AIR ACCIDENTS INVESTIGATION INSTITUTE

of the Czech Republic

Ref. No. CZ 09/029

FINAL REPORT

Investigation of Incident A/C Boeing B 737, Registration VP BBL, on 1st March 2009 on LKTB

Prague
July 2009

The report's information, findings and conclusions concerning the aircraft accident or system failures endangering operational safety are solely of informative nature and can only be used as recommendations to prevent similar accidents due to similar causes. The author of the Final report states explicitly that it cannot be used to lay the blame or responsibility for the accident on anyone or to file insurance claims.

Used abreviations:

AAII	*Air Accident Investigation Institute of Czech Republic*
AIP	*Aeronautical information publication*
APN	*Apron*
ATC	*Air Traffic Control*
ATPL	*Airline Transport Pilot Licence*
CPT	*Captain*
CSN	*Cycles since new*
FEW	*Few (cloud descriptor)*
FC	*Flight cycle*
FH	*Flight hours*
FO	*First Officer*
KT (kt)	*Knots (1,852 kmh^{-1})*
LKTB	*Brno Tuřany International Airport*
METAR	*Aviation routine weather report*
PIC	*Pilot in comand*
RWY	*Runway*
T	*Temperature (°C)*
TSN	*Time Since New (also TTSN)*
TWR	*Aerodrome control tower*
TWY	*Taxi way*
UTC	*Coordinated Universal Time*
UUWW	*Moscow International Airport*

A) Introduction

Operator:	Atlant Soyuz Airlines, Russia
Aircraft manufacturer and model:	Boeing, B 737-347
Registration Mark:	VP BBL
Planning destination:	UUWW, Russia
Place of incident:	LKTB, Czech Republic
Date and time:	01/03/2009, 16:20 (all times are UTC)

B) Synopsis

On 1st March, 2009 AAII of the Czech Republic was notified by the Brno Tuřany (LKTB) airport air traffic controller of an incident involving a B 737 airplane, registration mark VP-BBL, in which the plane had gone off the taxiway surface. There was no damage to the plane during leaving the taxiway. Neither the crew nor passengers were injured. Based on the announcement an investigation into the incident was launched.

The final report on the incident issued AAII based :
Beranových 130, 199 01 Prague 99, Czech Republic
fax: +420 266 199 234
web site: www.uzpln.cz

The cause of the incident was investigated by an Air Accident Investigation Institute commission comprising:

Commission chairman:	Mr. Ing Lubomír Stříhavka, AAII
Commission member:	Mr. Ing. Stanislav Suchý, AAII
	Mr. Ing. Radomír Janík, deputy of airport operator

C) The report includes the following main parts:

1/ Factual information
2/ Analysis
3/ Conclusions
4/ Safety recommendation
5/ Annex no. 1 - Engineering occurence report of March 3, 2009

1 Factual information

1.1 Taxiing
The airplane parked on the APN M apron with its nose pointing to a heading of 155 deg. PIC demanded and received instructions to start the engines. As the engine no.1 got started the ground equipment was shut off. PIC asked about the take-off direction. ATCo specified that the take-off would be from RWY 10. Having got this information the plane went to TWY, probably intending to start the engine no.2. However, the plane did not ask for clearance to taxi on TWY A and did not received it form the tower either. But the plane nose was not directed to the heading of 275 deg on TWY A as planned and the plane went off the hard surface south of TWY A. The crew did not keep radio communications with the control tower from that moment. Having found out the plane was off TWY A, PIC shut down the no.1 engine. On request of the ground personnel the technical and rescue airport group was called out to the plane. The passengers left the cabin using passenger stairs attached. PIC then reported the plane had had a technical failure preventing the controllability of the nose undercarriage wheels and causing the plane´s brakes to fail.

1.2 Injuries to persons

Injuries	Crew	Passengers	Others (inhabitants, etc)
Fatal	0	0	0
Serious	0	0	0
Light/no injury	0/8	0/93	0

1.3 Damage to Aircraft

Check on the undercarriage parts and engines´ inlet holes revealed no damage.

