

# Technical report

## A-023/2021

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Accident on 02 June 2021, involving a SCHLEICHER ASK 21 aircraft, registration EC-JEQ, in the municipality of Sabiñánigo (Huesca).

Please note that this report is not presented in its final layout and therefore it could include minor errors or need type corrections, but not related to its content. The final layout with its NIPO included (Identification Number for Official Publications) will substitute the present report when available.

## Notice

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 and its 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 5.6 of Regulation (UE) n° 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 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.

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## Abbreviations

%	Per cent
°C	Degrees Celsius
AEMET	State Meteorological Agency
AESA	National Aviation Safety Agency
GPS	Global positioning system
h	Hours
kg	Kilograms
km	Kilometres
LECI	Sta. Cilia de Jaca Aerodrome
LT	Local time
m	Metres
min	Minutes
mm	Millimetres
m/s	Metres per second
SAIL	Glider/Motorised sailplane
SPL	Sailplane pilot license
TMG	Touring motor glider rating
UTC	Coordinated universal time
VFR	Visual flight rules

## Synopsis

<b>Operator:</b>	Private
<b>Aircraft:</b>	SCHLEICHER ASK 21, EC-JEQ
<b>Date and time of accident:</b>	02/June/2021, 17:00 LT <sup>1</sup>
<b>Site of accident:</b>	Municipality of Sabiñánigo (Huesca)
<b>Persons on board:</b>	1 pilot, unharmed, and 1 passenger, seriously injured
<b>Type of flight:</b>	General aviation - Others- Competition
<b>Flight rules:</b>	VFR
<b>Phase of flight:</b>	Approach – Emergency descent
<b>Date of approval:</b>	27 April 2022

### Summary of incident:

On 02 June 2021, the SCHLEICHER ASK 21 glider, registration EC-JEQ, suffered an accident while executing an emergency off-field landing south of Senegüé in the municipality of Sabiñánigo (Huesca).

The aircraft had taken off with a pilot and passenger on board to perform a round-trip competition flight as part of the Pyrenees Cup.

During the flight, the pilot realised they might not have sufficient margin to make it back to the aerodrome and decided to make an emergency landing in a field planted with a cereal crop. However, when it made contact with the grain, the aircraft pivoted on its right wing and came to an abrupt halt.

The pilot was unhurt, but the passenger was seriously injured. The aircraft did not sustain any damage.

The investigation determined that the cause of the accident was the performance of an emergency off-field landing in a field planted with a tall cereal crop.

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<sup>1</sup> Unless specified otherwise, all times referenced in this report are local. On the day of the incident, local time was equivalent to UTC+2 hours.

## **1. FACTUAL INFORMATION**

### **1.1. Summary of the incident**

On Wednesday, 2 June 2021, the SCHLEICHER ASK 21 glider, registration EC-JEQ, took off from Santa Cilia Aerodrome to perform a competition flight as part of the Pyrenees Cup.

The aircraft took off at 13:03 h and remained in flight until 17:08 h, with a pilot and passenger on board.

According to the pilot, they attempted to gain altitude after take-off, initially heading north and then east until they reached the "Añisclo canyon", located some 68 km from the point of departure. After passing the Cotefablo pass on their return, they couldn't find the air currents they needed to gain altitude and complete the route specified by the organisers.

While flying over Sabiñánigo, where an area had been earmarked at the start of the championship as suitable for landing, the pilot opted to carry out an off-field landing because he did not think they could make it to Santa Cilia Aerodrome.

The aircraft made an extended and stable final approach with no sudden losses of altitude, but on hitting the cereal crop, it decelerated abruptly, turned sharply to the right and immediately stopped.

The pilot was unhurt, but the passenger was seriously injured. The aircraft did not sustain any damage.

