

Incident Report

Incident details

Type of event:	Serious incident
Date	28 June 2006
Location:	Nuremberg
Type of flight:	Public transport
Manufacturer / type:	Embraer Empresa Brasileira De Aeronautica / EMB-145LU
Injuries:	Four people slightly injured
Damage:	Aircraft slightly damaged
Incidental damage:	crop damage
Information source:	BFU investigation
Incident number::	5X008-0/06

Synopsis

History of the flight

At 08:39¹ on 28 June 2006 an EMB-145LU returned to Nuremberg due to heavy smoke in the cockpit, landed on runway 28 and overran it by about 120 m.

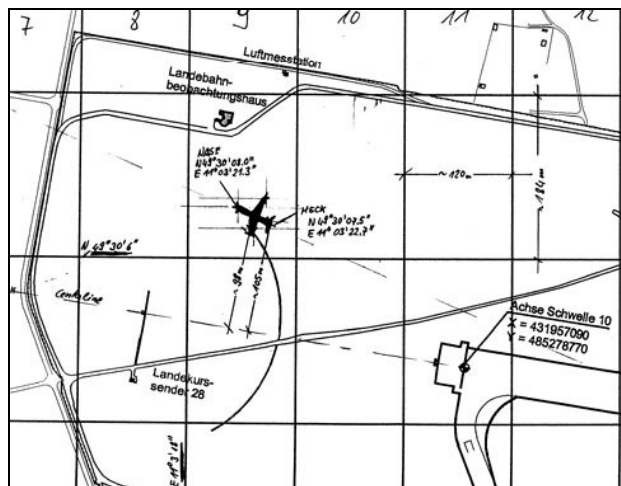
The aircraft took off from Nuremberg at 08:25 for the flight to Zurich with 49 passengers and three crew members on board. In the climb at about 5,000 ft, the crew received a "smoke in the rear toilet" warning. Shortly afterwards thick smoke entered the cockpit. The pilots put on their full-face oxygen masks and stopped the climb at about 7,000 ft. They requested assistance from Munich radar to return to Nuremberg. A right turn and a clearance to descend to 3000 ft were given which put the aircraft at a point about 8 NM from the runway 28 touchdown point on the localiser.

The landing was planned with a flap setting of 45°. The handling pilot in the left seat was a first officer

training to be a captain. In the right seat was the instructor.

On base leg just before intercepting the localizer the crew received a HIGH OIL TEMPERATURE warning followed shortly by LOW OIL PRESSURE. Due to these warnings the crew decided to carry out the approach and landing with a flap setting of 22° and Vref increased by 10kt. According to the pilots the visibility in the cockpit was about 20 cm at this point.

The approach was carried out with the autopilot engaged. The aircraft was on the localiser only and not stabilized on the glideslope, and so the descent profile was very unstable. At a height of about 1,500 ft during the approach the autopilot was disconnected and the aircraft was landed manually. At the time of landing it was raining. According to the crew the runway was partially covered with water and after touchdown no significant deceleration could be felt. The aircraft rolled off the right side of the runway end at high speed and came to a rest 120 m beyond the 10 threshold and about 100 m to the right of the centreline.



Only light smoke could be detected in the passenger cabin. According to the flight attendant's statement the passengers were calm and collected, although four of them had to be treated for shock.

¹ All times are local time unless stated otherwise

Information about the crew

Both pilots were in possession of valid licenses and authorisations to perform the flight.

The 63 year old pilot in command was occupying the right seat and had approximately 15,500 hours of flying experience, of which about 3,500 hours were on the Embraer EMB-145. His flight time within the past 90 days was 73:51 hours and in the last 24 hours before the incident 3:30 hours. His flight duty time on the day of the incident was 4:00 hours. Before commencing duty he had a rest period of 10:20 hours.

The 31 year old second in command was receiving command training and was occupying the left seat. He had 3,196 hours flying experience, of which approximately 37 hours were on the Embraer EMB-145. His flight time within the last 90 days was 37 hours and within the last 24 hours before the incident 12:15 hours. His flight duty time on the day of the incident was 4:00 hours. Before commencing duty he had a rest period of 10:20 hours.

There were no medical restrictions.

Information about the aircraft

The aircraft was an Embraer EMB-145LU, serial number 145564, manufactured in Brazil in 2002. It was equipped with two Rolls-Royce / Allison AE 3007 A1 engines without thrust reversers, mounted on the rear fuselage. The total operating time of the airframe was about 9,352 hours. The aircraft was subject to a regular maintenance cycle and the last maintenance action (C check) was conducted on 13 July 2005.

