



KÖZLEKEDÉSBIZTONSÁGI  
SZERVEZET  
TRANSPORTATION SAFETY  
BUREAU

## **FINAL REPORT**

**2006-097-4**

**Serious incident**

**Budapest, Ferihegy  
7<sup>th</sup> April 2006**

**Hughes MD 500 / Robinson R44 / Boeing 757 200  
HA-RTL / HA-MIW / G-BPEC**

The sole objective of the technical investigation is to reveal the causes and circumstances of aviation accidents, incidents or irregularities and to initiate the necessary technical measures and make recommendations in order to prevent similar cases in the future. It is not the purpose of this activity to investigate or apportion blame or liability.

## **The present investigation was carried out by the Transportation Safety Bureau of Hungary on the basis of**

- Act XCVII of 1995 on aviation,
- Annex 13 identified in the Appendix of Act XLVI. of 2007 on the declaration of the annexes of the Convention on International Civil Aviation signed in Chicago on 7th December 1944 and in the Appendix,
- Act CLXXXIV of 2005 on the technical investigation of aviation, railway and marine accidents and incidents (hereinafter referred to as Kbvt.),
- MET Decree 123/2005 (XII. 29.) on the regulations of the technical investigation of aviation accidents, incidents and irregularities;
- In absence of other related regulation of the Kbvt., in accordance with Act CXL of 2004 on the general rules of administrative authority procedure and service

The Kbvt. and the MET Decree 123/2005 (XII. 29.) jointly serve the compliance with the following EU acts:

- a) Council Directive 94/56/EC of 21 November 1994 establishing the fundamental principles governing the investigation of civil aviation accidents and incidents,
- b) Directive 2003/42/EC of the European Parliament and of the Council of 13 June 2003 on occurrence reporting in civil aviation.]

The competence of the Transportation Safety Bureau of Hungary is based until 31<sup>st</sup> December 2008. on Kbvt., and from 1<sup>st</sup> January 2007 on Government Decree 278/2006 (XII. 23.).

## **Under the aforementioned regulations**

- The Transportation Safety Bureau of Hungary shall investigate the aviation accidents and the serious aviation incidents.
- The Transportation Safety Bureau of Hungary may investigate aviation incidents and irregularities which - in its judgement - would have resulted in accidents under other circumstances.
- The technical investigation is independent of any administrative, infringement or criminal procedures initiated in connection with the transport accident or incident
- In addition to the aforementioned laws, throughout the technical investigation ICAO DOC 6920 Manual of Aircraft Accident Investigation is applicable.
- The present final report shall not be binding, nor shall an appeal be lodged against it.

No conflict of interest has arisen in connection with any member of the investigating committee. Persons participating in the technical investigation shall not act as experts in other procedures concerning the same case.

The IC shall safe keep the data having come to their knowledge in the course of the technical investigation. Furthermore the IC shall not be obliged to make the data – regarding which its owner could have refused the disclosure of the data pursuant to the relevant act – available to other authorities.

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## DEFINITIONS AND ABBREVIATIONS

ADC	Aerodrome Control
APP	Approach Control
ATS	Air Traffic Service
GAT	General Aviation Terminal
GND	Ground Control Unit or Ground Controller
IC	Investigating Committee
ICAO	International Civil Aviation Organization
Kbvt.	Act CLXXXIV of 2005 on the technical investigation of aviation, railway and marine accidents and incidents
MET	Ministry of Economy and Transport (Gazdasági és Közlekedési Minisztérium, GKM)
MTCW	Ministry of Transport, Communications and Water (Közlekedési, Hírközlési és Vízügyi Minisztérium, KHVM)
NTA AD	National Transport Authority, Aviation Directorate
NTA CAD	National Transport Authority, Civil Aviation Directorate (until 30 <sup>th</sup> June 2007)
TSB	Transportation Safety Bureau
TWR	Tower Aerodrome control tower or tower control unit
UTC	Universal Time Coordinated
VMC	Visual Meteorological Conditions

## BRIEF DESCRIPTION OF THE OCCURENCE

<b>Occurrence category</b>		Serious incident		
<b>Aircraft</b>	<b>Manufacturer</b>	Hughes	Robinson	Boeing
	<b>Type</b>	MD 500	R44	B 757 200
	<b>Registration</b>	HA-RTL	HA-MIW	G-BPEC
<b>Occurrence</b>	<b>Date and time</b>	7th April 2006, 17:53 UTC		
	<b>Location</b>	Budapest Ferihegy airport		
<b>Number of</b>	<b>fatalities</b>	None		
	<b>seriously injured persons</b>	None		
<b>Aircraft damage</b>		Not damaged		
<b>State of registry</b>		Republic of Hungary / United Kingdom		
<b>Competent investigating organization</b>		TSB		

### Reports and notifications

The occurrence was reported to the dispatcher of the TSB at 18:55, 7<sup>th</sup> April 2006 by HungaroControl ADC.

