

*The original of the Final Report was issued in the Slovak language.
In case of inconsistency original version in Slovak language is applicable.*



AVIATION AND MARITIME INVESTIGATION AUTHORITY
Námestie slobody 6, P.O.BOX 100
810 05 Bratislava 15

FINAL REPORT

on the safety investigation of the air accident

aircraft type **L-29 Delfin**

Registration Mark **OM-JLP**

Reg. No.: SKA2017002

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.

Use of abbreviations and acronyms

| | |
|-----------------------|--|
| FL | Flight Level |
| ft | Feet (dimensional units) |
| SPT/HPT | Simple/higher pilotage technique |
| LZSL | The ICAO code for Sliač airport |
| NATINAMDS | NATO Integrated Air Defence and Missiles System |
| PC TWR | Procedural Controller for Aerodrome Control Tower |
| AFT | Additional Fuel Tanks |
| ECL | Engine Control Lever |
| TANGO SCRAMBLE | The signal for training take-off in the context of NATINAMDS |
| UTC | Co-ordinated Universal Time |
| VFR | Visual Flight Rules |
| RWY | Runway |

A. INTRODUCTION

Operator / Owner: private owner
Operation type: General Aviation/Sports and Recreational Flying
Type of aircraft: L-29 Delfín
Registration mark: OM-JLP



Take-off Site: LZSL
Flight phase: take-off
Accident Site: LZSL
Accident date and time: 27.03.2017 11:03

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

B. INFORMATIVE SUMMARY

The pilot with another person in the rear cabin started at 10:51 from the LZSL airport on a training flight under VFR conditions without a flight plan. Part of the scheduled task was to approach for landing with a subsequent take-off. After performing take-off operations, the pilot diverted the aircraft from the surface of the RWY and moved the landing gear to a retracted position. Subsequently after the aircraft retracted the landing gear and the fuselage and AFT touched the RWY. After touching the RWY the pilot turned off the engine, and the plane slid over the AFT and rear fuselage until it stopped. No one was injured in this accident. The plane sustained major damage during the accident.

A commission was set up to investigate the causes of the air accident:

| | |
|-------------------------|---|
| Ing. Zdeno Bielik | Chairman of the Safety Investigation Commission |
| Lic. Jaroslava Mičeková | Member of the Safety Investigation Commission |

Report to be issued by:

Aviation and Maritime Investigation Authority
of the Ministry of Transport and Construction of the Slovak Republic

C. MAIN PART OF REPORT

1. FACTUAL INFORMATION
2. ANALYSIS
3. CONCLUSIONS
4. SAFETY RECOMMENDATIONS

1. FACTUAL INFORMATION

1.1 History of the flight

In preparation for the flight, the pilot focused on emergency landing training after the engine stopped.

After taking off from the RWY18 of the LZSL airport, he continued to the Očová Airport area, where there was allowed activity at 1000 ft above terrain to FL100. After completing the SPT/HPT in this area at 4000 ft, the pilot moved to the LZSL airport circuit with the intention of executing a training emergency landing after the engine stopped.

