



NATIONAL TRANSPORTATION SAFETY BOARD

Office of Aviation Safety

Washington, D.C. 20594

August 28, 2017

Group Chairmen's Factual Report

OPERATIONAL FACTORS / HUMAN PERFORMANCE

DCA17MA022

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A. ACCIDENT

Operator: FedEx Express
Location: Fort Lauderdale, Florida
Date: October 28, 2016
Time: 1751 Eastern Daylight Time (EDT)¹
Airplane: Boeing MD-10-10, N370FE

B. GROUP

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Operational Factors Division (AS-30)
National Transportation Safety Board (NTSB)

Katherine Wilson, Co-chairman
Human Performance and Survival Factors
Division (AS-60)
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Brian Flax
MD11 Flight Standards Check Airman
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Harold K. Sieglinger
Flight Technical Support LBD
Flight Operations
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Stacy Horn
MD11 Captain
Air Line Pilots Association (ALPA)

C. SUMMARY

On October 28, 2016, about 1751 EDT, FedEx flight 910, a McDonnell Douglas MD-10-10F, registration N370FE, experienced a left main landing gear collapse and subsequent fire on the left wing after landing on runway 10L at Fort Lauderdale/Hollywood International Airport (FLL), Fort Lauderdale, Florida. The two flight crew members evacuated the airplane after it came to rest on the side of runway 10L and were not injured. The airplane was substantially damaged. The cargo flight was operating on an instrument flight plan under the provisions of 14 *Code of Federal Regulation* (CFR) Part 121, and originated from Memphis International Airport, Memphis, Tennessee (MEM).

¹ All times listed are EDT unless otherwise noted.

D. DETAILS OF THE INVESTIGATION

October 29, 2016

The NTSB team at FLL about 1015, the team was escorted to the accident airplane by FLL airport operations personnel. The Ops/HP group chairmen did an initial walkaround of the main debris field and then gained access to the cockpit. The cockpit was documented and relevant paperwork, manuals, crew bags (2 suitcases, 2 backpacks) and company issued iPads were collected. The FLL fire department assisted with removing the crew bags from the airplane due to challenges with the final resting position of the airplane. The Ops/HP group chairmen then walked the runway to observe markings and debris on the runway.

About 1300, the team relocated to the command post in FLL terminal 4. The Ops/HP group chairmen documented the crew bags. Although an iPhone and iPad were found in both crew bags, the devices were password protected and not reviewed. The team then reviewed available airport video of the airplane landing and subsequent accident sequence.

The IIC held the organizational meeting at 1500. During the organizational meeting, the Ops group chairman briefed the group on the Ops/HP activities that day and an Ops/HP group was formed with representatives from ALPA, FedEx, Boeing and FAA. After the meeting, FedEx provided the Ops/HP group chairmen with available manuals and documents. The Ops/HP group chairmen arrived at the hotel about 1700 and secured a meeting room for interviews with the accident crew the following day. Later in the evening, the Ops/HP group chairmen debriefed about the day's activities and upcoming activities for the next day.

October 30, 2016

The Ops/HP group conducted interviews of the flight crew and completed field notes.

E. FACTUAL INFORMATION

1.0 Flight Crew Information

1.1 The Captain

The captain, age 55, was the pilot monitoring on the accident flight. He resided in Bryant, Arkansas. The captain stated in an interview that during the 12 months prior to the accident, he had no major changes in his financial situation or personal life which might have affected his performance.

According to his interview, he had no issues with his hearing, normally slept well, and sometimes woke up to go to the bathroom. He typically got 6.5 hours of sleep, and felt rested when he woke up. He had never seen a doctor about or been diagnosed with a sleep disorder. He would fall asleep pretty quickly in about 10 minutes after getting in bed. He sometimes napped and thought he took a nap or two in the days before the accident when he was home.