The maximum takeoff weight of the aircraft was 21,990 kg and actual takeoff weight was 19,716 kg. The stated maximum landing weight was 19,300 kg and actual landing weight at Nuremberg was about 19,310 kg. The computer load sheet indicated that the centre of gravity was within the permissible range.

Meteorological information

Recorded ATIS:

"A" 0450, Rwy28, TL 60, W270/2, 1200m TS RA Mist, Temp 16/15, QNH 1018, 4000 TS RA 22 CB, Low Visibility Procedure in progress

Weather Briefing:

EDDN / NUE NUERNBERG

SA 280420 CCA 09002KT 0300 R28/P1SO0N
FG VV/// 16/15 Q1018 BECMG
4000 TSRA BKNO20 CB=
FC 280300 CCA 280413 VRBO3KT 1200 BCFG
BKNO03
PROB30 TEMPO 0406 0200 FG VVOO2
BECMG 0407 9999 SCTO2O
TEMPO 0713 24015G25KT 4000 SHRA
BKN015CB
PROB30 TEMPO 0713 24020G35KT 2500
TSRA BKNO12CB=
FT 272200 280624 O4005KT 9999 SCTO2O
TEMPO 1119 24020040KT 4000 SHRA
PROB30 TSRA BKNO15CB=

Navigation aids

For the approach to runway 28 the instrument landing system (ILS) with a middle marker and outer marker was available, as well as Rotenbach (RTB) NDB and the Nuremberg (NGD) Distance Measuring Equipment (DME).

Radio communications

The radio communications were recorded and were available to the BFU for evaluation.

Aerodrome information

Nuremberg Airport has one runway, 2,700 m long and 45m wide . The alignment of the runway is 099°/279°. In the landing direction the first 1,768 m of runway 28 is asphalt and the surface of the remaining 932 m is concrete.

The coordinates of the airport reference point are N 49° 29 '55.12 " / E 011° 04' 41, 18 and it is at an elevation of 1,017 ft above sea level.

After the event no tests to determine the braking coefficient of the runway were carried out. The runway was wet and partially covered with water.

Flight recorders

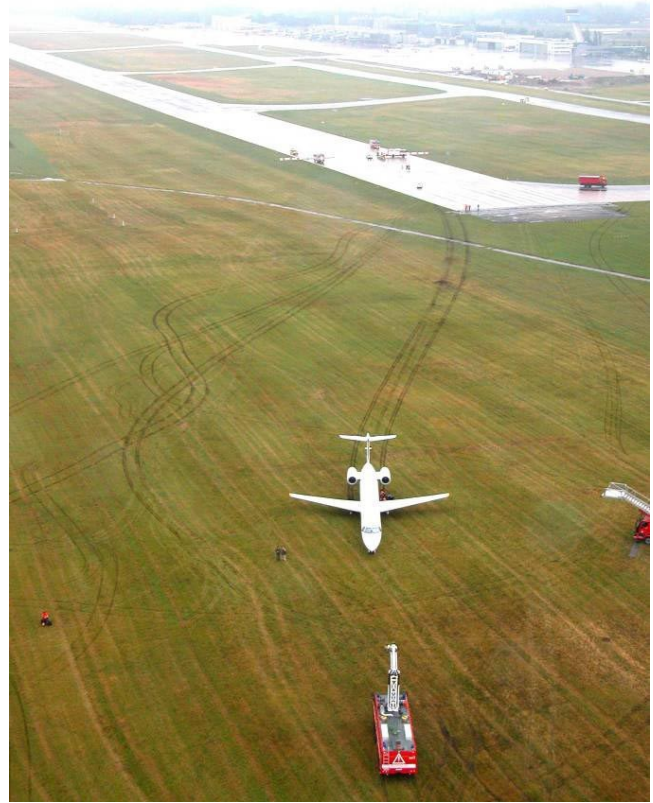
The Flight Data Recorder (FDR) and Cockpit Voice Recorder were recovered and are available to the BFU for evaluation.

Incident site survey and findings on the aircraft

The aircraft overran the end of the runway by about 120 m and came to a rest about 100 m right of the centreline. The ground was firm and therefore the landing gear was not damaged. The beacon light under the fuselage was smashed when the aircraft ran over an approach light. Engine oil was leaking from the left engine cowling.



On inspecting the cockpit, it was found that the lenses of the two oxygen masks were heavily fogged and therefore the view of the pilots would have been seriously impaired.



Fire

There was no fire.

Additional information

The left engine is undergoing further investigation at Rolls Royce in East Kilbride (Scotland).