



**MINISTRY OF TRANSPORT, CONSTRUCTION
AND REGIONAL DEVELOPMENT
OF THE SLOVAK REPUBLIC**

Air Accident and Incident Investigation Board
Nám. slobody 6, P.O. BOX.100, 810 05 Bratislava 15

Reg. No. SKA2011005

FINAL REPORT

on investigation of air accident
of helicopter type **Robinson R44 II**
registration **OM - JOJ**

Date: 18.06.2011

Place: Airport Boleráz / LZTR

A. INTRODUCTION

The investigation of air accident [AA], serious incident [SI], has been conducted pursuant to Art. 18 of the Act No 143/1998 on Civil Aviation (Civil Aviation Act) and on Amendment of Certain Acts.

The final report is issued in accordance with the Regulation L 13 that is the application of the provisions of ANNEX 13 Air Accident and Incident Investigation to the Convention on International Civil Aviation and in accordance with the Regulation (EU) No. 996/2010 of the European Parliament and of the Council on investigation and prevention of civil aviation accidents and incidents, governing the investigation of civil aviation accidents and incidents.

The exclusive aim of investigation is to establish causes of accident, serious incident, and to prevent their occurrence, but not to refer to any fault or liability of persons.

This final report, its individual parts or other documents related to the investigation of the air accident in question have an informative character and can only be used as recommendation for the implementation of measures to prevent occurrence of other air accidents and serious incidents with similar causes.

Owner / Operator:	FASHION TV, a.s. organizational unit, Pribinova 4, 811 09 Bratislava
Type of helicopter:	Robinson R44 II
Registration:	OM-JOJ



Take-off site:	airport Boleráz ("LZTR")
Planned landing site:	LZTR
Flight phase:	take-off
Place of air accident:	N 48°27'13.30'', E 017°31'36.96''
Date and time of air accident:	18.06.2011, 07:22 hrs

Note: All time data in this report are stated in the UTC time.

B. INFORMATIVE SUMMARY

On 18 June 2011 the student pilot ("pilot") was to make his first independent flight with helicopter Robinson R44 II, registration OM-JOJ, after his examination by the instructor.

The pilot started the take-off and boosted the engine. When the skids lost contact with the ground and the helicopter turned 90° to the left side, it started swinging in the longitudinal direction after reaching the height of 0.5 to 1 m above the ground. The helicopter touched the ground with the tail propeller which caused the breaking-off of tail reducer with propeller, tail beam and main rotor blades and the fall of the helicopter on its right side.

The pilot left the cabin on their own, without serious injuries.

Person appointed for investigation of the air accident:

Ing. Grell Ladislav

The report is issued by:

Air Accident and Incident Investigation Board
of the Ministry of Transport, Construction and Regional Development
of the Slovak Republic

C. MAIN PART OF REPORT

1. FACTUAL INFORMATION
2. ANALYSES
3. CONCLUSIONS
4. SAFETY RECOMMENDATIONS

1. FACTUAL INFORMATION

1.1 History of the flight

On 17 June 2011 the pilot implemented the ground preparation aimed to the examination of flying technique and independent flights with stress on emergency procedures and changes of the centre of gravity, with regard to the unoccupied seat of the instructor.

On 18 June 2011, after evaluation of weather conditions, the instructor implemented with the pilot the examination of flying technique on the route Bratislava – LZTR. On this route, the pilot was examined from implementation of standard and emergency procedures during flight and then from flights in a low altitude and flight on the circuit in the area of LZTR before his first independent flight. The examination was implemented between 05:45 and 06:45. After the examination the post-flight analysis of identified weaknesses was implemented.

Having boarded the helicopter and executed the mandatory pre-flight operations at 07:15, the pilot started the engine. The instructor visually monitored the starting up of the rotor from a distance of 50 m. After the start-up of engine the instructor tested the bilateral communication with the helicopter pilot on the frequency of 123.5 MHz.

At 07:21 the pilot started the take-off and boosted the engine. When the skids lost contact with the ground the helicopter turned 90° to the left side. The helicopter hopped off to the height of 0.5 to 1 m and continued turning left, swinging in both the longitudinal and transversal directions.

In his effort to manage the situation, the instructor was giving the pilot instructions through radio communication: "Reduce the collective, rev-down". The inclination of the helicopter continued to increase.

The pilot did not react to these instructions. The skids repeatedly came into contact with the ground and the helicopter turned around its vertical axis. The tail propeller blade touched the ground, the tail reductor with propeller came loose, the tail beam got broken and the main rotor blades come into contact with the ground and got broken. Finally the helicopter fell to the right side and the engine stopped.

The pilot was not injured in the accident and left the helicopter alone.

The accident was reported by the persons present at the airport to the fire rescue service, the emergency medical service, the police and the Air Accident and Incident Investigation Board of MoTCRD SR.

Daytime: day

Flight rules: VFR

1.2 Injuries to persons

Injury	Crew	Passengers	Other persons
Fatal	-	-	-
Serious	-	-	-
Minor	1	-	-
None	-	-	-

1.3 Damage to aircraft

The helicopter was destroyed in the accident.



1.4 Other damages

The Air Accident and Incident Investigation Board was not informed about circumstances with potential claims for compensation of other damages toward a third party.