### **THE DISPATCHER OF TSB**

- reported the occurrence to the head TSB officer on duty at 19:00, 7<sup>th</sup> April 2006, and
- notified the NTA AD officer on duty at 19:05, 7<sup>th</sup> April 2006.

### Investigating committee

On the 8<sup>th</sup> April 2006, the Director-General of TSB assigned the following investigating committee (hereinafter referred to as IC) to the investigation of the serious incident:

Investigator-in-Charge	Sándor SIPOS	Head of Department
Member	László PÁL	Investigator

### Overview of the investigation process

The TSB has categorized the case as a serious incident as based on paragraph 1.1 of Chapter I., Appendix 1. of the MET Decree 123/2005 (XII. 29.) – dangerous loss in separation, when a manoeuvre became necessary, or it would have been justified in order to avoid the collision or the dangerous situation.

During the investigation, the TSB listened to the relevant ground-to-ground and ground-to-air radio communication, studied the preliminary report of HungaroControl regarding the incident, the flight plan data of the two flights concerned, and the work schedule data of the air traffic controllers. The IC also analysed the flight and work procedures applied during the incident.

The organisations concerned were ready to cooperate with the IC during the investigation.

### A short summary of the occurrence

At 17:51:31 UTC, flight BAW14BU got clearance to take off from runway 31L of Ferihegy airport. At the same time, a helicopter formation (HA-RTL and HA-MIW) took off from its parking position in the GAT area, and proceeded to cross the runway. When the formation caught sight of flight BAW14BU taking off, it turned around, and positioned itself again in its starting position.

## **1. FACTUAL INFORMATION**

### **1.1 History of the flight**

The HA-RTL formation was carrying out a non-scheduled general aviation flight, departure aerodrome Budapest Ferihegy, time of departure 17:53 UTC, destination aerodrome Miskolc.

Flight BAW14BU was executing a scheduled passenger flight, departure aerodrome Budapest Ferihegy, time of departure 17:53, destination aerodrome London.

At 17:48:44 UTC, the HA-RTL formation asked permission to start its engines at the GND radio frequency. The GND controller first gave him an en-route clearance, then, after repeated request, the starting was permitted.

The formation was ready to take off from GAT at 17:51:55 UTC, which it signalled to GND. As a response, the GND controller repeated again the en-route clearance.

20 seconds preceding this, at 17:51:31 UTC, at the ADC radio frequency, flight BAW14BU was given clearance to take off from runway 31L.

At 17:52:53 UTC, the personnel of HA-MIW, the aircraft in the formation, having finished starting the engines, notified the formation leading pilot in HA-RTL that they could start.

The formation started take-off shortly before 17:53:00 UTC, and at this moment announced crossing the two runways. As a response, GND controller instructed the formation to change to ADC radio frequency.

Meanwhile, the leading pilot noticed flight BAW 14BU taking off, and returned to its starting position.

Shortly after take-off, flight BAW BU14 indicated that the helicopters came too close to the airplane and it will report this.

The scene of the serious incident is the north-western area of runway 31L, Budapest Ferihegy airport, time: 19:53 local time, at night.

### **1.2 Personal injuries**

There were no persons injured in the incident.

### **1.3 Damage to aircraft**

The incident did not cause financially relevant damage in the given aircraft.

### **1.4 Other damage**

The IC did not receive any information on further damage by the completion of the investigation.

### **1.5 Information on the personnel**

#### **1.5.1 Commander of aircraft HA-RTL**

Gender of the commander: man

Validity of professional licence: 31st December 2006

### **1.5.2 Commander of aircraft HA-MIW**

Gender of the commander: man

Validity of professional licence: 31st December 2006

### **1.5.3 Data of the ATS personnel**

Gender of the air traffic controller: man

The analysis of the data of the ATS personnel was not necessary.

### **1.6 Aircraft data**

The data of the aircraft had no effect on the course of events, therefore their analysis was not required.

### **1.7 Meteorological data**

a) VMC weather conditions

b) Night

The meteorological conditions had no effect on the course of events, their analysis was not required.

