

Aviation Investigation Final Report

Location: JAMAICA, New York Incident Number: NYC00IA036

Date & Time: November 20, 1999, 21:07 Local Registration: N610UA

Aircraft: Boeing 767-200 Aircraft Damage: None

Defining Event: 179 None

Flight Conducted Under: Part 121: Air carrier - Scheduled

Analysis

While on final, the first officer had trouble trimming the airplane. The captain attempted to trim the airplane via his yoke switch and the manual trim handle, with no success. A go-around was executed. The crew ran the checklist, but control of the stabilizer trim was not regained. The crew pulled circuit breakers H11 and H20, and then reset them. The stabilizer trim was still inoperative. The crew reset the trim cutout switches twice, and normal operation of the stabilizer trim was reestablished. 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. No faults were identified for the right system except for the right-stabilizer-position transmitter. According to the operator, the system should have operated at half rate with the above discrepancy, but did not. There have been no reports of difficulties with the airplane's stabilizer trim system since the event.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this incident to be: Total failure of the stabilizer control system for undetermined reasons.

Findings

Occurrence #1: AIRFRAME/COMPONENT/SYSTEM FAILURE/MALFUNCTION

Phase of Operation: APPROACH

- Findings
 1. (C) FLT CONTROL SYST, STABILATOR CONTROL FAILURE, TOTAL
 2. REASON FOR OCCURRENCE UNDETERMINED

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Factual Information

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.

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.

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.

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 preformed a controllability check at approach speed, and then executed an approach to runway 31L at JFK without further incident.

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.

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.

According to data retrieved from the digital flight data recorder, the stabilizer was at 11.46 degrees nose up, during the emergency.

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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; 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.

Pilot Information

Certificate:	Airline transport; Flight engineer	Age:	56,Male
Airplane Rating(s):	Single-engine land; Multi-engine land	Seat Occupied:	Left
Other Aircraft Rating(s):	None	Restraint Used:	
Instrument Rating(s):	Airplane	Second Pilot Present:	Yes
Instructor Rating(s):	None	Toxicology Performed:	No
Medical Certification:	Class 1 Valid Medicalno waivers/lim.	Last FAA Medical Exam:	June 24, 1999
Occupational Pilot:	Yes	Last Flight Review or Equivalent:	
Flight Time:	4870 hours (Total, all aircraft), 3299 hours (Total, this make and model)		

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Aircraft and Owner/Operator Information

Aircraft Make:	Boeing	Registration:	N610UA
Model/Series:	767-200 767-200	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	
Airworthiness Certificate:	Transport	Serial Number:	21871
Landing Gear Type:	Retractable - Tricycle	Seats:	179
Date/Type of Last Inspection:	Unknown	Certified Max Gross Wt.:	320000 lbs
Time Since Last Inspection:		Engines:	2 Turbo fan
Airframe Total Time:		Engine Manufacturer:	P&W
ELT:	Not installed	Engine Model/Series:	JT9D-7R4D
Registered Owner:	UNITED AIRLINES	Rated Power:	47000 Lbs thrust
Operator:		Operating Certificate(s) Held:	Flag carrier (121)
Operator Does Business As:		Operator Designator Code:	UALA

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	Condition of Light:	Night/dark
Observation Facility, Elevation:	JFK ,50 ft msl	Distance from Accident Site:	
Observation Time:	20:51 Local	Direction from Accident Site:	
Lowest Cloud Condition:	Scattered / 2000 ft AGL	Visibility	7 miles
Lowest Ceiling:	Broken / 5500 ft AGL	Visibility (RVR):	
Wind Speed/Gusts:	3 knots /	Turbulence Type Forecast/Actual:	/
Wind Direction:	220°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	30 inches Hg	Temperature/Dew Point:	13°C / 13°C
Precipitation and Obscuration:	Light - None - Rain		
Departure Point:	SAN FRANCISCO , CA (SFO)	Type of Flight Plan Filed:	IFR
Destination:	JAMAICA , NY (JFK)	Type of Clearance:	IFR
Departure Time:	12:39 Local	Type of Airspace:	Class B

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Airport Information

Airport:	JOHN F KENNEDY INTL JFK	Runway Surface Type:	Asphalt
Airport Elevation:	13 ft msl	Runway Surface Condition:	
Runway Used:	31L	IFR Approach:	ILS
Runway Length/Width:	14572 ft / 150 ft	VFR Approach/Landing:	

Wreckage and Impact Information

Crew Injuries:	11 None	Aircraft Damage:	None
Passenger Injuries:	168 None	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	179 None	Latitude, Longitude:	40.649345,-73.789779(est)

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Administrative Information

Investigator In Charge (IIC): Muzio, David

Additional Participating
Persons:

Original Publish Date: December 4, 2000

Last Revision Date:

Investigation Class: Class

Note:

Investigation Docket: https://data.ntsb.gov/Docket?ProjectID=47860

The National Transportation Safety Board (NTSB) is an independent federal agency charged by Congress with investigating every civil aviation accident in the United States and significant events in other modes of transportation—railroad, transit, highway, marine, pipeline, and commercial space. We determine the probable causes of the accidents and events we investigate, and issue safety recommendations aimed at preventing future occurrences. In addition, we conduct transportation safety research studies and offer information and other assistance to family members and survivors for each accident or event we investigate. We also serve as the appellate authority for enforcement actions involving aviation and mariner certificates issued by the Federal Aviation Administration (FAA) and US Coast Guard, and we adjudicate appeals of civil penalty actions taken by the FAA.

The NTSB does not assign fault or blame for an accident or incident; rather, as specified by NTSB regulation, "accident/incident investigations are fact-finding proceedings with no formal issues and no adverse parties ... and are not conducted for the purpose of determining the rights or liabilities of any person" (Title 49 Code of Federal Regulations section 831.4). Assignment of fault or legal liability is not relevant to the NTSB's statutory mission to improve transportation safety by investigating accidents and incidents and issuing safety recommendations. In addition, statutory language prohibits the admission into evidence or use of any part of an NTSB report related to an accident in a civil action for damages resulting from a matter mentioned in the report (Title 49 United States Code section 1154(b)). A factual report that may be admissible under 49 United States Code section 1154(b) is available here.

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