

STATE COMMISSION ON AIRCRAFT ACCIDENTS INVESTIGATION

PRELIMINARY REPORT

Serious Incident

Occurrence No: 982/14

aircraft: airplane, Bombardier CRJ-700, D-ACPJ

05 July 2014 – Katowice-Pyrzowice (EPKT)

In connection with the provisions of the Regulation (EU) No 996/2010 of the European Parliament and of the Council on the investigation and prevention of accidents and incidents in civil aviation and repealing Directive 94/56/EC (EU Journal of Laws L. 2010.295.35), the wording used in this Report may not be considered as an indication of a person guilty or responsible for the occurrence.

The Commission does not apportion blame or liability.

In connection with the above, any form of use of this Report for any purpose other than air accidents and serious incidents prevention, can lead to wrong conclusions and interpretations.



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DATA

Status: **Preliminary Report**

Classification: **Serious Incident**

Date: **5 July 2014**

Time: **15:46 UTC¹**

Aircraft type: **Bombardier CL-600-2C10 (CRJ-700)**

Operator: **Lufthansa CityLine GmbH**

Registration marks: **D-ACPJ**

Serial Number: **10040**

Year of manufacture: **2002**

Manufacturer: **Bombardier Aerospace**

Engines: **2x General Electric CF34-8C1**

Airframe flight time/cycles: **24684 hrs/24130 cycles**

Passengers/Crew: **52 Passengers, 2 Cabin Crew, 2 Flight Crew, all uninjured**

Captain: **Male, aged 64, German, holder of ATPL(A) issued by Luftfahrt-Bundesamt Germany, valid until 31 July 2015**

Co-Pilot: **Male, aged 44, German, holder of ATPL(A) issued by Luftfahrt-Bundesamt Germany, valid until 31 March 2015**

Aircraft Damage: **None**

Location: **Katowice-Pyrzowice (EPKT) aerodrome**

Phase of Flight: **Landing**

Flight Nature: **Commercial**

Departure Airport: **EDDF**

Destination Airport: **EPKT**

Flight number: **LH1360**

¹ All times in this Report are given in UTC



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Occurrence description

On July 2014 the crew of Bombardier CRJ-700 performing flight LH1360 from Frankfurt (EDDF) to Katowice (EPKT) landed on a runway which was under construction. The new runway under construction is located 200 m from the old runway and parallel to it. On the day of the accident ILS CAT I precision approach system at EPKT was shut down due to construction works.

During preparation for the flight the crew received operational plan of the flight with the NOTAM applicable to the route and the destination airport. When approaching EPKT the crew listened to the current ATIS broadcast and reported their position to the APP controller. The APP controller asked the crew whether they wish a visual approach and the crew agreed. Prior to the landing, due to a torrential rain limiting visibility, the controller informed the flight crew of braking conditions on the runway. The crew acknowledged receipt of the information. During the approach the lighting of the appropriate runway, PAPI and the threshold lights were turned on and set at the maximum. TWR controller monitoring the airplane noticed its touchdown on the runway under construction and warned the crew about the situation and possible obstacles on the runway as well as the need to stop the aircraft as soon as possible. The crew acknowledged receipt of the information.

After landing on the right half of the runway and stopping the airplane the airport services drove to it to check if assistance was needed. Passengers were asked to walk to the buses placed behind a grassy area, separating the old runway and the one under construction. Then the passengers and the cabin crew were transported to the airport terminal.

Due to the lack of paved surfaces connecting the runway under construction with the existing airport infrastructure a technical flight from the runway under construction was executed. The airplane landed on the proper runway and then was moved to the apron of the Katowice airport.



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Photo 1. Bombardier CRJ-700 airplane on the apron of Katowice-Pyrzowice aerodrome.



Photo 2. Katowice-Pyrzowice aerodrome (11 April, 2014), direction 27 – the runway under construction on the right side. [EPKT photo]. On the day of the occurrence the black strip on the runway surface did not exist anymore.

