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COMISIÓN DE
INVESTIGACIÓN
DE **A**CCIDENTES
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AVIACIÓN **C**IVIL

Report A-011/2016

Accident involving a
SCHLEICHER ASK 23 aircraft,
registration G-DEVY,
in Meranges (Girona, Spain),
on 14 April 2016



GOBIERNO
DE ESPAÑA

MINISTERIO
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SUBSECRETARÍA

COMISIÓN DE INVESTIGACIÓN
DE ACCIDENTES E INCIDENTES
DE AVIACIÓN CIVIL

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Foreword

This report is a technical document that reflects the point of view of the Civil Aviation Accident and Incident Investigation Commission (CIAIAC) regarding the circumstances of the accident object of the investigation, and its probable causes and consequences.

In accordance with the provisions in Article 5.4.1 of Annex 13 of the International Civil Aviation Convention; and with articles 5.5 of Regulation (UE) n.º 996/2010, of the European Parliament and the Council, of 20 October 2010; Article 15 of Law 21/2003 on Air Safety and articles 1, 4 and 21.2 of Regulation 389/1998, this investigation is exclusively of a technical nature, and its objective is the prevention of future civil aviation accidents and incidents by issuing, if necessary, safety recommendations to prevent from their reoccurrence. The investigation is not pointed to establish blame or liability whatsoever, and it's not prejudging the possible decision taken by the judicial authorities. Therefore, and according to above norms and regulations, the investigation was carried out using procedures not necessarily subject to the guarantees and rights usually used for the evidences in a judicial process.

Consequently, any use of this report for purposes other than that of preventing future accidents may lead to erroneous conclusions or interpretations.

This report was originally issued in Spanish. This English translation is provided for information purposes only.

Table of contents

Abbreviations	vi
Synopsis	vii
1. Factual information	1
1.1. History of the flight	1
1.2. Injuries to persons	1
1.3. Damage to aircraft	2
1.4. Other damage	2
1.5. Personnel information	2
1.6. Aircraft information	2
1.7. Meteorological information	3
1.8. Aids to navigation	3
1.9. Communications	3
1.10. Aerodrome information	4
1.11. Flight recorders	4
1.12. Wreckage and impact information	6
1.13. Medical and pathological information	8
1.14. Fire	8
1.15. Survival aspects	8
1.16. Tests and research	8
1.17. Organizational and management information	9
1.18. Additional information	9
1.19. Useful or effective investigation techniques	9
2. Analysis	11
3. Conclusions	13
3.1. Findings	13
3.2. Causes/Contributing factors	13
4. Safety recommendations	15

Abbreviations

00° 00' 00"	Sexagesimal degrees, minutes and seconds
00 °C	Degrees centigrade
CAA	Civil Aviation Authority of the United kingdom
E	East
EASA	European Aviation Safety Agency
FLARM	Fleet tracking device
ft	Feet
h	Hour(s)
hPa	Hectopascal(s)
kg	Kilogram(s)
km	Kilometer(s)
km/h	Kilometers per hour
kt	Knot(s)
LT	Local time
m	Meter(s)
N	North
N/A	Not affected
NOTAM	Notice distributed via telecommunications containing information on the establishment, condition or modification of any aviation facility, service, procedure or hazard, knowledge of which is essential for personnel in charge of flight operations (Notice to Airmen)
NW	Northwest
QFE	Altimeter sub-scale setting to obtain zero when on the ground ("Atmospheric Pressure (Q) at Airfield Elevation")
QNH	Altimeter sub-scale setting to obtain elevation when on the ground
SE	Southeast
SPL	Sailplane pilot license
SW	Southwest
W	West

Synopsis

Owner and operator:	Private
Aircraft:	SCHLEICHER ASK 23
Date and time of accident:	Thursday, 14 April 2016; at 16:40 LT ¹
Site of accident:	Meranges (Girona)
Persons onboard:	1, crewmember, seriously injured
Type of flight:	General aviation – Private
Phase of flight:	Landing – Off-field landing
Date of approval:	2 November 2016

Summary of accident

On Thursday, 14 April 2016, a SCHLEICHER ASK 23 aircraft, registration G-DEVY, took off from the La Cerdanya aerodrome (Girona) to make a local flight.