1.1.1 The Captain's Pilot Certification Record

Private Pilot – Airplane Single Engine Land certificate issued April 9, 1982

Private Pilot – Airplane Single Engine Land, Instrument Airplane certificate issued September 15, 1988

Commercial Pilot – Airplane Single and Multi-Engine Land, Instrument Airplane certificate issued December 19, 1988

Flight Instructor – Airplane Single Engine certificate issued March 8, 1989

Flight Instructor – Airplane Single Engine Instrument Airplane certificate issued July 14, 1989

Ground Instructor – Advanced Instrument certificate issued August 7, 1989

Flight Instructor – Airplane Single and Multi-Engine, Instrument Airplane certificate issued May 18, 1990; Gold Seal added October 26, 1990; renewed July 6, 1992; July 26, 1994; July 15, 1996; July 28, 1998; May 8, 2000; February 10, 2002; February 22, 2004

Airline Transport Pilot – Airplane Multi-Engine Land, Commercial Privileges Airplane Single Engine Land certificate issued June 22, 1997

Airline Transport Pilot – Airplane Multi-Engine Land, LR-Jet, Commercial Privileges Airplane Single Engine Land certificate issued October 13, 1998

Flight Engineer – Turbojet Powered certificate issued October 19, 2000
Subject to the provisions of Exemption 4901, as amended

Flight Engineer – Turbojet Powered certificate issued October 27, 2000

Airline Transport Pilot – Airplane Multi-Engine Land, LR-Jet, B-727, Commercial Privileges Airplane Single Engine Land certificate issued August 31, 2005
Limitations: B-727 circling approach VMC only

Airline Transport Pilot – Airplane Multi-Engine Land, LR-Jet, B-727, MD-11, Commercial Privileges Airplane Single Engine Land certificate issued September 1, 2012
Limitations: B-727, MD-11 circling approach VMC only

1.1.2 The Captain's Certificates and Ratings Held at Time of the Accident

Airline Transport Pilot (issued September 1, 2012)

Airplane Multiengine Land

LR-Jet, B-727, MD-11

Commercial Privileges: Airplane Single Engine Land

Limitations: B-727 MD-11 circling approach VMC only

Flight Engineer (issued October 27, 2000)

Turbojet Powered

Ground Instructor (issued August 7, 1989)

Advanced Instrument

Medical Certificate – First Class (issued June 6, 2016)

Limitations: Must have glasses available for near vision

1.1.3 The Captain's Pre-accident Activities

The captain's pre-accident activities are summarized below:

- On Tuesday, October 25, 2016, the captain was off duty. He was at home and he described it as a normal day. He went to bed around 2200 CDT.
- On Wednesday, October 26, he woke up around 0430 or 0500 CDT. He was off this day also and described it as a normal day. The time he went to bed was unknown.
- On Thursday, October 27, he woke up around 0700 CDT, had coffee and breakfast, then drove to Memphis for a 1445 show time; the flight was scheduled to depart at 1545 CDT. He flew to MCO, arriving at 1849, and had about a 14-hour layover. The time he went to bed was unknown.
- On Friday, October 28, he woke up about 0630-0640. He was picked up at the hotel 0740 for a show time of 0808. The flight departed at 0908 to MEM, arriving 0958 CDT. The scheduled arrival time was 1013 CDT. He did not secure a sleep room or take a nap during the hub turn; he ate lunch and had a caffeinated beverage. He had a show time of 1345 CDT for a 1445 CDT departure to FLL in the accident airplane. He had no sleep issues in the 72 hours prior to the accident flight and felt good the morning of the accident. He had a normal schedule for the few days prior.

1.2 The First Officer

The first officer (FO), age 47, was the pilot flying on the accident flight. He resided in a suburb near Memphis, Tennessee. The FO stated in an interview that during the past 12 months, he had not had any changes (good or bad) to his health or financial situation. In the past few months, an in-law had passed away and the family dog was undergoing treatment for cancer which he said were semi-stressful but it was nothing that he felt was distracting when working.

In his interview, the FO stated he had no issues with his vision or hearing. He characterized his health as excellent; he did not use tobacco products or illicit drugs. He did not have any medicine, prescription or nonprescription in the 72 hours before the accident that might have affected his performance. When not working, he typically went to bed between 2300-0000 and woke up around

0730-0800. He tried to get 7-8 hours of sleep when not working. He usually fell asleep about 30 minutes after going to bed. He typically woke up several times throughout the night. He would not wake up feeling “ultra-refreshed” but felt good when he was up and about. He did not normally nap unless he was really tired. He had not seen a doctor for or been diagnosed with a sleep disorder.