## 1.2. Injuries to persons

<i>Injuries</i>	<i>Crew</i>	<i>Passengers</i>	<i>Total in the aircraft</i>	<i>Others</i>
Fatalities				
Serious		1	1	
Minor				
Unharmmed	1		1	
TOTAL	1	1	2	

## 1.3. Damage to the aircraft

The aircraft did not sustain any damage.

## 1.4. Other damage

The landing and subsequent recovery of the aircraft resulted in damage to the cereal crop.

## 1.5. Information about the personnel

### 1.5.1. Information about the crew of aircraft

The 55-year-old pilot had a sailplane license (SPL) renewed by Spain's National Aviation Safety Agency (AESA) on 27 April 2021, with the glider/sailplane (SAIL) (aero-tow and winch) rating and the touring motor glider (TMG) rating, as well as being an instructor for both categories.

He also had a class 2 medical certificate, valid until 13 December 2021.

His flight experience was 4,962 h: 96 h as pilot-in-command of a fixed-engine motor glider and 4,866 h as pilot-in-command of a non-powered glider, 300 of which were in type.

## 1.6. Information about the aircraft

The aircraft was a Schleicher glider, model ASK 21, with a maximum take-off weight of 600 kg. It was registered on 06 June 2005 with serial number 21791.

The aircraft had a Certificate of Airworthiness issued by Spain’s National Aviation Safety Agency (AESA) on 12 May 2011 and an Airworthiness Review Certificate issued by ROBERTO RUÍZ RIAÑO, PART 66 license ES.66.00046536, valid until 12 May 2022.

The aircraft had undergone a 3,000 h life extension check on 12 May 2021 with 2,994:54 h of flight time and 5,193 landings.

At the time of the accident, the aircraft had 3,044 flight hours.

### 1.7. Meteorological information

According to the information provided by the State Meteorological Agency (AEMET), the meteorological conditions in the area at the time of the accident were partially cloudy with good visibility, temperatures around 24°C and light winds. There were no significant phenomena.

AEMET has two weather stations close to the accident site: one 4 km to the south in Sabiñánigo and another 17 km to the west of Senegüé, in Jaca.

The data collected at those stations at the time of the accident was as follows:

	Sabiñánigo			Jaca		
	14:50:00	15:00:00	15:10:00	14:50:00	15:00:00	15:10:00
Time in UTC						
Precipitation (mm)	0	0	0	0	0	0
Wind speed (m/s)	1.8	1.2	1.4	2.4	2.8	2.4
Wind direction (degrees)	124	110	147	222	242	239
Maximum wind speed (m/s)	3.7	2.7	2.7	6.1	5.8	5.3
Direction of the maximum speed (degrees)	207	132	120	208	253	242
Temperature °C	23.5	24.8	24.1	24.2	24.3	24.3
Relative humidity (%)	42	39	40	31	30	30

**1.8. Aids to navigation**

N/A.

