



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

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

Reg. No.: SKA2011006

FINAL REPORT

on investigation of air accident

of aircraft type **Z 137T**

registration No. **OM - NRK**

Date: 08.07.2011

Place: Zemplínske Jastrabie

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, 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 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.

Operator / Owner:	AERO SLOVAKIA, a.s. Airport Janíkovce, 949 07 Nitra
Type of aircraft:	Z 137T
Registration number of aircraft:	OM – NRK



Take-off site:	operating area of Novosad
Planned landing site:	operating area of Novosad
Flight phase:	left-handed operating turn
Place of air accident:	Zemplínske Jastrabie
Date and time of detection of accident:	08.07.2011, 05:35 hrs

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

B. INFORMATIVE SUMMARY

On 8 July 2011 the pilot with aircraft type Z 137T, registration No. OM-NRK, was performing aerial work in agriculture from the operating area of Novosad.

During the critical flight in the left-handed operating turn the pilot touched 22 kW high-tension cables with the left wingtip, causing the break-off of winglet with adjacent part of the wing. Subsequently the aircraft turned on its back, in this position fell to the border of treated land and remained stuck in the windbreak stand.

The pilot suffered fatal injuries.

The SAR employees and the operator of AERO SLOVAKIA, a.s. reported the accident by phone to the Aviation and Maritime Investigation Authority.

Persons appointed for investigation of causes of the accident:

Ing. Grell Ladislav

Ing. Kumorovitz Marián

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

A technician prepared the aircraft for flight one day before the critical flight. The pilot conducted the pre-flight check himself on 8 July 2011.

On the day of accident, in early morning hours, the technician departed to the operating area of Novosad in an air fuel tank. After this arrival to the operating area the technician instructed the operating personnel of the customer and at 02:25 he informed the pilot by phone that the aircraft was ready for the planned activity.

After his arrival to the operating area at 03:05 the pilot conducted a procedure in compliance with the convention on the method of implementation of aerial work on the individual land lots.

The first flight took place at 03:30. After the flight had landed the aircraft was refuelled (90l) and further three aerial work flights were conducted without weaknesses.

After these flights the aircraft was refuelled again (150 l). After the take-off the pilot returned to the operating area because the unintentional discharge of chemical substance was drained from the tank through emergency outlet for unknown reason. The emergency outlet was secured and testes by a technician. After the tank was refilled with chemical substance the aircraft was released for operation.

The pilot conducted further flights without weaknesses. These further flights were followed by tank refilling with fuel (150 l) and chemical substances.

The pilot started for the critical flight at 05:30. The flight history is not described because witnesses, who would be able to describe the last flight phase before the accident, were not found and no flight recorders were incorporated in the aircraft.

From the layout of wreckage and damage to high tension cables it can be stated that the aircraft had probably touched the cables with the left winglet, which got broken off together with the adjacent part of the wing.

The aircraft turned to its back, in this position fell to the ground in front of the windbreak and remained stuck in the windbreak stand.

The pilot was found in the wreckage without signs of life.

The called rescue medical service stated that the pilot had suffered injuries not compatible with life.

Daytime: day
Time of accident: VFR

1.2 Injuries to persons

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

1.3 Damage to aircraft

The aircraft was destroyed in the incident.





1.4 Other damages

High tension cables were torn during the accident.



The Aviation and Maritime Investigation Board was not informed about any circumstances with potential claims for compensation of other damages toward a third party.

1.5 Personnel information

Citizen of Slovak Republic, aged of 63

Holder of the commercial pilot licence CPL(A) No. SK 03800050, issued by the Civil Aviation Authority of SR on 8 May 1980, with marked validity until 10 May 2016.

Qualifications:

FI(A) with marked validity until 31.10.2013

SEP(L) with marked validity until 28.02.2013

SET with marked validity until 30.06.2013

TMG with marked validity until 31.10.2011

ULL with marked validity until 30.11.2012

Z 137T with marked validity until 28.02.2012

The pilot underwent the medical check at the Institute of Aeronautical and Preventive Medicine of LVN (Aeronautical Military Hospital) Košice on 18 April 2011 with result „fit for the 1st class of medical fitness“.

The total number of flight hours before the air accident was not ascertained by the investigation board because the pilot had sufficient previous experience from making flights of this type.

1.6 Aircraft information

Airframe:

Type: Z 137T
Registration No: OM - NRK
Serial No.: 049
Year of manufacture: 1993
Manufacturer: Moravan Otrokovice, CR

Certificate of airworthiness No. 0577 - S, issued by the Civil Aviation Authority of SR on 4 August 2008.

