



KÖZLEKEDÉSBIZTONSÁGI
SZERVEZET

**FINAL REPORT
2010-171-4P
AVIATION ACCIDENT**

**Balatonkeresztúr (outer area)
10 July 2010**

**TL-2000 Sting Carbon (Ultralight)
I-9603**

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 make recommendations in order to prevent similar cases in the future. It is not the purpose of this activity to investigate or apportion blame or liability.

INTRODUCTION

This present investigation was carried out on the basis of

- Regulation (EU) 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 to ICAO Convention on Civil Aviation, put in force in Hungary by MTCW (Ministry of Transport, Communications and Water) Decree 20/1997. (X. 21.) on the declaration of the annexes of the Convention on International Civil Aviation signed in Chicago on 7th December 1944,
- Act CLXXXIV of 2005 on the technical investigation of aviation, railway and marine accidents and incidents (hereinafter referred to as Kbt.),
- MET Decree 123/2005 (XII. 29.) on the regulations of the technical investigation of aviation accidents, incidents and irregularities.

In absence of other related regulation of the Kbt., the Transportation Safety Bureau of Hungary carried out the investigation in accordance with Act CXL of 2004 on the general rules of administrative authority procedure and service.

The Kbt. and the MET Decree 123/2005 (XII. 29.) jointly serve the compliance with Directive 2003/42/EC of the European Parliament and of the Council of 13 June 2003 on occurrence reporting in civil aviation, with the exception of its Annex I and Annex II.

The competence of the Transportation Safety Bureau of Hungary is based on Government Decree 278/2006 (XII. 23.).

Under the aforementioned regulations

- The Transportation Safety Bureau of Hungary shall investigate aviation accidents and serious aviation incidents.
- The Transportation Safety Bureau of Hungary may investigate aviation incidents and irregularities which - in its judgment - would have resulted in accidents in other circumstances.
- The technical investigation is independent of any administrative, infringement or criminal procedures.
- In addition to the aforementioned laws, the ICAO DOC 6920 Manual of Aircraft Accident Investigation is applicable.
- This present Final Report shall not be binding, nor shall an appeal be lodged against it.

Persons participating in the technical investigation did not act as experts in other procedures concerning the same case and shall not do so in the future.

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.

DEFINITIONS AND ABBREVIATIONS

EU	European Union
HNAS	Hungarian National Ambulance Service (Országos Mentőszolgálat)
IC	Investigating Committee
ICAO	International Civil Aviation Organization
Kbvt.	Act CLXXXIV of 2005 on the technical investigation of aviation, railway and marine accidents and incidents
MET	Ministry of Economy and Transport (Gazdasági és Közlekedési Minisztérium)
MTCW	Ministry of Transport, Communications and Water (Közlekedési, Hírközlési és Vízügyi Minisztérium, KHVM)
NTA DAT	National Transport Authority, Directorate for Air Transport
QNH	Atmospheric pressure value, when set, the altimeter of the aircraft indicates the height above sea level
TSB	Transportation Safety Bureau
VFR	Visual Flight Rules
VMC	Visual Meteorological Conditions

BRIEF DESCRIPTION OF THE OCCURENCE

Occurrence category		Serious aviation incident
Aircraft	Class	Fixed wing aircraft
	Manufacturer	TL ULTRALIGHT Company
	Type	TL-2000 Sting Carbon
	Registration	I-9603
	Operator	Aero Club d' Italia
Occurrence	Date and time in local time	10 July 2010, 18:30
	Location	Balatonkeresztúr (outer area)

Reports and notifications

The occurrence was reported to the TSB officer on duty at 18:47, on 10th July 2010 by the TSB Head of Communications.

THE TSB OFFICER ON DUTY

- informed the NTA DAT officer on duty at 18:56, 10 July 2010,
- informed the Italian aviation authority at 20:17, 10 July 2010.

Investigating committee

On 10th July 2010, the Director-General of TSB assigned the following investigating committee (hereinafter referred to as IC) to the investigation of the case:

Investigator-in-Charge	Márk KOVÁCS	investigator
Member	Ottó BÍRÓ	investigator

During the investigation Mr. Kovacs and Mr. Biro left the TSB therefore the Director-General assigned Mr. Laszlo Grez as IIC and accident investigator Mr. Endre Szilagyi as IC member.

