

*The original of the Final Report was issued in the Slovak language.
In case of inconsistency original version in Slovak language is applicable.*



AVIATION AND MARITIME INVESTIGATION AUTHORITY
Námestie slobody 6, P.O.BOX 100
810 05 Bratislava 15

FINAL REPORT

safety investigation
of the balloon of BB70Z type
with registration mark **OK-8882**

Reg. No.: SKP2017002

The investigation of occurrence 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 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 final report is issued in accordance with the Regulation L 13 that is the application of the provisions of ANNEX 13 Aircraft Accident and Incident Investigation to the Convention on International Civil Aviation.

The exclusive aim of investigation is to establish causes of accident, 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 occurrence in question have an informative character and can only be used as recommendation for the implementation of measures to prevent occurrence of other accidents and incidents with similar causes.

A. INTRODUCTION

Operator/Owner:	BALONY.EU, s.r.o.
Operation type:	General Aviation/Sports and Recreational Flying
Balloon category:	BB70Z
Registration mark:	OK-8882
Place of take-off:	Kežmarok
Flight phase:	landing
Occurrence location:	Hrabušice
Date and time:	26.05.2017, 18:30

Note: All time data in this report is reported in UTC time.

B. INFORMATIVE SUMMARY

On 26.05.2017, the BB70Z hot-air balloon pilot, with OK-8882 registration mark (hereinafter "the balloon"), took off from the Tesco Kežmarok area at 17:40, with the intention of performing a sightseeing flight with 11 passengers with a scheduled place of landing 18 km south of Kežmarok city. When landing / laying the basket on the ground, the crew safely stepped out of it and the balloon then touched the wires of the power line with the onset of a fire.

Following person was set up to investigate the causes of the occurrence:

Ing. Igor Benek

The report to be issued by:

Aviation and Maritime Investigation Authority
of the Ministry of Transport and Construction of the Slovak Republic

C. MAIN PART OF REPORT

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

1. FACTUAL INFORMATION

1.1 History of the flight

At 17:10, the pilot performed the balloon flight preparation by standard procedure (preparation of the basket and balloon envelope).

At 17:40, the pilot took off with a balloon from the Tesco Kežmarok department store area with a height of 300 m AGL and continued in flight in the expected south direction at a speed of about 30 km/h.



The flight took place without any problems.

The pilot at 18:23 made his first attempt to land north of the Hrabušice village. However, the site was evaluated as inappropriate for landing and it was decided to continue with the flight through the Hrabušice village with the intention of landing behind the village.

After passing the village, the pilot continued southward and searched for a suitable landing space with knowledge of the height obstacle – the 22 kV electric power line, which was located along the balloon flight along its left side. The pilot decided to continue with the flight to the “Green Mountain” meadow on the border of Slovak Paradise, flew over the electric power line and performed a safe standard landing past it.

The pilot began to drop the balloon and perform a landing maneuver onto the terrain. During the landing maneuver, with a gradual drop of up to 20 m AGL, the wind direction began

to change northwest. The balloon flew right over the wires of the power line from the right to the left, but the side wind began to waft it back to the power line, coming in from the right.



The pilot decided, based on the dangerous situation, and to maintain the maximum safety of the crew in the basket, to immediately land on the ground in front of the electric power line.

Before releasing of the balloon envelope with the air discharge device, the pilot closed the fuel bottles and instructed the balloon crew to gradually organized exit from the basket by jumping and going a safe distance from the balloon. The crew of the balloon stepped out of the basket without injury.

Subsequently, during the discharge of the air, the weight of the fabric brought the envelope closer to the 22 kV wires at such a distance that there was a short circuit and discharge, causing the balloon envelope to burn and the polyester fabric began to melt.

After leaving the basket at 18:35, the pilot called the 112 emergency line. The fire and rescue force began to fight the fire at 19:01. After the extinction of the fire, the balloon was damaged by fire to a large extent.

Daytime: day

Flight rules: VFR

1.2 Injuries to persons

Injury	Crew	Passengers	Other persons
Fatal	-	-	-
Serious	-	-	-
Minor	-	-	-
None	1	11	

1.3 **Damage to the balloon**

Damage to a large scale.

1.4 **Other damage**

No circumstances with potential claims for compensation of other damage toward a third party were notified to the Aviation and Maritime Investigation Authority.

1.5 **Personnel information**

Pilot:

citizen of the Czech Republic, age 31, holder of Balloon Pilot License, issued by the Civil Aviation Authority of the Czech Republic on 14.07.2010.