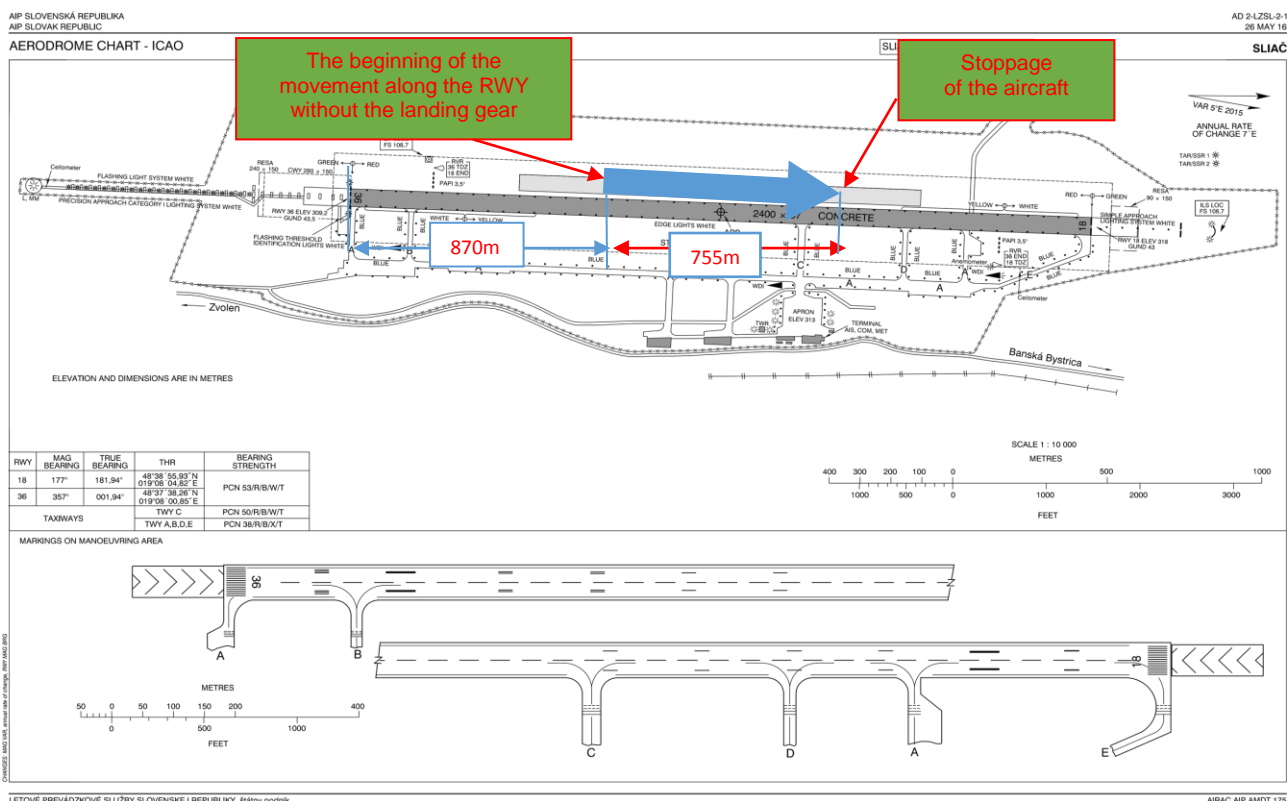
At 11:01, the PC TWR required a training emergency landing on the RWY36 with a landing and subsequent take-off and shifting to the left circuit of RWY36. After this announcement, the pilot continued with the landing without announcing the extension of the landing gear and requesting landing permission.

After landing on the RWY36, he pressed the landing gear flap to move it to a takeoff position of 15°, a compensating movement to position -2 (heavy for the tail) and the ECL moved to the MAX position. After launching the aircraft and reaching the take-off speed, the aircraft was repelled and then the landing gear slid.

During the sliding of the landing gear, the aircraft dropped and the rear fuselage and AFT touched the concrete surface of the RWY. When touching the RWY, the pilot switched off the engine and the aircraft slid further down the RWY until it stopped.



The position of the aircraft after stopping on the RWY



The diagram of the movement of the aircraft along the RWY

1.2 Injuries to persons

No personal injury occurred.

1.3 Damage to aircraft

The aircraft was damaged to a large extent in the abutting and movement along the concrete RWY (covering on the rear fuselage, bar nos. 5-26, main landing gear covers, damage by local fire in the engine section, damaged wing beams, damaged AFT) , so its repair would be inefficient.

The extent of the airplane damage was detected by authorized organizations Aeroholdus OÜ Tallinn and Letecké opravovne Trenčín, a. s..

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:

SR citizen, 49 years of age, CPL(A) commercial pilot license holder, issued on 04.11.2013 by the Civil Aviation Authority of the Slovak Republic.

Class 1 Medical Certificate 1 marked valid until 27.05.2017.

Qualifications:

L-29 marked valid until 31.10.2017

Total Flight Hours: 861 hrs. 38 min
Total on the L-29: 217 hrs. 18 min
In the last 90 days: 4 hrs. 53 min
In the last 30 days: 2 hrs. 21 min

1.6 Aircraft information

Type: L-29 Delfin
Registration Mark: OM-JLP
Serial Number: 591683
Engine: M-701C500
Year of Manufacture: 1965
Manufacturer: LET, n.p. Kunovice/ČR
Total Flight Hours: 5035 hrs. 10 min

Aircraft Registration Certificate No. 1158/03, issued by the Transport Authority of the SR on 08.03.2017.

Special Certificate of Airworthiness No. 1158/01, issued by the Transport Authority of the SR, with indicated validity until 17.04.2017.

Insurance: AXA CORPORATE SOLUTIONS Austria from 10.03.2017 to 09.03.2018.

1.7 Meteorological information

Clear, visibility 20 km, wind variable up to 3 m/s.

1.8 Aids to navigation

Not applicable.

1.9 Communications

The aircraft was equipped with a radio communication device that allowed two-way radio connection at any time during the flight with all air stations and rescue service stations.

1.10 Aerodrome information

LZSL airport is an international airport with mixed military and civilian operation.

1.11 Flight recorders

The aircraft was not equipped with flight recorders to record flight parameters.

