



TRANSPORTATION SAFETY
BUREAU OF HUNGARY

FINAL REPORT

**2013-151-4P
ACCIDENT**

**Hajdúszoboszló Airfield (LHHO)
13 June 2013**

**Nimbus 3 / 24.5
OE-5310**

The sole objective of the technical investigation is to reveal the causes and circumstances of aviation accidents, incidents or irregularities and to initiate the necessary technical measures and draw up recommendations in order to prevent similar cases in the future. The technical investigation is not intended in any way to determine the liability or fault.

THE STATUS OF THE INVESTIGATION

This investigation was carried out on the basis of

- Regulation (EC) No 996/2010 of the European Parliament and of the Council of 20 October 2010 on the investigation and prevention of accidents and incidents in civil aviation and repealing Directive 94/56/EC,
- Act XCVII of 1995 on aviation,
- Annex 13 identified in the Appendix of Act XLVI. of 2007 on the declaration of the annexes of the Convention on International Civil Aviation signed in Chicago on 7 December 1944,
- Act CLXXXIV of 2005 on the technical investigation of aviation, railway and marine accidents and incidents (hereinafter referred as Kbvt.),
- MET Decree 123/2005 (XII. 29.) on the regulations of the safety investigation of aviation accidents, incidents and irregularities,
- Decree No 70/2015 (XII.1.) of the Minister of National Development on safety investigation of aviation accident and incident, as well as on detailed investigation rules for operators,
- Act CXL of 2004 on the general rules of administrative authority procedure and service unless otherwise specified in Kbvt.,

by the Transportation Safety Bureau of Hungary, applying the above provisions appropriately.

The competence of Transportation Safety Bureau is based on Government Decree 278/2006 (XII. 23.) and, from 1 September 2016, on Government Decree 230/2016 (VII. 29.) on the assignment of a transport safety body and the termination of Transportation Safety Bureau with legal succession.

Under the aforementioned regulations

- The Transportation Safety Bureau shall investigate aviation accidents and serious aviation incidents.
- The Transportation Safety Bureau may investigate aviation incidents and irregularities which - in its judgment - might have resulted in accidents in other circumstances.
- The Transportation Safety Bureau is independent of any person or body whose interest are in conflict with the functions of the investigating body.
- In addition to the aforementioned laws, the Transportation Safety Bureau applies the contents of the ICAO Doc 9760 and Doc 6920 Manual of Aircraft Accident Investigation.
- This Final Report shall not be binding, nor shall an appeal be lodged against it.

No conflict of interest has arisen in connection with the members of the Investigating Committee (IC). Persons participating in the technical investigation shall not act as experts in other procedures concerning the same case.

The IC shall safe keep the data having come to their knowledge in the course of the technical investigation. Furthermore the IC shall not be obliged to make the data – regarding which the owner of the data could have refused the disclosure of the data pursuant to the relevant act – available to other authorities.

This Final Report

was based on the draft final report which prepared by the IC and sent to all affected parties (as stipulated by the relevant regulation) for comments.

This document is the translation of the Hungarian version of the final report. Although efforts have been made to translate it as accurately as possible, discrepancies may occur. In this case, the Hungarian is the authentic, official version.

DESCRIPTION OF THE OCCURENCE

Occurrence class accident
Aircraft registration OE-5310
Aircraft operator private owner
Occurrence location Hajdúszoboszló Airfield (LHHO)
Occurrence date and time 13 June 2013 13:45 LT

Investigation Committee (IC)

The Director General of the TSB assigned the following Investigating Committee (hereinafter referred to as IC) for the investigation of the incident on 14 June 2013:

Investigator-in-Charge (IIC) János Horváth, Investigator
IC member Gergely Maróti, investigator
IC member Miklós Ferenci, investigator
IC member Péter Király, field technician

János Horváth Government Official's employment by TSB was terminated during the investigation and Zsigmond Nagy, Investigator, was assigned by the Director General of TSB as Investigator-in-Charge (IIC) instead of him.

Overview of the investigation process

On 13 June 2013, the IC investigated the scene, viewing the wreck and the winch cable, and interviewed witnesses on several occasions. During the investigation, the IC reviewed in detail the Aircraft Flight Manual of the aircraft type, and took into consideration some final reports of safety investigations into foreign events involving similar aircraft.

Data of the Aircraft

Aircraft category glider / sailplane
Aircraft sub-category N/A
Aircraft type Nimbus 3 / 24.5
Aircraft manufacturer Schempp-Hirth Flugzeugbau GmbH, Germany
Aircraft year of manufacture 1983
Aircraft identification / S/N 39
Landing gear type tailwheel/tailskid, retractable
Damage aircraft destroyed

Data of the Flight

Flight Rules VFR
Purpose of Flight GA/pleasure
Location and Time of the Take Off LHHO, 13:45LT
Crash site location and time LHHO, 13:45LT

Meteorological Data

Visual conditions VMC
Light conditions daylight
Weather Conditions (METAR / TAF) Wind: 020°, 4 m/s, Temperature: 25°C, Air pressure (QNH) 1018 hPa

Crew Data

| | Position | | License category | Medical cert. |
|----|------------------|-------|------------------|---------------|
| 1. | Pilot-In-Command | pilot | foreign | Class 2 |

Personal Injuries

The pilot was seriously injured in the accident.

History of the flight

The winch launch of the glider with registration number OE-5310 was started at Runway 04 of Hajdúszoboszló Airport on 13 June 2013 at 13:45 hours. According to available weather data, the wind direction was 020°, and wind speed was 4 m/s.

After a few metres of roll following the start of winch launch, the glider took off from the ground wings level. However, immediately after taking off, the glider toppled to the right, as a result of which the right wing tip touched the ground. As a consequence, the aircraft deviated from its original take-off direction to the right, while the pilot continued the climb. While climbing, the aircraft leaned more and more to the right.

At a height of about 15 metres, with the winch cable still attached to the aircraft, the aircraft turned upside down due to its continuous right roll around the longitudinal axis, and crashed into the ground with its nose. The aircraft stopped after a few metres of slip.

During the investigation of the scene, the IC found that the flap control lever was in the position “+1”.

ANALISYS

Based on available data, the IC concluded that, after take-off, the aircraft flew at low speed and with high angle of attack. During take-off, the flaps were in the position specified in the Aircraft Flight Manual. However, the wings with increased arc allow a smaller critical angle of attack than the wings with the flaps withdrawn, and the aircraft is more ready to climb with its flaps released.

According to the position of the IC, a slight wind gust or turbulence may also have caused the right wing to drop (**Figure 1**). However, some more factors may also have contributed to the event indirectly.

According to weather data, there was a slight crosswind at the time of the take-off. Given this wind direction, less lift force will be generated at the right wing due to the sheltering effect of the airframe, which results in asymmetric lift force distribution between the two wings (**Figure 2**). As a consequence, a torque arose which moved the left wing upward and the right wing downward. This effect was even increased by the fact that the aircraft turned right of the original take-off direction due to touching the terrain with the wing tip, i.e. the right wing “lagged behind”, while the left wing accelerated. The different speeds of the two wings resulted in different amounts of lift force, which then produced an additional lean torque to the right.

When the aircraft turned away from the intended direction, the winch cable formed an angle with the longitudinal axis that was identical with the angle of the turn, which resulted in an additional lean torque (**Figure 1**).

The winch cable was released as a consequence of the effect of the forces arising at the impact. Neither the winch cable nor the weak link broke during the event.

The pilot of the glider had appropriate licence and rating for the given flight task at the time of the event. The glider was fit for flight, and had a valid certificate of airworthiness. No information was obtained during the technical investigation relating to any malfunction of any structure or system of the aircraft prior to the event which would have contributed to the event.

The event took place during daytime, in good visibility and meteorological circumstances, during a VFR flight.

FINDINGS

Event causes

During the technical investigation, the IC concluded that the cause of the incident was that

- The pilot started climbing with a speed lower than required.

SAFETY RECOMMENDATION

The TSB IC did not find such circumstances which would justify the issuance of Safety Recommendations.

Budapest, 06th January 2017

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Zsigmond Nagy
Investigator-in-Charge (IIC)

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Gergely Maróti
IC member

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Miklós Ferenci
IC member

.....
Péter Király
IC member

ATTACHMENTS

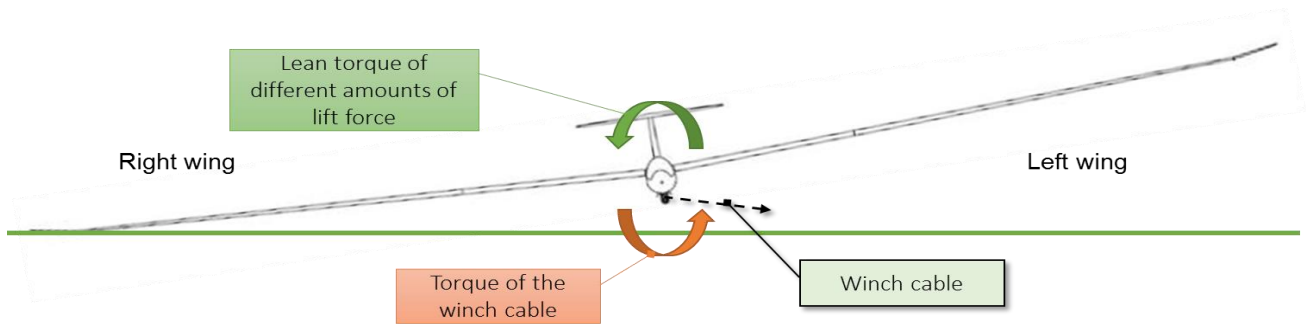


Figure 1

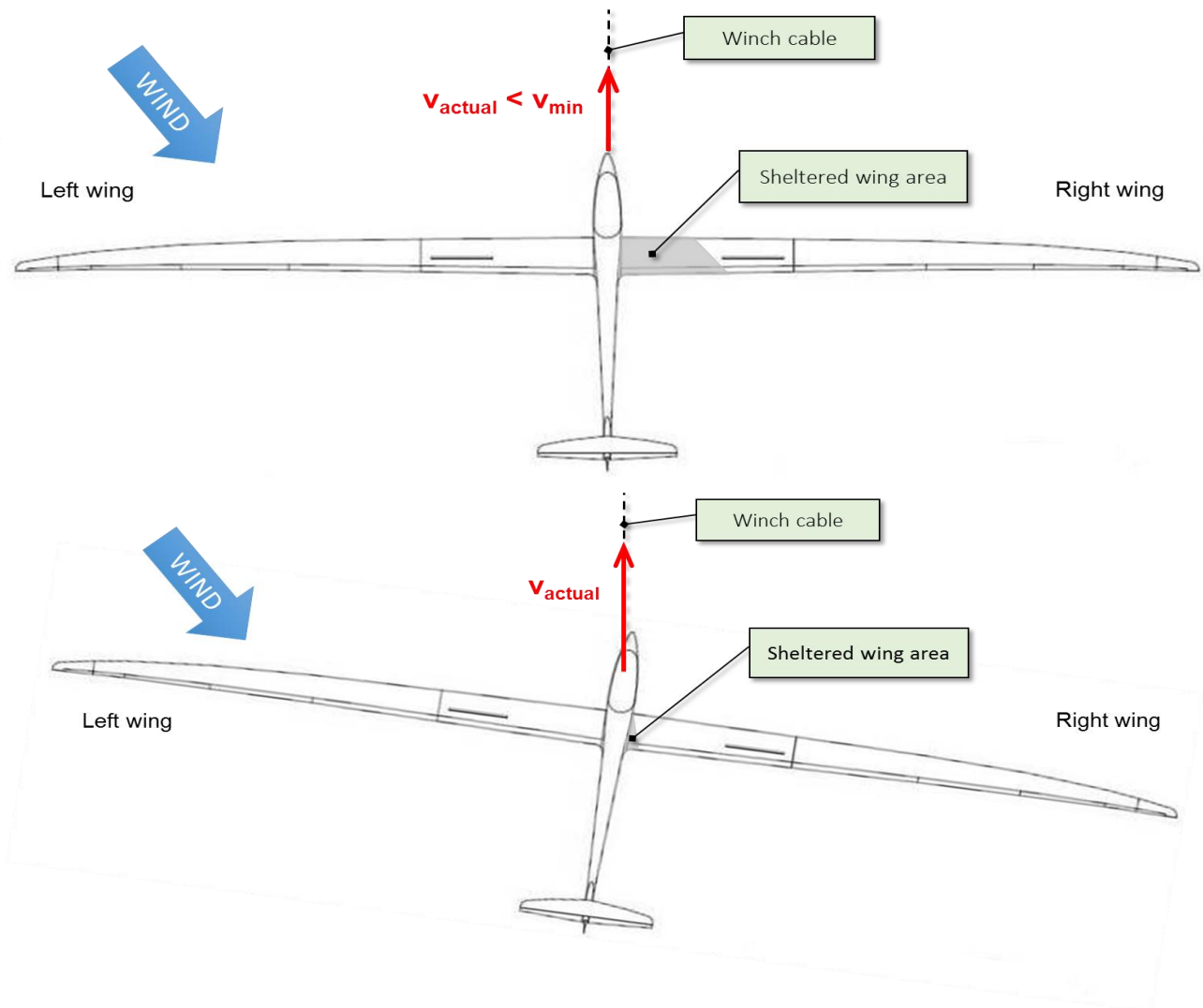


Figure 2 (upper: before lift-off, lower: the moment after the right wing touched the ground)