



MINISTRY OF TRANSPORT CONSTRUCTION AND REGIONAL DEVELOPMENT OF THE SLOVAK REPUBLIC

Aviation and Maritime Investigation Authority
Námestie slobody 6, P.O.BOX 100, 810 05 Bratislava 15



Reg. No. : SKA2012017

FINAL REPORT

on investigation of air accident
of powered paraglider type **ORBIT 3 28 / MINIPLANE TOP80**
without registration number

Date: 17.09.2012

Location: Nové Zámky

The investigation of air accident, serious incident, 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 Air Accident and Incident Investigation to the Convention on International Civil Aviation.

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.

A. INTRODUCTION

| | |
|---|---|
| Type of operation: | general aviation |
| Type of aircraft: | flying sport vehicle ("FSV"), of powered paraglide type ("PP") ORBIT 3 28 / Miniplane TOP80 |
| Registration number: | not allocated |
| Flight phase: | flight |
| Site of accident: | Nové Zámky |
| Coordinates of the site of accident: | N: 47°59' 03, 19'' E: 018°10' 28,83'' |
| Date and time of detection of accident: | 17.09.2012, 07:30 |

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

B. INFORMATIVE SUMMARY

During the flight of PP ORBIT 3 28 / Miniplane TOP80 without registration number PP stroke an obstacle and fell to ground from a low altitude.

The pilot of PP was seriously injured.

Persons appointed for investigation of causes of the air accident:

Ing. Milan GREGA – chairman of the investigation commission

Ing. Zdenko BIELIK – member of the investigation commission

The final report is issued by:

Aviation and Maritime Investigation Authority of the Ministry of Transport, Construction and Regional Development 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

Pilots of both PPs took-off from the airport Nové Zámky ("LZNZ") at 07:05, one behind the other, with one minute interval. After the take-off they continued the flight on the same route with a course of 350° over the city of Nové Zámky. The person involved in the accident did not know this flight area very well and therefore continued the flight, following the first pilot of PP. The meteorological conditions were favourable for these flights, just before the take off of PPs the wind speed at the airport LZNZ was 2-3 m/s and wind direction was approximately 180°.

According to their testimony, the pilots of PP were conducting the flight operation in an altitude of 300 m above the ground between the city of Nové Zámky and the airport LZNZ.

When flying in a low altitude over the built-up area of the city of Nové Zámky, the pilot of the second PP caught some high-tension cables, which caused the fall of PP to the ground. The pilot of the first PP did not notice the accident and assumed that the pilot of the second PP landed in the area of the city of Nové Zámky because of "thermic gusts" and continued the flight with landing at the airport LZNZ without problems.

The pilot of PP was seriously injured and PP was seriously damaged in the air accident.

The air accident was reported to the Aviation and Maritime Investigation Authority of MoTCRD SR on 18.09.2012.

Daytime: day

1.2 Injuries to persons

| Injuries | Crew | Passengers | Others |
|----------|------|------------|--------|
| Fatal | - | - | - |
| Serious | 1 | - | - |
| Minor | - | - | - |
| None | - | - | - |

1.3 Damage to PP

Damage to protecting frame of the Miniplane TOP80 para-engine propeller, damage to para-engine propeller, damage to 8 rigging cords of paraglider ORBIT 3 28.

1.4 Other damages

The Aviation and Maritime Investigation Authority was not informed about circumstances with potential application of other claims for compensation of damages towards a third party.

1.5 Personnel information

Pilot of PP:

Citizen of the Slovak Republic, male, aged of 36 years, holder of LŠZ PK-A pilot licence No. 4-2079, LŠZ-PP pilot, licence No. 5-127, issued by the Light Aircraft Association of the Slovak Republic ("LAA SR") on 27.06.2011.

The medical certificate issued on 23 June 2011 in the aviation personnel records of LAA SR with marked validity until 23.06.2013.

Qualifications:

Pilot – Paragliders non-powered "A".

