
Landing gear pivot pin failure, Boeing 767-300ER, PH-MCL, February 19, 2004

Micro-summary:

Event Date: 2004-02-19 at 1410 EST


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

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

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		NTSB ID: ANC04IA025		Aircraft Registration Number: PH-MCL	
		Occurrence Date: 02/19/2004		Most Critical Injury: None	
		Occurrence Type: Incident		Investigated By: NTSB	
Location/Time					
Nearest City/Place Miami	State FL	Zip Code 33166	Local Time 1410	Time Zone EST	
Airport Proximity: On Airport		Distance From Landing Facility:		Direction From Airport:	
Aircraft Information Summary					
Aircraft Manufacturer Boeing		Model/Series 767-300 ER		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>On February 19, 2004, about 1410 eastern standard time, a Dutch registered Boeing 767-300 ER airplane, PH-MCL, had a landing gear component failure while landing at the Miami International Airport, Miami, Florida. The airplane was being operated by Martinair Holland, under Title 14, CFR Part 129, as an instrument flight rules (IFR) international cross-country scheduled passenger flight. There were no injuries to the two pilots, eight flight attendants, or the 280 passengers. Visual meteorological conditions prevailed, and an instrument flight plan was filed. The flight originated on February 19, about 0923 Universal Coordinated Time (UTC), from the Amsterdam Schiphol International Airport, the Netherlands, and was en route to the Miami International Airport.</p> <p>The flight crew reported to their Miami based contract maintenance company personnel that during landing rollout on runway 12, as they applied the brakes, they noted a significant airframe vibration, and a pronounced rumbling noise as the airplane slowed. During a postincident inspection, maintenance personnel discovered a broken landing gear pivot pin on the right main landing gear truck.</p> <p>On February 20, 2004, in the presence of the National Transportation Safety Board (NTSB) investigator-in-charge, the landing gear bogie pivot pin was removed from the incident airplane's main landing gear bogie beam. During the removal process, a residual amount of dried grease was noted on the fractured pivot pin and associated bogie beam bushings. The pivot pin was sent to the NTSB's Materials Laboratory in Washington, DC, for a metallurgical examination.</p> <p>According to Martinair, the pivot pin was installed in the incident airplane in February of 2001. The pivot pin had attained 2,232 landing cycles prior to the event. According to Boeing Commercial Airplane Group, the landing gear bogie pivot pin has a 50,000 landing cycle limit.</p> <p>According to the NTSB Pilot/Operator Aircraft Accident Report (NTSB Form 6120.1/2) submitted by Martinair, the incident airplane had accumulated a total time of 63,592.6 flight hours. The most recent A check inspection was accomplished on February 12, 2004, 103.3 hours before the incident. According to Boeing Commercial Airplane Group, the landing gear bogie pivot pin should be lubricated during the A-check inspection.</p> <p>A senior materials engineer from the NTSB's Materials Laboratory reported that most of the chromium plating was missing from the pin's shank, and the underlying steel was worn, corroded, and displayed signs of heat damage. He noted that the originating fracture region contained corrosion pits. The fracture features noted are typical of stress corrosion cracking. A complete copy of the NTSB's materials laboratory factual report is included in the public docket for this incident.</p> <p>The airplane's flight data recorder (FDR) was removed and shipped to the NTSB's Washington, DC, laboratory for analysis. The FDR readout showed that the incident landing was within normal</p>					
FACTUAL REPORT - AVIATION					
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National Transportation Safety Board

FACTUAL REPORT

AVIATION

NTSB ID: ANC04IA025

Occurrence Date: 02/19/2004

Occurrence Type: Incident

Narrative (Continued)


operating tolerances.


According to Boeing Commercial Airplane Group, nine operators of Boeing 767 airplanes reported ten additional pivot pin fractures, with six of the fractures being reported within the last two years.

On January 20, 2004, Boeing Commercial Airplane Group issued a fleet team digest (FTD) notice to operators of Boeing 767 airplanes, addressing cracked pivot pins, and the importance of correct grease usage. Boeing updates the FTD regularly, with the latest revision released December 16, 2004. In addition, the fleet team digest notice states, in part: "Boeing plans to release service bulletin 767-32A0199 which recommends that current pivot pins be replaced at overhaul, or heavy maintenance (D) check. SB release is currently planned for April-2004, based on availability of new pins."

On April 8, 2004, Boeing Commercial Airplane Group issued Alert Service Bulletin (ASB) 767-32A0199, which requires the replacement of the current pivot pins with pivot pins made of a different type of steel called Aermet 100. According to Boeing Commercial Airplane Group, Aermet 100 is more resistant to heat damage, and less susceptible to stress corrosion cracking.