The data provided by the FLARM system indicated that the pilot flew toward the mountainous area north of the La Cerdanya aerodrome and made an off-field landing after nine minutes. During the landing the aircraft impacted several rocks.

The pilot was seriously injured and the aircraft was heavily damaged.

The likely cause of the accident was the off-field landing, which resulted in the glider striking the rocks that were in the area.

¹ All times in this report are local unless otherwise specified.

1. FACTUAL INFORMATION

1.1. History of the flight

On Thursday, 14 April 2016, a SCHLEICHER ASK 23 aircraft, registration G-DEVY, took off from the La Cerdanya aerodrome (Girona) to make a local flight. The sole occupant of the aircraft was the pilot.

The aircraft impacted the terrain in the municipality of Meranges, some 200 m away from the Malniu shelter.

After the accident, the pilot, a British national, was evacuated to the Sabadell Hospital, where he remained until he was transferred to a medical facility in the United Kingdom. Investigators later spoke with the pilot, who stated being unable to recall anything from the day of the event.



Figure 1. Aircraft after the impact

There were no eyewitnesses to the accident, meaning the only data available on the flight parameters were those collected by the FLARM system.

The pilot was seriously injured by the impact and the aircraft sustained heavy damage.

1.2. Injuries to persons

Injuries	Crew	Passengers	Total in the aircraft	Others
Fatal				
Serious	1		1	
Minor				Not applicable
None				Not applicable
TOTAL	1		1	

1.3. Damage to aircraft

The aircraft was heavily damaged.

1.4. Other damage

There was no additional damage.

1.5. Personnel information

The pilot, a 49-year old British national, had been a London Gliding Association member for approximately five years.

In the United Kingdom there is an exemption to EASA regulations that allows glider pilots to fly with a national authorization or with an EASA sailplane pilot license (SPL) until April 2018. The national authorization features a series of phases that the pilot must complete before attaining the level necessary to have this authorization equated with the EASA's sailplane pilot license. The pilot's qualifications and experience were:

The pilot fulfilled all the requirements to obtain the EASA sailplane pilot license but had not completed the relevant paperwork needed to be awarded said license.

According to the law in the United Kingdom, the medical requirements to pilot a glider are the same as for a driver's license. The pilot's driver license expires on 10 December 2019.

He had approximately 100 h of flight time on gliders.

In the days before the accident, the pilot made two solo flights and one with an instructor in the same area as the accident.

1.6. Aircraft information

The SCHLEICHER ASK 23 aircraft was built in 1984 with serial number 23008. It had a maximum takeoff weight of 350 kg.

The aircraft had a certificate of airworthiness and a registration certificate, both issued by the CAA². The certificate of airworthiness was valid until 10 February 2017.

² Civil Aviation Authority of the United Kingdom.

The last check of the aircraft was an annual inspection conducted on 27 January 2016, when the aircraft had 6,810 h of flight time. This inspection was satisfactory.

At the time of the accident the aircraft had 6,830 flight hours.

1.7. Meteorological information

Spain's National Weather Agency does not have data for Meranges, but the information from the weather station in La Seu d'Urgell, some 20 km west, along with satellite and radar images and adverse phenomena warnings, indicate that the most likely weather conditions at the accident site at the time of the event were as follows:

- Wind:
 - Direction: from the southwest, from about 220°.
 - Speed: light, about 10 km/h.
 - Maximum gusts: to around 30 km/h.
- Visibility: good on the surface.
- Clouds: none.
- Temperature: around 22 °C.
- QNH: 1,012 hPa.
- Relative humidity: around 30%.
- There was no precipitation and no adverse phenomena warnings were in effect.

At the time of the accident there were other gliders flying in the area. Their pilots reported that weather conditions were turbulent.

1.8. Aids to navigation

Not applicable. The flight was carried out under visual flight rules.

1.9. Communications

The pilot did not send any messages on the La Cerdanya aerodrome frequency prior to impact.

1.10. Aerodrome information

The La Cerdanya aerodrome is located 2.3 km away from the town of Alp (Girona). Its runway is in a 07/25 orientation and measures 1,150 × 23 m. The asphalt runway is at an elevation of 3,609 ft.

