

Interim Report

Identification

Type of Occurrence:	Serious incident
Date:	20 October 2015
Location:	Paderborn
Aircraft:	Airplane
Manufacturer / Model:	The Boeing Company / B 737-800
Injuries to Persons:	None
Damage:	Minor damage to aircraft
Other Damage:	Runway edge lighting damaged
Information Source:	Investigation by BFU
State File Number:	BFU 15-1465-EX
Published:	February 2016

Factual Information

During the landing on runway 24 of Paderborn-Lippstadt Airport the Boeing 737-800 touched down left of the runway centre line and veered off the runway. The crew manoeuvred the aircraft back onto the runway after approximately 260 m. No one was injured.

History of the Flight

At approximately 2147 hrs¹ on 19 October 2015 the Boeing 737-800 took off from Antalya Airport, Turkey. Six crew members and 172 passengers were on board the airplane. The Pilot in Command (PIC) was Pilot Flying (PF) and the co-pilot Pilot Monitoring (PM). The crew made preparations for an ILS precision approach.

The Cockpit Voice Recorder (VCR) recordings show that the crew reported at approximately 2359 hrs to Langen Radar to be established on ILS runway 24: “[...] *established two four*.” Langen Radar passed on the crew to Paderborn Tower. The Flight Data Recorder (FDR) recorded at that time a heading of 240°. The recorded deviation from the localizer/glide slope was 0.00. The ground speed was 145 kt. The crew reported to Paderborn Tower. The Tower answered: “[...] *good evening wind two nine zero degrees three knots runway two four cleared to land RVR (Runway Visual Range) is 800 meters*”. At that time radio height was 2,100 ft. Approximately 2 min 10 s later the FDR recorded the deactivation of the autopilot. Up until that time the heading and the deviations from the localizer/glide slope had barely changed. Ground speed decreased to 140 kt. At the time the deactivation of the autopilot was recorded, the radio height was 200 ft. During the subsequent 24 seconds the heading the FDR recorded decreased to 232° and then increased again to 243°. The deviation from the localizer increased during this time to 0.05. Subsequently the FDR recorded the activation of the air-ground switch. Approximately 10 seconds prior to the activation of the air-ground switch an automated announcement could be heard on the CVR: “[...] *fifty, forty, thirty, twenty, ten*”. Two seconds later the co-pilot could be heard: “*Go around Captain, go ar.*” Another 11 seconds later the voice of the PIC was recorded: “*Ah, it was too late*”.

The co-pilot's report shows that the aircraft touched down left of the runway centre line. The right main landing gear had had ground contact first. The nose landing gear and the left main landing gear had hit the runway edge lighting.

The radio communications transcripts show that approximately 50 seconds after activation of the air-ground switch the crew had reported to Paderborn Tower they had veered off the runway: “[...] *upon touchdown it were eh we sat on left side of the runway eh just for information.*” The PIC manoeuvred the aircraft towards the runway centre line and decreased speed on the runway.

The aircraft left runway 24 via taxiway D and taxied to the parking position.

¹ All times local, unless otherwise stated.

The Airport Safety Report and the daily report of the air traffic service provider at Paderborn-Lipstadt Airport showed that during a subsequent inspection three damaged runway edge lights were discovered. It was determined that the runway was contaminated with dirt and broken glass. According to the Airport Safety Report the passengers did not notice the incident. The aircraft was slightly damaged.

Personnel Information

Pilot in Command

The 59-year-old PIC held an Air Transport Pilot's Licence (ATPL(A)) issued in accordance with Part-FCL by the Republic of Lithuania. The licence had been issued on 15 November 2013 and was valid until 15 November 2018. Field XII of the licence listed the ratings as PIC for Boeing 737 800-900 in accordance with instrument flight rules (PICIR). The ratings had last been renewed on 3 July 2015 and were valid until 31 August 2016. He had a total flying experience of 17,900 hours. For this operator he had flown 1,542 hours. The BFU had been provided with the valid class 1 medical certificate issued in accordance with Part-MED. Field XIII listed the requirement to wear reading glasses.

Co-pilot

The 28-year-old co-pilot held a Commercial Pilot's Licence (CPL(A)). The licence was initially issued on 10 December 2014 in accordance with JAR-FCL by Turkish authorities and valid until 2020. Field XII of the licence listed the ratings as co-pilot for Boeing -B737-300/900 in accordance with instrument flight rules (COPIR). The rating was valid until 31 January 2016. His total flying experience was about 704 hours. His last proficiency check was on 28 July 2015. He held a class 1 medical certificate valid until 19 June 2016 which was provided to the BFU. No restrictions were listed.

Aircraft Information

The Boeing 737 is a low-wing transport aircraft with conventional tail and equipped with two turbofan engines.

Manufacturer: The Boeing Company

Type: Boeing 737-800

Year of manufacture: 2002

Serial number: 32363
Maximum Take-Off Mass: 79,015 kg
Engines: Two CFM 56-7B26

The aircraft had a Turkish certificate of registration and was operated by a Turkish air operator. A valid Airworthiness Review Certificate (ARC) had been provided to the BFU.

Meteorological Information

The METAR of 2350 hrs of Paderborn-Lippstadt Airport read: METAR EDLP 192250z 29002KT 0200 R24/0650N -DZ FG VV/// 07/07 Q1022.

In plain language:

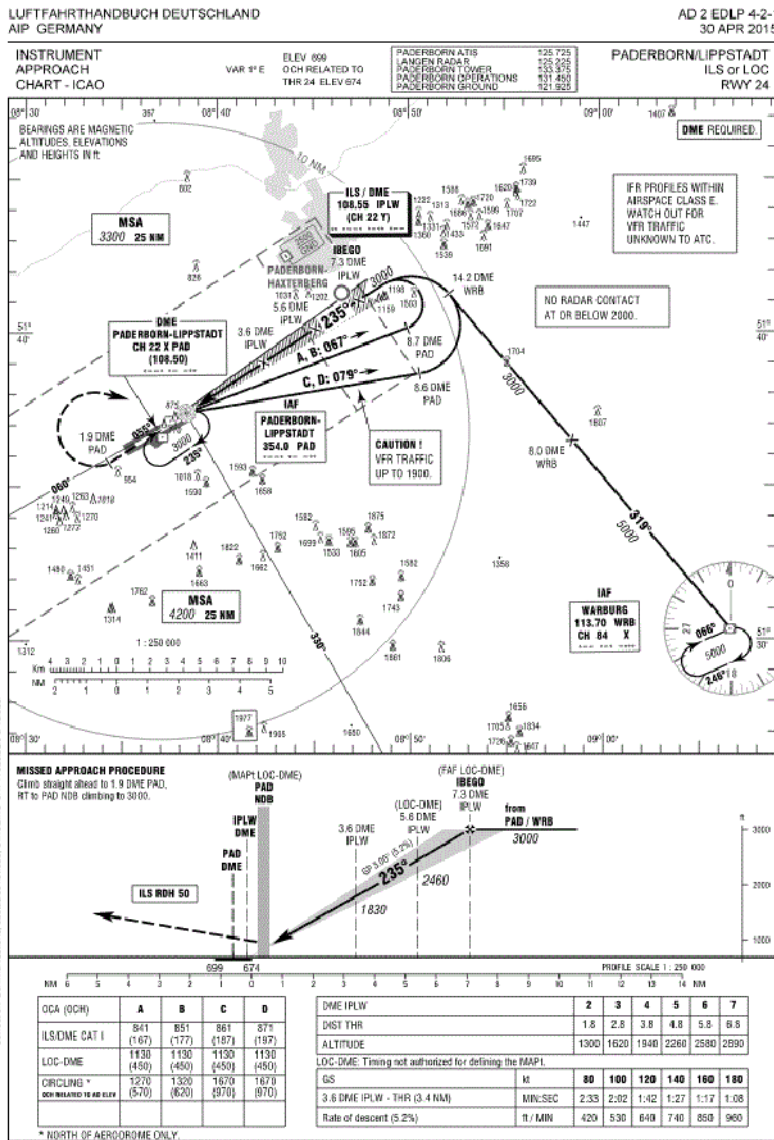
Time of the report: 2350 hrs
Wind: 290°/ 2 kt
Visibility: 200 m
RVR runway 24: 650 m
Weather: Drizzle, fog
Cloud base: Cannot be measured
Temperature: 7°C
Dewpoint: 7°C
Barometric air pressure (QNH): 1,022 hPa

Approximately three minutes prior to landing Paderborn Tower told the crew RVR was 800 m.

Aids to Navigation

On runway 24 an ILS CAT 1 was available. The localizer of the ILS is 235°. The glide slope is 3°.

The landing system's accuracy was last checked on 15 July 2015. There were no irregularities.



ILS approach runway 24

Source: AIP

Radio Communications

The BFU had available the transcripts of the radio communications between the Boeing crew and Paderborn Tower. Radio communications were held in English.

Aerodrome Information

Paderborn-Lippstadt Airport is located eight Nautical Miles (NM) south-west of Paderborn city. Aerodrome elevation is 699 ft AMSL.

The airport has two runways; runway 24 oriented 237° and runway 06 oriented 057°. Runway 24 is 2,180 m long and 45 m wide. The Landing Distance Available (LDA) of runway 24 is 2180 m. The intersection of taxiway B is located 890 m after the threshold of runway 24. The remaining length of the runway is 1,290 m.

Flight Recorder

The FDR and CVR were sized by and read out at the BFU. The data of both the FDR and the CVR contained relevant information for the safety investigation.

FDR

Manufacturer: Honeywell
Type: SSFDR
Serial number: 12002
Part Number: 980-4700-042

The recorder was undamaged and 982 parameters could be read out.

CVR

Manufacturer: Honeywell
Type: SSCVR
Serial number: 92010
Part Number: 980-6022-001

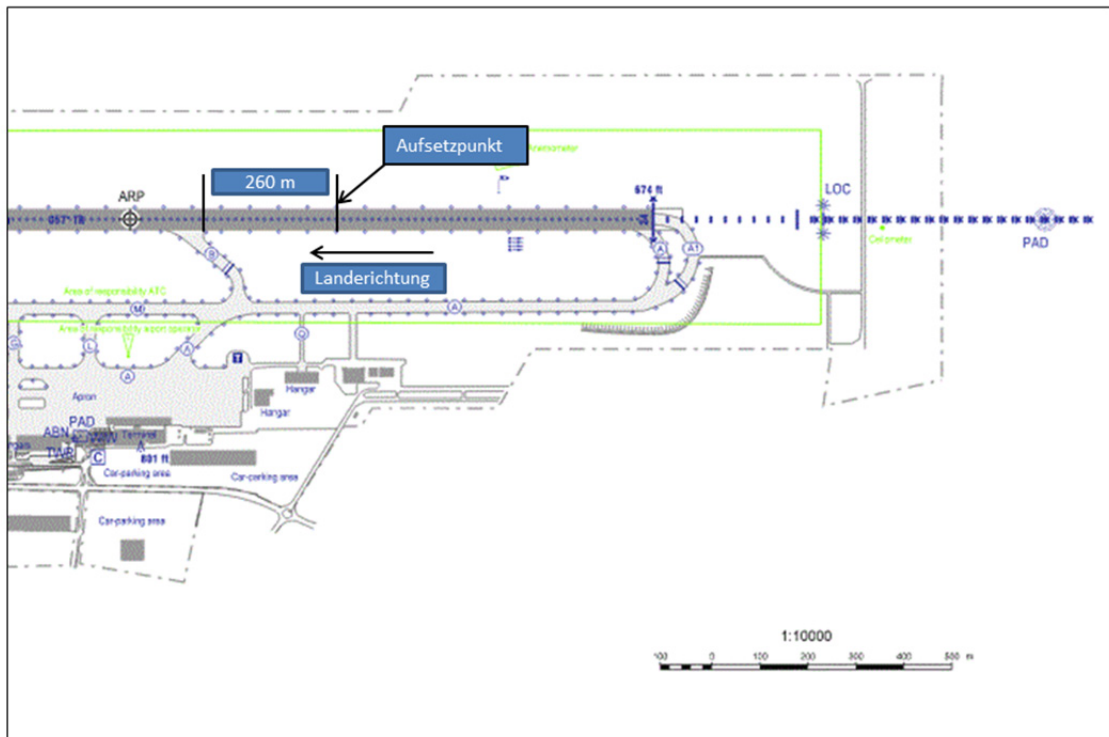
The recorder was undamaged and could be read out. The occurrence had been recorded.

Wreckage and Impact Information

Findings at the Airport:

Approximately 630 m after the threshold of runway 24 wheel marks of the right main landing gear were found on the left runway edge marking. Another 47.5 m farther along the trace of the nose landing gear was found in the grass south of the runway. In a distance of 74 m from the first visible wheel marks the impression of the left main landing gear was found in the grass. Over a distance of approximately 260 m the

impressions of the three landing gears were visible in the grass south of the runway. Abeam of the intersection of taxiway B the traces of the wheels in the grass ended.