Verification of airworthiness with marked validity until 8 April 2012.

Total flight hours since manufacture: 2 344 h 35 min (until 31.06.2011)

Engine:

Type: WALTER M601Z
Serial No: 882002
Year of manufacture: 1988
Manufacturer: WALTER a.s. PRAGUE, CR

Date of incorporation into the aircraft: 18.02.2011

Total operating hours since manufacture: 2 089 h 39 min

Total operating hours since the first GO: 564 h 39 min

Propeller:

Type: V 508 Z/99 A/A
Serial No: 64070026
Year of manufacture: 1986
Manufacturer: AVIA Letňany, PRAGUE, CR

Date of incorporation into the aircraft: 10.02.2010

Total operating hours since manufacture: 2 554 h 46 min

Total operating hours since the second GO: 752 h 56 min

1.7 Meteorological situation

Meteorological conditions in the place and at the time of air accident had no influence on the flight and did not participate in the occurrence of the air accident.

In view of the position of the sun above the horizon counter the flight direction at the time of accident light conditions could have negatively affected the visibility of the terrain obstacle (high tension cables).

1.8 Aids to navigation

The aircraft was equipped by devices for VFR flights.

1.9 Communications

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

1.10 Aerodrome information

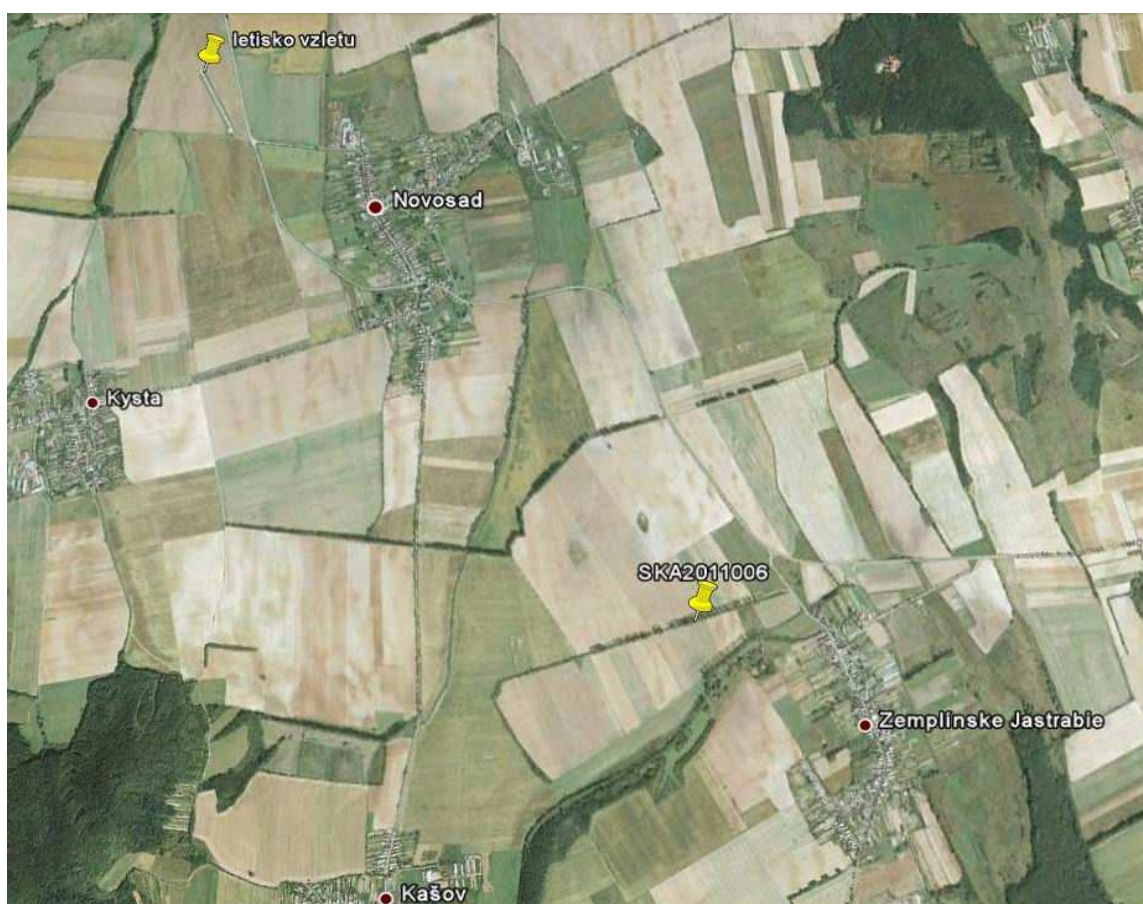
The operating area of Novosad is a bituminous surface reserved for take-off and landing of aircraft used for aerial work and had no causal connection with the air accident.