Pilot of PP

Flying experience:

| | |
|---|----------------------------|
| Total flight hours: | 40 h 00 min and 50 flights |
| Total flight hours during previous 90 days: | 15 h 00 min and 20 flights |
| Total flight hours on the type during previous 90 days: | 15 h 00 min and 20 flights |
| On the day of air incident (including the critical flight): | 0 h 25 min and 1 flight |

1.6 Information on PP

Parachute-wing

Para-engine

a) Type:

| | | |
|----------------------|--------------|--------------------|
| Serial No.: | ORBIT 3 28 | MINIPLANE TOP 80 |
| Year of manufacture: | G27281106334 | 601106023 |
| Manufacturer: | 2011 | 2011 |
| | Gradient, CR | Per il Volo, Italy |

Total number of flight hours

since manufacture: not identified

not identified

The certificate of airworthiness was not issued by LAA SR. The owner did not apply for its issue.

| | |
|-------------------------|----------------|
| Sport class FAI | O – PG / RPF 1 |
| Category of safety (EN) | B / NIL |
| Minimum flight speed | 24 km/h |
| Maximum flight speed | 50 km/h |
| Minimum take-off weight | 95 / 123 kg |
| Maximum take-off weight | 115 / 149 kg |

b) Take-off weight of PP at the time of air incident:

| | |
|---------------------------------|---------------|
| Empty weight of PP | 5.7 + 18.5 kg |
| Weight of crew | 93.0 kg |
| Weight of equipment and luggage | 7.5 kg |
| Fuel | 6.5 kg |

Total take-off weight at the time of air incident: 131.2 kg

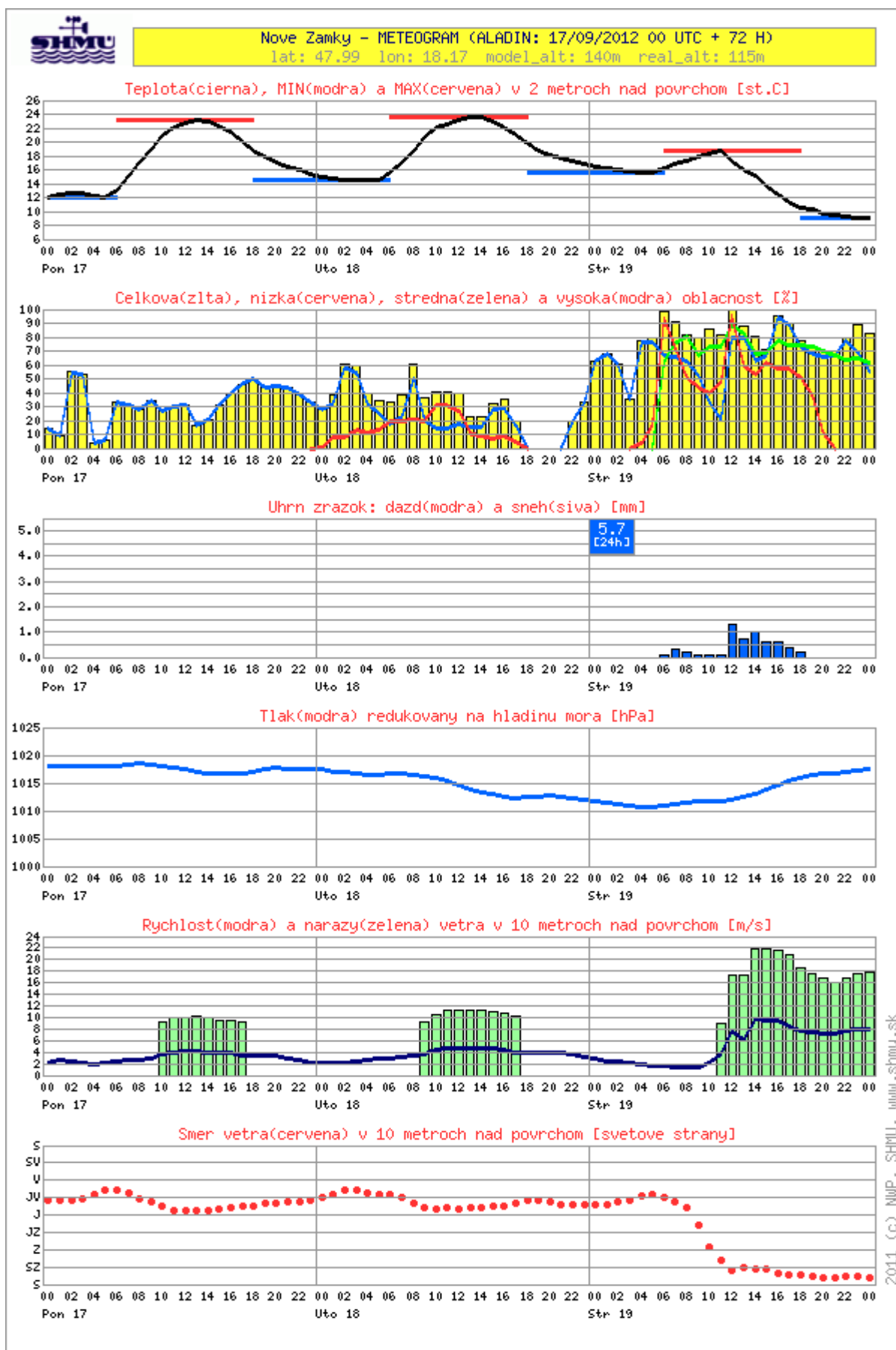
Maximum permissible take-off weight of PP for flight is 149 kg.