Overview of the investigation process

The IC arrived at the scene of occurrence at 21:05. After identifying themselves, the site survey was carried out by the member of the IC in parallel with the colleagues from the Police Department of Somogy County and from the M7 Highway Police. During the survey the position of the damaged aircraft, the extent of damage and the available on-board documents were recorded.

The IC interviewed the pilot and the passenger of the aircraft in the hospital. The IC also took photographs and interviewed witnesses.

The damaged aircraft was confiscated by the police for further investigations.

The interested parties had no substantial reflections on the draft therefore TSB HU issues the report without changes.

A short summary of the occurrence

The two-seat ultralight aircraft in private ownership, operated by the pilot was used for hobby flying. The flight was carried out in daytime, in good meteorological conditions, in the afternoon.

According to the pilot, the aircraft got into a spin while turning into the landing direction when the speed was reduced. As a consequence, the aircraft crashed into the ground.

The pilot and the passenger got seriously injured, they were transported to the hospital by air ambulance.

The aircraft was destroyed.

The IC does not suggest to issue a safety recommendation in connection with the case.

1. FACTUAL INFORMATION

1.1 History of the flight

The IC reconstructed the occurrence as based on the information from the pilot, the passenger, eyewitnesses and from other sources.

The pilot and the passenger arrived at 11.00, 10 July 2010 with the TL-2000 Sting Carbon ultralight aircraft registered I-9603 at Balatonkeresztúr temporary take-off and landing site for a two day holiday.

Having fuelled the aircraft, the pilot and the passenger of the ultralight aircraft started a hobby flight around 17:00-17:30.

According to the pilot and the passenger, until the approach the flight continued as planned. Returning from their trip, the pilot made the final approach in ideal meteorological conditions (VMC), conforming to the landing direction of 315 degrees.

Before turning to the runway heading, he carried out a 360 degree left turn by a bank angle of approx. 30-40 degrees, in order not to disturb another aircraft on the glide slope, preparing to land. After the full turn, at 60-80 m, the pilot reduced the power of the engine to idle. As a consequence the aircraft slowed down, stalled and got into a spin.

After the stall, the pilot increased the power of the engine to the maximum, but due to the inefficiency of the control surfaces and the low altitude he could not prevent the aircraft from crashing down. The aircraft was falling in a steep spiral line.

The uncontrolled manoeuvre lasted until the fence of the M7 highway was reached, where the banked aircraft was spun by colliding with the fence, and then impacted the peaty ground and skidded with its tail forward, being shattered and slowing down for 18 m, when it came to a halt. The wreckage can be seen on fig 1.

1.2 Personal injuries

Injuries	Crew	Passengers	Other
Fatal	0	0	0
Serious	1	1	0
Minor	0	0	0
None	0	0	

1.3 Damage to aircraft



Fig. 1. The wreckage

The aircraft was completely destroyed in the accident.

1.4 Other damage

The IC had not received any information on further damage by the completion of the investigation.

1.5 Information on the personnel

1.5.1 Data of the pilot of the aircraft:

Age, citizenship, gender		41 year old, Italian, male
Licence data	Professional valid until	21 July 2010
	Medical valid until	Medical class 2 valid without limitations until 26 July 2011
	Ratings	PPL/A; UL A2
Hours flown	Total	1000 hours
	In the previous 30 days	15 hours
	In the previous 7 days	06 hours
	In the previous 24 hours	02 hours 30 minutes

The hours flown were recorded as based on what was stated by the pilot. He could not present a flight log containing the data stated.

1.6 Aircraft data

Class	ultralight aircraft
Manufacturer	TL Ultralight, Czech Republic
Type	TL-2000 Sting Carbon
Year of manufacturing, serial number	1995, 11554
Registration	I-9603
State of registry	Italy
Owner, operator	Private person

Fuel type used: reciprocating fuel.

The aircraft's further parameters had no effect on the course of the events therefore they are not to be detailed.

1.7 Meteorological data

According to the log of the airfield manager, at the time of the accident there was no wind and the visibility was 20 km. There was no noteworthy meteorological phenomenon, the weather was in all respects appropriate for VFR flying.

The meteorological conditions had no effect on the course of events.

1.8 Aids to navigation

The navigational instruments had no effect on the course of events therefore their analysis was not required.

1.9 Communication

Communications instruments had no effect on the course of events therefore their analysis was not required.

1.10 Aerodrome information

Temporary take-off and landing site, 95 degrees and 2 km from Balatonkeresztúr
Geographical coordinates: N46°41'49" E017°23'40". Size of the runway 800X30 m, in direction 315/135. Altitude above sea level: 110 m. Runway surface: grass. The operator is the owner of the field.

The temporary take-off and landing site had an operation licence valid at the time of the accident. Type of authorized traffic: VFR.

Further parameters of the temporary take-off and landing site had no effect on the course of events therefore their analysis was not required.

1.11 Flight recorders

The aircraft had no flight recorder, it is not required by law or regulation for the aircraft type and the mission.

1.12 Wreckage and impact information

The IC finds it probable that all damage and shattering occurred due to the impact. There are no circumstances indicating that any part or structural element of the aircraft would have failed before the impact. This is confirmed by the statement of the pilot.

The traces left on the ground by the impact and also the position of the wreckage implies that first the aircraft hit the wire fence with its left wing, then after having spun and the left main landing gear having been torn off, the body of the aircraft

impacted the ground with its nose part, in an angle of approx. 25-30 degrees. On the soft, peaty ground it skidded with its tail forward, being shattered and slowing down for 18 m, when it came to a halt 600 m from the runway. The resulting wreckage was seized by the competent police authorities for investigation.

1.13 Information from the medical investigations

The pilot of the aircraft had a valid medical certificate before the start of the flight. There are no data available about the psychophysical state of the pilot before and during the flight.

There is no further information available on the injured to the IC.

Medical forensics investigation

The results of the blood alcohol test taken after the accident were negative.

There was no proof indicating that physiological factors or other hindrances affected the cockpit crew.

1.14 Fire

There was no fire.

1.15 Chances of survival

The energy of the impact by relatively slow speed was absorbed by the composite structure of the aircraft and the soft peaty ground, thus the pilot and the passenger of the aircraft endured serious but not life threatening injuries.

The aircraft seats and the connecting fastening devices were operable.

The pilot and the passenger were freed from the seriously damaged aircraft by eyewitnesses.

The ambulance arrived in time and professional medical help was provided without delay.

1.16 Tests and research

Tests and researches were not initiated by the IC.

1.17 Organisational and management information

The characteristics of the organizations concerned did not contribute to the incident, therefore their analysis was not required.

1.18 Additional information

The aircraft was not equipped with a warning system that would inform the pilot in case the aircraft is operated in near-stall conditions.

The crew told the IC they had the Operating Manual on board, however, it could not be found during the site survey.

The IC was not informed about any relevant additional information and it does not intend to publish additional information other than the factual information above.

1.19 Useful or effective investigation techniques

The investigation did not require techniques differing from the traditional approach.

2. ANALYSIS

The weather and other conditions were appropriate on the day of the occurrence for the execution of the hobby flight.

Arriving at the temporary take-off and landing site at Balatonkeresztúr, the pilot did not notice anything unusual in the behaviour of the aircraft.

The operability of the aircraft during the flight has been confirmed in a statement by the pilot. There is no proof indicating that the structure of the aircraft or any system thereof failed before the occurrence.

The pilot told the IC that the interruption of the approach (carrying out the 360 degree turn, as seen on fig. 2) was necessary to increase the distance between his aircraft and a landing aircraft. The eyewitnesses, however, were united in their view that there was no aircraft on the glide slope.

In the opinion of the IC the pilot conducted the last turn before final with a relatively low airspeed and reduced engine power to idle without pushing down the nose of the aircraft. As a result the inner wing stalled and the aircraft went into a tailspin.

