



Aviation Investigation Final Report

Location:	JAMAICA, New York	Accident Number:	NYC93FA137
Date & Time:	July 25, 1993, 09:48 Local	Registration:	HZAIS
Aircraft:	BOEING 747-368	Aircraft Damage:	Minor
Defining Event:		Injuries:	151 None
Flight Conducted Under:	Part 129: Foreign		

Analysis

THE CREW OF THE DEPARTING ATR-42, N242AT, HAD ACCEPTED AN INTERSECTION DEPARTURE, AND WAS HOLDING ON A STUB TAXIWAY WHEN THE FOLLOWING B-747, HZ-AIS, TRIED TO GET AROUND IT. THE LEFT WING OF THE B-747 CONTACTED THE VERTICAL STABILIZER AND RUDDER OF THE ATR-42. AT THE TIME OF THE ACCIDENT, THE CAPTAIN OF THE B-747 WAS MAKING AN ANNOUNCEMENT ON THE PUBLIC ADDRESS SYSTEM TO THE CABIN, AND AT THE SAME TIME ATTEMPTING TO MANEUVER THE AIRPLANE TO THE RIGHT TO AVOID THE ATR-42.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: MISSJUDGED CLEARANCE BY THE CAPTAIN OF THE B-747, HZ-AIS, AS HE ATTEMPTED TO MANEUVER AROUND THE ATR-42, N242AT. A FACTOR RELATED TO THE ACCIDENT WAS THE DIVERTED ATTENTION OF THE CAPTAIN OF THE B-747.

Findings

Occurrence #1: ON GROUND/WATER COLLISION WITH OBJECT
Phase of Operation: TAXI - TO TAKEOFF

Findings

1. (C) CLEARANCE - MISJUDGED - PILOT IN COMMAND

2. (F) DIVERTED ATTENTION - PILOT IN COMMAND
3. OBJECT - AIRCRAFT PARKED/STANDING

Factual Information

HISTORY OF FLIGHT

On Sunday, July 25, 1993, at 0948 eastern daylight time, while taxiing for takeoff, a Boeing 747-368, HZ-AIS, operating as Saudian Arabian Airlines flight SVA 039, and an Aerospatiale ATR-42-300, N242AT, operating as Flagship Airlines (dba American Eagle) flight 4944, collided on the ground, at John F. Kennedy (JFK) Airport, Jamaica, New York. The collision involved the left wing of the B747 and vertical stabilizer and rudder of the ATR-42. The B747 received minor damage and the ATR-42 received substantial damage. There were no injuries to the occupants. Visual meteorological conditions prevailed. Both flights had filed instrument flight rules flight plans. Flight 039 was operating under 14 CFR Part 129, and flight 4944 was operating under 14 CFR Part 121.

Flight 039 was the continuation of a flight from Saudi Arabia. At JFK there was a flightcrew change and the flight was scheduled to continue on to Dulles Airport, Washington, DC. Flight 039 was parked at Delta Airlines terminal 1A. The on coming flight crew had been on 48 hours of rest.

Flight 4944 was an originating flight for the flightcrew. The destination was National Airport, Washington, DC. The airplane was parked in the commuter area for American Eagle. This was the first flight after 4 days of rest for the crew.

Both flight were instructed to taxi to runway 4L. Upon crossing runway 31L, both flightcrews contacted the control tower. As flight 4944 neared taxiway KILO BRAVO on taxiway KILO, they were asked if they would accept an intersection departure, and they replied they would. Flight 4944 pulled onto taxiway KILO BRAVO to await their departure sequence.

As flight 039 neared taxiway KILO BRAVO, on taxiway KILO, the pilot deviated to the right, however, the left wing made contact with the vertical stabilizer of N242AT (Flight 4944).

In a written statement, made after the accident, the captain of flight 039 stated:

...As I was approaching [taxiway] KB and to give myself more clearance I taxied off centerline to the right thinking I would be clear of the American Eagle. Meanwhile I heard over the VHF Frequency (AE)[American Eagle] calling and advising position at KB[KILO BRAVO] and been hit. I stopped the aircraft immediately....

In a written statement, the Purser (senior flight attendant) on flight 039, who was seated at the L1 position in the cabin stated:

...During our taxiing, I observed a small commuter aircraft...As we passed behind this aircraft, I felt a small jolt but I was unable to see anything. I got the impression initially, that we may have clipped the American Eagle Aircraft, as I thought I had seen the AA [American Eagle] A/C moving as we passed it. The Captain was in the middle of a welcoming P.A. to the pax[passengers]. But he broke off mid-way....

The interrupted public address from the captain was also mentioned in two other written statements from flight attendants.

