



AIR ACCIDENTS INVESTIGATION
INSTITUTE OF CZECH REPUBLIC
Beranových 130
199 01 PRAHA 99

CZ-10-844

Copy No.: 6

FINAL REPORT

**Investigation into an accident involving
The ground collision of a CL-600 aircraft registration mark D-ACPE
with the cab of a de-icing car at Prague/Ruzyně de-icing area
On 17 December 2010**

June 2011

The final report, its findings and conclusions concerning air accidents and incidents or system failures threatening operational safety are of informative character solely and can only be used as recommendation steps to be taken to avoid similar accidents or incidents. The producer of the report specifies explicitly that the Final Report cannot be used as background to determine persons' fault or responsibility for the mishap in question or for average claims ensuing thereof.

List of abbreviation used

ATC	Air traffic control
ATCo	Air traffic controller
ATIS	Automatic terminal information service
ATPL	Airline transport pilot license
ATS	Air traffic services
CPL	Commercial pilot license
FDR	Flight data recorder
FO	Flight officer
KT (kt)	Knot – unit of speed (one nautical mile i.e. 1,852 m per hour)
LKPR	Prague/Ruzyně airport indication
M (m)	Unit of length
MMP	Power service vehicles
NIL	None
PF	Pilot flying
PIC	Pilot in command
RWY	Runway
ŘLP ČR	Air traffic control of the Czech Republic, state enterprise
RPL	Aerodrome traffic control
T	Temperature (degree centigrade)
TWR	Aerodrome control tower
TWY	Taxiway
UTC	Coordinated Universal Time
ÚZPLN	AAII CZ (Air Accidents Investigation Institute of the Czech Republic)

A) Introduction

Aircraft

Operator: Lufthansa Regional (Lufthansa City Line) Germany
Manufacturer and Model of aircraft: Bombardier Aerospace, Canadair CL-600-2C10 Regional Jet CRJ-701ER
Registration mark: D-ACPE
Call sign: DLH3UT

Location	Prague/Ruzyně airport (LKPR)
Date	17 th December 2010
Time	10:30 Central European Time (09:30 UTC) next all times in UTC

B) Information survey

Based on a report by Letiště Prague a.s. (Airport Prague, Joint Stock Company) and ATS a collision investigation was launched involving a CL-600 aircraft's left winglet and the cab of a de-icing vehicle standing at the airport de-icing area. Nobody was injured.

The cause of the event was investigated by AAll CZ commission consisting of:
Investigator in charge: Josef Procházka
Commission member: Petr Hloušek, Airport Prague

The Final Report was issued by:
ÚSTAV PRO ODBORNÉ ZJIŠŤOVÁNÍ PŘÍČIN LETECKÝCH NEHOD (Air Accidents Investigation Institute)
Beranových 130
199 01 PRAHA 99
on 30. May 2011

The body of the Final Report contains:

1. Factual information
2. Analysis
3. Conclusions
4. Safety recommendations

1. Factual information

1.1 History of the flight

On frequency Ruzyně Ground, the CL-600 crew requested taxiing from the de-icing area back to the stand because their departure was delayed due to winter maintenance work on RWY in use.

The crew began taxiing from this area without coordination with ground personnel. During taxiing from the de-icing area the CL-600 left winglet struck the cab of de-icing vehicle.

1.2 Injury to persons

There were no injuries to persons.

1.3 Damage to aircraft

Left winglet was damaged



1.4 Other damage

No damage was reported to the de-icing car.
No other damage has been reported.

1.5 Crew information

PIC, PF (man) – age:	44 years
Total flight time:	12,000 hours
On type:	7,200 hours
ATPL:	Valid
Medical:	Valid

F/O (man) – age	26 years
Total flight time	5,500 hours
On type:	4,900 hours
ATPL:	Valid
Medical:	Valid

1.6 Aircraft information

Production year:	2001
Production no.:	10027
Airworthiness certificate:	Valid
Insurance:	Valid

1.7 Weather situation

1712 0900 METAR LKPR 170900Z 14009KT 1500 R13/1400N R24/1400N SN BKN013 OVC033 M06/M08 Q0992 R24/490539 R31/490524

TEMPO 1700 SN BKN010 RMK REG QNH 0987=

1712 0930 METAR COR LKPR 170930Z 14011KT 1100 R13/1100N R24/1000N SN BKN013 OVC033 M06/M08 Q0992 R24/490539

R31///99// TEMPO 1500 SN BKN015 RMK REG QNH 0987=

1712 1000 METAR LKPR 171000Z 15012KT 1700 SN BKN018 OVC046 M06/M08 Q0991 R24/490539 R31///99// BECMG 3000 -SN RMK

REG QNH 0987=

Zpráva SPECI na zhoršení (dohlednosti) byla vydána v 0919 UTC:

1712 0919 SPECI LKPR 170919Z 14010KT 1100 R13/1100N R24/0900V1700D SN BKN012 OVC030 M06/M07 Q0992 R24/490539 R31/490524 RMK REG QNH 0987=

1.8 Aids to navigation

Radio navigation aids at the airport had no influence on the accident.
Visual aids corresponded to aerodrome class 4E.

1.9 Communications

Communications between the air traffic control service and CL-600 airplane were conducted on frequency 121,900 MHz Ruzyně Ground.

Radio communications readout was comprehensible.
Communication service had no effect on the accident.

1.10 Airport information

Airport category 4E.
Markings according to regulation ICAO ANNEX 14.
Winter maintenance was under way on RWY in use.