After arriving at the Katowice-Pyrzowice airport a representative of the State Commission on Aircraft Accidents Investigation - SCAAI, in cooperation with the Airport Operational Officers, the following was done:



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- photographic documentation of the condition of the runway under construction;
- photographic documentation of construction machinery located on the runway under construction;
- photographic documentation of the markings on the closed runway under construction;
- photographic documentation and measurement of the landing tracks on the runway under construction.

No damage to surface of the runway under construction was found.

On the same day the Investigator-in Charge interviewed the pilots and obtained from them statements about course of the flight.



Photo 3. Marking of the closed runway under construction in the threshold 27 area.



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Photo 4. Marking of the closed runway under construction in the threshold 09 area.



Photo 5. Marking of the closed runway under construction in the threshold 09 area partially covered with concrete.



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Photo 4. Construction machinery on the runway under construction (~260 m from the beginning of the runway 27 surface).



Photo 5. Touchdown tracks of the Bombardier CRJ-700 (~870 m from the beginning of the runway 27 surface).



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Photo 8. Touchdown tracks of the nose landing gear (~1130 m from the beginning of the runway 27 surface) and a turn at the beginning of the landing roll.



Photo 6. Tracks of the closest proximity between the airplane RMLG and the step of the newly constructed runway surface (1 m distance).



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Photo 7. Step of the surface of the newly constructed runway (30 cm high – yellow arrow), right side.



Photo 8. Structure forming/bounding the surface of the newly constructed runway (left side).



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Photo 9. Tracks of the airplane stop on the runway under construction (~2700 m from the beginning of the runway 27 surface).

Upon arrival of the operator maintenance personnel, an inspection of the airplane was carried out – no damage was found. Flight Data Recorder (FDR) and Cockpit Voice Recorder (CVR) were protected. Recordings of the recorders will be used in the further investigation of this air occurrence.

The following evidence was protected for further investigation:

- recordings of ATC communication;
- recordings of radar imaging;
- recordings of EPKT operational services communication;
- recordings of the FDR and CVR;
- documentation and plans of the airport expansion.



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Photo 10. FDR and CVR from the Bombardier CRJ-700 airplane.