1.4 Other damage

NIL

1.5 Personnel information

1.5.1 Captain (CPT) Male, aged 49 years, ATPL(A) licence valid till 2^{-nd} Dec 2009, rating CPT B737, medical valid.

Flying experience	*Flight time in last 24 hrs*	*Flight time in last 90 day*	*Total hrs*
Total	**2:30**	**148**	**5,410**
as PIC	**2:30**	**-**	**534**
on B737	**2:30**	**148**	**1,320**

PIC was at the LKTB Tuřany Airport 19 times in the past according to the operator, the last time on 30th Dec 2008.
The pilot-in-command was the flying pilot at the moment of the incident.

1.5.2 First officer (FO)
FC: No details were being checked out.

1.6 Aircraft information

Type:	Boeing B737-347
Year of manufacture:	1985
Total FH/FC to 1-st March 2009:	59,564 FH/ 39,145 FC

The plane had a valid airworthiness certificate. The crew did not notice any brake or undercarriage control malfunctions during the precedent flight to Brno.
The plane´s weight limit was not exceeded.

Note: The undercarriage and the aircraft systems were checked at LKTB Airport immediately following the plane had gone off the taxiway and the plane was found operable. The check was done by the technical staff of a foreign maintenance organization.

1.7 Meteorological information

The taxiways surface was dry. Horizontal visibility was good.
The incident took place 13 minutes before dusk still at daylight.

1.8 Aids to navigation

The taxiway from the stand APN M to TWY A was delimited by horizontal yellow continuous line marking.

1.9 Communications

The crew was in radio contact with TWR LKTB on frequency 119.60 MHz.

1.10 Aerodrome information

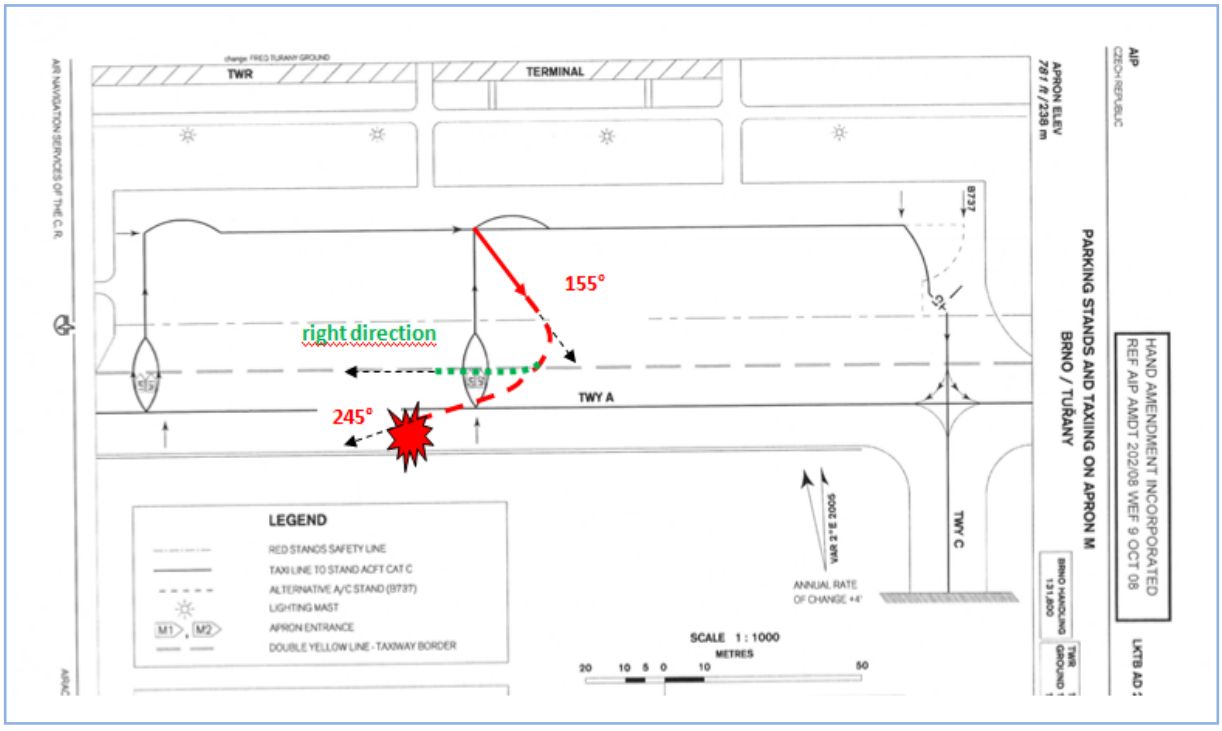
The LKTB Airport is an international airport. AIP AD 2-LKTB-14 (Article 2.20.3.5) provides that for safety reason only minimum engine power can be used.