When interviewed after the accident, the captain of flight 039 stated he thought we would clear the airplane while on the taxiway centerline. He said he moved to the right for more clearance.

The accident occurred during the hours of daylight at 40 degrees, 37.57 minutes north and 73 degrees, 47.07 minutes north.

AIRCRAFT INFORMATION

HZ-AIS The airplane, a Boeing 747-368, has a wing span of 195 feet, 8 inches. According to Boeing, the wing landing gear is 41 feet, 4 inches wide, measured from the outside tires. The left wing tip is 126.8 feet rearward, and 95.35 feet outboard of the left pilot seat. Sitting in the left seat of HZ-AIS, this investigator found it was possible to see the wing tip, only if the seat belt was loosened, and he rotated in the seat to the left.

N242AT The airplane, an Aerospatiale ATR-42-300, has an overall length of 74 feet, 5 inches. The nose wheel is located 5 feet aft of the nose of the airplane.

AERODROME INFORMATION

John F. Kennedy Airport is managed by the Port Authority of New York and New Jersey. It is a FAR 139 airport and receives federal funding. No restrictions were found for the use of intersection takeoffs at taxiway KILO BRAVO, when using runway 4L for departures, or for taxiing other airplanes behind an airplane holding on a stub taxiway.

Measurements of the runway and taxiway at taxiway, KILO (K), KILO BRAVO (KB), and runway 4 LEFT (4L) produced the following measurements:

Centerline of runway 4L to runway hold short line 283 feet, 2 inches; Runway hold short line to centerline of taxiway K, 167 feet, 7 inches; Width of taxiway K, at taxiway KB, 72 feet, 2 inches; Centerline of taxiway K to edge line on left 37 feet, 11 inches Centerline of taxiway K to edge line of right 34 feet, 3 inches

According to Mr. William DeGraaff, FAA Eastern Region, Airports Division, Safety and Standards Branch, the runway and taxiway markings at JFK met FAA requirements. The 280

foot distance, centerline of runway to runway hold short line had been in use since November 1980.

FLIGHT RECORDERS

HZ-AIS The cockpit voice recorder (CVR) and digital flight data recorder (DFDR) were forwarded to the NTSB Laboratory in Washington, DC, for review. The recording medium on both recorders was of useable quality.

According to the cockpit voice recorder report, the recorder had been bulk erased. At the end were 14 seconds of conversation which was transcribed.

The information in the flight data recorder was not inconsistent with interviews, and was not included in this report.

N242AT The airplane was stationary at the time of the accident. The flight data recorder was not retained. The cockpit voice recorder was retained and listened to. The recording was of useable quality; however, it was not inconsistent with interviews and a transcript was not made.

WRECKAGE AND IMPACT INFORMATION

The airplanes were examined at the accident site on July 25, 1993.

HZ-AIS The airplane was on taxiway K, with the main landing gear approximately 250 feet beyond the centerline of taxiway KB. All wheels except the left wing landing gear were found to be on the west (right) side of taxiway K. The airplane was angled with the nose pointed approximately 10 degrees left of the centerline of taxiway K.

The wing flaps were extended to 20 degrees and the leading edge devices were extended. All damage was limited to the outboard section of the left wing. The number one leading edge device was off the airplane and the number two leading edge device was crushed back into the leading edge of the wing. There were two small punctures of the leading edge skin in the vicinity of the leading edge devices. The plastic navigation light cover on the left wing was broken.

When a photograph of the left wing was reviewed by Boeing, they placed the initial contact point at 108 inches (9 feet) from the wing tip.

N242AT The airplane on located on taxiway KB. The wing flaps were in the takeoff position. The nose of the airplane was rotated 50 degrees nose left. An arcing skid mark was found which originated on the centerline of taxiway KB, and terminated with the nosewheel of the airplane. The center of the skid originated 30 feet 3 inches from the runway hold short line. There was a small gouge mark in the asphalt that corresponded with the position of the

outboard wheel of the right main landing gear. In addition, a mark was found on the wheel rim, and small pieces of asphalt were imbedded in the wheel rim. The left main gear had left an intermittent skid mark approximately 10 feet long, in the shape of a curving arc.

The number one leading edge device from HZ-AIS was found lodged in the vertical stabilizer of the ATR-42, just forward of the rudder (approximately 7 feet from the rear of airplane). In addition, horizontal scrape marks were visible between the point where the number one leading edge device was lodged in the vertical stabilizer and the end of the rudder.

ADDITIONAL INFORMATION

Additional statements were submitted by the flightcrew of HZ-AIS after they returned to Saudi Arabia. In these statements, the captain stated he was making a cabin public address at the time of the accident.

