



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

Air Accident and Incident Investigation Board  
Nám. slobody 6, P.O. BOX100, 810 05 Bratislava 15

**Reg. No. SKA2011003**

**FINAL REPORT**

on investigation of air accident

of aircraft type **AL-Fox**

registration **OM-M300**

Date: 05.06.2011

Place: municipality of Lipová near Nové Zámky

## 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.

Operator / Owner:	Ing. Štefan Šafár, Pribinova 19, 940 01 Nové Zámky
Type of operation:	general aviation
Type of aircraft:	manufacturer of flying sports vehicle Dušan Kollár, model AI-Fox
Registration:	OM-M300



Place of take-off:	Airport Šurany – Kopec (Hill)
Planned landing site:	Airport Šurany – Kopec (Hill)
Flight phase:	landing correction drill
Place of accident:	Municipality of Lipová near Nové Zámky, garden of family house No. 310
Date and time of detection of accident:	05. 06. 2011, 12:35 hrs

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

## **B. INFORMATIVE SUMMARY**

Characteristics and circumstances:

a training/retraining flight. Start from the Airport Šurany – Kopec at 12:15. Duration of flight 20 min. During slide drill in flight configuration the flight runs normally. During slide drill with landing flaps extended to the 1st degree, i. e. 20°, the crew registered ungrounded turning with port-wing-down without possibility of restoration of normal flight. The left-handed descending turn caused the aircraft to approach the margin of the municipality of Lipová, where it came into contact with electric power line and then fell into the garden of a family house. The accident was reported by witnesses to IZS (line 112) of the operations centre in Nové Zámky.

None of the aircraft crew members suffered injury.

Person appointed for investigation of the air accident:

Ing. CIBÁK Milan, CSc.

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**

At 12:15 the crew started from the Airport Šurany – Kopec for training/retraining flight with flying sports vehicle ("FSV") of Al-Fox type, registration OM-M300. The purpose of the flight was retraining of the pilot for this type of FSV. According to statements of the crew members, the crew performed the theoretical preparation and prescribed pre-flight preparation of the pilot and inter-flight inspection of FSV before the flight. After the start, they climbed in the working space up to the working height of 500 AGL and fulfilled tasks prescribed by retraining curricula. The last task they fulfilled was left and right-handed slides in flight configuration. Next planned task should have been the slide training with landing flaps out. The starting position of FSV before fulfilment of the task was the stabilized straight flight in altitude of 500 m AGL and with speed of 100 kph. After extension of landing flaps to the angle of 20° (small flaps) FSV suddenly inclined 30 degrees to one side and then it made a left-handed descending turn that the pilot was unable to level off in spite of his interventions into controls, because FSV did not react to these interventions. The instructor took over but his interventions into controls were equally ineffectual. The crew did not attempt to take control of FSV and stabilize the flight by closing the wing flaps and FSV continued the flight with a left-handed descending turn until the contact with a local power line, followed by the fall into garden.

Search and rescue were not required.

Daytime: day

Time of occurrence of accident: 12:35 hrs

Geographic coordinates of the place of accident: 48°06' 53.40''  
18°09' 58.72''

Place of accident: garden of family house No. 310 in the municipality of Lipová near Nové Zámky

The accident was reported by witnesses to ISZ (112), operations centre in Nové Zámky, and then by employees of the Training Centres of SFUL Šurany – Kopec to the Air Accident and Incident Investigation Board of MoTCRD SR and to the chief flight inspector of SFUL.

## 1.2 Injuries to persons

Injury	Crew	Passengers	Other persons
Fatal	-	-	-
Serious	-	-	-
Minor	-	-	-
None	2	-	-

## 1.3 Damage to aircraft

The flying sports vehicle was destroyed.



#### 1.4 Other damages

- demolished local electric power lines
- damaged TV antenna
- broken concrete pole of local power line



- damaged garden enclosure



- damaged crops grown in the garden



The damaged third parties notified their claims for damages. The damages will be enforced with use of liability insurance of FSV. The claims are not the subject of investigation of the air accident.

## 1.5 Personnel information

### Pilot in command:

Citizen of Slovak Republic, aged of 48,  
holder of FSV pilot licence No: 10S2210 issued by SFUL.

Qualifications: pilot of flying sports vehicles with marked validity until 21.10.2012.  
Medical certificate of 2<sup>nd</sup> class with validity until 16.05.2013.

### Flying experience:

Total flight hours: 49 h 59 min and 341 flights  
Total flight hours for previous 90 days: 04 h 40 min and 43 flights  
Total flight hours for previous 90 days with the aircraft type: 04 h 40 min and 43 flights  
Flight hours on the day of accident (incl. critical flight): 00 h 20 min and 1 flight

### Instructor

Citizen of Slovak Republic, aged of 68,  
holder of FSV pilot licence No: 99S0030, issued by SFUL.

Qualifications: pilot of flying sports vehicles - trainer with marked validity until 10.05.2012.  
Medical certificate of 2<sup>nd</sup> class with marked validity until 10.09.2011.

### Flying experience:

Total flight hours: 10250 h 00 min and 0 flights  
Total flight hours for previous 90 days: 25 h 00 min and 0 flights  
Total flight hours for previous 90 days with the aircraft type: 6 h 00 min and 0 flights  
Flight hours on the day of accident (incl. critical flight): 00 h 20 min and 1 flight

## 1.6 Aircraft information

### a) Airframe

Type: Al-Fox  
Serial No: 03  
Year of manufacture: 2006  
Manufacturer: Dušan Kollár

Total flight hours since manufacture: 190 h 20 min and 808 flights.