1.11 Flight recorders and other recording means

ŘLP ČR s.p. records and Letiště Praha records were used.

- Radar situation record.
- Radio phone conversation record.
- Camera system record.

1.12 Accident site and wreckage description

The accident took place in DE-ICING 3, TWY AA area.
Left winglet of the CL-600 plane was damaged by the impact.

1.13 Medical and pathological findings

NIL

1.14 Fire

NIL

1.15 Search and rescue

NIL

1.16 Tests and research

NIL

1.17 Organizational and management information

1.17.1 ŘLP ČR, s.p.

Is a provider of air operation services at LKPR.
Approval to provide these services – valid.

1.17.2 Menzies Aviation (Czech) s.r.o. (Menzies)

Is a provider of the turnaround services of aircraft, passengers and baggage.
Certificate to provide services – valid.

1.17.3 Prague Airport, joint-stock company

Is the operator of the International Airport Prague/Ruzyně.
Airport certificate – valid.

1.18 Additional information

1.18.1 From CL-600 crew statement

The crew stated that they had no communication with the de-icing personnel during stay at de-icing area.

The crew received from ATCo a clearance to taxi from de-icing area back to the aircraft stand

The crew visually checked the left and right space around the plane, switched on taxi lights and began taxiing.

On commencing taxiing the crew noticed a strange noise coming from the nose landing gear area. At the sometime FO spotted a de-icing worker was waving. The crew stopped taxiing.

Not having any contact with de-icing personnel, the crew was not informed that a wheel chock had been placed.

Subsequently, the crew got information that the left winglet had been damaged.

1.18.2 From the statement of Menzies Aviation (Czech)s.r.o. employees

Ramp agent

He put on headphones to be connected with the plane and put a wheel chock in front of the nose wheel.

The crew told him that de-icing was not necessary for the time being and asked him for information about the state of the RWY in use and what time exactly the RWY was going to be serviceable again. The ramp agent confirmed the request and informed the crew that he could get the information through radio station in his car. After getting "OK" from the crew he disconnected headphones from the plane and went to his car to get the information.

He had no visual communication with plane crew.

He did not see the impact. He only could hear engine's increased power and the nose undercarriage run onto the chock.

He did not know why the plane got rolling.

Driver of the de-icing car standing right of the airplane

Ramp agent went to the plane, connected headphones and put a wheel chock in front of the nose undercarriage. We went with our cars to the wing tips and waited

in his signal. After awhile the ramp agent got disconnected and informed us that we would have to wait because the airport was closed and then he went to his car.

At the time the ramp agent stood by his car this driver saw the plane got to move and pushed the chock forward with its nose undercarriage. The ramp agent began to run and waved for the crew to see him and stop the plane. Then the crew stopped the plane, having travelled ca 5-6 m.

The plane got rolling without any signal from the ramp agent.

Driver of the de-icing car standing left of the airplane

He should have to de-icing the plane from the left hand side.

After the ramp agent got connected with headphones to the plane, he went ca 4 m away from the plane, braked the car with hand brake and waited to receive instruction from the ramp agent. After about three minute waiting for a ramp agent instruction to start de-icing, the plane got to move.

The ramp agent and the second crew of the de-icing car stood on the other side of the plane and they could not be seen from the position of this driver. He could not react in time to the movement of the plane and get away.

Operator of the de-icing car located left of the airplane

Got on de-icing cab and got ready for de-icing. He waited to receive instruction from the ramp agent to start de-icing.

He got sight of the plane moving and tried to go up with the de-icing cab as high as possible to avoid contact with it, but failed to prevent collision.

It follows from statements made by other witnesses and from a camera system record that after the plane arrived at the de-icing ramp, the ramp agent put a wheel chock in front of the nose undercarriage, connected his headphones to the plane and apparently established contact with crew.

They saw the ramp agent went to his car.

Subsequently the plane got rolling and they saw the left winglet strike the cab of the de-icing car.

1.19 Investigation techniques

Standard investigation techniques conforming to ANNEX 13 have been used in looking into the accident.

2 Analysis

2.1 CL-600 crew

- Pilots had valid licenses.
- Pilots had valid medicals.
- Received taxiing clearance to return to the stand.
- Subsequently, they began taxiing from the de-icing ramp without previous communication with ramp agent.

2.2 Weather

- The airport was covered in continuous snow layer.
- Air traffic went on in condition of possible icing.
- Aircraft de-icing was conducted on aircrews' request.
- Had no effect on the accident.

2.3 Flight history

- When staying on the de-icing ramp, the crew asked ATCo to be allowed to taxi back to the stand because RWY conditions were not convenient for take-off.
- ATCo cleared CL-600 crew to taxi using standard terminology.
- CL-600 crew commenced taxiing without coordination with ground personnel.
- When taxiing, CL-600 left wing struck the cab of a de-icing car standing at the de-icing ramp.
- Subsequently, CL-600 went on taxiing to stand No.54 where it was checked.
- The plane was not capable to flight.

2 Conclusions

3.1 The investigation commission made the following conclusions:

- Staying at the de-icing ramp, CL-600 crew asked for clearance to taxi back to the stand because the RWY conditions were not convenient for take-off (winter maintenance of RWY in use).
- ATCo issued taxiing clearance.
- CL-600 crew began taxiing without coordination with ground personnel.

3.2 Causes

- Human factor failure – no coordination of CL-600 aircrew with ground personnel.

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Josef Procházka
ICC

4 Safety recommendation

Up to aircraft operator.

31. May 2011

Approved by:

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Pavel Štrůbl
Director