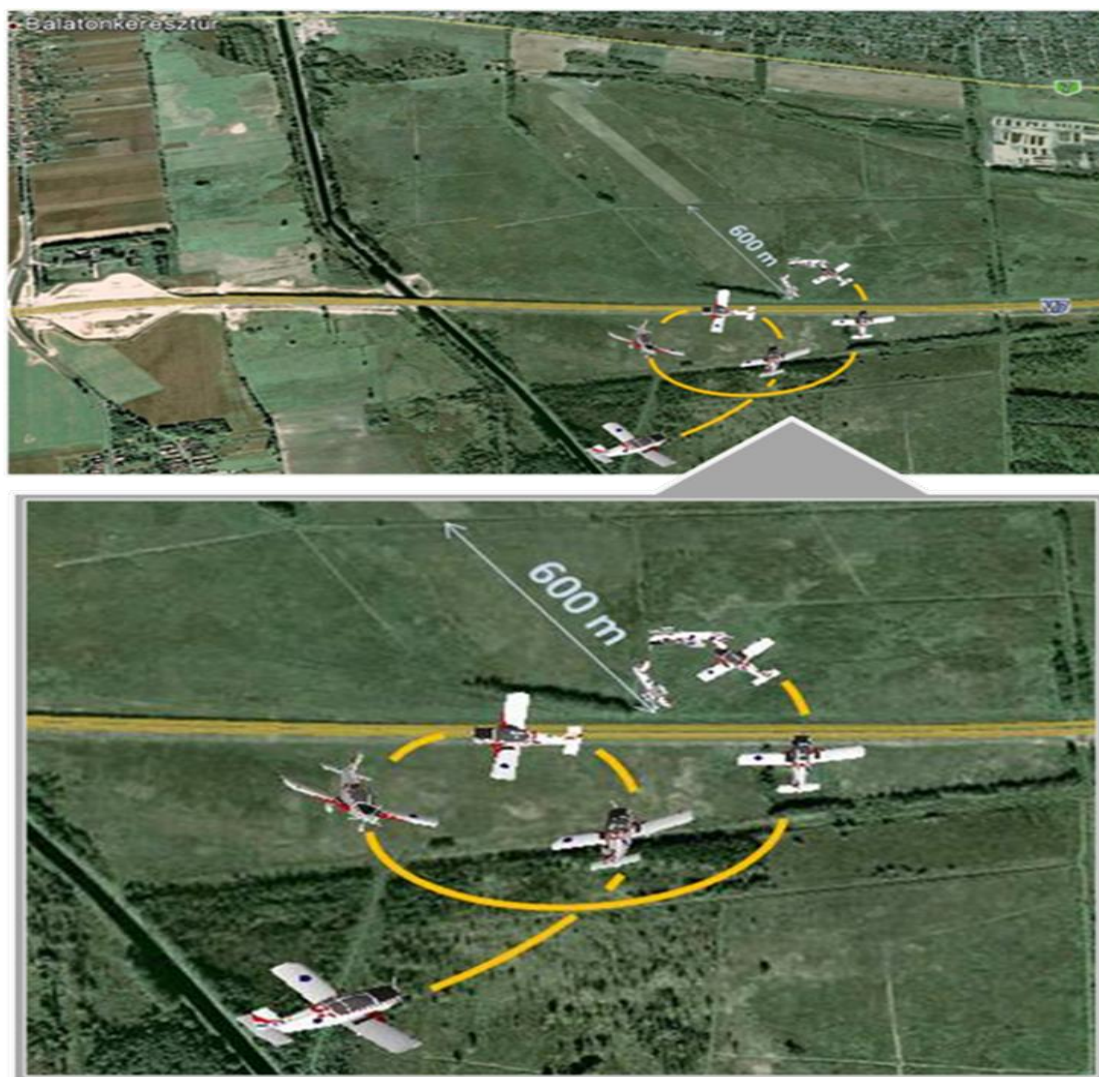


Fig. 2. The flight path of the aircraft prior to the occurrence

3. CONCLUSIONS

3.1 Factual findings

The pilot had the necessary authorizations, certificates and adequate experience required for the execution of the given flight at the time of the occurrence.

The aircraft was airworthy. It had a valid airworthiness certificate. Its on-board equipment corresponded to its category.

Due to lack of the maintenance log, the IC could not check the level of maintenance.

The aircraft was filled up with fuel of appropriate quality and quantity for the flight. There is no proof indicating that the structure of the aircraft or any system thereof failed before the accident, and a following technical malfunction would have caused or contributed to the accident.

The flight took place in good visibility and in daylight.

3.2 Causes of the occurrence

The technical investigation of the IC concluded that the incident happened due to the following reasons:

- The decrease of the flight speed below the minimum.

4. SAFETY RECOMMENDATIONS

Similar occurrences can be prevented by adhering to the existing rules and regulations, therefore issuing a safety recommendation is not necessary.

Budapest, 03 June 2014

Laszlo GREZ
Investigator-in-Charge

Endre SZILAGYI
Member of the IC

NOTE:

The present 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.