Certificate(s): Flag Carrier/Domestic					
Operating Certificate:					
Operating Certificate:			Operating Certificate:		
Regulation Flight Conducted Under: Part 121: Air Carrier					
Type of Flight Operation Conducted: Scheduled; Domestic; Passenger/Cargo					
FACTUAL REPORT - AVIATION					

 <p><b>National Transportation Safety Board</b> <b>FACTUAL REPORT</b> <b>AVIATION</b></p>	NTSB ID: NYC001A036
	Occurrence Date: 11/20/1999
	Occurrence Type: Incident

**First Pilot Information**

Name On File	City On File	State On File	Date of Birth On File	Age 56
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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; Flight Engineer

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: 06/1999
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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	4870	3299		4870						
Pilot In Command(PIC)										
Instructor										
Last 90 Days		166		166						
Last 30 Days		68		68						
Last 24 Hours		11		11						

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	
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Departure Point SAN FRANCISCO	State CA	Airport Identifier SFO	Departure Time 1239	Time Zone PST
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Destination JAMAICA	State NY	Airport Identifier JFK	
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Type of Clearance: IFR

Type of Airspace: Class B

**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: NYC001A036
	Occurrence Date: 11/20/1999
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<b>Weather Information</b>					
WOF ID	Observation Time	Time Zone	WOF Elevation	WOF Distance From Accident Site	Direction From Accident Site
JFK	2051	EST	50 Ft. MSL	0 NM	0 Deg. Mag.
Sky/Lowest Cloud Condition: Scattered			2000 Ft. AGL	Condition of Light: Night/Dark	
Lowest Ceiling: Broken		5500 Ft. AGL		Visibility: 7 SM	Altimeter: 30.00 "Hg
Temperature: 13 °C	Dew Point: 13 °C	Wind Direction: 220		Density Altitude: Ft.	
Wind Speed: 3	Gusts:	Weather Conditions at Accident Site: Visual Conditions			
Visibility (RVR): 0 Ft.	Visibility (RVV) 0 SM	Intensity of Precipitation: Light			
Restrictions to Visibility: None					
Type of Precipitation: Rain					

<b>Accident Information</b>		
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				9	9
Other Crew					
Passengers				168	168
- TOTAL ABOARD -				179	179
Other Ground	0	0	0		0
- GRAND TOTAL -	0	0	0	179	179

National Transportation Safety Board

**FACTUAL REPORT**

**AVIATION**



NTSB ID: NYC001A036

Occurrence Date: 11/20/1999

Occurrence Type: Incident

Administrative Information

Investigator-In-Charge (IIC)

DAVID S. MUZIO

Additional Persons Participating in This Accident/Incident Investigation: