

Investigation Report

The Investigation Report was written in accordance with para 18 Law relating to the Investigation into Accidents and Incidents Associated with the Operation of Civil Aircraft stating facts only.

Identification

Type of Occurrence:	Incident
Date:	21 May 2015
Location:	Frankfurt/Main
Aircraft:	Airplane
Manufacturer / Model:	The Boeing Company / B767-300
Injuries to Persons:	None
Damage:	Minor damage to aircraft
Other Damage:	None
Information Source:	BFU staff
State File Number:	BFU 15-0553-PX

Factual Information

On 21 May 2015 the aerodrome controller instructed the crew of a Boeing 767-300 on take-off run on runway 25C at Frankfurt/Main Airport to reject take-off at high speed. The aircraft came safely to a standstill.

The passengers disembarked via the main door. No one was injured.

History of the Flight

The BFU reconstructed the course of events by means of: crew report, operator's statement, interview of the aerodrome controller, radio communications recordings, and analysis of the Quick Access Recorder (QAR).

The Boeing 767-300 crew had clearance for departure route BIBTI 3G on runway 25C. Initially the departure route led straight ahead for 5 Nautical Miles (NM) and then towards north-east. Ten crew members and 223 passengers were on board the airplane. Destination airport was Halifax, Canada.

The crew had calculated a take-off decision speed (V_1) of 151 kt. Take-off mass was 157,334 kg.

At 16:37:37 hrs¹ the Boeing 767-300 crew received take-off clearance for runway 25C from the aerodrome controller. The crew confirmed the take-off clearance. The QAR recording showed that at 16:37:50 hrs the aircraft began to roll. The aerodrome controller stated that shortly afterwards her colleague informed her that on the parallel runway 25L an approaching Boeing 747 freighter was performing a go-around. The freighter crew had received the instruction from the responsible aerodrome controller to follow the standard missed approach procedure. The missed approach procedure for runway 25L includes departure to the south. At 1638:23 hrs the aerodrome controller responsible for the rolling Boeing 767 issued the instruction to reject take-off: *"Stop immediately, I say again stop immediately"*. At 1638:27 hrs engine thrust was reduced and the aircraft decelerated using the wheel brakes. Three seconds later the crew acknowledged: *"Abort ah aborting take off"*. The QAR recorded the computed airspeed. It showed that the speed decreased over a period of 32 seconds to 165 kt and then over a period of 34 seconds to 0 kt. The aircraft left runway 25C via taxiway L17 and stopped on taxiway L. Taxiway L17 is located about 600 m prior to the end of runway 25C. The airport fire brigade was alarmed and upon

¹ All times local, unless otherwise stated.

arrival determined red-hot brakes. The fire brigade cooled them down. The front wheels of the left main landing gear showed complete pressure loss.

Personnel Information

Pilot in Command

The 42-year-old Pilot in Command (PIC) held an Air Transport Pilot's Licence (ATPL(A)) issued on 25 March 2014 by the Luftfahrt-Bundesamt (German aviation authority, LBA) in accordance with Part-FCL. The licence listed in field XII the ratings as PIC for Boeing 757/767 in accordance with instrument flight rules (PIC IR). The rating was valid until 31 May 2016. He held a class 1 medical certificate valid until 15 August 2015 which was provided to the BFU.

He had a total flying experience of about 9,000 hours. He had flown about 5,000 of them on Boeing 767. In the last 12 months prior to the occurrence he had flown 625 hours. His last simulator check flight occurred 34 days prior to the occurrence.

Since 13 July 2007 the PIC had been working for the operator.

Co-pilot

The 33-year-old co-pilot held an Air Transport Pilot's Licence (ATPL(A)) initially issued in accordance with JAR-FCL on 23 November 2011. The licence was valid until 21 November 2016. Field XII of the licence listed the ratings as co-pilot for Boeing 757/767 in accordance with instrument flight rules (COP IR). The rating was valid until 31 January 2016. She had a total flying experience of about 7,000 hours. She had flown about 2,000 hours of them on Boeing 767. The last simulator check took place on 18 May 2015. Since 01 November 2011 she had been working for the operator. She held a class 1 medical certificate valid until 19 July 2015 which was provided to the BFU.

Air Traffic Control

The 34-year-old tower controller held an Air Traffic Control Licence (aerodrome control with radar, including FIS). The rating was valid until 21 December 2015.

Aircraft Information

The Boeing 767-300 is a low-wing transport aircraft with conventional tail and equipped with two turbofan engines.

Manufacturer: The Boeing Company
Year of manufacture: 1994
Manufacturer's
Serial Number (MSN): 26259
Engines: Two General Electric CF6-80C2B6F
Maximum Take-Off Mass: 184,600 kg

It had a German certificate of registration and was operated by a German operator.

A valid airworthiness certificate had been provided to the BFU.

Meteorological Information

The aviation routine weather report (METAR) of Frankfurt/Main Airport of 1620 hrs read:

Wind: 360° / 7 kt, variable between 270° and 010°
Clouds/Visibility: No clouds below 5,000 AGL
Visibility more than 10 km
Temperature: 18°C
Dewpoint: 0°C
Trend: No significant change (NOSIG) within the next 2 hours to be expected

At the time of the occurrence it was daylight.

Radio Communications

The crew was in radio contact with Frankfurt Tower. Radio communications were held in English. The transcripts of the radio communications between Frankfurt Tower and the airplanes taking off from and approaching runways 25C and 25L, respectively, were made available to the BFU.

Aerodrome Information

Frankfurt/Main Airport is located 6.5 Nautical Miles (NM) south-west of Frankfurt City. Aerodrome elevation is 364 ft AMSL.

The airport has three parallel runways oriented 069°/249° and one runway oriented 179°. Accelerate and Stop Distance Available (ASDA) of runway 25C is 4,000 m.

The Luftfahrthandbuch Deutschland (Aeronautical Information Publication (AIP)) stated the requirements for separated parallel flight operations in accordance with ICAO DOC 4444 Chapter 6.7.3 and ICAO Annex 14 Chapter 3.1.12 were met.

Flight Recorders

The data of Flight Data Recorder (FDR), the Cockpit Voice Recorder (CVR), and the QAR were available for evaluation.

FDR

Manufacturer: Sundstrand
Type: SSFDR
Part Number: 980-4700-033
Serial number: 0456

The analysis of the FDR showed the last recording. It was dated 14 January 2015. The occurrence had not been recorded. The examination of the FDR by the BFU did not reveal any technical deficiencies.

CVR

Manufacturer: Fairchild
Type: A 100S
Part Number: S100-0080-00
Serial number: 00537

The CVR was undamaged. The read-out resulted in two stereo files of 30 minutes each. The occurrence had not been recorded.

Wreckage and Impact Information

The operator had inspected the main landing gears and determined damages on all four axes. The melting plug of the front wheels of the left main landing gear had melted. The front wheels of the left main landing gear showed total pressure loss. The brakes of the wheels 1, 2, 3, 4, 5, 7, and 8 leaked hydraulic fluid.

Fire

The airport fire brigade determined red-hot brakes. There was no fire.

Investigator in charge: Lutz Jäkel

Air Traffic Control: Christian Blanke

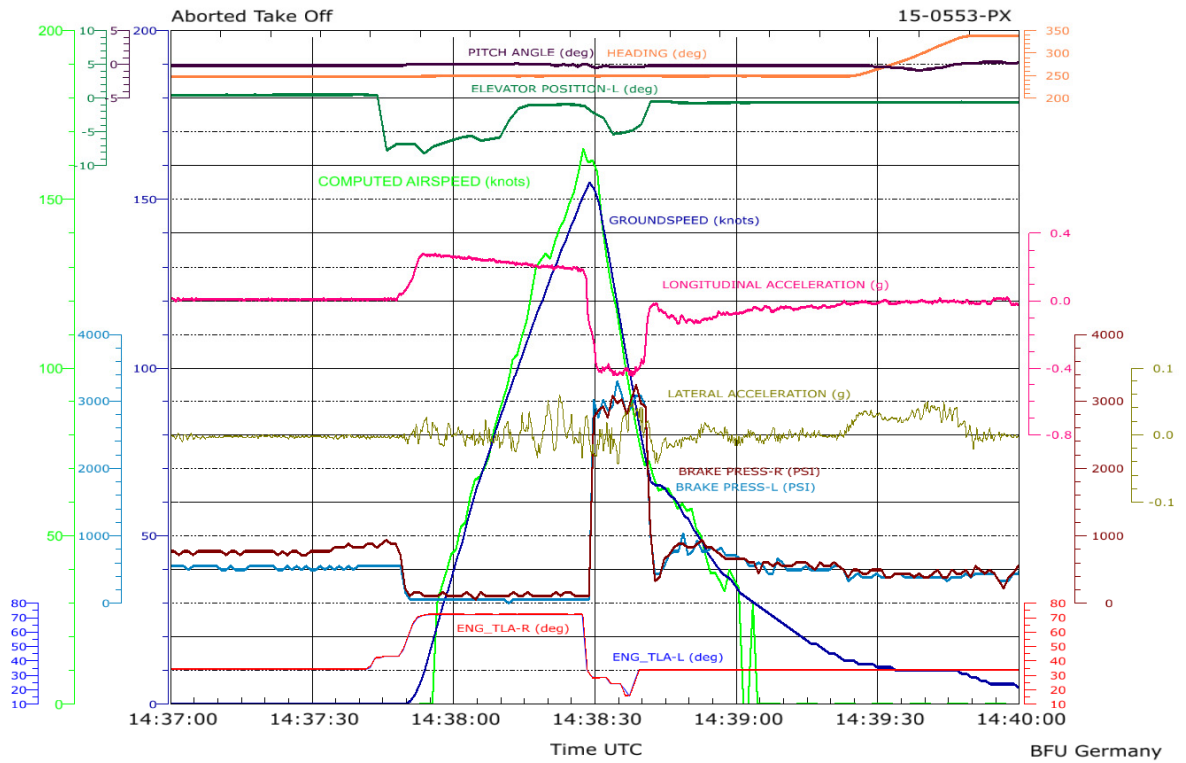
Flight data: Hans-Werner Hempelmann, Dieter Ritschel

Appendix

Excerpt QAR data

Photo of the left main landing gear

Departure routes of runway 25C and 25L



Excerpt QAR data

Source: BFU



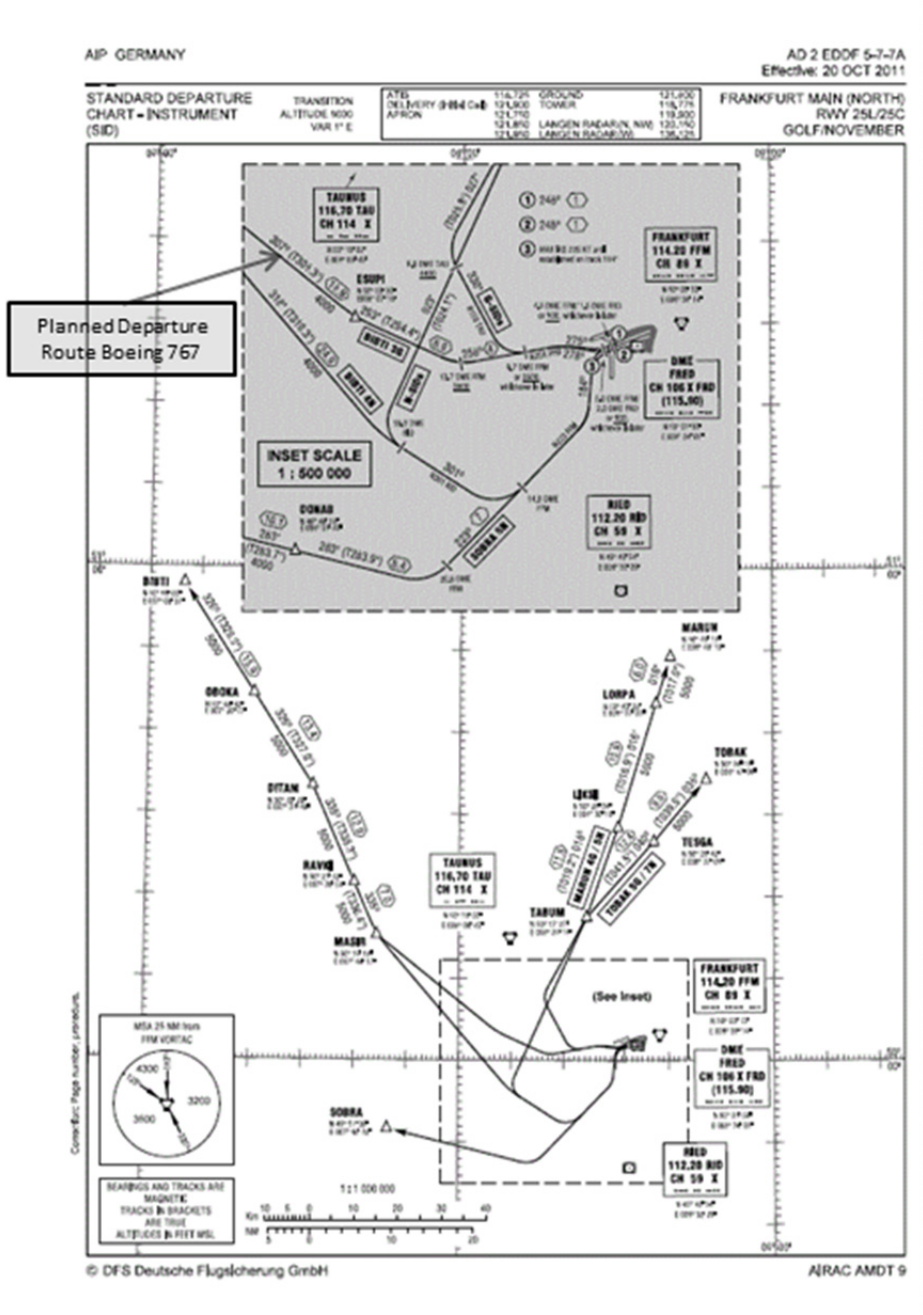
Left main landing gear

Photo: Aviation Supervision Office

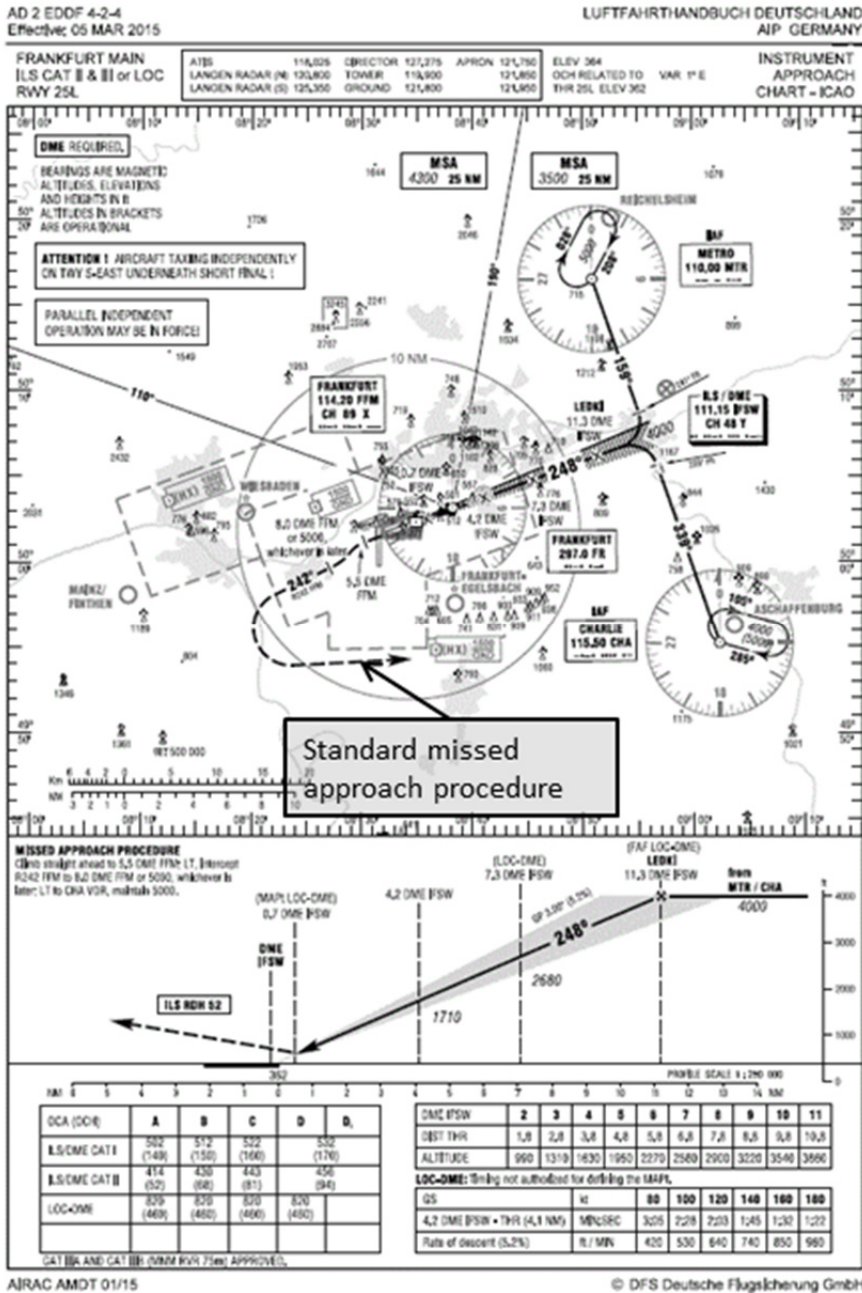


Melting plug

Photo: Aviation Supervision Office



Source: AIP



Approach chart runway 25L

Source: AIP

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.

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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