1.2.1 The F/O’s Pilot Certification Record

Private Pilot – Airplane Single Engine Land certificate issued February 4, 1990

Commercial Pilot – Airplane Multi-Engine Land, Instrument Airplane, Private Privileges Airplane Single Engine Land certificate issued January 10, 1994

Airline Transport Pilot – Airplane Multi-Engine Land, Private Privileges Airplane Single Engine Land certificate issued October 22, 1999

Flight Engineer – Turbojet Powered certificate issued July 5, 2001
Subject to the provisions of Exemption 4901, as amended

Flight Engineer – Turbojet Powered certificate issued July 18, 2001

Airline Transport Pilot – Airplane Multi-Engine Land, MD-11, Private Privileges Airplane Single Engine Land certificate issued August 31, 2004
Limitations: MD-11 circling approach VMC only, Subject to pilot-in-command limitations for the MD-11

Airline Transport Pilot – Airplane Multi-Engine Land, MD11, Private Privileges Airplane Single Engine Land certificate issued July 6, 2012
Limitations: MD-11 circling approach VMC only

1.2.2 The F/O’s Certificates and Ratings Held at Time of the Accident

Airline Transport Pilot (issued July 6, 2012)
Airplane Multi-Engine Land
MD11
Private Privileges Airplane Single Engine Land
Limitations: MD11 circling approach VMC only

Flight Engineer (issued July 18, 2001)
Turbojet Powered

Medical Certificate – First Class (issued September 6, 2016)
Limitations: None

1.2.3 The F/O's Pre-accident Activities

The first officer's pre-accident activities are summarized below:

- On Tuesday, October 25, 2016, he woke up about 0600 CDT and had a 0630 CDT show time in the hotel lobby. He flew from El Paso, Texas, departing 0851 CDT for MEM, arriving 1138 CDT. During the 2 hour and 30 minute layover, the first officer secured a sleep room (it is unknown if he napped) and also went for a run before getting ready for the next flight. He reported for his next flight at 1405 CDT and flew to Sacramento, California (SMF), departing MEM at 1449 CDT and arriving SMF at 1753 PDT. After arriving in Sacramento, he rented a car and drove about an hour to his parents' home, arriving to their house about 1830-1900 PDT. He ate dinner, thought he had one beer and hung out with his parents until going to bed about 2200-2230 PDT.
- On Wednesday, October 26, he woke up about 0800 PDT, went for a jog and hung out with his family. After having brunch, he relaxed until about 1600 PDT when he left for the airport. The crew met at FedEx, briefed the flight. The flight departed SMF at 1859 PDT and arrived in MEM at 0029 CDT on Thursday AM; he arrived home about 0130-0200 CDT.
- On Thursday, October 27, he woke up about 0700 CDT because workers arrived at the house. He did routine activities around the house that day and after dinner was probably in bed about 2230 CDT. His son came into his room about 2330 CDT and the first officer moved to a guest room upstairs.
- On Friday, October 28, he woke up about 0700 CDT, exercised and then did routine activities and errands. He got home about 1245 CDT and got ready for work. He arrived at the FedEx Air Operations Center (AOC) at about 1320 CDT, and hung out with his brother who was on reserve. He met the accident captain at the trip folder about 1345 CDT.

2.0 Aircraft Information

The aircraft was a McDonnell Douglas MD-10-10F, serial number 46608, registration N370FE. It had a transport category Standard Airworthiness certificate issued November 2, 2003. It was configured as a freight aircraft, with 4 seats on the flight deck, and 4 passenger seats just aft of the flight deck. It was powered by three General Electric turbo-fan engines, model CF6-6D.

The airplane was manufactured in 1972, and had an airframe total time of 84,589 hours. The last inspection of the airplane was on September 21, 2016. It was registered to the Federal Express Corporation.

3.0 Meteorological Information

At 1753, about 2 minutes after the accident, the METAR (official report of weather conditions at the airport) reported wind from 050 degrees at 15 gusting to 24 knots, 10 miles visibility, few clouds at 2600 feet agl (above ground level), broken ceiling at 5000 feet agl, overcast clouds at 25,000 feet agl, temperature 26°C, dewpoint 21°C, altimeter setting 29.98 inches of mercury. A peak wind speed had been recorded at 1732 of 060 degrees at 26 knots.

About an hour prior to the accident, at 1653, the METAR reported wind from 050 degrees at 15 gusting to 25 knots, 10 miles visibility, few clouds at 2400 feet agl, scattered clouds at 3300 feet agl, broken ceiling at 4100 feet agl, overcast clouds at 25,000 feet agl, temperature 26°C, dewpoint 20°C, altimeter setting 29.99 inches of mercury.

F. LIST OF ATTACHMENTS

Attachment 1 – Crew Interview Summaries

Submitted by:

Dr. Katherine Wilson and Marvin Frantz