According to the Saudi Arabian Airlines, Flight Operations (Part 121/91) Policy Manual, Item 9:

If, at any time, there is any doubt in the pilot's mind as to proper clearance, the aircraft should be stopped until he is assured that there is sufficient room.

Both airplanes were verbally released to their operators on July 25, 1993.

Pilot Information

Certificate:	Airline transport	Age:	51, 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:	Yes
Medical Certification:	Class 1 Valid Medical-w/ waivers/lim	Last FAA Medical Exam:	May 18, 1963
Occupational Pilot:	Yes	Last Flight Review or Equivalent:	
Flight Time:	21198 hours (Total, all aircraft), 1945 hours (Total, this make and model), 143 hours (Last 90 days, all aircraft), 14 hours (Last 30 days, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	BOEING	Registration:	HZAIS
Model/Series:	747-368 747-368	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	
Airworthiness Certificate:	Transport	Serial Number:	23270
Landing Gear Type:	Retractable - Tricycle	Seats:	416
Date/Type of Last Inspection:	July 11, 1993 AAIP	Certified Max Gross Wt.:	833000 lbs
Time Since Last Inspection:	249 Hrs	Engines:	4 Turbo fan
Airframe Total Time:	23888 Hrs	Engine Manufacturer:	Rolls-Royce
ELT:	Installed, not activated	Engine Model/Series:	RB 211-524D4
Registered Owner:	SAUDI ARABIAN AIRLINES	Rated Power:	
Operator:		Operating Certificate(s) Held:	Flag carrier (121)
Operator Does Business As:		Operator Designator Code:	SAFF

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	Condition of Light:	Day
Observation Facility, Elevation:	JFK ,13 ft msl	Distance from Accident Site:	
Observation Time:	09:56 Local	Direction from Accident Site:	
Lowest Cloud Condition:	Scattered / 25000 ft AGL	Visibility	20 miles
Lowest Ceiling:	None	Visibility (RVR):	
Wind Speed/Gusts:	5 knots /	Turbulence Type Forecast/Actual:	/
Wind Direction:	50°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	30 inches Hg	Temperature/Dew Point:	28°C / 15°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	(JFK)	Type of Flight Plan Filed:	IFR
Destination:	WASHINGTON , DC (IAD)	Type of Clearance:	None
Departure Time:	00:00 Local	Type of Airspace:	Class D

Airport Information

Airport:	JOHN F. KENNEDY JFK	Runway Surface Type:	Asphalt
Airport Elevation:	13 ft msl	Runway Surface Condition:	Dry
Runway Used:	0	IFR Approach:	None
Runway Length/Width:		VFR Approach/Landing:	None

Wreckage and Impact Information

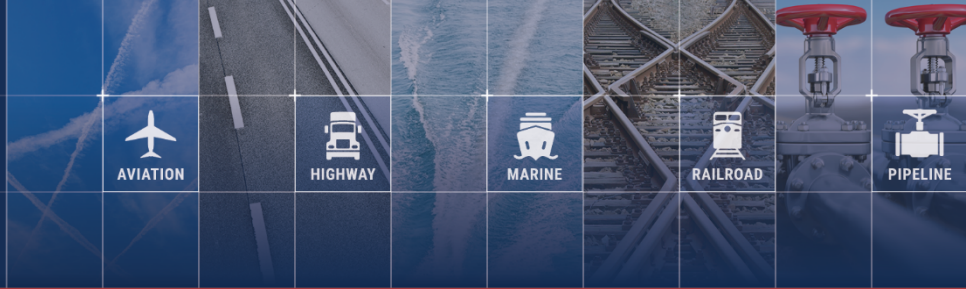
Crew Injuries:	21 None	Aircraft Damage:	Minor
Passenger Injuries:	130 None	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	151 None	Latitude, Longitude:	40.6497,-73.789932(est)

Administrative Information

Investigator In Charge (IIC):	HANCOCK,, ROBERT
Additional Participating Persons:	TOM CARMODY; WASHINGTON , DC FRANK HEUER; JAMAICA , NY MOHAMMED BERENJI; WASHINGTON , DC ROBERT GRABOWSKI; ARLINGTON , TX
Original Publish Date:	September 27, 1994
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.nts.gov/Docket?ProjectID=38583

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](#).



