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FINAL REPORT

Investigation into the incident
of aircraft B737-73S,
at LKPR on 18 August 2006

Prague
January 2007

The present document is the translation of the Czech Investigation Report. Although efforts are made to translate it as accurate as possible, discrepancies may occur. In this case the Czech version is authentic.

A) Introduction

Operator: HAMBURG International

Aircraft type: Boeing, B737-73S
Registration: D-AHIF
Place of Incident: FIR Praha (LKAA)
Date and Time: 18 August 2006, at 10:55 (All times in this report are UTC)

B) Synopsis

On 18 August 2006 Air Accidents Investigation Institute (AII) was notified by the Czech Republic ATC and the Czech Air Force of an incident involving an aircraft Boeing B737, registred D-AHIF. The crew of D-AHIF was on flight HHI5753 from Izmir Adnan Mercedes Airport (LTBJ) to Bremen Airport (EDDW). Air traffic controller ACC Praha (NEU EC) was informed that flight HHI5753 was flying in FIR Bratislava without contact and the attempts to establish contact with HHI5753 crew failed. The aircraft HHI5753 entered FIR Praha at FL 380 over the point HDOPI without contact established, with the set code SSR 7600 and continued via UY444 to the point HDO. JAS 39 Gripen fighters of the Czech Air Force (QRA) scrambled against HHI5753. Contact with the crew was then established on an emergency frequency. The HHI5753 crew could not sent radio messages because of its VHF1 transmitter failure. The HHI5753 crew received from QRA's pilot on the emergency frequency the instruction to tune in to the ACC Praha sector frequency and after that it was able to receive messages from NEU EC through one-way connection. The airplane was identified by "Squawk Ident" and then the crew followed NEU EC instructions. Information about HHI5753 flight was passed to FIR Rhein, the crew was tuned in to the right frequency and left FIR Praha over the HDO point at 11:21.

The cause of the incident was investigated by an AII commission comprising:

Investigator in charge: Ing Stanislav Suchý
Members: Ing. Radomil Havíř
Ing. Ivan Skala

The Final report was released by:

AIR ACCIDENTS INVESTIGATION INSTITUTE
Beranových 130
199 01 PRAHA 99

On the 30 December 2006.

C) The Final report includes the following main parts:

- 1) Factual information
- 2) Analysis
- 3) Conclusions
- 4) Safety recommendation
- 5) Annexes (to copy No.1 stored in AII archive)

1 Factual information

1.1 History of the incident

On 18 August 2006 the crew of the Boeing 737-73S, call sign HHI5753, was on flight from LTBJ Airport to EDOW Airport. At 10:48 the control and reporting centre (CRC) advised the shift chief of the military aera control centre (MACC) that no contact had been established with HHI5753 in FIR Bratislava (LZBB), that loss of contact had been indicated by SSR 7600 code and announced that QRA fighters would scramble. The HHI5753 aircraft flew in LZBB according to FLP without deviations. As early as 10:45 LZBB sector informed about the situation the appropriate FIR sector of LKAA NEU where the flight was planned on route LALES, UT42, DOBIL, UY444, and HDO.

At 10:54:40 the aircraft HHI5753 entered LKAA at FL 380 without contact established and continued according to FPL. At 10:57:22 HHI5753 began descending from FL380 to reach FL360 keeping it further on.

At 10:57 the QRA scrambled to help HHI5753. At 11:04 QRA pilots started the intervention procedure trying to establish two-way communication on emergency frequency.

At 11:07 the HHI5753 crew established contact on emergency frequency with QRA's pilot, confirmed failure of its radio station to work on reception mode only, and said there were no other problems. The QRA pilot instructed the HHI5753 crew to establish contact with "Praha Control" and transmitted the relevant frequency of the NEU sector. At 11:14 the HHI5753 crew reported on the emergency frequency that they monitored the NEU sector frequency and would follow further instructions. NEU EC asked to switch on Squawk Ident. The QRA pilots then accompanied HHI5753 flight as far as 25 NM away of HDO where they disengaged.