The arrival procedures at the aerodrome specify:

- Aircraft inbound to the La Cerdanya aerodrome must report passing reporting points W, SW, SE or E, marked on the aerodrome chart, stating their altitude and intentions. Aircraft must fly over the airfield at 5,100 ft QNH (1,491 ft QFE) and then join the start of the downwind leg on the corresponding South circuit.
- If a NOTAM warns of parachuting or acrobatic activity over the aerodrome, aircraft are to join the South circuit without flying over the aerodrome.
- The circuit will be made at 4,600 ft QNH (991 ft QFE), avoiding flying over populated areas at all times.
- If the wind is calm, the preferred runway for landings is 07.

1.11. Flight recorders

The sailplane had a flight tracking system called FLARM³ installed. This device records the entire flight route on a file that can be downloaded after the flight and that can provide information on the most relevant flight parameters.

This file yielded the route shown in Figure 2:

At the top of the figure is the point where the system first started to record data, this being the La Cerdanya aerodrome, and the last point recorded by the system is at the bottom.

The green point indicates the instant when the glider released the towrope. This point is about 20 seconds from impact

According to the FLARM system, the aircraft was airborne for about nine minutes.

³ The name FLARM is a combination of the words Flight and Alarm.

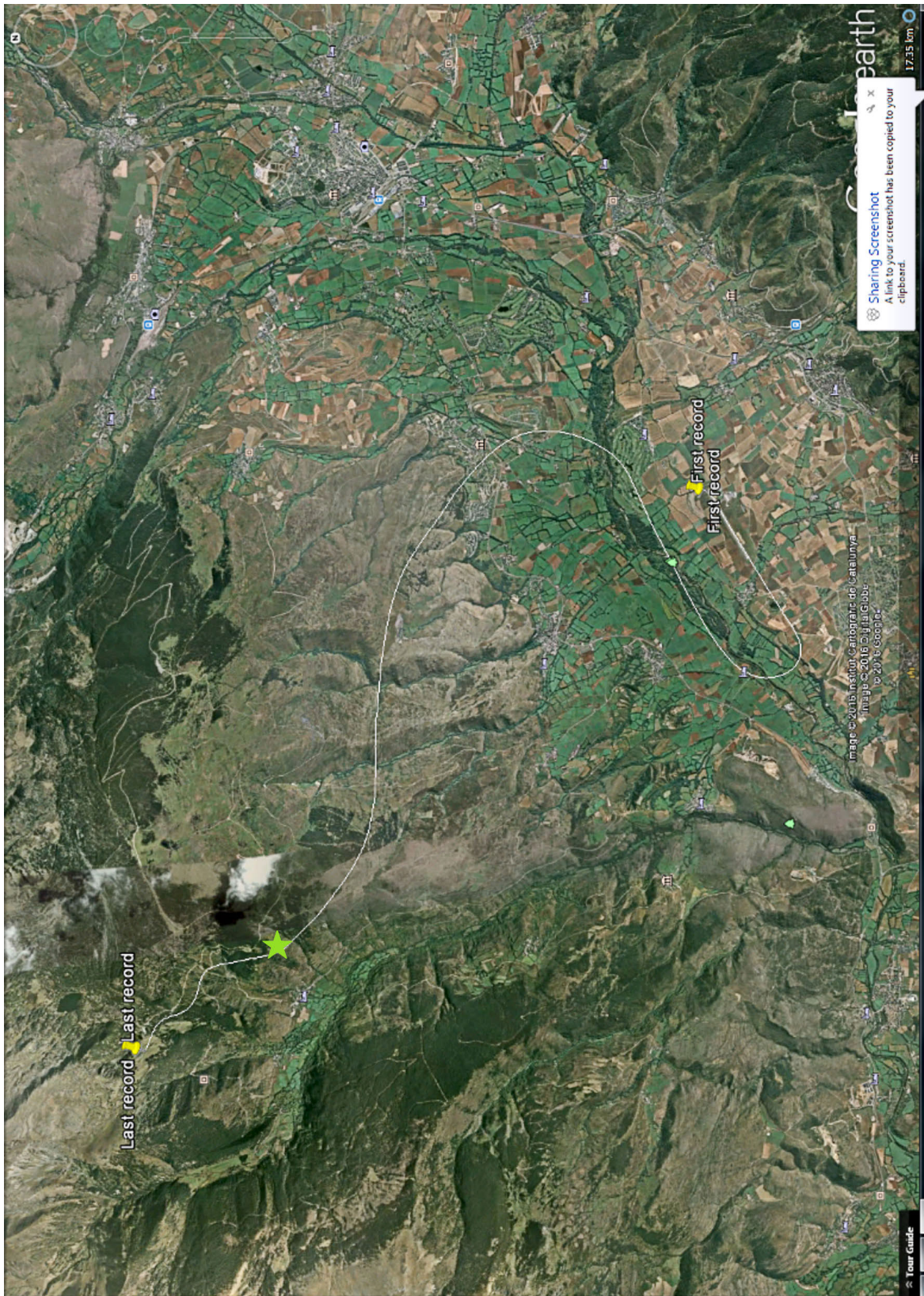


Figure 2. Aircraft's route

1.12. Wreckage and impact information

The glider impacted some 200 m away from the Malniu shelter, at coordinates 42°27'54.30" N 1°46'51.85" E and at an elevation of 2,140 m.

The aircraft initially impacted the ground (shown with a red star in Figure 4) when the right side of the nose struck a rock weighing some 70 kg. This impact moved the rock from its location and left blue marks on it, matching the paint on the nose of the aircraft.

After this impact, the aircraft began to move sideways, as a result of which its left wing struck another rock. During this time the nose wheel on the landing gear impacted another stone, which penetrated the cockpit. The main gear wheel slid on the ground until it struck a rock, where it came to a stop.

The left wing had marks on the outboard third of the leading edge, and in the same area on the lower wing surface.