1.5 Personnel information

Student pilot: Citizen of Slovak Republic, aged of 36, holder of aviation personnel licence PPL(H) No. HAC /11-001/, issued by the aviation school Air Carpatia on 20 May 2011, with marked validity until 31 May 2013.

Medical certificate of 2nd class with marked validity until 6 October 2011.

Total flight hours before the air accident: 25 hour 05 min and 138 flights.

Pilot instructor: Citizen of Slovak Republic, aged of 70, holder of aviation personnel licence PPL(H) No. 06010717, issued by the Civil Aviation Authority of SR on 22 August 2001, with marked validity until 5 May 2016.

Qualifications: FI(A) with marked validity until 31 May 2013
R 44 with marked validity until 30 April 2012.

Medical certificate of 2nd class with validity until 8 May 2012.

1.6 Aircraft information

<u>Airframe:</u>	Type:	ROBINSON R44 RAVEN II
	Registration:	OM-JOJ
	Serial No:	12222
	Year of manufacture:	2008
	Manufacturer:	Robinson Helicopter Company/USA.

Certificate of airworthiness No. 1005/01, issued by the Civil Aviation Authority of SR on 23 February 2010. Certificate of verification of airworthiness with marked validity until 23 February 2012.

Total flight hours since manufacture: 431 h 35 min

<u>Engine:</u>	Type:	Lycomig IO-540-AEIA5
	Serial No:	L-32709-48E
	Year of manufacture:	2007
	Manufacturer:	LYCOMING ENGINES 652 Oliver Street, Williamsport, PA 17701 U.S.A.

Date of incorporation into helicopter: 19.02.2008.

Total operating hours since manufacture: 431 h 25 min.

1.7 Meteorological situation

Semi-cloudy, visibility distance of more than 10 km, wind 140°/5-7kNT.

Meteorological conditions in the place and time of accident had no influence on the flight and did not participate in the occurrence of the accident.

1.8 Aids to navigation

Not applicable.

1.9 Communications

The aircraft was equipped by radio communication system enabling bilateral communication at every moment of flight with all air stations.

1.10 Aerodrome information

LZTR is a non-public, domestic aerodrome with a runway covered by grass. The place for parking is asphalt area in front of the hangar. At the time of accident the airport was serviceable and suitable for take-off and landing of this type of helicopter.

1.11 Flight recorders and other recording systems

Not applicable.

1.12 Wreckage and impact information

The helicopter fell on its right side in the vicinity of the reinforced asphalt area of the airport. The final position of the helicopter after the accident was documented, including photodocumentation.





1.13 **Medical and pathological information**

The pilot underwent the medical check and the blood test for alcohol with negative result at the Trnava hospital.

1.14 **Fire**

No fire broke out.

1.15 **Survival aspects**

Search and rescue were not required.

1.16 **Tests and research**

Not applicable.

1.17 **Organizational and management information**

The aviation activity was carried out by the aviation school AIR CARPATIA s.r.o. holding the licence for training of pilots with use of given type of helicopter.

1.18 **Additional information**

The instructor indicates in his statement that after the police had terminated the photodocumentation of the accident, he and the technician found out through inspection that the cyclic pitch lever had not been fully released (the locking device had only been released partially), the collective control lever was in the upper position, the correction (gas hand) had been in the central position and the regulator of revolutions had been switched on.

1.19 **Useful or effective investigation techniques**

Standard investigation methods were used.

2. ANALYSIS

2.1 Activity of pilot

Before the take-off and at the set take-off power the pilot had not fully released the cyclic pitch lever and just after unstick the left foot on the control pedal had a larger deflection, due to which the helicopter turned around the vertical axis in the left direction after unstick. The change of the centre of gravity (having regard to the unoccupied seat of instructor) the helicopter inclined to one side and downwards after unstick, which the pilot tried to correct by intervention into controls.

But the helicopter was hard to control because the cyclic pitch lever was not fully released (it seemed rigid to the pilot). By his rough and uncoordinated interventions the pilot made the helicopter swinging around both the longitudinal and transversal axes.

Afterwards, he fully lost control of the helicopter. The tail propeller and main rotor blades touched the ground and were destroyed and the helicopter fell on its right side.

3. CONCLUSIONS / Cause of air accident

3.1 Findings

- the pilot had valid qualifications for the flight.
- the helicopter had valid documentation and did not show any faults before the air accident.
- the helicopter fulfilled the conditions of airworthiness before the critical flight.
- the helicopter was destroyed in the accident.
- the pilot was slightly injured in this accident.

3.2 Causes of air accident:

- the main cause of the air accident was the poor mastering of flying technique during the first independent flight.
- the pilot insufficiently executed the prescribed operations before the takeoff (incomplete release of cyclic pitch lever).
- excessive deflection of left foot (azimuthal control) at unstick.

4. SAFETY RECOMMENDATIONS

On the basis of investigation of causes of the air accident of

Helicopter type **Robinson R44 II**

Identification No. **OM - JOJ**

Date of air accident **18.06.2011**

We recommend the implementation of the following measures by CAA SR:

- the operator FASHION TV, a.s. organizational unit and the aviation school AIR CARPATIA will implement an analysis of the air accident with the flight personnel.

Bratislava, 03.08.2011