Aviation Investigation Final Report

Location:	JAMAICA, New York	Accident Number:	NYC93FA137
Date & Time:	July 25, 1993, 09:48 Local	Registration:	N242AT
Aircraft:	AEROSPATIALE ATR-42-300	Aircraft Damage:	Substantial
Defining Event:		Injuries:	42 None
Flight Conducted Under:	Part 121: Air carrier - Scheduled		

Analysis

THE CREW OF THE DEPARTING ATR-42, N242AT, HAD ACCEPTED AN INTERSECTION DEPARTURE, AND WAS HOLDING ON A STUB TAXIWAY WHEN THE FOLLOWING B-747, HZ-AIS, TRIED TO GET AROUND IT. THE LEFT WING OF THE B-747 CONTACTED THE VERTICAL STABILIZER AND RUDDER OF THE ATR-42. AT THE TIME OF THE ACCIDENT, THE CAPTAIN OF THE B-747 WAS MAKING AN ANNOUNCEMENT ON THE PUBLIC ADDRESS SYSTEM TO THE CABIN, AND AT THE SAME TIME ATTEMPTING TO MANEUVER THE AIRPLANE TO THE RIGHT TO AVOID THE ATR-42.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: MISSJUDGED CLEARANCE BY THE CAPTAIN OF THE B-747, HZ-AIS, AS HE ATTEMPTED TO MANEUVER AROUND THE ATR-42, N242AT. A FACTOR RELATED TO THE ACCIDENT WAS THE DIVERTED ATTENTION OF THE CAPTAIN OF THE B-747.

Findings

Occurrence #1: ON GROUND/WATER COLLISION WITH OBJECT
Phase of Operation: STANDING - ENGINE(S) OPERATING

Findings

1. (C) CLEARANCE - MISJUDGED - PILOT OF OTHER AIRCRAFT

2. (F) DIVERTED ATTENTION - PILOT OF OTHER AIRCRAFT
3. OBJECT - AIRCRAFT MOVING ON GROUND

Factual Information

See narrative report for NYC93FA137A.

Pilot Information

Certificate:	Airline transport	Age:	34, 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):	Airplane multi-engine; Airplane single-engine	Toxicology Performed:	Yes
Medical Certification:	Class 1 Valid Medical-w/ waivers/lim	Last FAA Medical Exam:	April 16, 1993
Occupational Pilot:	Yes	Last Flight Review or Equivalent:	
Flight Time:	10100 hours (Total, all aircraft), 1800 hours (Total, this make and model), 7000 hours (Pilot In Command, all aircraft), 180 hours (Last 90 days, all aircraft), 60 hours (Last 30 days, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	AEROSPATIALE	Registration:	N242AT
Model/Series:	ATR-42-300 ATR-42-300	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	
Airworthiness Certificate:	Transport	Serial Number:	242
Landing Gear Type:	Retractable - Tricycle	Seats:	49
Date/Type of Last Inspection:	July 5, 1993 Continuous airworthiness	Certified Max Gross Wt.:	36825 lbs
Time Since Last Inspection:	117 Hrs	Engines:	2 Turbo prop
Airframe Total Time:	4264 Hrs	Engine Manufacturer:	P&W
ELT:	Installed, not activated	Engine Model/Series:	PW 120
Registered Owner:	GPA ATR 11 INC.	Rated Power:	1800 Horsepower
Operator:	FLAGSHIP AIRLINES, INC.	Operating Certificate(s) Held:	Flag carrier (121)
Operator Does Business As:	AMERICAN EAGLE	Operator Designator Code:	NVEA

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	Condition of Light:	Day
Observation Facility, Elevation:	JFK ,13 ft msl	Distance from Accident Site:	
Observation Time:	09:56 Local	Direction from Accident Site:	
Lowest Cloud Condition:	Scattered / 25000 ft AGL	Visibility	20 miles
Lowest Ceiling:	None	Visibility (RVR):	
Wind Speed/Gusts:	5 knots /	Turbulence Type Forecast/Actual:	/
Wind Direction:	50°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	30 inches Hg	Temperature/Dew Point:	28°C / 15°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	(JFK)	Type of Flight Plan Filed:	IFR
Destination:	WASHINGTON , DC (DCA)	Type of Clearance:	None
Departure Time:	00:00 Local	Type of Airspace:	Class D;Class E

Airport Information

Airport:	JOHN F. KENNEDY JFK	Runway Surface Type:	Asphalt
Airport Elevation:	13 ft msl	Runway Surface Condition:	Dry
Runway Used:	0	IFR Approach:	None
Runway Length/Width:		VFR Approach/Landing:	None

Wreckage and Impact Information

Crew Injuries:	3 None	Aircraft Damage:	Substantial
Passenger Injuries:	39 None	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	42 None	Latitude, Longitude:	40.6497,-73.789932(est)

Administrative Information

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Additional Participating Persons:	TOM CARMODY; WASHINGTON , DC FRANK HEUER; JAMAICA , NY MOHAMMED BERENJI; WASHINGTON , DC ROBERT GRABOWSKI; ARLINGTON , TX
Original Publish Date:	September 27, 1994
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Note:	
Investigation Docket:	https://data.nts.gov/Docket?ProjectID=38583

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