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. : SKA2012019

FINAL REPORT

on investigation of air accident

of aircraft type **PULSAR**

registration No. **OM-AYF**

Date: 03.10.2012

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 operation: general aviation / recreational flight

Type of aircraft: PULSAR

Registration No: OM-AYF

Flight phase: landing

Place of accident: LZNI

Geographic coordinates of the place of accident:
N 48°16´ 46,34´´
E 18°08´ 00,39´´

Date and time of accident: 03.10.2012, 14:00 h

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

B. INFORMATIVE SUMMARY

During landing of the aircraft with west wind at the airport LZNI the aircraft landed hard on the runway 15 (hereinafter „RWY“) and bounced several times. After the fourth bounce of the aircraft to the height of approx. 2 m and its subsequent touch-down on RWY the front landing gear leg broke off and the working propeller come into contact with the grass surface of RWY.

No person was injured in the accident.

The commission composed from the following persons was appointed for investigation of the accident:

Ing. Zdeno BIELIK
Lic. Jaroslava MIČEKOVÁ

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

1.1 History of the flight

On 3 October 2012 the pilot with aircraft type PULSAR, registration No. OM-AYF, was flying on the route „Senica – Nitra - Prievidza“. During the flight in an area north of Nitra the pilot noticed an oil pressure drop and engine power loss (4500 rpm, speed approx. 180 km/h). Fearing potential engine failure and realizing the proximity of the airport LZNI, the pilot assessed the situation as dangerous and decided to land at the airport as soon and as direct as possible.

During the landing approach the pilot maintained the speed of 180 km/h until he reached the boundary of the airport LZNI and then made a landing manoeuvre regardless of the wind direction that was blowing from the back at that time.

The aircraft landed on RWY on three points, at high landing speed, without the right approach angle at landing flare, with hard contact of the first landing-gear leg with RWY. Afterwards the aircraft bounced several times, with height increasing with every next bounce (so-called „somersault“), until the front landing-gear leg broke off and the aircraft nose come into contact with the grass surface of RWY. Finally the aircraft stopped on RWY. In the contact of the nose of aircraft with the ground the working propeller got caught and was damaged.

On 3 October 2012 the accident was reported by phone to the Aviation and Maritime Investigation Authority of MoTCRD SR.

Daytime: day

Flight rules: VFR

1.2 **Injuries to persons**

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

1.3 **Damage to aircraft**

Broken front landing-gear leg, destroyed propeller.

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 Board.

1.5 **Personnel information**

Pilot:
Citizen of the Federative Republic of Germany, male, aged of 68 years,

holder of the private pilot licence PPL(A) No. SK 02950112 issued by the Civil Aviation Authority of the Slovak Republic on 2 October 2012.

Medical certificate of 2nd class with marked validity until 28.04.2013.

Qualifications: SEP(L) with marked validity until 31.10.2014

Flight experience: total flight hours 399 h 15 min and 911 flights

1.6 **Aircraft information**

Airframe: Type: PULSAR
Serial number: 328/003
Year of manufacture: 1995
Manufacturer: Marian Barus-AEROPLAST

Total number of operating hours since manufacture: not identified.

Special certificate of airworthiness No. 0482-S/06, issued by the Civil Aviation Authority of the Slovak Republic for indefinite period.

Third-party insurance: Allianz Slovenská poisťovňa, certificate No. 411 009 830.

1.7 **Meteorological information**

Not applicable.

1.8 **Aids to navigation**

Not applicable.

1.9 **Communications**

Not applicable.

1.10 **Aerodrome information**

The airport LZNI is a public international airport with altitude of 135 m (443ft) and RWY 15/33 covered by grass with dimensions 1080 m x 100 m.

At the time of air accident the airport was suitable for landing of this aircraft type.

1.11 **Flight recorders**

Not applicable.

1.12 **Wreckage and impact information**

The aircraft landed on RWY of airport LZNI.


OM-AYF


OM-AYF

1.13 **Medical and pathological information**

Not applicable.

1.14 **Fire**

No fire broke out.

1.15 **Survival aspects**

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

1.16 **Tests and research**

The function of oil pressure transmitter was checked by measurement of resistance of pressure transmitter VDO29/12 under pressure developed on the device GUMP 300. The test proved that the device was showing incorrect values of measures pressure, which was caused by wear of one of two transmitter contacts.

1.17 **Organizational and management information**

Not applicable.

1.18 **Additional information**

During the critical flight the aircraft did not carry documentation as required by Article 14 of the Act No. 143/1998 Coll. on Civil Aviation. The documentation was submitted to the commission later.

1.19 **Useful or effective investigation techniques**

Standard investigation methods were used.

2. ANALYSIS

The pilot of aircraft in his statement says that the engine oil pressure indicator on the cockpit panel clearly indicated an oil pressure drop and simultaneously registered engine power loss.

However, the pilot´s observation does not correspond with the fact that engine revolutions (4500 rpm) and hence the propeller revolutions did not decrease and that the flight speed did not drop below 180 km/h even in horizontal flight.

This justifies the assumption that oil pressure drop and engine power loss did not actually occur, which is proved by the fact that the pilot continued the flight for 4-5 minutes in horizontal flight without was flying without flight speed loss.

These findings suggest incorrect assessment of actual situation by the pilot onboard the aircraft and adoption of premature conclusion on engine power loss and related fear of potential engine failure (on the basis of oil pressure drop on the cockpit panel indicator).

Based on this incorrect conclusion, the pilot decided to land at the airport LZNI. He made the approach to the airport LZNI over the city of Nitra, where he maintained a margin of height, fearing the engine failure. This caused that during landing approach from „straight line" on the descent path the aircraft got into a large glide angle and achieved a speed of approximately 180 km/h (instead of 110-120 km/h).

In this stress situation the pilot did not pay adequate attention to the wind, which at that moment was unfavourable from that landing direction and he landed with tail wind.

Just before the landing the aircraft was flowing at a speed of approximately 160 km/h instead of 70-80 km/h.

The landing of aircraft at high speed caused that the aircraft was not properly „stretched" before contact with RWY and landed hard on „three points", making multiple bounces to a height from 0.5 to 2 m.

After the last fourth bounce the front landing-gear leg broke off and the aircraft stopped on RWY. When the nose of aircraft inclined to RWY the working propeller got damaged.

3. C O N C L U S I O N S / CAUSE OF ACCIDENT

3.1 **Findings**

- the pilot had valid qualifications to make the flight,
- the aircraft had valid documentation and did not show any faults before the accident,
- the aircraft fulfilled the airworthiness conditions before the critical flight,
- the aircraft did not carry the documents required by Article 14 the Act No. 143/1998 Coll. on civil aviation.

3.2 **Causes of air accident:**

- rush and ill-considered decision of the pilot without correct recognition of signs of engine power loss;
- hard landing at a high speed without flare-out;
- failure of pressure transmitter in the engine oil system.

4. SAFETY RECOMMENDATIONS

Final report from investigation of the air accident does not contain any recommendation.

Bratislava, 28.02.2013