
Near-miss, British Airways Boeing 747-136, G-AWNM, and United Airlines DC-10, February 25, 1995, near Chicago

Micro-summary: A Boeing 747 and DC-10 were placed in close proximity.


Event Date: 1995-02-25 at 1925 CDT

Investigative Body: National Transportation Safety Board (NTSB), USA

Investigative Body's Web Site: <http://www.nts.gov/>

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		NTSB ID: CHI95IA095		Aircraft Registration Number: GAWNM	
		Occurrence Date: 02/25/1995		Most Critical Injury: None	
		Occurrence Type: Incident		Investigated By: NTSB	
Location/Time					
Nearest City/Place CHICAGO		State IL	Zip Code 60666	Local Time 1925	Time Zone CDT
Airport Proximity: Off Airport/Airstrip		Distance From Landing Facility:		Direction From Airport:	
Aircraft Information Summary					
Aircraft Manufacturer BOEING		Model/Series 747-136		Type of Aircraft Airplane	
Sightseeing Flight: No			Air Medical Transport Flight: No		
Narrative					
Brief narrative statement of facts, conditions and circumstances pertinent to the accident/incident:					
<p>HISTORY OF FLIGHT</p> <p>On February 25, 1995 about 1926 central standard time, British Airways (BA) Flight 296, from Chicago, Illinois, to London, England, and United Airlines (UA) Flight 243 from Chicago, Illinois, to Denver, Colorado, were involved in a near midair collision while the two airplanes were departing from the Chicago O'Hare International Airport. There were no injuries to the 339 passengers or crew of 18 on Flight 296, a Boeing 747-136. There were no injuries to the 140 passengers or crew of 10 on Flight 243, a McDonnell Douglas DC-10. Both flights were conducting scheduled passenger service, Flight 296 under the provisions of 14 CFR Part 129, and Flight 243 under the provisions of 14 CFR Part 121. IFR flight plans were filed for both flights. Visual meteorological conditions prevailed in Chicago.</p> <p>BA Flight 296 was issued a departure clearance to climb to 5,000 feet and turn right to a heading of 070 degrees. The flight was cleared for takeoff on runway 32R at 1922:36. UA Flight 243 was issued a departure clearance to climb to 5,000 feet and turn left to a heading of 320 degrees. The flight was cleared for takeoff on runway 4L at 1923:25, 49 seconds after BA Flight 296 was cleared to takeoff. BA Flight 296 was told to contact departure control at 1924:11.</p> <p>UA Flight 243 was told to fly runway heading at 1924:25 and told to make a "sharp" left turn to a heading of 270 degrees at 1924:30. At 1924:35, the flight was instructed to maintain 2,000 feet and, at 1925:00, was instructed to expedite their climb to 5,000 feet. At 1925:18, UA Flight 243 acknowledged that they had BA Flight 296 in sight "well below" them. The controller instructed UA Flight 243 to maintain visual separation.</p> <p>BA Flight 296 was instructed, by departure control, to maintain 3,000 feet and turn to the north. They were subsequently instructed to maintain their present altitude. The pilot of BA Flight 296 reported they stopped the climb at 2,300 feet and were on a heading of about 050 degrees when they initiated the left turn. He reported the other airplane was "clearly visible to our right" and "several cabin crew members reported the proximity of the other airplane." One flight attendant said she heard the other airplane. The pilot reported that a TCAS traffic advisory was received after they had acquired visual contact and no resolution advisory was received. He advised departure control of the occurrence and subsequently filed a near midair collision report.</p> <p>The pilot of UA Flight 243 reported that they were holding short of runway 4L, in the number two position, behind Air Canada Flight 700, a DC-9, when the controller initially cleared them on to the runway. Tower tapes disclose the flight crew alerted the controller, who rescinded the clearance. He later cleared Flight 243 onto the runway after the DC-9 departed. During a telephone interview, the pilot of UA Flight 243 reported they were at an altitude of about 800 feet AGL, prior to flap retraction, when they were instructed to maintain runway heading. They acquired visual contact with the other airplane as they rolled right to return to runway heading. They</p>					
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received a TCAS traffic alert coincident with the clearance to climb to 5,000 feet and did not receive a resolution alert. He estimated the minimum separation between the two airplanes was 300 feet vertically and one mile horizontally.

In a TCAS simulation summary, ARINC, Inc. of Cambridge, Massachusetts, a contractor tasked by the FAA to investigate TCAS incidents, reported that at a range of approximately 1.7 miles, TCAS thresholds for traffic advisories were satisfied for both airplanes. TCAS resolution advisories were not issued because "the rapid climb established by TCAS #2 resulted in vertical separation projections in excess of the minimum thresholds of 300 and 600 feet for corrective and preventative resolution advisories, respectively."