The take-off weight of PP at the time of air accident was observed. Data under **a) and b)** of this paragraph are based on data provided by manufacturers of FSV and conditions of airworthiness laid down in LAA SR.

On the day of air accident no faults of PP were detected before the flight and no negative signs in the flying qualities were registered during the flight.

1.7 Meteorological information

1.7.1. Weather forecast for 17.09 - 19.09.2012 for the location of Nové Zámky



1.7.2. Current weather

| HOUR | DATA – METEOROLOGICAL STATION HURBANOVO | | | | DATA OF WITNESSES Airport LZNZ | |
|-------|---|---------------------|-----------------------|---------------------|-----------------------------------|---------------------|
| | [h/UTC] | Wind speed [m/s] | Wind direction [°] | Temperature [°C] | Pressure [hPa] | Wind speed [m/s] |
| 6:00 | wind calm | --- | 15.5° | 1018.2 | --- | --- |
| 7:00 | 3 m/s | 150° | 19.7° | 1018.4 | 2 – 3 m/s | 180° |
| 8:00 | 4 m/s | 150° | 21.8° | 1018.2 | --- | --- |
| 9:00 | 4 m/s | 170° | 23.2° | 1018.1 | --- | --- |
| 10:00 | 5 m/s | 190° | 23.7° | 1017.6 | 5 – 7 m/s | 180° |

In their testimonies, the eye witnesses of the air accident described weather at the time of air accident as pleasant and typical for this season of the year.

1.8 Aids to navigation

Not applicable.

1.9 Communications

Not applicable.

1.10 Aerodrome information

LZNZ is a public domestic aerodrome – take-off site of FSV, situated in an altitude of 115 m (376 ft), described by coordinates N 47° 57' 43.33 ; E 018° 11' 03.98, with runway 16/34, grass surface with dimensions of 1001 m x 69 m.

