



# National Transportation Safety Board Aviation Accident Final Report

---

<b>Location:</b>	BALTIMORE, MD	<b>Accident Number:</b>	BFO90FA017
<b>Date &amp; Time:</b>	01/02/1990, 0007 EST	<b>Registration:</b>	N109AA
<b>Aircraft:</b>	DOUGLAS DC-10	<b>Aircraft Damage:</b>	None
<b>Defining Event:</b>		<b>Injuries:</b>	3 Serious, 7 Minor, 247 None

**Flight Conducted Under:** Part 121: Air Carrier - Scheduled

---

## Analysis

SMOKE ENTERED THE FLIGHT DECK AND CABIN DURING CRUISE FLIGHT AND THE FLIGHT DIVERTED TO AND LANDED AT BWI. AFTER THE FLIGHT CAME TO A STOP ON THE RUNWAY, THE CAPTAIN ORDERED THE EMERGENCY EVACUATION OF THE AIRCRAFT. ALL THE EMERGENCY EXITS WERE USED, EXCEPT THE OVERWING EXITS. WHEN THE OVERWING EXITS WERE DEPLOYED, THEY BLEW OVER THE REAR INSTEAD OF OVER THE FRONT OF THE WING AND WERE DEEMED UNUSABLE. EXAMINATION OF THE AIRCRAFT REVEALED THE NO. 1 AIR CONDITIONING MODULE OVERHEATED AND OIL RESIDUE ON IT WAS THE SMOKE SOURCE.

## Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: INJURIES ASSOCIATED WITH THE EVACUATION OF THE AIRCRAFT.

## Findings

---

Occurrence #1: AIRFRAME/COMPONENT/SYSTEM FAILURE/MALFUNCTION  
Phase of Operation: CRUISE - NORMAL

### Findings

1. (C) AIR COND/HEATING/PRESSURIZATION - OVERTEMPERATURE
2. (F) AIR COND/HEATING/PRESSURIZATION - SMOKE

-----

Occurrence #2: HAZARDOUS MATERIALS LEAK/SPILL  
Phase of Operation: DESCENT - EMERGENCY

-----

Occurrence #3: MISCELLANEOUS/OTHER  
Phase of Operation: STANDING - ENGINE(S) NOT OPERATING

### Findings

3. EVACUATION - INTENTIONAL

## Factual Information

### 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
<b>Instrument Rating(s):</b>	Airplane	<b>Second Pilot Present:</b>	Yes
<b>Instructor Rating(s):</b>		<b>Toxicology Performed:</b>	No
<b>Medical Certification:</b>	Class 1 Valid Medical--no waivers/lim.	<b>Last FAA Medical Exam:</b>	12/05/1989
<b>Occupational Pilot:</b>		<b>Last Flight Review or Equivalent:</b>	
<b>Flight Time:</b>	1506 hours (Total, this make and model)		

### Aircraft and Owner/Operator Information

<b>Aircraft Make:</b>	DOUGLAS	<b>Registration:</b>	N109AA
<b>Model/Series:</b>	DC-10 DC-10	<b>Aircraft Category:</b>	Airplane
<b>Year of Manufacture:</b>		<b>Amateur Built:</b>	No
<b>Airworthiness Certificate:</b>		<b>Serial Number:</b>	46509
<b>Landing Gear Type:</b>	Tricycle	<b>Seats:</b>	303
<b>Date/Type of Last Inspection:</b>	Unknown	<b>Certified Max Gross Wt.:</b>	413000 lbs
<b>Time Since Last Inspection:</b>	0 Hours	<b>Engines:</b>	3 Turbo Fan
<b>Airframe Total Time:</b>		<b>Engine Manufacturer:</b>	GE
<b>ELT:</b>	Installed, not activated	<b>Engine Model/Series:</b>	CF6-6
<b>Registered Owner:</b>	UNKNOWN	<b>Rated Power:</b>	40000 lbs
<b>Operator:</b>	AMERICAN AIRLINES	<b>Operating Certificate(s) Held:</b>	Flag carrier (121)
<b>Operator Does Business As:</b>		<b>Operator Designator Code:</b>	AALA

## Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual Conditions	Condition of Light:	Night/Dark
Observation Facility, Elevation:	BWI, 146 ft msl	Distance from Accident Site:	0 Nautical Miles
Observation Time:	2350 EST	Direction from Accident Site:	0°
Lowest Cloud Condition:	Clear / 0 ft agl	Visibility	20 Miles
Lowest Ceiling:	None / 0 ft agl	Visibility (RVR):	0 ft
Wind Speed/Gusts:	12 knots /	Turbulence Type Forecast/Actual:	/
Wind Direction:	280°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	30 inches Hg	Temperature/Dew Point:	1°C / -3°C
Precipitation and Obscuration:			
Departure Point:	DALLAS, TX (DFW)	Type of Flight Plan Filed:	IFR
Destination:	NEW YORK, NY (LGA)	Type of Clearance:	IFR
Departure Time:	2008 CST	Type of Airspace:	

## Airport Information

Airport:	BALTIMORE-WASHINGTON (BWI)	Runway Surface Type:	Asphalt
Airport Elevation:	146 ft	Runway Surface Condition:	Dry
Runway Used:	28	IFR Approach:	None
Runway Length/Width:	9452 ft / 200 ft	VFR Approach/Landing:	Precautionary Landing

## Wreckage and Impact Information

Crew Injuries:	10 None	Aircraft Damage:	None
Passenger Injuries:	3 Serious, 7 Minor, 237 None	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	3 Serious, 7 Minor, 247 None	Latitude, Longitude:	

## Administrative Information

Investigator In Charge (IIC):	DENNIS L JONES	Report Date:	12/08/1992
Additional Participating Persons:	KEVEN WHITE; BALTIMORE, MD		
Publish Date:			
Investigation Docket:	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> .		

The National Transportation Safety Board (NTSB), established in 1967, is an independent federal agency mandated by Congress through the Independent Safety Board Act of 1974 to investigate transportation accidents, determine the probable causes of the accidents, issue safety recommendations, study transportation safety issues, and evaluate the safety effectiveness of government agencies involved in transportation. The NTSB makes public its actions and decisions through accident reports, safety studies, special investigation reports, safety recommendations, and statistical reviews.

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](#).