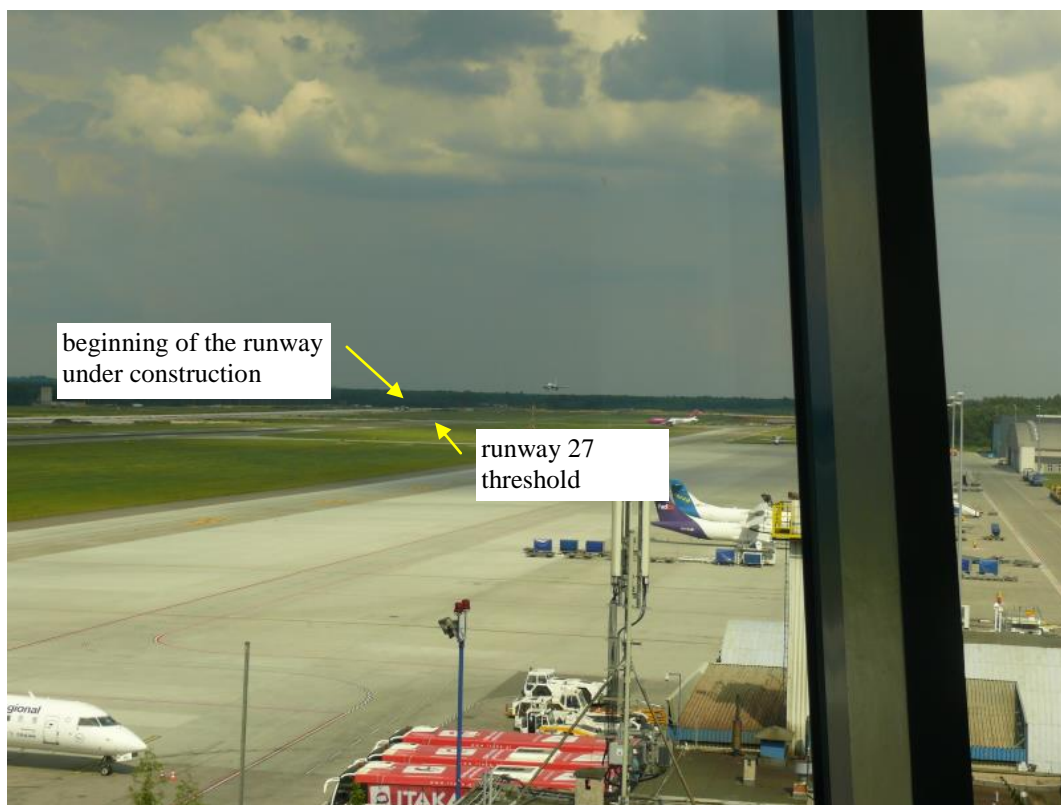


Photo 11. View on a landing airplane from EPKT Tower.



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EPKT AIP.

AIP for EPKT contains the relevant supplementary information about the construction work at the Katowice-Pyrzowice airport including description, deadlines and plans of individual tasks.


POLSKA AGENCJA ŻEGLUGI POWIETRZNEJ		POLISH AIR NAVIGATION SERVICES AGENCY	
SŁUŻBA INFORMACJI LOTNICZEJ		AERONAUTICAL INFORMATION SERVICE	
		SUP 06/14 (AD 2 EPKT)	
		Obowiązuje od / Effective from 06 MAR 2014 Obowiązuje do / Effective to 30 JUN 2015 EST	
02-147 Warszawa, ul. Wieżowa 8 AIS HQ: +48-22-574-5610, Fax: +48-22-574-5619, AFS: EPWWYOYX NOTAM Office: +48-22-574-7174, Fax: +48-22-574-7179, AFS: EPWWYNYX E-mail: ais.poland@pansa.pl, www: http://www.ais.pansa.pl			
PRACE BUDOWLANE NA LOTNISKU KATOWICE/ PYRZOWICE (EPKT)		CONSTRUCTION WORKS AT KATOWICE/ PYRZOWICE (EPKT) AERODROME	
1. ZADANIE 1 Budowa nowej RWY wraz z niezbędną infrastrukturą. Harmonogram prac Termin rozpoczęcia: rozpoczęcie Termin zakończenia: 2014-09-30 EST Zakres prac a) Budowa nowej RWY 09/27: wymiarów 3200 x 60 m, nawierzchnia sztywna (beton cementowy) wraz z poboczniami o nawierzchni podatnej (beton asfaltowy). RWY wyposażona będzie w: ILS CAT II na kierunku 27, PAPI na kierunkach 09 i 27, świetlny system podejścia precyzyjnego kategorii II w układzie ALPA-ATA na kierunku 27, uproszczony system świetlny podejścia na kierunku 09, światła krawędziowe, światła progu i końca RWY, światła osi, światła strefy przyziemienia, światła wskazania drogi kołowania szybkiego zjazdu.		1. TASK 1 Construction of a new RWY and the necessary infrastructure. Schedule of works Date of commencement: in progress Date of completion: 2014-09-30 EST Scope of works a) Construction of the new RWY 09/27: dimensions 3200 x 60 m, rigid pavement (concrete) with the shoulders of flexible pavement (asphalt). The RWY will be equipped with: RWY 27 CAT II ILS, RWY 09 PAPI, RWY 27 PAPI, RWY 27 precision approach CAT II lighting system ALPA-ATA, RWY 09 simple approach lighting system, RWY edge lights, RWY threshold lights, RWY end lights, RWY centre line lights, RWY touchdown zone lights, rapid exit TWY indicator lights.	

Figure 1. Extract from supplement to AIP (AD 2 EPKT) with description of construction works.

NOTAM

The crew had access to the current NOTAMs and information about the runway under construction at EPKT airport.

1E505/14

CONSTRUCTION OF NEW RWY IN A DISTANCE 150M NORTH PARALLEL TO RWY 09/27. DO NOT USE NEW PAVEMENTS FOR OPERATIONAL PURPOSES.

ATIS broadcast

When approaching EPKT the crew listened to the current ATIS broadcast:



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THIS IS KATOWICE-PYRZOWICE, INFORMATION GOLF.
TIME 1526.
EXPECT RADAR VECTORS VOR ZULU APPROACH FOR RUNWAY 27.
TRANSITION LEVEL 80.
RNAV APPROACH ON REQUEST.
WIND 230 DEGREES, 18 KNOTS.
VISIBILITY 10 KILOMETERS OR MORE.
CLOUD FEW CUMULONIMBUS 5 THOUSAND FEET.
TEMPERATURE 24.
DEWPOINT 14.
QNH 1011.
DELIVERY CLOSED. CAUTION: RUNWAY WIDTH REDUCED BY 1 METER OF THE
NORTHERN EDGE OF THE RUNWAY, BETWEEN 330 AND 430 METERS FROM
THRESHOLD 09 AND BETWEEN 0 AND 70 METERS FROM THRESHOLD 27.
RUNWAY REPORT DRY BRAKING ACTION GOOD.
END OF INFORMATION GOLF

Weather conditions

METAR EPKT 051600Z 21010KT 9999 -SHRA FEW050CB 20/16 Q1011

METAR EPKT 051530Z 23012G24KT 9999 FEW050CB 24/14 Q1011

METAR EPKT 051500Z 23007KT 180V260 CAVOK 25/13 Q1011

Markings of the runway under construction

Due to termination of the works involving construction of the runway foundation which was made of cement concrete and with a view to avoid misinterpretation of the new pavement as an active runway, the airport management ordered the contractor to produce and maintain a horizontal markings showing a closed runway at each end of the runway under construction. These markings should be white on a contrasting background (i.e. with a black outline) and have the shape and dimensions in accordance with ICAO Annex 14 “Aerodrome Design and Operations”.

EGPWS

The Bombardier CRJ-700 was equipped with a Honeywell MKV Enhanced Ground Proximity Warning System (EGPWS). The system did not warn the flight crew of a dangerous situation due to the lack of “Smart Landing” function (implemented in newer EGPWS models) and because of insufficient resolution of the area map.



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Proposed preliminary safety recommendations related to investigation into serious incident No 982/14.

In the course of the works to date it has been found that:

- AIP contained supplementary information about the construction works at EPKT aerodrome;
- NOTAM contained information about the construction works;
- ILS CAT I system at EPKT aerodrome was shut down due to the construction works;
- ATIS broadcast did not contain the relevant information about the construction of a new runway;
- markings of the closed runway under construction were incorrect;
- the TWR controller had an still has difficulties in observation (of the landing airplanes) because the threshold of the runway under construction was moved 750 m to the east;
- visibility deteriorated due to the local weather conditions;
- EGPWS system, depending on the version, may fail to warn pilots of a dangerous situation.

Therefore, at this stage of the investigation into the serious incident, above all bearing in mind safety of the air operations, the State Commission on Aircraft Accidents Investigation recommends:

Management of the Katowice-Pyrzowice airport:

1. Improve and maintain in the proper condition the horizontal markings informing about closure of the runway under construction.
2. Consider use of warning lights on the runway under construction, especially in the conditions of limited visibility.
3. Send to all the operators using the Katowice-Pyrzowice airport a reminder of the ongoing construction works.

Polish Air Navigation Services Agency:

4. Enter into EPKT ATIS broadcast a warning about the construction of a new runway on the northern side of the runway in use.



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Implementation of the preliminary safety recommendations related to investigation into serious incident No 982/14.