1.12 Wreckage and impact information



After stopping the aircraft remained on the RWY on the fuselage and AFT



Part of broken radio antenna equipment

1.13 Medical and pathological information

N/A.

1.14 Fire

A local fire occurred in the engine compartment. Intervention into the fire's extinguishing was unnecessary because it did not grow and was extinguished without any intervention before fire-fighters arrived.

1.15 Survival aspects

None.

1.16 Tests and research

None.

1.17 Organizational and management information

The company operating the aircraft in question is licensed to perform Aviation Work No. SK/054 issued by the Transport Authority of the Slovak Republic on 29.11.2016, in which the type of operation approved in the "Operational Specification" section includes "Observation and Patrolling". During the course of its existence, the company has not performed any observer training.

In the aircraft handbook approved by the Transport Authority of the SR, the following are listed in section 8.7.8 *Aircraft Services*: "During such a flight, the aircraft crew may be composed according to type of aviation work performed."

The above permit applies only to the OM-SLK registration mark.

In accordance with operating manual, Point 8.7.1, when training emergency procedures onboard the aircraft, a trained company pilot and instructor or examiner may be present.

1.18 Additional information

The L-29 aircraft was designed for use in military aviation primarily for training pilots and is not suitable for performing certain types of aerial work, either in terms of speed or the economic view.

At 11:00, the crew of the aircraft involved in the alert system signal for the take-off of aircraft NATINAMDS declared the emergency TANGO SCRAMBLE. Due to the incident occurring at 11:03 and the subsequent blockage of the RWY, which prevented planes standing by from starting and for 1 hour and 42 min the continuous protection of the inviolability of the airspace of the Slovak Republic within the NATINAMDS airspace was disturbed.

1.19 Useful or effective investigation techniques

Common investigation methods were used.

2. ANALYSIS

The pilot, when moving along the RWY, before the repeated take-off when adjusting the flaps for take-off, the pilot unintentionally pushed the button into the retracted position, causing the wing buoyancy to drop below the expected value.

The retraction of the landing flaps in combination with the premature retraction of the landing gear just after the peeling of the aircraft caused the changed aircraft to touch the RWY. On touching the RWY the aircraft continued moving at 755 m along the fuselage and AFT until it stopped. During this sliding movement, the pilot correctly switched off the engine to reduce the possibility of sucking in a foreign object and shortening the movement. The premature retraction of the landing gear resulted in a violation of the provisions of the flight manual, which states that the landing gear is moved after take-off at a height of 20-25 m.

The following facts have also been found in a deeper investigation of the flight circumstances:

despite the pilot's statement and the document confirming that this flight was performed as a **“Training Flight – a training candidate for the function of Observer”** and that it was an observer training, the presence of a second person onboard the aircraft was unclear because the company does not have permission to performing aerial work for the OM-JLP aircraft.

Since, when training emergency procedures, only a trained company pilot and instructor can be onboard the aircraft or examiner, there was another uncertainty about what type of flight was actually transpiring.

Due to the fact that cases of the unjustified presence of a foreign person onboard an aircraft has already occurred in the company in the past, in the interests of transparency it would be advisable for the Transport Authority of the SR to specify the conditions under which foreign persons can operate onboard company aircraft, the determined conditions permitting a relatively free interpretation of these rules, and flights are paid for which can be convinced whether from the media which provided information about such flights for the benefit of some well-known celebrities as well as on the sites where “flights are offered by the L- 29” including price.

3. CONCLUSIONS / Cause of the air accident

3.1 Findings

- the pilot had valid qualifications for the flight in question,
- the aircraft had valid documentation and did not demonstrate any malfunction before take-off and during the flight,
- the aircraft fulfilled airworthiness conditions before the critical flight according to the available documentation,
- the airplane was not equipped with an onboard flight data recorder, so the flight analysis is based on witness testimony and the documentation provided,
- the OM-JLP aircraft is not permitted to carry out aerial work, yet despite this there was a person present for no reason whose purpose was not clear,
- the presence of a person other than an instructor or an examiner in the training emergency procedures violated the company's operating guidelines,
- the L-29 aircraft was primarily designed to train military pilots and is not suitable for performing some permitted aerial work.

3.2 Causes of air accidents

The cause of the accident was the pilot's improper operation with the repeated take-off.

4. SAFETY RECOMMENDATIONS

Based on the safety investigation of the causes of the air accident

aircraft type **L-29 Delfin**

Registration Mark **OM-JLP**

which occurred on **27.03.2017**

We recommend taking measures for:

The Transport Authority of the SR:

review the conditions for performing aviation and specifying the conditions of the presence of another person onboard.

In Bratislava, 23.08.2017