The minimum lateral separation required between two heavy airplanes in the Chicago terminal area is four miles. Controllers have the option of providing visual separation, and reduced separation standards, between other airplanes, but this option is not available for heavy airplanes.

The Chicago O'Hare Air Traffic Control Tower (ATCT) was staffed with two local controllers at the time of the incident. The north local controller was responsible for landing traffic on runway 9L and departing traffic on runways 4L, 32R, and 9L. Additionally, a relieving north local controller, a local control monitor, an area supervisor, and an area manager were monitoring traffic. During interviews, several controllers described the traffic as "fairly busy" and the configuration as "complex" but not abnormal for the O'Hare ATCT.

The heavy Boeing 747, BA Flight 296, normally would have departed on runway 32L, however, runway 32L was closed due to damage to the surface of the runway. Airplanes were departing on runways 4L, 9L, and 32R. Airplanes were arriving on runway 4R with simultaneous instrument landing system (ILS) approaches to runways 9R and 9L.

The occurrence was classified as an operational error by the FAA. Findings of the FAA were that there was a "momentary lapse of the required separation" and the error was categorized as "human."


Safety Board Investigators interviewed the North Local Controller, the East Departure Controller, the relieving North Local Controller, the North Local Control Monitor, the Area Supervisor, and the Area Manager.

During a personal interview with NTSB investigators, the North Local Controller reported that he was preparing to brief the controller who was scheduled to relieve his position. He planned a sequence to depart BA Flight 296, but the flight was not initially on his frequency when he was ready to issue takeoff clearance. He modified his planned sequence, eventually issued takeoff clearance to BA Flight 296, and continued briefing the relieving controller. He issued a takeoff clearance to UA Flight 243, handed off BA Flight 296 to departure control, and soon realized the potential conflict. He had considered the alternative of requesting that UA Flight 243 abort their takeoff, but the airplane had accelerated about 3,000 feet down the runway and he believed it would not be a good technique to request an abort at that point.

The controller stated that minimum separation standards were violated as soon as UA Flight 243 became airborne. He immediately began taking action to prevent a more severe occurrence.

He commented during the interview that he had an excellent working relationship with his supervisors in the tower. He believed they did not put undo pressure on him to keep traffic moving and said "the only pressure is pressure I put on myself"

The relieving North Local Controller, during a personal interview, reported he had been briefed on a few items from the relief briefing card, and had just plugged into the station when UA Flight 243 was cleared for takeoff. He commented "what heading you got BA on?" He stated that he believed that it was at this time the North Local Controller realized there was a traffic conflict.

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The Tower Supervisor reported that part of his duty was to "see where people may need some assistance." At the time of the incident, he was assisting the inbound and outbound ground controllers on the opposite side of the tower cab. He realized a conflict had occurred and observed the Area Manager move over to the north local control position. At that point he "stood back" and continued assisting the ground controllers.

The Area Manager reported that his duties included "the oversight of operations and to recognize trouble spots", and to make on the spot corrections of any problems with controller performance. At the time of the incident he was working on a schedule for the next day. He focused his attention on the north local control position when he heard the controller say "... give me a tight left turn" He saw the targets and believed they were going to merge. He asked the controller "what's happening." The controller responded "I've got visual."

The Area Manager stated that he wasn't observing the relief changeover. He said he occasionally observes changeovers, on a random basis, but there is no requirement for them to be monitored.

The North Local Control Monitor, during a personal interview, reported he heard the North Local Controller comment that he had a problem. The monitor looked at the airport and looked at the radar and saw that the "aircraft were aimed at each other." He said he recommended that the controller "issue traffic." He looked back to runway 9L, "saw nobody else in position, so no other deals could occur," then resumed his duties of monitoring.

ADDITIONAL INFORMATION

The local control monitor position was established by the FAA following NTSB recommendations A-86-45 and A-86-46 which resulted from the NTSB investigation of an operational error at O'Hare on May 17, 1986. Recommendation A-86-45 stated, "Establish on a trial basis, for the north and south control operations in the Chicago O'Hare International Airport control tower, local control coordinator positions to monitor and supervise, directly, the local control positions; staff these positions whenever intersecting runways are in concurrent operation," This recommendation was classified by the NTSB as "Closed--Unacceptable Action" on August 3, 1987. Recommendation A-86-46 stated, "Evaluate the need for a local control coordinator position at all major airports that use intersecting runways in concurrent operations and establish the position where the need is evident." This recommendation was classified by the NTSB as "Closed-- Acceptable Action" on July 10, 1989.

