



# 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. : SKS2013006**

## **FINAL REPORT**

on investigation of serious incident  
of aircraft type **EuroFOX 912 3k-Tow**  
Registration No. **OM-LAN**

Date: 18.08.2013

Place: Airport Nitra / LZNI

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

Type of aircraft:	EuroFOX 912 3k-Tow
Registration number:	OM-LAN
Operator:	SNA gen. M. R. Štefánika
Owner:	Aero Nitra spol, s r.o.



Take-off site:	LZNI
Flight phase:	take-off
Place of serious incident:	grass runway ("RWY") 15L N 48°16'54,34'', E 018°07'50,19''

Date and time of serious incident: 18.08.2013, 15 h 15 min

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

## **B. INFORMATIVE SUMMARY**

On 18 August 2013 at 15:15, in the phase of take-off run, the front landing gear wheel of tow aircraft type EuroFOX 912 3k-Tow, registration No. OM-LAN ("EuroFOX"), towing the glider type L-23, registration No. OM-9205 ("L23"), ran through an undulation in the form of depression and got broken. Subsequently the aircraft tilted over to its nose.

The pilot of the towed glider released the towing rope and safely stopped on RWY 15L by turning right from the towed aircraft EuroFOX.

Serious incident was reported to VLP AK Nitra, PZ Nitra and the Aviation and Maritime Investigation Authority of the Ministry of Transport, Construction and Regional Development of SR.

The following commission was appointed for investigation of the occurrence:

Ing. Igor Benek – chairman of the investigation commission;  
Ing. Dominik Jančík – member of the investigation commission.

The 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. ANALYSES
3. CONCLUSIONS
4. SAFETY RECOMMENDATIONS

### **1. FACTUAL INFORMATION**

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

On 18 August 2013 a flight day of the Aeroklub Nitra with take-offs of gliders towed by aircraft EuroFOX was in progress.

The glider tow take-offs were conducted from RWY 15L of airport LZNI.

During the take-off with glider L23 the front landing gear wheel of tow aircraft EuroFOX ran through an undulation (a recession probably created by a wild animal about 200 m away from the threshold of RWY15L and invisible from the aircraft cockpit during the take-off) at a speed of 60 km/h.

In view of the significant depth of the undulation the front landing gear leg got broken, the aircraft tilted over hard to its nose, the rotating propeller came into contact with the ground and the engine was stopped by force.

After the stoppage of the engine the pilot cut off the ignition, the main switch, closed main fuel cock and left the aircraft uninjured on his own.

The pilot of towed glider released the towing rope and safely stopped on RWY15 by turning right from the tow aircraft.

Daytime: Day

Flight rules: VFR

### 1.2 Injuries to persons

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

### 1.3 Damage to aircraft

The aircraft EuroFOX suffered substantial damage in the serious incident.

Scope of damage: front landing gear leg broken, engine stopped by force, all three propeller blades destroyed, front landing gear wheel spats, sump guard and propeller spinner damaged, strut frame of the front fuselage deformed in the area of attachment of the front landing gear leg and canvas cover of the underbody broken.







#### 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 in command:**

A national of the Slovak Republic, male, aged of 31 years,

holder of private pilot licence PPL(A), No. SK 02120169, issued by the Civil Aviation Authority of the Slovak Republic, with marked validity until 17.10.2017.

Medical certificate of 2<sup>nd</sup> class with marked validity until 17.04.2015.

Radio telephonist certificate No. OFS II.-74/2008 with unlimited validity.

Qualifications: SEP(L), with marked validity until 30.09.2014  
Aerotowing-TOW

##### **Flying experience:**

Total flight hours:	120 h 14 min and 557 flights
For the last 90 days:	43 h 39 min and 277 flights
For the last 30 days:	22 h 45 min and 191 flights
On the day of serious incident:	1 h 21 min and 11 flights

## 1.6 Aircraft information

### a) Airframe:

Type: EuroFOX 3k-Tow  
Registration No.: OM-LAN  
Serial number: 19506  
Year of manufacture: 2006  
Manufacturer: AEROPRO, a.s. Nitra /SR

Total operating hours since manufacture: 1 600 h 05 min and 8 734 flights

Certificate of airworthiness No. 0847, issued by the Civil Aviation Authority of SR on 26.03.2007 without time limitation on the condition of verification of the airworthiness by authorized legal entity with periodicity not longer than 12 months.

The latest verification was implemented on 13.06.2013; validity of the certificate of airworthiness was prolonged until 14.06.2014.

### b) Engine:

type: ROTAX 912 S2  
serial number: 4923285  
year of manufacture: 2006  
manufacturer: BRP ROTAX GmbH, A - 4623 Gunskirchen, Austria

The engine has been incorporated into the aircraft since its manufacturer in 2006.

Total operating hours: 1 600 h 05 min

### c) Propeller:

type: DUC-FCDS  
serial number: Hub: 4219,4217; brades:10452,10421,10451  
year of manufacture: 2010  
manufacturer: DUC Helices, France

Date of incorporation in the aircraft: 04.04.2011.

Total operating hours: 340 h 17 min.

### d) Calculation of weight of aircraft at the time of serious incident

Empty weight of aircraft	281.0 kg
Weight of crew	95.0 kg
<u>Weight of fuel: cca 45 l x 0.72 kg/l</u>	<u>32.4 kg</u>
Total weight of aircraft at the time of incident	<b>408.4 kg</b>

Maximum permissible take-off and landing weight of aircraft according to the Flight Manual is 450 kg.

## 1.7 Meteorological information

The meteorological situation at the airport LZNI at the time of serious incident was suitable for given type of flight and had no influence on the occurrence.

## 1.8 Aids to navigation

Not applicable.