Figure 3. Crash site

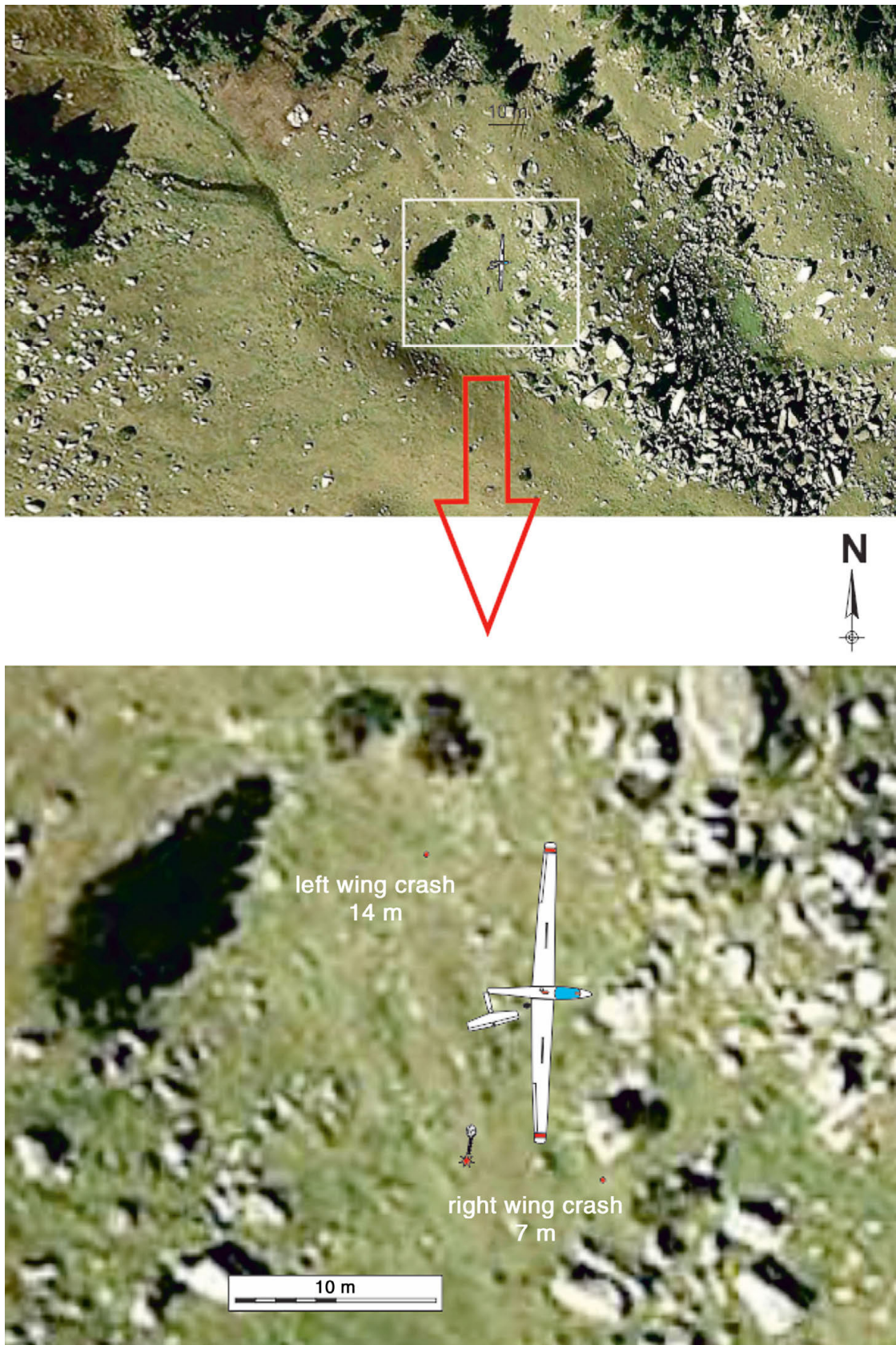


Figure 4. Aircraft wreckage

The right wing also had marks on its lower surface and it was shifted forward with respect to the airframe in the area of the wing root. There was a fracture that spanned from the leading edge to the middle of the wing, some 15 centimeters away from the root.

Both air brakes were exposed, but not completely deployed.

The cockpit floor had given way, shifting inward. The trim lever was in a nose up position and the air brake lever was in its forward-most position, without engaging the nose wheel brake.

The aft part of the fuselage broke symmetrically about the longitudinal axis of the aircraft. As a result, the tail fell forward on the right side of the aircraft.

On the instrument panel, the airspeed indicator read approximately 100 kt, the altimeter 7,600 ft with QNH of 1,015 and the vertical speed indicator read zero.

1.13. Medical and pathological information

After the accident, the pilot was evacuated from the area to the Sabadell hospital.

His right elbow was fractured and there was a double fracture in his pelvis. The internal injuries caused by the accident required him to be sedated and connected to a ventilator. The pilot stayed at the hospital in Sabadell for almost two months before being transferred to a medical center in the United Kingdom.

1.14. Fire

Not applicable.

1.15. Survival aspects

Not applicable.

1.16. Tests and research

Once the pilot recovered from his injuries, he was asked about the event, but he stated that he had no memory of the day of the accident.

1.17. Organizational and management information

Not applicable.

1.18. Additional information

Not applicable.

1.19. Useful or effective investigation techniques

Not applicable.

2. ANALYSIS

In the days before the accident, the pilot had flown both by himself and with an instructor, so he knew the area and had previously demonstrated his knowledge of the ridge lift technique.