O'Hare Operating Order 7110.65C, dated September 1, 1993, specifies that the local control monitor's responsibilities are to:

- (1) Monitor the Local Controller's operation through the use of an FAA headset.
- (2) Assist the Local Controller by acting as an "extra pair of eyes."
- (3) Advise the Local Controller of any observed or anticipated unsafe operation.

During interviews, several controllers commented that the responsibility of the local control monitor was limited to the surface only. One controller described the position as "totally boring." Another commented that "for the most part, monitors just sit there" because the position is not an "active" job.

One controller commented that the requirement for the monitor position sometimes prevented the tower from using optimum configurations because desirable runways could not be opened due to the need for additional staffing. Several controllers, however, described situations where the monitor intervened to prevent an operational error from occurring and remarked that the position was

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invaluable for safe operations.

Parties to the investigation were the Federal Aviation Administration, British Airways, the National Air Traffic Controllers Association, and United Airlines.

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Landing Facility/Approach Information					
Airport Name	Airport ID:	Airport Elevation	Runway Used	Runway Length	Runway Width
CHICAGO O'HARE INT'L	ORD	Ft. MSL	0		
Runway Surface Type:					
Runway Surface Condition:					
Type Instrument Approach: NONE					
VFR Approach/Landing:					
Aircraft Information					
Aircraft Manufacturer		Model/Series		Serial Number	
BOEING		747-136			
Airworthiness Certificate(s): Transport					
Landing Gear Type: Retractable - Tricycle					
Homebuilt Aircraft? No	Number of Seats: 418	Certified Max Gross Wt.	710000 LBS	Number of Engines: 4	
Engine Type:	Engine Manufacturer:	Model/Series:	Rated Power:		
Turbo Jet	P&W	JT9D-7A			
- Aircraft Inspection Information					
Type of Last Inspection	Date of Last Inspection	Time Since Last Inspection	Airframe Total Time		
Continuous Airworthiness		Hours	Hours		
- Emergency Locator Transmitter (ELT) Information					
ELT Installed? Yes	ELT Operated? No	ELT Aided in Locating Accident Site?			
Owner/Operator Information					
Registered Aircraft Owner		Street Address			
		SPEEDBIRD HOUSE, P.O. BOX 10			
BRITISH AIRWAYS		City	State	Zip Code	
		HOUNSLOW	UK		
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: BRA		
- Type of U.S. Certificate(s) Held:					
Air Carrier Operating Certificate(s): Flag Carrier/Domestic					
Operating Certificate:			Operator Certificate:		
Regulation Flight Conducted Under: Part 129: Foreign					
Type of Flight Operation Conducted: Scheduled; International; Passenger Only					
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First Pilot Information

Name On File	City On File	State On File	Date of Birth On File	Age 49
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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: 11/1994
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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	10100	7000								
Pilot In Command(PIC)										
Instructor										
Last 90 Days	62	61	1	61						
Last 30 Days	39	39								
Last 24 Hours										

Seatbelt Used? Yes	Shoulder Harness Used? Yes	Toxicology Performed? No	Second Pilot? No
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Flight Plan/Itinerary

Type of Flight Plan Filed: IFR

Departure Point Same as Accident/Incident Location	State	Airport Identifier	Departure Time 1923	Time Zone CST
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Destination LONDON	State UK	Airport Identifier LHR	
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Type of Clearance: IFR

Type of Airspace: Class B

Weather Information

Source of Briefing:
Company

Method of Briefing:

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Weather Information					
WOF ID	Observation Time	Time Zone	WOF Elevation	WOF Distance From Accident Site	Direction From Accident Site
ORD	1850	CST	667 Ft. MSL	0 NM	0 Deg. Mag.
Sky/Lowest Cloud Condition: Scattered			10000 Ft. AGL	Condition of Light: Night/Dark	
Lowest Ceiling: None		0 Ft. AGL	Visibility: 10 SM	Altimeter: 30.00	"Hg
Temperature: 3 °C	Dew Point: -3 °C	Wind Direction: 60		Density Altitude: 700	Ft.
Wind Speed: 15	Gusts: 22	Weather Conditions at Accident Site: Visual Conditions			
Visibility (RVR): 0 Ft.	Visibility (RVV) 0 SM	Intensity of Precipitation: Unknown			
Restrictions to Visibility: None					
Type of Precipitation: None					

Accident Information		
Aircraft Damage: None	Aircraft Fire: None	Aircraft Explosion: None

Classification: Foreign 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				1	1
Cabin Attendants				15	15
Other Crew					
Passengers				339	339
- TOTAL ABOARD -				357	357
Other Ground	0	0	0		0
- GRAND TOTAL -	0	0	0	357	357

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Administrative Information

Investigator-In-Charge (IIC)

WESLEY M. ROBBINS,

Additional Persons Participating in This Accident/Incident Investigation:

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