### **1.8 Aids to navigation**

The navigational instruments had no effect on the course of events, therefore their analysis was not required.

### **1.9 Communications**

The equipment recorded in the type certificate were installed onto the aircraft, they operated properly.

The ground based equipment operated in accordance with the requirements, they were capable of fulfilling their given task.

The communications equipment had no effect on the course of events therefore their analysis was not required.

### **1.10 Aerodrome information**

The airport concerned disposed of a valid operating licence.

The parameters of the aerodrome had no effect on the course of events, therefore their analysis was not required.

### **1.11 Flight recorders**

The required data recording systems were operative on the equipment of air traffic control and on the aircraft. The data recorded by them were useable.

Flight BAW14BU was equipped with the flight recorders indicated in its type certificate.

Aircraft HA-RTL and HA-MIW had no flight recorder, it is not required by law or regulation for the given aircraft type and the mission in question.

**1.12 Wreckage and impact information**

The incident did not result in a wreckage.

**1.13 Data of the medical investigations**

There are no data available about the psychophysical state of the crew before and during the flight.

**Medical forensics examination**

There was no medical forensics examination.

**1.14 Fire**

There was no fire.

**1.15 Chances of survival**

There were no personal injuries.

**1.16 Tests and research**

Tests and researches were not initiated by the IC.

**1.17 Organisational and management information**

The characteristics of the relevant organizations had no effect on the incident thus their analysis was not required.

**1.18 Additional information**

The IC was not informed about any relevant additional information.

**1.19 Useful or effective investigation techniques**

The investigation did not require techniques differing from the traditional approach.

## 2. ANALYSIS

During the incident, the information exchange between the helicopter formation and ATS was problematic. This manifested itself, among others, in the fact that several times the ATS did not reply to the question of the helicopter formation, but it gave the en-route clearance two times.

Having contacted GND frequency, the formation was granted en-route clearance, then they asked permission to start the engines, which was also permitted by GND.

The leading pilot waited until the escort notified him of being ready, then he announced to GND that they were ready to go. GND gave again the en-route clearance, which was repeated by the formation.

Having finished starting, and also having announced their intention to go, the pilots were waiting for the transition to ADC, who would clear them to take off. Expecting this, and prepared to go as soon as possible, it is likely that the formation interpreted the repeatedly granted en-route clearance as a take-off clearance, and took off from its parking position.

Taking off, the leading pilot asked confirmation to cross the line of the runways on the GND frequency, as a response to which the GND controller diverted the HA-RTL formation to the ADC frequency to obtain take-off clearance, but at the same time he did not endeavour to clarify the uncertain situation. Meanwhile, with a left turn of 360 degrees, the leading pilot returned to the starting position, because he noticed the aircraft taking off from runway 31L.

Having contacted ADC frequency, the formation asked for clearance to take off, which it was then granted.



### **3. CONCLUSIONS**

#### **3.1 Factual findings which can be directly linked to the occurrence**

Formation HA-RTL took off without a take-off clearance.

The GND controller did not grant permission to take off for the HA-RTL formation, but he gave the en-route clearance twice.

The formation, prepared to go as soon as possible, interpreted the repeatedly granted en-route clearance as a take-off clearance.

Repeating the clearance and carrying out the manoeuvres, the formation did not use the standard expressions of radio communication, i.e. it did not use the expressions "take-off" or "take-off clearance" which would have clarified his intentions.

To confirm his conduct, the leading pilot notified air traffic control about crossing the line of both runways.

The formation leading pilot noticed the aircraft on runway 31L and returned to his starting position.

#### **3.2 Factual findings which can be indirectly linked to the occurrence**

Even though the previously indicated task of the helicopters, transporting transplant material, featured in the flight plan, the helicopters did not otherwise request special treatment due to their urgent task.

The formation and GND conducted, in an international environment, the radio communication in Hungarian, which, in practice, makes non-standardized radio communication possible.

### **4. SAFETY RECOMMENDATIONS**

Similar occurrences can be prevented by adhering to the relevant regulations, therefore issuing a safety recommendation is not necessary.

### **5. APPENDICES**

- Appendix 1.: Radio communication of HA-RTL and the air traffic services on the GND frequency.
- Appendix 2.: Radio communication of HA-RTL, BAW14BU and the air traffic services on the ADC frequency.