The weather conditions were not limiting for this type of flight.

The pilot was unable to provide a statement to investigators since he did not have any memory of the accident. As a result, the only information available during the investigation was the data provided by the FLARM system installed in the aircraft. There were also no eyewitnesses to the event.

The flight was relatively short, lasting only about nine minutes. An analysis of the data provided by the FLARM system showed that the pilot did not make the so-called figure of 8 maneuvers used to gain altitude.

As Figure 2 shows, the pilot took off and released the towrope without any problems. From that point he flew north toward the mountains to practice the ridge lift technique, but he made practically no turns. This means that the aircraft likely lost energy and the pilot was forced to make an off-field landing.

It is probable that the pilot tried to reach a field that was beyond this rocky area (see Figure 3). This area is much lower and has practically no obstacles, which would have made it suitable for an off-field landing. The aircraft may not have had sufficient energy to remain airborne and reach this area, and as a result, it ended up impacting the rocks.

3. CONCLUSIONS

3.1. Findings

- The aircraft had all of the documentation required to make the flight.
- The pilot met all the requirements to be issued an EASA sailplane license, but he had not filed the paperwork necessary to obtain said license.
- The weather conditions were not limiting for the type of flight.
- The pilot had no memory of the events involving the accident.
- There were no eyewitnesses to the accident.
- According to the FLARM records, the pilot made practically no turns during the flight.

3.2. Causes/Contributing factors

The accident was the result of the off-field landing by the glider, which caused it to impact some rocks that were in the area.

4. SAFETY RECOMMENDATIONS

None.