1.11 Flight recorders

Radio communications recording between the crew and TWR LKTB station was secured and evaluated. The record was intelligible and legible.

1.12 Description of incident site

The incident happened on the south edge of TWY, five to ten metres on grassy surface, 70 m away from the stand. The TWY A surface is concrete and the adjoining surface is grass.
The plane went on the grass with nose landing gear and main left undercarriage leaving trails three to fifteen metres deep. When checking the setting of control elements and electricity breakers it was found out that the hydraulic pump circuit breakers on panel P6-2 were cut off.



Situation of the incidents area

1.13 Medical and pathological findings

Police of the Czech Republic had both of crew members breathalysed for alcohol. The breath test was negative.

1.14 Fire

NIL

1.15 Survival aspects

The aircraft was removed from grass by Brno Tuřany Airport technical staff and a rescue team from South Moravia.

1.16 Tests and research

NIL

1.17 Organizational and management information

NIL

1.18 Additional information

NIL

1.19 Useful or effective investigation techniques

The incident has been investigated according to L-13 National Regulation (Investigation into Air Accidents and Incidents of the Czech Republic as per recommendation of ICAO - Annex 13).

2 Analysis

2.1 Analysis of factual information

- PIC was trained and qualified for the flight and had a medical certificate;
- the airplane had a valid airworthiness certificate;
- the crew did not notice any steering control malfunctions when moving on the ground at LKTB previous landing;
- external conditions had no influence on the incident;
- the plane was not damaged when it went off TWY A;
- PIC knew the Brno Tuřany Airport well and was acquainted sufficiently with local operational conditions.

2.2 PIC´s work when taxiing from stand

Connected to TWR LKTB, PIC got standard permission to start engines. There is no limitation to start engines on APN M so PIC was allowed to start both the engines at the stand. PIC did not ask for permission to do taxiing and was not cleared to taxi to TWY A either. At the moment the plane began taxiing the crew did not notice a low pressure signal in the hydraulic system. PIC reported technical malfunction only after the plane had gone off the TWY A hard surface.

2.3 Effect of technical failure

On completing procedures to start up no. 1 engine, the systems to steer the nose undercarriage and to brake the plane were apparently working OK. This is witnessed by the fact that if they did not work properly, the plane could not have turned 80 to 85 deg into the taxiing direction requested. These systems failed probably by overloading the sector circuit breakers that were cut off the moment the plane started to move. Cutting off the circuit breakers caused hydraulic pumps´electric circuit to be cut off too, which led to lowering pressure in nose wheels and brakes. The plane halted owing to the increased tyre resistance on the grassy surface with the crew being unable to bring it to a stop.

3 Conclusion

The incident was caused by circuit breakers cutting off electricity supply to the aircraft hydraulic pump systems of nose undercarriage wheel control and brakes. PIC started taxiing from APN M apron without getting ATC clearance, and he could not control the plane because of its technical failure.

4 Safety recommendations

None.

Approved by Prague July 8, 2009