Detail of the aerodrome chart

Source: AIP



Wheel marks of the right main landing gear veering off the runway

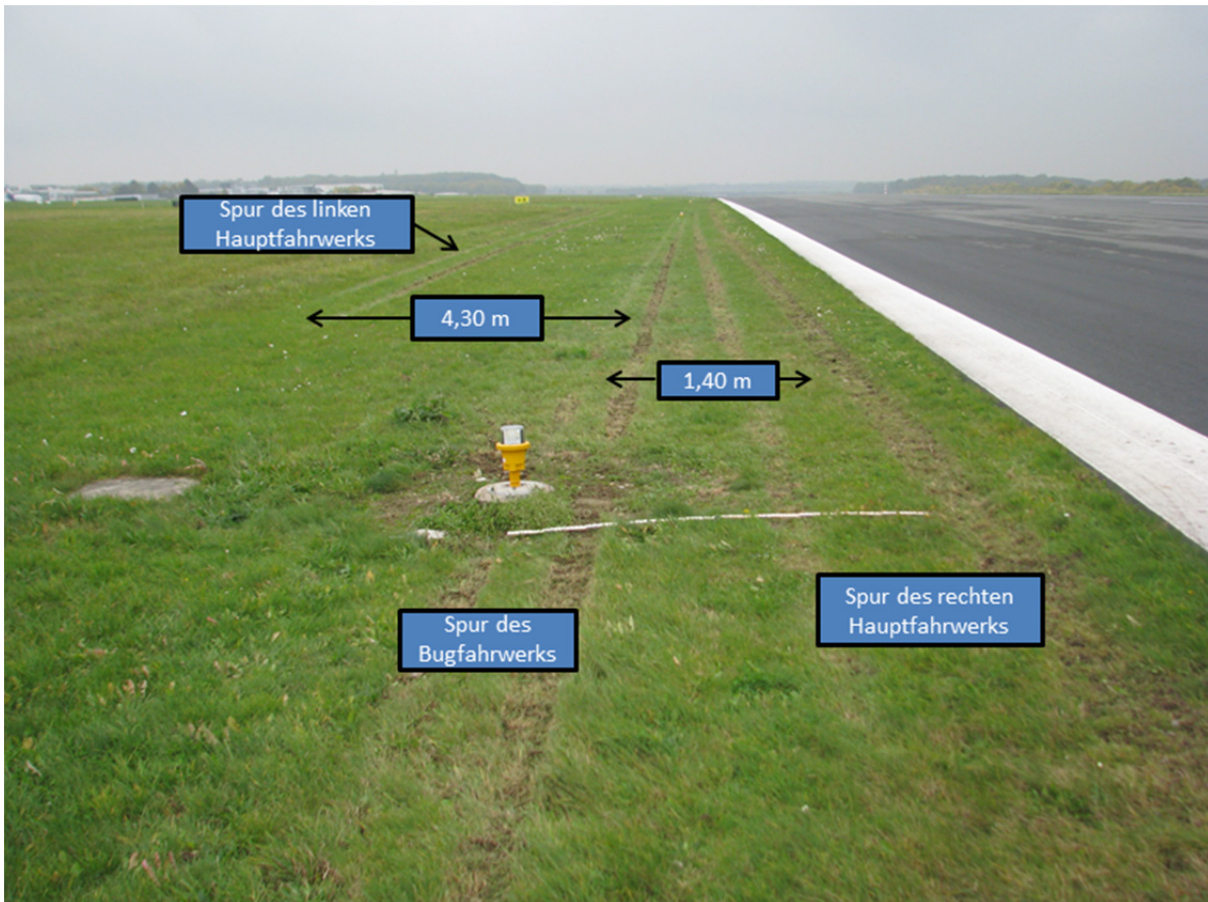
Photo: BFU



Wheel marks at taxiway B

Photo: BFU

The BFU documented the distances between the individual traces. The distance of the axle pivot point of the right main landing gear to the axle pivot point of the nose landing gear was 1.40 m. The distance of the axle pivot point of the left main landing gear to the axle pivot point of the nose landing gear was 4.30 m.



