



**MINISTRY OF TRANSPORT, POSTS AND  
TELECOMMUNICATIONS  
OF THE SLOVAK REPUBLIC**

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

**Reg. No: SKA2010018**

**FINAL REPORT**

on air accident investigation

of aircraft **FOX 912 3K**

registration No: **OM-DARO**

Date: 13.08.2010

Place: Liptovský Trnovec

## A. INTRODUCTION

The investigation of an 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 with the Council Directive 94/56/EC, establishing the fundamental principles governing the investigation of civil aviation accidents and incidents.

The exclusive aim of investigation is to establish causes of an accident or serious incident and 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 have 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.

Operator / Owner:	Mgr. Roland Bilovský
Type of operation:	general aviation
Type of aircraft:	AEROPRO FOX 912 3K
Registration No:	OM-DARO



Place of take-off:	LZNI
Planned place of landing:	LZRU
Flight phase:	safety landing
Place of air accident:	Liptovský Trnovec
Date of air accident:	13.08.2010
Time of air accident:	08:50 hrs

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

## B. INFORMATIVE SUMMARY

On 13 August 2010, the pilot flying aircraft FOX 912 3K, registration No OM-DARO, was conducting a navigation flight. In the area of the water body Liptovská Mara the pilot noticed irregular engine running and decided to do a safety ground landing. After landing he touched concrete panels with the landing gear, due to which the aircraft turned over. The aircraft was damaged and the pilot suffered an injury.

The following person was appointed as investigator of the air accident:

Ing. BENEK Igor

The report is issued by:

Air accident and Incident Investigation Board  
of the Ministry of Transport, Posts and Telecommunications 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 13 August 2010 the pilot with aircraft FOX 912 3K, registration No OM-DARO, was conducting a navigation flight without flight plan. The pre-flight preparation was carried out by the pilot according to the regulations. He took over the aircraft with full gas tanks and at 07:50 hrs started from the airport in Nitra - Janíkovce with planned landing at the Ružomberok Airport ("LZRU"). Before the planned landing at LZRU he decided to fly round the water body of Liptovská Mara. On the north edge of the water body in the height of 300 m above the ground the pilot noticed irregular engine running and engine-power decrease. He chose a ground for safety landing. The pilot visually estimated the direction and force of wind and took it around the road connecting the city of Liptovský Mikuláš and the municipality of Liptovský Trnovec. In front of the municipality of Liptovský Trnovec he made turns 3 and 4 continuously and proceeded with the final phase of safety landing, because he expected the full engine shutdown. After landing the aircraft touched an unforeseen obstacle – concrete panels with the landing gear and the aircraft turned over.

Daytime of air accident: DAY

#### 1.2 Injuries to persons

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

### 1.3 Damage to aircraft

The aircraft suffered a minor damage in the air accident.

After the turn-over the aircraft remained in one piece and was not separated into the individual parts. The barrier impact caused deformation of the body of midsection and one wing bracing strut, destruction of the main and front landing gear, distortion of engine attachment, destruction of the cockpit hood and damage to the engine and the front part of the aircraft body.



#### 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

##### Pilot:

Citizen of SR, aged of 42

holder of the private pilot licence PPL(A) No SK 02020228, issued by the Civil Aviation Authority of the Slovak Republic

Qualifications: SEP(L) with marked validity until 31 August 2010

ULL with marked validity until 30 September 2010

Medical certificate of 1<sup>st</sup> class with marked validity until 12 August 2011

##### Flying experience:

Total number of flying hours and flights: 700 h 15 min and 1600 flights

Of which for the last 90 days: 06 h 10 min and 20 flights

Of which for the last 90 days with the aircraft type: 03 h 30 min and 10 flights

Number of flying hours on the day of accident

(including the critical flight): 01 h 00 min and 1 flight

#### 1.6 Aircraft information

##### a) Airframe

Type: FOX 3K

Serial No: 021095

Year of manufacture: 1995

Manufacturer: AEROPRO

Total number of flying hours from the year of manufacture: 449 h 30 min and 926 flights

Certificate of airworthiness No 0497-S issued by the Civil Aviation Authority of SR with marked validity until 15 June 2011.

##### b) Engine

Type: ROTAX 912 A (non-certified because the general overhauls was not performed within the determined term)

Serial No: 4412536

Year of manufacture: 1989

Manufacturer: Bombardier- ROTAX AUSTRIA

The engine was incorporated in the aircraft on 15 March 2007

Total number of operating hours: 900 h, after incorporation 65 h 14 min

Fuel used: BA-95 NATURAL

The engine ROTAX 912 is a four-cylinder four-stroke OHV boxer engine with central cam shaft. Cooling is combined – water-cooled cylinder heads and air-cooled cylinders. Lubrication with dry-box. Dual-plug breakerless condenser magnet ignition. The engine is equipped by electric start, A.C. generator and mechanical fuel delivery pump.

##### c) Propeller

Type: FITI 3 LR

Serial No: 073/2006

Manufacturer: FITI Disign, Czech Republic

Incorporated in the aircraft: 2007

Total number of operating hours: 65 h 14 min

d) **Aircraft weight at the time of air accident:**

Empty weight of aircraft		279.0	kg
Weight of crew		93.0	kg
Weight of luggage		5.0	kg
Weight of fuel	approx. 35 l x 0.72 kg/l	25.2	kg
Weight of oil	approx. 2.3 l x 0.90 kg/l	2.7	kg

Total aircraft weight at the time of accident: 404.9 kg

Maximum permissible take-off weight according to the Flight Manual is 450 kg.

Weight and balancing of aircraft were within the required range during the whole flight phase.

1.7 **Meteorological situation**

The meteorological situation had no influence on the occurrence of the air accident.

1.8 **Aids to navigation**

The aircraft was equipped for VFR flights.

1.9 **Communications**

The aircraft was equipped by a radio communication system enabling a two-way communication with all air stations at any moment of flight. The pilot used a blind transmission on the frequency of 123.500 MHz.

1.10 **Aerodrome information**

Not applicable.

1.11 **Flight recorders**

The aircraft were not equipped by any flight recorders.

1.12 **Wreckage and impact information**

The place of air accident is situated on a meadow opposite the Tatrallandia Aquapark in the proximity of a grass parking area, in the cadastral area of Liptovský Trnovec.



### **1.13 Medical and pathological information**

The witnesses of the air accident called the quick rescue service that transported the injured pilot to the hospital in Liptovský Mikuláš, where his wounded leg was treated. Subsequently he was transported to the hospital in Nitra.

### **1.14 Fire**

No fire broke out.

### **1.15 Survival aspects**

The search and rescue using the SAR means were not required.

### **1.16 Tests and research**

Not applicable.

## **2. ANALYSIS**

On the basis of the irregular motor running the pilot decided to make a safety landing on a chosen ground.

He found himself in a territory with rugged undulated relief near the water body of Liptovská Mara. In view of the expected engine shutdown and the area in which the aircraft found itself the pilot was under pressure in given situation. From the height of 300 m he started the safety landing and at that moment he did not notice an obstacle on the chosen ground.

After landing the aircraft touched concrete panels with the landing gear which caused the damage to the aircraft and injury to the pilot.

## **3. CONCLUSIONS / Cause of air accident**

The aircraft collision with an obstacle after safety ground landing.

## **4. AIR SAFETY RECOMMENDATION**

The final report from investigation of the air accident does not contain any recommendations.

Bratislava, 13 September 2010