The management of the Katowice-Pyrzowice airport has already informed SCAAI about implementation of some preliminary safety recommendations.

Re: 1. Improvement of marking of the runway under construction.

As a result of ad hoc audit carried out 7-8 July 2014 by the Civil Aviation Authority at the Katowice-Pyrzowice airport, the following recommendation was issued:

“Place additional marking of a closed runway (red cross) on the runway under construction. Crosses in this color are to be placed close to both thresholds and in the middle of the runway”.

The airport management has introduced the correct markings of the closed runway under construction.



Photo 12. Marking of the closed runway under construction in the area of the threshold 27.



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Photo 16. Marking of the closed runway under construction in the area of the threshold 09.



Photo 17. Marking in the middle of the closed runway under construction.



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Re: 3. Information for the operators using the EPKT aerodrome.

On 22 July 2014 the airport management sent to all its operators an email titled:

„URGENT // DO NOT MISTAKE RUNWAY UNDER CONSTRUCTION
ON THE NORTH, WITH RUNWAY IN USE // AD EPKT !!!”

The letter contains a description of the works, aerial photos of the airport and the photos of the correct markings of the closed runway under construction.

Re: 4. ATIS broadcast.

According to the SCAAI recommendation and to the procedure implemented on the day of the accident, a warning about possibility of mistakes during landing was introduced into ATIS broadcast.

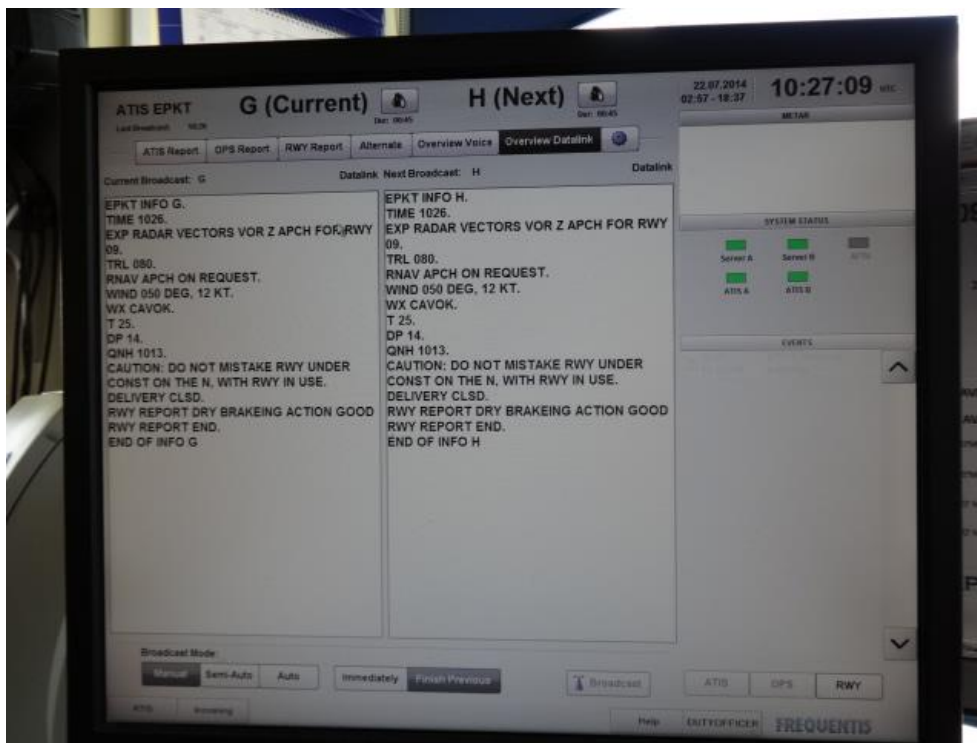


Photo 13. Current ATIS broadcast of the EPKT aerodrome.

Investigator-in-Charge

Piotr Lipiec

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