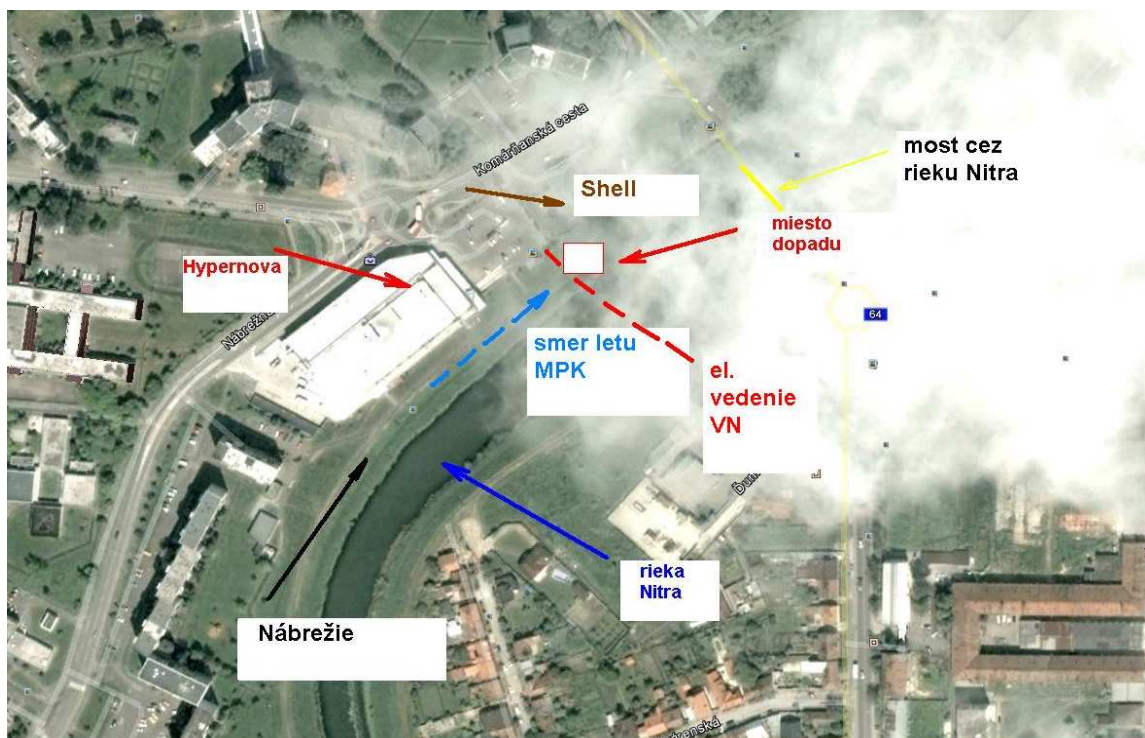


1.11 Flight recorders

Not applicable.

1.12 Wreckage and impact information

The site of air accident is situated on the bank of the river Nitra in the built-up area of Nové Zámky.



1.13 Medical and pathological information

The pilot of PP was seriously injured. He suffered left wrist fracture, uncomplicated pelvic bone fracture and hip joint fracture.

1.14 Fire

Fire did not break out.

1.15 Survival aspects

Search operations were not required. Rescue operations were implemented by emergency medical service.

1.16 Tests and research

Not applicable.

1.17 Organizational and management information

Not applicable.

1.18 Additional information

- According to accounts of eye witness (non-interested citizen), the flight of PP was conducted in very low altitude over the built-up area of Nové Zámky.
- According to accounts of eye witness (non-interested citizen), two PPs performed some level flight on a very low altitudes, over the river Nitra.
- According to accounts of eye witness (non-interested citizen), the flights of PPs in very low altitudes were also conducted in a couple of days preceding the air accident.

- According to accounts of eye witness (non-interested citizen), impact with sparking after electrical discharge was registered in the area, where the high-tension electrical power lines cross over the river Nitra.
- According to testimony of the person involved in the air accident, this decided to make a safety landing on the bank of the river Nitra because of significant air turbulences, which he evaluated as dangerous.
- According to accounts of the pilot of the first PP, he conducted the flight in an altitude of 300 m above the ground over the fringe of the city of Nové Zámky, continued the flight in an altitude of 300 m above the ground and landed at the airport LZNZ, because he disposed of more powerful engine and smaller parachute wing. In his opinion the person involved in the air accident probably became scared of the turbulent conditions and decided to land on the bank of the river Nitra, in the built-up area of Nové Zámky.
- The investigation commission ascertaining the causes of the air accident registered some discrepancies in the testimony of the person involved in the air accident, the pilot of the first PP and accounts of eye witnesses of the air accident.
- According to Regulation ZL-4 (training programme of LAA SR pilot of PP) some training units are conducted at wind speed of up to 5 m/s. For this reason the pilot of PP must handle situations at this wind speed.
- The commission took account of the provisions of Regulation L-2, Title 4 Article 4.6, and provisions of Regulation LAA SR LZ-1, Title 3, Article 3.1.2 paragraph 5.