Certificate of airworthiness No. RS065 issued on 21 September 2006, with validity until 18.08.2011.

The last supplementary test was performed on 18 August 2010 by the inspector engineer of SFUL. No defects were detected. Documents of maintenance, pre-flight and inter-flight inspections were not submitted.

Total flight hours: 808 starts, 190 h 20 min. Actual weight was not measured at the start of aircraft.

MTOW 450 kg. Centre of gravity was not identified at the start of aircraft, prescribed value 22 – 30 % <sup>bsat</sup>

Fuel Ba 95 super – suitable for this type of engine.

### b) Engine

Type: Rotax 912 A2  
Serial No: 4380681  
Manufacturer: Bombardier Rotax GmbH

Date of incorporation into aircraft: 13.08.2010

Total operating hours of engine: 1750 h 20 min

Life of engine was prolonged to 1874 hours.

### c) Propeller

Type: FITI-ECO  
Serial No: 021  
Manufacturer: J.Fatuřík, Rěvnice, CZ

Date of incorporation into aircraft: 13.08.2010

Total operating hours: 113 hours 15 min

### d) Calculation of weight of aircraft at the time of air accident:

Empty weight of aircraft	285.00 kg
Weight of crew	148.50 kg
Weight of baggage	0.00 kg
Weight of fuel	approx. 20 l x 0.72 kg/l 14.40 kg

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Total weight of aircraft at the time of accident: 447.90 kg

Maximum permitted take-off weight of aircraft according to the Flight Manual is 450 kg.  
Weight of aircraft at the time of accident was within the permitted range.

## 1.7 Meteorological situation

2/8 Cu, 23°C, variable wind with speed of 3 m/s.

## 1.8 Aids to navigation

FSV was equipped for VFR flights.

Navigation system: 1x magnetic compass serviceable.

## 1.9 Communications

FSV had a functional bilateral radio communication of aeronautical mobile service. Set frequency of local airport Šurany – Kopec: 123.55 MHz.

### 1.10 **Aerodrome information**

At the time of start and planned landing, the non-public airport equipped for VFR flights was serviceable and had a land radio communication station of aeronautical mobile service set on frequency of 123.55 MHz.

### 1.11 **Flight recorders and other recording systems**

No flight recorders and other recording devices were installed in FSV. The GPS system was not activated during the flight.

### 1.12 **Wreckage and impact information**

After the contact with local power line FSV fell into garden of a family house situated in a gap between the family house and garage, in the crop and fruit-trees stands. The debris from enclosure and power line was found in the distance of 15.5 m, 20.3 m and 21.7 m.

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

The aircraft crew was not injured.

### 1.14 **Fire**

No fire broke out during the accident.

### 1.15 **Survival aspects**

Not required.

### 1.16 **Tests and research**

Not required.

### 1.17 **Organizational and management information**

Other organisations and physical persons had not influence on the occurrence of the accident.

### 1.18 **Additional information**

Not applicable.

### 1.19 **Useful or effective investigation techniques**

Standard investigation methods were used.

## 2. **ANALYSIS**

The investigation of the air accident revealed the following facts:

- the fall of FSV occurred after the uncontrolled descending flight in a left-handed turn.
- the crew used standard procedures for management of the critical situation but without success.
- the critical situation occurred after extension of landing flaps.
- the crew did not use the possibility of management of the critical situation by return of controls to the standard position (closing of opened flaps).

- the detailed technical analysis of wreckage revealed a long-term contact of the right aileron with the right-hand landing flap. This contact was overlooked during maintenance and technical inspections and no correction was made.



- reports on results and conclusions of periodical maintenance checks or reports on pre-flight, inter-flight and post-flight inspections carried out at least on the day of air accident were not submitted.

- the section rib carrying the common central console of ailerons and wing flaps is made of duralumin sheet with thickness of 0.5 mm (on both sides), without further reinforcement.



- the concurrence of these circumstances caused the contact of the aileron with the right wing flap after extension of wing flaps and their congruous position in downward deviation (port-wing-down) without possibility of correction by means of other controls.

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

The air accident occurred due to a left turn in descending flight and uncontrolled contact of SFV with ground equipment and with the ground.

This situation occurred due to the contact of the extending wing flap with the aileron and its blocking in the port-wing-down position. Vyšetřovaním bola táto skutočnosť stanovené ako bezprostredná príčina leteckej nehody.

The systém cause that influenced the occurrence of the accident is the nonobservance of the prescribed maintenance system and inconsistent performance of technical inspections of FSV.

The investigators determined the contributing cause of the accident – failure to use the possibility of normalization of the flight regime by placing the controls (wing flaps) into the initial position (closed).

Summary: The air accident was caused by concurrence of sudden foreseeable technical fault and incorrect pilotage.

### **4. SAFETY RECOMMENDATIONS**

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

Flying sports vehicle type AI-Fox,

Registration OM-M300,

Date of air accident 05.06.2011

We recommend the implementation of the following measures by SFUL:

a) to exclude mutual collision of steering tillers and controls by suitable technical implementation (design).

b) to ensure the systematic performance of prescribed periodical maintenance works and inspections of FSV, especially for FSV designed for training of aviation personnel.

c) to implement the review of performance of operations set out in b) in Training Centres of SFUL.

d) to implement a special training of personnel of the Training Centre of SFUL in Šurany – Kopec.

Bratislava, 03.08.2011