**1.9. Communications**

N/A

**1.10. Information about the aerodrome**

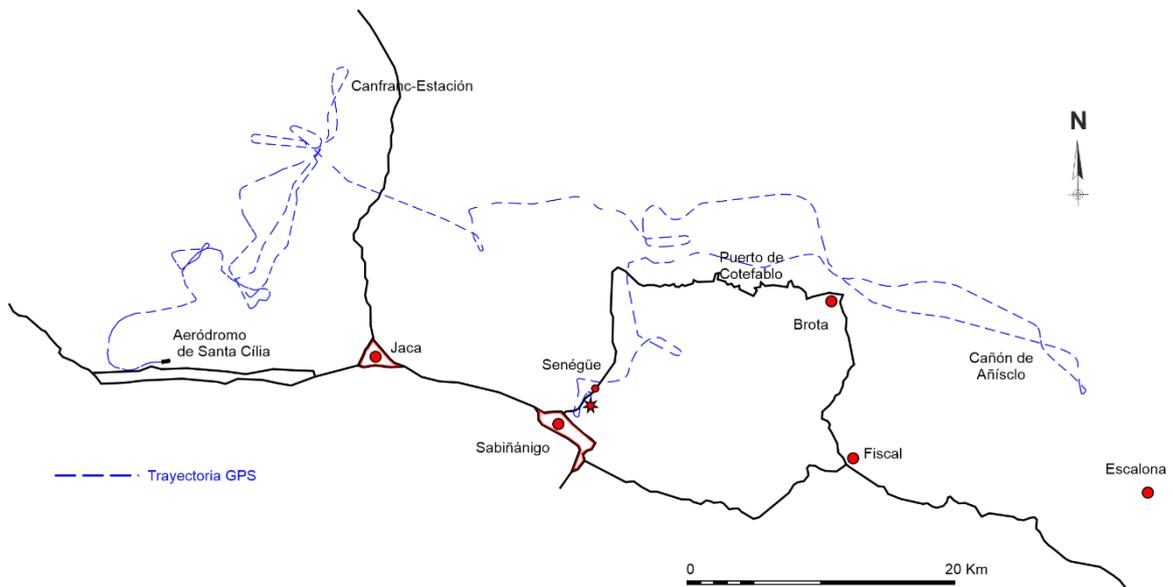
Sta. Cilia de Jaca Aerodrome (LECI) is a restricted-use aerodrome located in the municipality of the same name in the province of Huesca. It has two parallel runways designated 09-27. One is fully paved and measures 850 m long by 18 m wide, and the other, located further south, is an unpaved 650 m long runway for glider landings.

Its elevation is 679 m.

**1.11. Flight recorders**

The aircraft was not equipped with a conventional flight data recorder or a cockpit voice recorder, as it is not a requirement for this type of aircraft. The applicable aeronautical regulations do not require the installation of any type of recorder on this type of aircraft.

However, the aircraft’s flight path was recorded on a GPS device, and the data was made available to the investigation.



**Fig. no. 2 - GPS Trajectory**

The recorded data shows that the aircraft took off at 13:03 h from Sta. Cilia Aerodrome, located at 679 m of altitude, and released at 13:06 h at 923 m of altitude. From this point on, it made continuous manoeuvres to gain altitude, first on a northerly and then easterly course. The furthest point reached was the Añisclo canyon, located some 68 km east of the starting point. During the return leg, about 9 km beyond the Cotefablo pass, the aircraft turned south to land in an agricultural field south of the town of Senegüe in the Sabiñánigo area.

The aircraft gained 1,815 m of altitude during the flight, reaching the highest point at 15:55 h. The landing took place at 17:09 h at 793 m of altitude. The flight duration was 4 h and 5 min.

#### 1.12. Aircraft wreckage and impact information



*Fig. no. 1 - Aircraft in its final position*

The aircraft landed in a field planted with a cereal crop; on hitting the crop, it made a sharp right turn and came to a sudden stop.

The aircraft did not sustain any damage.

**1.13. Medical and pathological information**

There is no evidence that physiological factors or incapacities affected the pilot's actions.

**1.14. Fire**

No fire broke out.

**1.15. Survival aspects**

The harnesses and restraint systems worked adequately, and the cabin interior maintained its structural integrity.

**1.16. Tests and research**

**1.16.1. Video recordings**

A video recorded with a mobile phone by a witness in the accident area was made available to the investigation.

The video lasts 16 seconds and captures the last section of the aircraft's final approach through to the moment it stopped after making contact with the ground.

It shows the aircraft with a slight nose-up attitude following an extended approach path with a gentle angle of descent. As soon as it makes contact with the crop, the aircraft slows, turns sharply to the right and comes to a complete stop.

**1.17. Organisational and management information**

N/A

## **1.18. Additional information**

### **1.18.1. Information about the conditions affecting the operation**

Non-powered high altitude flight requires pilots to have sound knowledge of areas with minimum landing conditions in case they should need to reach one at any point during the flight.