The Safety Board shipped the FDR to Martinair in Holland on March 4, 2004. At the request of Martinair, the fractured landing gear bogie pivot pin was shipped to the Boeing Commercial Airplane Group, Seattle, Washington, on August 31, 2004.

 National Transportation Safety Board FACTUAL REPORT AVIATION		NTSB ID: ANC04IA025			
		Occurrence Date: 02/19/2004			
		Occurrence Type: Incident			
Landing Facility/Approach Information					
Airport Name	Airport ID:	Airport Elevation	Runway Used	Runway Length	Runway Width
MIAMI INTL	MIA	7 Ft. MSL	12	9354	150
Runway Surface Type: Asphalt					
Runway Surface Condition: Dry					
Type Instrument Approach: Unknown					
VFR Approach/Landing: Full Stop					
Aircraft Information					
Aircraft Manufacturer		Model/Series		Serial Number	
Boeing		767-300 ER		26469	
Airworthiness Certificate(s): Normal					
Landing Gear Type: Retractable - Tricycle					
Homebuilt Aircraft? No	Number of Seats: 292	Certified Max Gross Wt.	412000 LBS	Number of Engines: 2	
Engine Type:	Engine Manufacturer:	Model/Series:	Rated Power:		
Turbo Fan	Pratt & Whitney	PW 4060-3	60000 LBS		
- Aircraft Inspection Information					
Type of Last Inspection	Date of Last Inspection	Time Since Last Inspection	Airframe Total Time		
AAIP	02/2004	103 Hours	63592 Hours		
- Emergency Locator Transmitter (ELT) Information					
ELT Installed? Yes	ELT Operated? No	ELT Aided in Locating Accident Site? No			
Owner/Operator Information					
Registered Aircraft Owner		Street Address			
MARTINAIR HOLLAND		Havenmeesterweg 201			
		City	State	Zip Code	
Operator of Aircraft		Street Address			
		Same as Reg'd Aircraft Owner			
		City	State	Zip Code	
Operator Does Business As:			Operator Designator Code: MHLY		
- Type of U.S. Certificate(s) Held:					
Air Carrier Operating Certificate(s): Foreign Operation					
Operating Certificate:			Operator Certificate:		
Regulation Flight Conducted Under: Part 129: Foreign					
Type of Flight Operation Conducted: Scheduled; International; Passenger Only					
FACTUAL REPORT - AVIATION					

 <p>National Transportation Safety Board FACTUAL REPORT AVIATION</p>	NTSB ID: ANC041A025
	Occurrence Date: 02/19/2004
	Occurrence Type: Incident

First Pilot Information

Name On File	City On File	State	Date of Birth On File	Age 34
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Sex: M	Seat Occupied: Left	Principal Profession: Civilian Pilot	Certificate Number: On File
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Certificate(s): Foreign

Airplane Rating(s):

Rotorcraft/Glider/LTA:

Instrument Rating(s):

Instructor Rating(s):

Type Rating/Endorsement for Accident/Incident Aircraft? Yes	Current Biennial Flight Review?
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Medical Cert.:	Medical Cert. Status:	Date of Last Medical Exam:
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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										
Pilot In Command(PIC)										
Instructor										
Last 90 Days										
Last 30 Days										
Last 24 Hours										

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

Type of Flight Plan Filed: IFR

Departure Point Amsterdam	State	Airport Identifier AMS	Departure Time 0923	Time Zone UTC
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Destination Same as Accident/Incident Location	State	Airport Identifier MIA	
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Type of Clearance: IFR

Type of Airspace: Class C

Weather Information

Source of Briefing:
Company


Method of Briefing:

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Weather Information					
WOF ID	Observation Time	Time Zone	WOF Elevation Ft. MSL	WOF Distance From Accident Site NM	Direction From Accident Site Deg. Mag.
Sky/Lowest Cloud Condition: Clear			Ft. AGL	Condition of Light: Day	
Lowest Ceiling:		Ft. AGL	Visibility: 10	SM	Altimeter: "Hg
Temperature: 24 °C	Dew Point: °C	Wind Direction:		Density Altitude: Ft.	
Wind Speed:	Gusts:	Weather Conditions at Accident Site: Visual Conditions			
Visibility (RVR): Ft.	Visibility (RVV)	SM	Intensity of Precipitation:		
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				2	2
Second Pilot					
Student Pilot					
Flight Instructor					
Check Pilot					
Flight Engineer					
Cabin Attendants				8	8
Other Crew					
Passengers				280	280
- TOTAL ABOARD -				290	290
Other Ground					
- GRAND TOTAL -				290	290

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Administrative Information

Investigator-In-Charge (IIC)

Clinton O. Johnson

Additional Persons Participating in This Accident/Incident Investigation:

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