The HHI5753 captain reported that his crew had lost two-way connection as early as they entered FIR Budapest. The plane flew at FL 380 and since the crew had no contact with any planes or ATS units, they set the SSR code 7600 on the responder to inform they had lost contact. After 7 minutes the plane descended to FL 360 as stated in the filed FPL. On the TCAS display the crew spotted another airplane at FL 360 around 5 NM away, so they climbed back to FL 380 and after 10 minutes went down to FL 360 again. On crossing the LKAA border, the crew saw fighters on portside, heard message from the fighter pilot and could establish contact with him. The crew told the QRA pilot they had a technical problem with radio connection and then got the NEU sector frequency from him. With the VHF radio station test key pressed, the crew could hear faint instructions transmitted by NEU EC. The HHI5753 crew confirmed the reception of the report by switching on Squawk Ident. ATS units did not hear transmission of the aircrew.

1.2 Injuries to persons

NIL

1.3 Damage to aircraft

NIL

1.4 Other damage

NIL

1.5 Personnel information

The PIC, aged 32, holder of ATPL(A), had a PIC qualification for the type B 737. He has flown total 5000 hours, of which 4658 hours on the B 737.

The F/O, aged 27, holder of CPL(A). She has flown total 400 hours, of which 111 hours on the B 737.

1.6 Aircraft information

Type and Model:	Boeing 737-73S
Registration:	D-AHIF
Serial number:	29079
Total flight time:	22519 hours
Operating cycles:	9636
Certificate of Airworthiness:	valid to MAR 2007

1.7 Meteorological information

Meteorological conditions at LKAA were no aspect relevant to the incident. The interception by QRA proceeded in day conditions.

1.5 Aids to navigation

Aids to navigation were no aspect relevant to the incident.

1.6 Communications

There were no two-way communications between the HHI5753 crew and air traffic services at LKAA until 11:07 when was established one-way communication on emergency frequency 121,5 MHz and at 11:14 on the sector frequency ACC EC 132,805 MHz.

A direct telephone link is in operation between ACC and MACC and between MACC and CRC.

1.10 Aerodrome information

NIL.

1.11 Flight recorders

Pertinent data from the flight recorder were no available to AAll investigation. The ATS records were used for an analysis.

1.12 Description of incident site

NIL

1.13 Medical and pathological information

NIL

1.14 Fire

NIL

1.15 Survival aspects

NIL

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 serious incident has been investigated in accordance with Annex 13.

2 Analysis

The HHI5753 crew found they had lost contact and went on in accordance with procedures for loss of air-to-ground communication. The moment the aircraft entered LKAA it flew according to the filed FPL with the SSR 7600 code set on the transponder. The crew was able to receive reports from the QRA aircraft, which was in the vicinity. The crew could also hear very faint instructions from NEU EC when pressing the test button of the radio station, but could not maintain two-way communication.

The QRA fighters intercepted in a standard way. The HHI5753 crew reacted to the QRA action and contact was established on emergency frequency 121.5 MHz on which the HHI5753 crew acknowledged problems with radio communication.

Based on the information that HHI5753 flight flew without contact established in FIR Bratislava, the NEU sector coordinated other traffic, MACC action, identification and transmission of instructions to continue the flight, and handover to the appropriate sector of FIR Rhein.

According to the information provided by the aircraft operator, subsequent check on the plane revealed faults in the way antennas were connected to both of the VHF radio stations:

- corrosion was discovered on VHF antenna of radio station # 1;
- a disconnected connector was found on VHF antenna of radio station # 2;
- both radio stations were replaced.

3 Conclusions

3.1 The commission determined the following conclusions:

- HHI5753 crew were qualified and rated for the flight;
- Aircraft had valid airworthiness certificate and maintenance and operation approval certificate;
- The HHI5753 crew found that two-way communication with ATC stations at the FIR it flew in failed, and followed the appropriate valid procedures;
- Subsequent functional check on radio stations confirmed they were defective;
- ATC stations followed loss-of-contact procedures.

3.2 The causes

Due to the malfunction of the radio equipment on board the aircraft was not possible to establish two-way communication.

4 Safety recommendations

The operator of the aircraft should initiate procedures to increase serviceability of airborne radio equipment.

Prague, January 2007