Landing in a field with tall vegetation can lead to situations whereby, instead of the landing gear making the initial contact with the ground, the undersides of the wings hit the top of the vegetation first.

On most of these occasions, given the difficulty of both wings making contact simultaneously, one makes contact before the other and therefore brakes before the other, causing the aircraft to pivot on the first. How sharply the aircraft pivots depends on how much time elapses before the second wing makes contact and the speed at which the aircraft is travelling.

### **1.18.2. Information provided by the pilot**

#### **1.18.2.1. With regard to the field**

After passing the Cotefablo pass when flying from the east towards the Santa Cilia de Jaca Aerodrome, the area around Sabiñánigo is of vital importance.

The Santa Cilia Aerodrome has had a field designated for emergency landings ever since it first began operating, but it had to be changed more than a year ago due to work on the Pyrenees motorway.

After a favourable inspection, a new emergency field, south of the town of Senegüé and still in the Sabiñanigo area, was selected to replace the previous one.

#### **1.18.2.2. With regard to the operation**

The pilot explained that during the return leg, he realised he might not be able to make it back to the aerodrome, so he decided to land in the field that had been specifically designated for that situation. However, as he approached, he observed that another glider forced to land in the same field was now almost entirely covered by the grain, which gave him an idea of the height it had grown to and, consequently, the difficulty

involved in the landing. Nonetheless, as he had headed straight to the field, the aircraft's approach height was no longer sufficient to look for an alternative field.

He explained that, given the height of the crop, he tried to minimise the impact by aiming to land as if ground level were the top of the vegetation and at the slowest possible speed.

The flare and moment of contact were smooth with no sharp drops. Furthermore, the recent rains had softened the ground, and the high, wet vegetation had the effect of 'cushioning' the impact, minimising the sensation. What did ensue, however, was a "very abrupt deceleration".

On another note, before commencing the circuit, the two occupants had checked that their seat belts were correctly fastened, that they were sitting upright and that the parachute was in the correct position, although he couldn't recall whether the passenger had done this on the ground before the flight, which is always easier and more accurate than in flight.

Lastly, he explained that the passenger had been suffering from back problems before the accident, as confirmed by the hospital medical report, and that this may have contributed to the vertebral damage caused by the landing.

**1.19. Useful or effective investigation techniques**

N/A.

## **2. ANALYSIS**

### **2.1 General aspects**

The pilot held the required license and relevant medical certificates for the flight. The pilot had extensive flight experience and knew the area well.

The aircraft had the correct documentation for the flight.

### **2.2 Of the meteorological conditions**

The data recorded at the different meteorological stations in the area confirms non-limiting meteorological conditions for the flight.

### **2.3 Of the operation**

The area's orography and the type of flight necessitate the precautionary designation of a series of alternative fields for use in an emergency.

According to the information provided by the pilot and the flying club, the field used in the event in question was the designated emergency landing field for the Sabiñánigo area.

As can be seen in the video, on the day of the accident, the field's cereal crop had grown to a considerable height, which meant the undersides of the wings made contact with the vegetation before the landing gear touched down on the ground.

As the pilot was well aware, these circumstances made the landing more complicated due to the difficulty of making contact with both wings simultaneously.

Although, as can be seen in the video, the pilot carried out an extended overflight, the rapid deceleration that occurred when the aircraft hit the crop caused it to turn sharply to the right and come to an abrupt and immediate stop.

According to the pilot, both occupants checked and adjusted their position and harnesses before landing.

### **3. CONCLUSIONS**

#### **3.1 Confirmed findings**

There were no limiting meteorological conditions for the flight.

The first part of the aircraft to hit the grain was the underside of its right wing, which produced a sharp turn to the right.

The aircraft decelerated abruptly and came to a sudden stop.

#### **3.2 Causes/contributing factors**

The cause of the accident was the performance of an emergency off-field landing in a field planted with a tall cereal crop.