Distances between the wheel marks of the landing gears

Photo: BFU

Findings at the Aircraft:

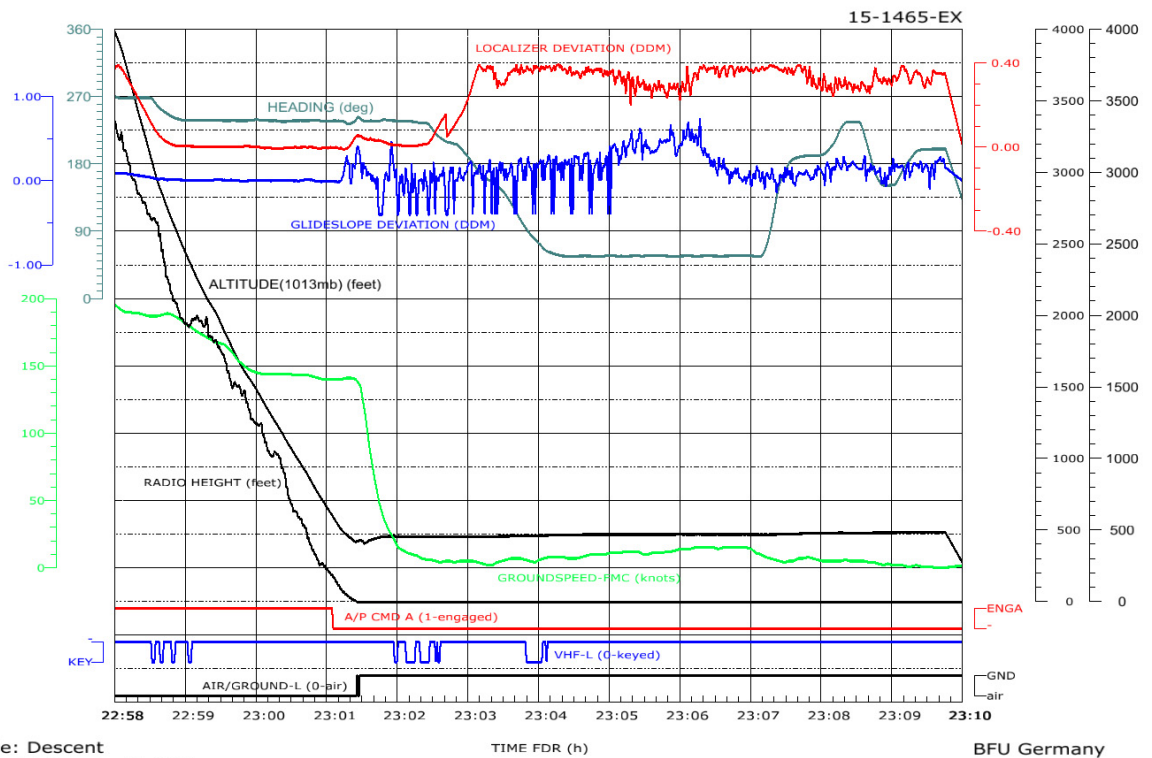
The BFU documented the following damages: On engine No 1 four fan blades were damaged. The left retractable landing light was damaged, the left aft flap showed two holes with a diameter of 10 mm and 18 mm. The reverser of engine No 1 showed three small individual damages.

The tire of the left wheel of the nose landing gear was damaged and showed complete pressure loss.

Investigator in charge: Lutz Jäkel
 Field investigation: Jens Eisenreich, Holger Röstel
 Assistance: Christian Blanke, Hans-Werner Hempelmann

Appendix

FDR data



file: Descent
 Created: December 15, 2015
 Revised: December 16, 2015

BFU Germany

FDR data

Source: BFU

This investigation was conducted in accordance with the regulation (EU) No. 996/2010 of the European Parliament and of the Council of 20 October 2010 on the investigation and prevention of accidents and incidents in civil aviation and the Federal German Law relating to the investigation of accidents and incidents associated with the operation of civil aircraft (*Flugunfall-Untersuchungs-Gesetz - FIUUG*) of 26 August 1998.

The sole objective of the investigation is to prevent future accidents and incidents. The investigation does not seek to ascertain blame or apportion legal liability for any claims that may arise.

This document is a translation of the German Investigation Report. Although every effort was made for the translation to be accurate, in the event of any discrepancies the original German document is the authentic version.

Published by:

Bundesstelle für
Flugunfalluntersuchung
Hermann-Blenk-Str. 16
38108 Braunschweig

Phone +49 531 35 48 - 0
Fax +49 531 35 48 - 246

Mail box@bfu-web.de
Internet www.bfu-web.de