### 1.9 Communications

The aircraft was equipped by a radio communication system enabling two-way radio communication with all air stations at every moment of flight.

### 1.10 Aerodrome information

The airport LZNI is a public international airport with irregular operation.  
Its grass RWY 15/33 is used for aircraft operation.

### 1.11 Flight recorders

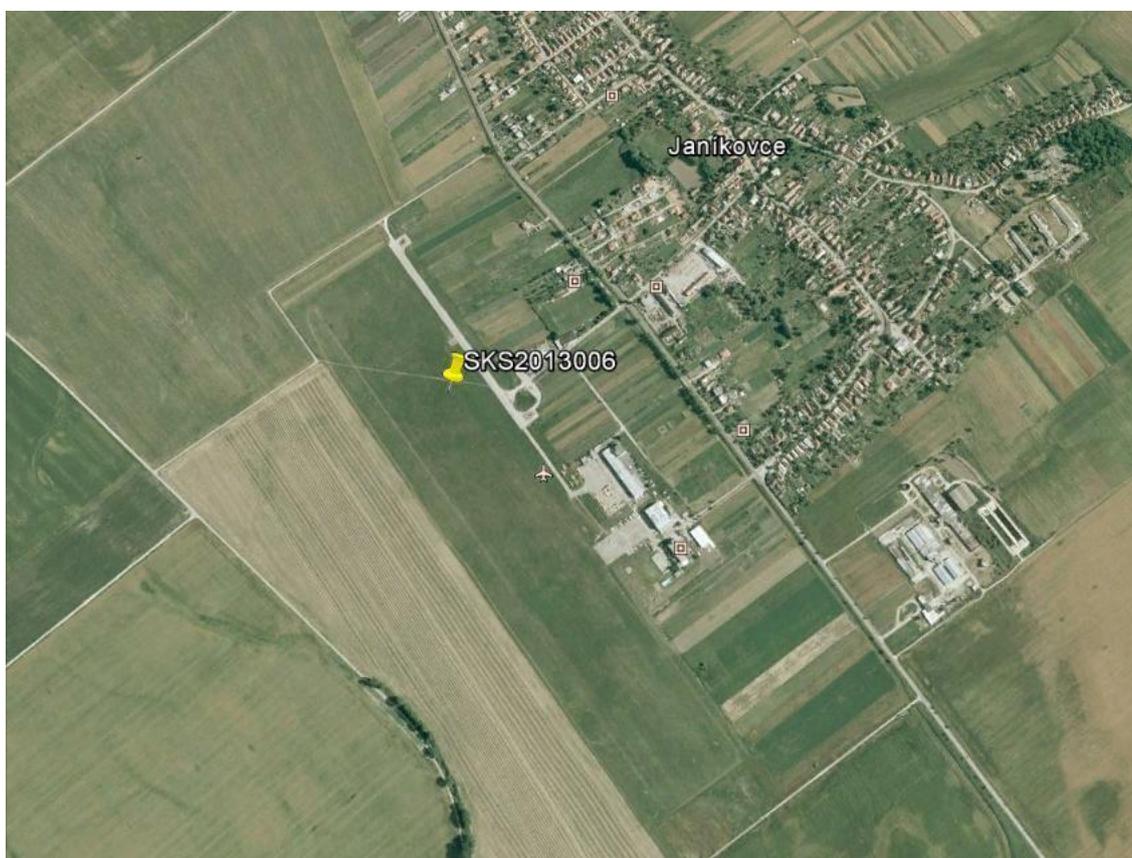
Not applicable.

### 1.12 Wreckage and impact information

The place of serious incident was RWY of LZNI. The final position of the aircraft after the serious incident was documented and photo documentation was taken.

The site of serious incident is described by the geographic coordinates:

N 48°16'54,34'', E 018°07'50,19''



### 1.13 Medical and pathological information

Not applicable.

### 1.14 Fire

No fire broke out.

### 1.15 Survival aspects

The search and rescue operations were not required.

#### 1.16 Tests and research

Not applicable.

#### 1.17 Organizational and management information

The air operations were implemented in accordance with aviation regulations valid in the territory of the Slovak Republic.

The aero tow takeoffs were conducted in accordance with the regulation P-1 Flying regulation for aero clubs, Title 7, Article 7.2 Aero-towing operation.

#### 1.18 Additional information

Not applicable.

#### 1.19 Useful or effective investigation techniques

Standard investigation methods were used.

## 2. ANALYSIS

### 2.1. Activity of pilot

The pilot conducting the aero tow take-off from RWY15L of airport LZNI ran with its aircraft through an undulation, which was invisible from the aircraft cockpit, and the aircraft was damaged.

The pilot of towed glider L23 timely released the towing tope, turned right from the tow aircraft and safely stopped on RWY15L without further damage.

## 3. CONCLUSIONS / Cause of serious incident

### 3.1 Findings

- the pilot of aircraft EuroFOX had valid qualifications for the critical flight,
- the aircraft EuroFOX had valid documentation and did not show any faults before the serious incident,
- the aircraft EuroFOX fulfilled the conditions of airworthiness before the critical flight,
- the meteorological conditions had no influence on the occurrence,
- nobody was injured in this serious incident.

### 3.2 Cause of serious incident

The running into an undulation in the take-off run phase, which caused the breaking of the front landing gear leg and subsequent damage to the aircraft.

#### **4. SAFETY RECOMMENDATIONS**

On the basis of investigation into causes of serious incident of:

Aircraft type: **EuroFOX 3k-Tow**

Registration No.: **OM-LAN**

Date of occurrence: **18.08.2013**

**we recommend:**

**the operator of airport LZNI, SNA gen. M. R. Štefánika:**

before the start of the flight day to check RWY of LZNI for potential occurrence of major undulations.

Bratislava, 08.10.2013