1.19 Useful or effective investigation techniques

Standard investigation methods were used.

2. ANALYSIS

According to their testimony, the pilots of PP were conducting the flight operations in an altitude of 300 m above the ground between the city of Nové Zámky and the airport LZNZ, with the person involved in the air accident following the pilot of the first PP, who knew the area of flight operations. The person involved in the air accident, because of allegedly unfavourable meteorological conditions manifesting by wind and turbulence, decided to terminate the flight sooner than planned and to make a safety landing near the embankment of the river Nitra. He did not notice the high tension electrical power lines before the impact.

From the accounts of the eye witness it resulted that he had registered both PPs flying over the river Nitra in an altitude, when he did not have to bend his head back to be able to see them. He was observing the flight of PPs until the moment when the canopies of PPs got behind the top of the tree situated about 10-15 m away from him. He estimated the flights of PPs to a distance of about 50-60 m from the observation point. This witness did not see the impact because of the treetop, but he could see sparks flying off in the area of flight of PP. He realized that there was an air accident and rushed to the site, where the pilot of PP was lying beside the damaged PP.

In view of the damage caused to rigging cords of the upper gallery 0.5 – 1.7 m away from the canopy and assuming the pilot suspension was 7.5 m away from the canopy, at the moment of impact the pilot with driving unit was situated about 6 – 7 m below the high tension power lines. Judging by the area where the cords were damaged – left of the centre of the canopy, the impact occurred when the paraglider was flying almost vertically to the high tension power lines.

Based on witnesses' information, the weather was pleasant and typical for this season of the year. The ascertained meteorological parameters did not create conditions for occurrence of a distinct to dangerous situation requiring safety landing in the built-up area of the city. If the flight was made in an altitude of 300 m over the city of Nové Zámky, the pilot

could search for several possibilities of landing in an open area. The current meteorological conditions were more or less identical with weather forecast.

In view of the aforesaid it can be stated that the pilots of PPs were probably conducting the flight in an altitude, where its minimum value achieved approximately 10 m above the ground (water). By flight in a low altitude, the person involved in the air accident did not notice the high tension power lines, probably because a bridge over the river Nitra is situated on its background. As a result, the rigging cords of PP get caught on high tension cables and PP fell to the ground. At the impact, due to the contact of individual cables, there was a short circuit followed by electrical discharge, in which the rigging cords of PP were damaged. The pilot was injured and the driving unit was damaged due to the fall. The pilot of the first PP flew over these high tension power lines and continued the flight to the airport LZNZ.

3. CONCLUSIONS / Cause of air accident

3.1 Findings

- the pilot had valid qualifications for the critical flight,
- PP had not a valid documentation,
- the person involved in the air accident made a flight on a PP without registration number,
- meteorological conditions were suitable for the critical flight,
- testimonies of the pilots of PP and witnesses' accounts differ in data on the flight altitude,
- the provision of Regulation LAA SR LZ-1, Title 3 Article 3.1.2 paragraph 5 was not complied with,
- the provisions of Regulation L-2 Flight rules, Title 4 Article 4.6 were not complied with,
- the pilot was seriously damaged in this air accident.

3.2 Causes of air accident:

- collision of PPs during flight in a low altitude with obstacle – high tension power lines in the densely built-up area of Nové Zámky.

4. SAFETY RECOMMENDATIONS

Based on investigation into causes of air accident of

FSV type **ORBIT 3 28 / MINIPLANE TOP80**

without registration number

that occurred on **17.09.2012**

we recommend:

to **LAA SR** to take the following measures:

- to publish the final report on the website of LAA SR
- to analyse the air accident with flight personnel of LAA SR.

Bratislava, 16.10.2012