



National Transportation Safety Board Aviation Accident Final Report

Location:	BELLEVILLE, MI	Accident Number:	CHI95LA078
Date & Time:	01/28/1995, 1910 EST	Registration:	N706CK
Aircraft:	Boeing 747-238B	Aircraft Damage:	Substantial
Defining Event:		Injuries:	4 None
Flight Conducted Under:	Part 91: General Aviation - Positioning		

Analysis

THE FLIGHTCREW REPORTED THAT THE AIRPLANE WAS NOT PRESSURIZED FOR THE 15 MINUTE REPOSITIONING FLIGHT, AND THE MAXIMUM ALTITUDE REACHED WAS 3,100 FEET. THEY REPORTED NO UNUSUAL OCCURRENCES DURING THE FLIGHT. POSTFLIGHT INSPECTION REVEALED THAT PALLETS FROM THE 3L POSITION HAD SHIFTED AFT AND PUNCTURED THE AFT PRESSURE BULKHEAD IN TWO PLACES. A FLIGHT MECHANIC REPORTED THAT HE HAD SECURED THE PALLETS IN POSITION 3L AND 3R WHEN THEY WERE PLACED THERE TWO FLIGHTS BEFORE THE ACCIDENT FLIGHT. HE 'FLIPPED UP THREE ROWS OF LOCKS AFT OF EACH PALLET POSITION.' THE FLIGHT ENGINEER REPORTED THAT HE HAD INSPECTED THE PALLETS DURING THE PREFLIGHT AND 'THE LEFT SIDE HAD AN OVERHANG' AND HE COULD NOT SEE THE AFT LOCKS. HE SAID THE FRONT LOCKS WERE INSTALLED.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: the failure of company maintenance personnel to adequately secure the cargo pallets, and the failure of the flightcrew to detect the deficiency during their preflight inspection.

Findings

Occurrence #1: CARGO SHIFT
Phase of Operation: TAKEOFF

Findings

1. (C) SECURITY OF CARGO - INADEQUATE - COMPANY MAINTENANCE PERSONNEL
2. (C) AIRCRAFT PREFLIGHT - INADEQUATE - FLIGHTCREW
3. FUSELAGE,PRESSURE BULKHEAD - PENETRATED

Factual Information

On January 28, 1995, at 1910 eastern standard time, a Boeing 747- 238B airplane, N706CK, operated by American International Airways Inc., sustained substantial damage to the aft pressure bulkhead when cargo pallets shifted during takeoff from the Willow Run Airport, Ypsilanti, Michigan. Three crew members and a mechanic onboard the airplane reported no injuries. The repositioning flight, conducted under 14 CFR Part 91, landed uneventfully at the Detroit Metropolitan Wayne County Airport approximately 1930.

Visual meteorological conditions prevailed and an IFR flight plan was filed.

The flight crew reported the airplane was not pressurized for the 15 minute repositioning flight and the maximum altitude reached was 3,100 feet. They reported no unusual occurrences during the flight and did not know the pallets had shifted until they conducted a postflight inspection and discovered the stack of pallets that had been located in position 3L had shifted aft.

In a written statement, the flight mechanic reported that he had secured the pallets in position 3L and 3R when they were placed there, two flights before the accident flight. He "flipped up three rows of locks aft of each pallet position." He stated that "sometime after the airplane arrived in Ypsilanti, the pallets had to be either moved, or the locks disengaged, and not resecured."

The flight engineer reported that he had inspected the pallets during the preflight and "the left side had an overhang" and he could not see the aft locks. He said the front locks were installed.

Photographs of the pressure bulkhead, provided to the NTSB investigator, exhibited two holes in the four o'clock and seven o'clock positions as viewed from the cargo area.

Pilot Information

Certificate:	Airline Transport	Age:	48, Male
Airplane Rating(s):	Multi-engine Land	Seat Occupied:	Left
Other Aircraft Rating(s):	None	Restraint Used:	Seatbelt, Shoulder harness
Instrument Rating(s):	Airplane	Second Pilot Present:	Yes
Instructor Rating(s):		Toxicology Performed:	No
Medical Certification:	Class 1 Valid Medical--w/ waivers/lim.	Last Medical Exam:	10/28/1994
Occupational Pilot:		Last Flight Review or Equivalent:	
Flight Time:	19000 hours (Total, all aircraft), 1500 hours (Total, this make and model), 10000 hours (Pilot In Command, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Manufacturer:	Boeing	Registration:	N706CK
Model/Series:	747-238B 747-238B	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	No
Airworthiness Certificate:	Transport	Serial Number:	20010
Landing Gear Type:	Retractable - Tricycle	Seats:	9
Date/Type of Last Inspection:	Continuous Airworthiness	Certified Max Gross Wt.:	785000 lbs
Time Since Last Inspection:		Engines:	4 Turbo Jet
Airframe Total Time:		Engine Manufacturer:	P&W
ELT:	Installed, not activated	Engine Model/Series:	JT9D-7J
Registered Owner:	AMERICAN INTERNATIONAL AIRWAYS	Rated Power:	49970 lbs
Operator:	AMERICAN INTERNATIONAL AIRWAYS	Air Carrier Operating Certificate:	Supplemental

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual Conditions	Condition of Light:	Dusk
Observation Facility, Elevation:	YIP, 716 ft msl	Observation Time:	1845 EST
Distance from Accident Site:	0 Nautical Miles	Direction from Accident Site:	0°
Lowest Cloud Condition:	Thin Broken / 2500 ft agl	Temperature/Dew Point:	-6° C / -10° C
Lowest Ceiling:	None / 0 ft agl	Visibility	15 Miles
Wind Speed/Gusts, Direction:		Visibility (RVR):	0 ft
Altimeter Setting:	30 inches Hg	Visibility (RVV):	0 Miles
Precipitation and Obscuration:			
Departure Point:		Type of Flight Plan Filed:	IFR
Destination:	DETROIT, MI (DTW)	Type of Clearance:	IFR
Departure Time:	1910 EST	Type of Airspace:	Class D

Airport Information

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

Wreckage and Impact Information

Crew Injuries:	4 None	Aircraft Damage:	Substantial
Passenger Injuries:	N/A	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	4 None	Latitude, Longitude:	

Administrative Information

Investigator In Charge (IIC): WESLEY M ROBBINS, **Adopted Date:** 11/25/1996

Additional Participating Persons: STEVEN C BUCHER; BELLEVILLE, MI

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 pubinq@ntsb.gov, or at 800-877-6799. Dockets released after this date are available at <http://dms.nts.gov/pubdms/>.

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