Qualifications:

HOT AIR FREE 0-10500 m³

test date 08.07.2010 with indicated validity - no time restriction

HOT AIR FREE 0-10500 m³ and more

test date 24.10.2016 with indicated validity - no time restriction

Holder of a restricted radiotelephone operator's certificate with validity until 19.03.2018.

Medical certificate:

class 2 with indicated validity to 25.10.2018

LAPL with indicated validity until 25.10.2018

Flight Experience:

Total Flight Hours: 397 hrs 35 min

Total on the BB70Z: 30 hrs 05 min

Last 90 days on the BB70Z: 4 hrs 25 min

Last 30 days on the BB70Z: 4 hrs 25 min

1.6 **Information on the balloon**

Type: BB70Z

Registration mark: OK-8882

Serial number: 627

Manufacturer: BALÓNY KUBÍČEK spol. sro, Brno, Czech Republic

MTOW: 2300 kg

Certificate of airworthiness No. 4525, issued by the Civil Aviation Authority of the Czech Republic, on 26.09.2008.

Mandatory Insurance: ALLIANZ poist'ovňa, a.s., No. 490001349 - 420232091, valid to 12.03.2018.

1.7 **Meteorological information**

On 26.05.2017 at 18:30 in the cadastral of Hrabušice village, the weather was cloudy, without precipitation. The predominant type of cloud was Stratocumulus cumulogenitus, with a bottom base height of 1500 to 2000 m. The air temperature was about 13 °C and with a relative humidity of 70%. Visibility was approximately 40 km, and a north to northeast wind blew at a speed of 2 to 3 m/s.

On 26.05.2017 the sun set in the area of Hrabušice at 18:28.

The air current in the free atmosphere above the cadaster of Hrabušice village on 26.05.2017 at 18:30 was as follows: At 1500 m above sea level, the northern wind blew at a velocity of about 7 m/s and the air temperature at this level was about 7 °C. At lower levels the wind direction did not change significantly, the wind speed was gradually declining.

At 1000 m above sea level, the north to northeast winds ranged at about 5 m/s and downwards at an altitude of 700 m above sea level, the north to northeast wind blowing 3 to 4 m/s. From the earth's surface to a height of about 100 m, a northerly to northeast wind blew at a speed of 2 to 3 m/s.

1.8 Aids to navigation

N/A.

1.9 Communications

N/A.

1.10 Aerodrome information

N/A.

1.11 Flight recorders

During the flight, the pilot used a GPS device - the GARMIN 60 CSx, which stored the GPS flight record.

1.12 Wreckage and impact information

The last record on the balloon's landing position was N 48° 57'48,74" E 20° 24'23,88".

1.13 Medical and pathological information

N/A.

1.14 Fire

When the air was released, the balloon fabric came into contact with the wires of the electrical power line, causing a short circuit and discharge that caused the balloon envelope to burn.

1.15 Survival aspects

It was not necessary to perform a search and rescue by SAR.

1.16 Tests and research

No tests or expert examination of the balloon parts was necessary.

1.17 Organizational and management information

Flight operations were performed in accordance with aviation regulations valid in the territory of the Slovak Republic along with local regulations.

1.18 Additional information

N/A.

1.19 Useful or effective investigation techniques

Standard investigation methods were used.

2. ANALYSIS

2.1. Pilot activity

The choice of a suitable area and the timely landing of the balloon on the ground require careful attention from the pilot at any point of the flight.

The pilot picked a last suitable landing area for the balloon in the field in front of the forest at the last second, not expecting a possible change of the current ground wind at the site and in proximity to the 22 kV power line, then had to make a decision due to the crew's safety for an immediate landing with the basket on the ground to prevent a collision with the electric power line during the flight and even at the cost of the subsequent placing of the balloon envelope on the electric power line.

The pilot started releasing air quickly, causing the collapse of the envelope with it subsequent touching the wires of the electric power line.

3. CONCLUSIONS / Cause of occurrence

3.1 Findings

Pilot

According to the documentation submitted, there were valid flight qualifications for the given balloon category.

Balloon

The aircraft had valid documentation and did not demonstrate any malfunction before take - off.

3.2 Causes of occurrence

The pilot selected the landing surface at the last minute while the balloon was near a 22 kV electric power line.

4. SAFETY RECOMMENDATIONS

The operator BALONY.EU, s.r.o., on the basis of an internal investigation, has taken the following measures:

- perform analysis and training within the company - an analysis of the situation with all pilots,
- perform an analysis and training during the nationwide winter training of pilots.

In Bratislava, 10.11.2017