



Aviation Investigation Final Report

Location:	ORLANDO, Florida	Incident Number:	MIA88IA177
Date & Time:	May 24, 1988, 15:30 Local	Registration:	N1544
Aircraft:	British Aircraft Corp. (BAC) BAC-111-203	Aircraft Damage:	Minor
Defining Event:		Injuries:	6 Minor, 55 None
Flight Conducted Under:	Part 121: Air carrier - Scheduled		

Analysis

THE FLT WAS DESCENDING THRU 13000 FT WHEN TURBULENCE WAS ENCOUNTERED. FOUR PASSENGERS AND TWO FLIGHT ATTENDENTS WERE INJURED. THE PASSENGERS WERE INJURED WHEN THEIR SEATBELTS' END FITTINGS DETACHED FROM THEIR SEATS' TIE-DOWN SHACKLES AND THE PASSENGERS STRUCK CABIN FURNISHINGS. TESTS DETERMINED THAT WHEN A SHACKLE'S ATTACHMENT BOLT WAS OVERTIGHTENED (AND THE SHACKLE WAS NOT FREE TO SELF-CENTER) A SEATBELT LOAD WOULD BEND THE KEEPER ON THE BELT'S END FITTING AND THE FITTING WOULD OPEN AND DETACH FROM THE SHACKLE.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this incident to be:

Findings

Occurrence #1: IN FLIGHT ENCOUNTER WITH WEATHER
Phase of Operation: DESCENT - NORMAL

Findings

1. PASSENGER BRIEFING - ISSUED - PILOT IN COMMAND
2. WEATHER EVALUATION - PERFORMED - PILOT IN COMMAND
3. SEAT BELT SIGN - SELECTED - PILOT IN COMMAND

Occurrence #2: AIRFRAME/COMPONENT/SYSTEM FAILURE/MALFUNCTION
Phase of Operation: DESCENT - NORMAL

Findings

4. (C) MISC EQPT/FURNISHINGS,SEAT BELT - DISCONNECTED
5. (C) MAINTENANCE,ADJUSTMENT - IMPROPER - OTHER MAINTENANCE PERSONNEL

Factual Information

Pilot Information

Certificate:	Airline transport	Age:	45, Male
Airplane Rating(s):	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 Medical--no waivers/lim.	Last FAA Medical Exam:	December 29, 1987
Occupational Pilot:	Yes	Last Flight Review or Equivalent:	
Flight Time:	16000 hours (Total, all aircraft), 5000 hours (Total, this make and model), 230 hours (Last 90 days, all aircraft), 80 hours (Last 30 days, all aircraft), 6 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	British Aircraft Corp. (BAC)	Registration:	N1544
Model/Series:	BAC-111-203 BAC-111-20	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	
Airworthiness Certificate:	Transport	Serial Number:	018
Landing Gear Type:	Retractable - Tricycle	Seats:	72
Date/Type of Last Inspection:	May 24, 1988 Continuous airworthiness	Certified Max Gross Wt.:	79000 lbs
Time Since Last Inspection:	2 Hrs	Engines:	2 Turbo jet
Airframe Total Time:		Engine Manufacturer:	Rolls-Royce
ELT:		Engine Model/Series:	506-14D
Registered Owner:	FINALCO, INC.	Rated Power:	10410 Horsepower
Operator:	BRANIFF, INC.	Operating Certificate(s) Held:	Flag carrier (121)
Operator Does Business As:		Operator Designator Code:	BNFA

Meteorological Information and Flight Plan

Conditions at Accident Site:	Instrument (IMC)	Condition of Light:	Day
Observation Facility, Elevation:	MCO ,113 ft msl	Distance from Accident Site:	35 Nautical Miles
Observation Time:	15:50 Local	Direction from Accident Site:	270°
Lowest Cloud Condition:	Scattered / 3500 ft AGL	Visibility	8 miles
Lowest Ceiling:	Broken / 25000 ft AGL	Visibility (RVR):	
Wind Speed/Gusts:	13 knots / None	Turbulence Type Forecast/Actual:	/
Wind Direction:	180°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	29 inches Hg	Temperature/Dew Point:	33°C / 19°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	INDIANAPOLIS (IND)	Type of Flight Plan Filed:	IFR
Destination:	ORLANDO (MCO)	Type of Clearance:	IFR
Departure Time:	00:00 Local	Type of Airspace:	Class B

Airport Information

Airport:		Runway Surface Type:	
Airport Elevation:	0 ft msl	Runway Surface Condition:	
Runway Used:	0	IFR Approach:	None
Runway Length/Width:	0 ft / 0 ft	VFR Approach/Landing:	None

Wreckage and Impact Information

Crew Injuries:	2 Minor, 2 None	Aircraft Damage:	Minor
Passenger Injuries:	4 Minor, 53 None	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	6 Minor, 55 None	Latitude, Longitude:	28.479013,-81.319892(est)

Administrative Information

Investigator In Charge (IIC): Bird, Ronald

Additional Participating Persons: DENNIS GOETZ; PHOENIX , AZ
WILLIAM BRABHAM; ORLANDO , FL

Original Publish Date: March 5, 1990

Last Revision Date:

Investigation Class: [Class](#)

Note:

Investigation Docket: <https://data.nts.gov/Docket?ProjectID=32064>

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](#).