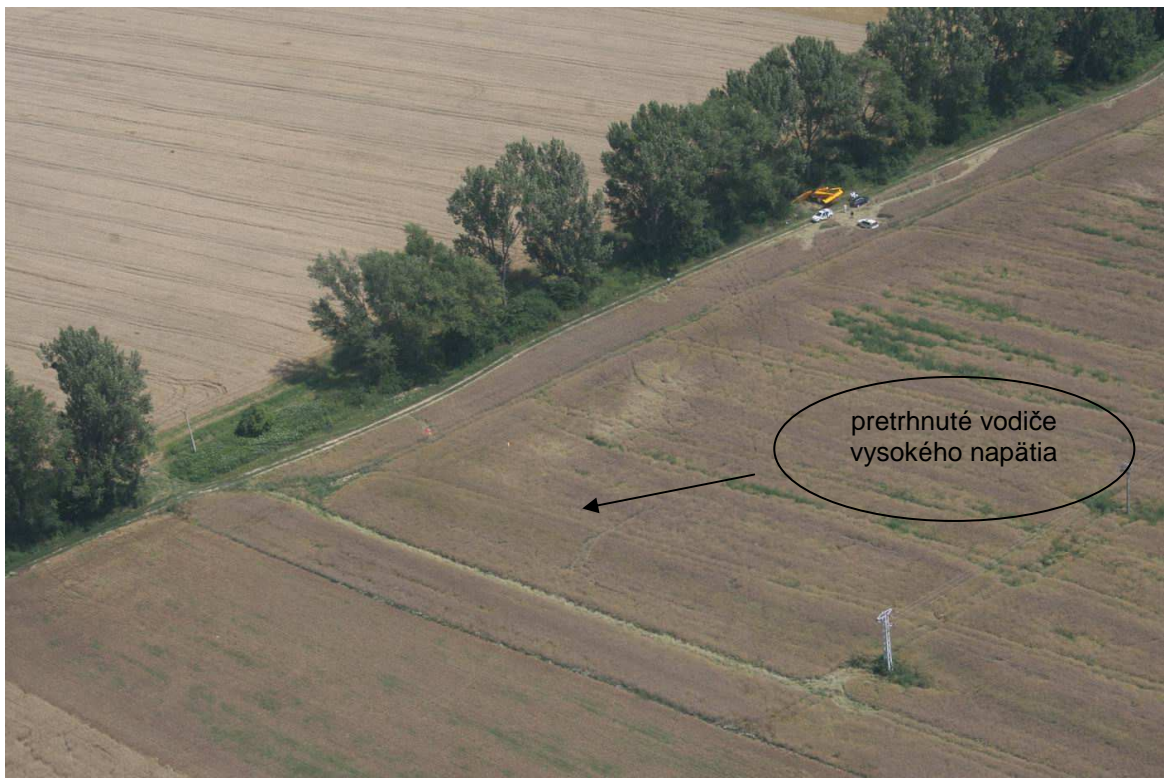
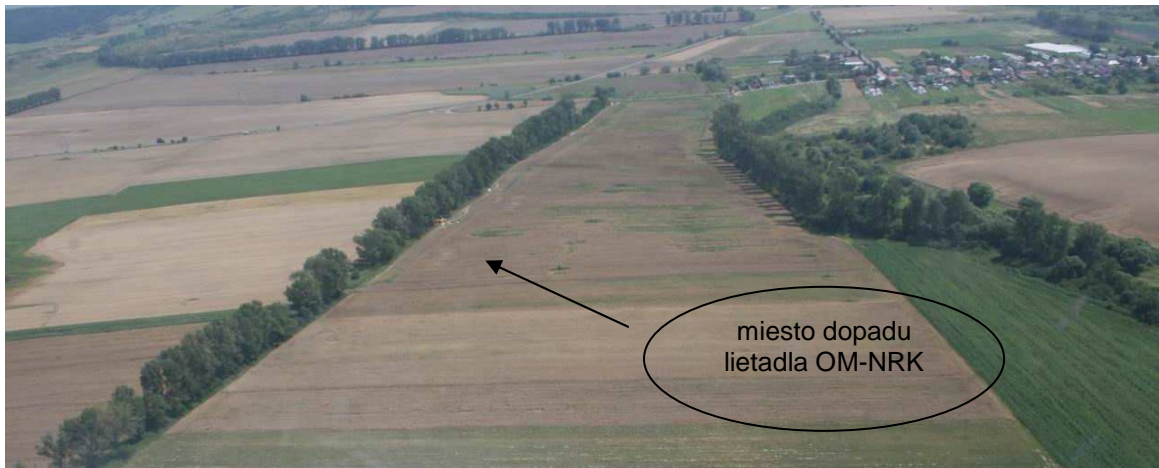
1.11 Flight recorders and other recorders