Budapest, 10. February 2010

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Sándor SIPOS  
Investigator-in-Charge

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László PÁL  
Member of the IC

## Appendix 1.

Unit	Time (UTC)	Text
HA-RTL	17:48:44	<i>GND, hi, HA-RTL helicopter formation before GAT, I would like to start the engines, with destination Miskolc.</i>
GND	17:49:01	<i>HA-RTL, hi, formation flight to Miskolc permitted, night VFR to Miskolc, right turn after take-off, KEREPEs, climb to 1.500 feet, squawk 7026.</i>
HA-RTL	17:49:22	<i>Then, we'll be cleared to climb in VFR with a right turn to 1.500 feet KEREPEs, our squawk will be 7026, but now we would like to start only.</i>
GND	17:49:33	<i>That is also permitted to HTL</i>
GND	17:49:35	<i>Starting permitted to TL</i>
HA-RTL	17:51:50	<i>(name), tell me, if you're ready</i>
HA-MIW	17:51:52	<i>I'm ready.</i>
HA-RTL	17:51:55	<i>GND, HA-RTL formation, ready to depart.</i>
GND	17:52:04	<i>To HTL: special VF..., no, night VFR to Miskolc permitted, then right turn after Kerepes, Kerepes until 1.500 feet, squawk 7026</i>
HA-RTL	17:52:16	<i>Then once again: permission to climb to 1.500 in night VFR, then right turn to KEREPEs, squawk 7026</i>
GND	17:52:26	<i>HTL exact</i>
HA-MIW	17:52:33	<i>You can go (name)</i>
HA-RTL	17:53:00	<i>Then we'll cross the line of both runways with the TL.</i>
GND	17:53:04	<i>HTL for take off: TWR 118.1</i>
GND	17:53:21	<i>Ground calling HTL</i>
GND	17:53:28	<i>HA-RTL</i>
unknown	17:53:36	<i>He is on TRW frequency already, I guess.</i>
GND	17:53:40	<i>That's great!</i>
unknown	17:53:42	<i>Well, yes, that was great!</i>

## Appendix 2.

Unit	Time (UTC)	Text
BAW14BU	17:51:28	BAW14BU, good evening, fully ready
ADC	17:51:31	BAW14BU, good evening, cleared to line-up and take-off RWY31L, wind is calm
BAW14BU	17:51:33	Roger! Cleared for take off, wind is calm
BAW14BU	17:53:20	BAW14BU, a helicopter took off, very close to cross to left
ADC	17:53:24	BAW14BU er....., a helicopter didn't have the clearance, er.... so roger, contact APP 129.7
BAW14BU	17:53:33	OK, we have the traffic in sight 129.7 fortunately BAW14BU
ADC	17:53:35	Roger, Sir!
HA-RTL	17:53:42	<i>TWR, formation HA-RTL</i>
ADC	17:53:46	<i>HA-RTL Hi, now you are clear to cross both runways and to take off, the wind is calm, head straight to Tápiósáp.</i>
HA-RTL	17:54:02	<i>Clearance to cross both runways granted and heading to Tápiósáp, HTL</i>
ADC	17:55:11	<i>HTL Go to Tápiósáp and the secondary is 7026</i>
HA-RTL	17:56:29	<i>Reaching Tápiósáp will be reported and 7026 is selected</i>
BAW14BU	17:56:35	Ferihegy TWR, BAW14BU
ADC	17:56:38	Go ahead
BAW14BU	17:56:40	Yes, remind a traffic as we took off, a helicopter I will have to put a report for its, as a paper work as regular
ADC	17:56:53	BAW14BU roger, we make it too!
BAW14BU	17:56:55	Just to confirm the didn't have clearance to cross, just confirm
ADC	17:56:57	I confirm, traffic didn't have take off clearance
BAW14BU	17:57:02	Ok, Can I have registration number?
ADC	17:57:17	Registration is HA-RTL
ADC	17:57:35	HA-RTL you took off without clearance, and BAW14BU will write a report on that, just as us. The VFR applied to Miskolc, and you did not change to TWR frequency. You did not get a clearance to take off.
HA-RTL	17:59:00	Yes, roger that. We have talked with each other meanwhile. There was a misunderstanding, we also have recognized that, sorry.
ADC	17:59:02	HA-RTL switch to advisory

*Remark of the translator: The dialogues in italics were originally conducted in Hungarian.*

## NOTE:

*The present document is the translation of the Hungarian version of the final report. Although efforts have been made to translate it as accurately as possible, discrepancies may occur.*

*In this case, the Hungarian is the authentic, official version.*