Not applicable.

1.12 Wreckage and impact information

The aircraft remained in one piece after the accident, turned in the position on its back. The winglet of left wing with its terminal piece was found near the broken high tension cables.





The place of accident was identified by geographic coordinates:

N 48°30'11,3''

E 021°45'49,9''

1.13 Medical and pathological information

From the forensic expertise it results that at the time of accident the pilot was not under the influence of alcohol or forensically relevant medicaments, drugs or other psychotropic substances likely to decline his attention during the flight.

The external and internal inspections as well as supplementary laboratory investigations of biological materials detected no acute or chronic pathological changes that could have negatively affected the pilot's attention and action at the time of accident or that would be in causal connection with his death.

All detected injuries were in causal connection with the air accident and occurred upon impact of the aircraft to the ground.

1.14 Fire

No fire broke out.

1.15 Survival aspects

No search and rescue operations using the SAR devices were implemented SAR .

The wreckage was found in the search for the cause of failure of power supply to the municipality of Zemplínske Jastrabie.

When the estimated time of arrival of the aircraft to the operating area of Novosad elapsed, the technician started to check with the customer, for which aerial work had been performed, whether the aircraft in question was performing any activity in the proximity of the treated land.

1.16 Tests and research

Not applicable.

1.17 Organizational and management information

The aircraft operator AERO SLOVAKIA, a.s. is a company holding the license for performance of aerial work.

1.18 Additional information

The pilot of the aircraft was granted an exception by the Ministry of Transport, Construction and Regional Development of the Slovak Republic of 18 May 2010 from Regulation L 1, Title 2, Article 2.1.10.3 , for performance of aerial work after reaching the age of 62 years as employee of AERO SLOVAKIA, a.s. Nitra – as pilot-in-command holding the commercial pilot licence CPL(A) until 2 June 2011, providing he fulfils the requirements for medical fitness and professional competence.

The quoted provision setting the age limit for performance of aerial work was cancelled by Amendment No. 3 to the Regulation L 1 with effect from 1 May 2011.

1.19 Useful or effective investigation techniques

Standard investigation methods were used.

2. ANALYSIS

2.1 Activity of pilot

During the critical flight the pilot was approaching the treated land in left-hand descending turn. In the final phase of approach in the flight direction to north-east he could have been blinded by sun in view of the position of the sun above the horizon (counter flight direction), which could have caused him to oversee the high tension cables. At that moment the pilot probably did not realize the proximity of the obstacle and touched the high tension cables with the left wing.

All the following events are the consequence of a collision of the aircraft with the said obstacle.

3. CONCLUSIONS/ Cause of air incident

3.1 Findings

- the pilot had valid qualifications for performance of aerial work
- the aircraft had a valid documentation and did not show any faults before the air accident
- the aircraft fulfilled the conditions of airworthiness before the critical flight
- meteorological conditions were suitable for performance of the said activity.

3.2 Cause of air accident

- entrapment of high tension cables by the left winglet in the left descending turn, followed by the break-off of this winglet with adjacent part of the wing
- the pilot's blinding could have contributed to the occurrence of the air accident.

4. FLIGHT SAFETY RECOMMENDATIONS

On the basis of investigation of causes of the accident of:

Aircraft **Z 137T**

Registration No. **OM - NRK**

Date of accident: **08.07.2011**

We recommend that the **Civil Aviation Authority of SR** should take the following measures:

- to ensure that the operators who are holders of the license for performance of AWA will implement an analysis of the said accident with the flying personnel.

We recommend that the **Civil Aviation and Water Transport Section of MoTCRD SR** should take the following measure:

- to consider the adoption of the following limitations in the new Civil Aviation Act:

a pilot license holder who has reached the age of 62 years must not carry out aerial works, without a possibility to be granted an exemption.

Bratislava, 25.11.2011