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Report A-042/2019

Accident involving the aircraft
SPORTINE AVIACIJA LAK 17B FES
18M, registration D-KSEO, on
11 August 2019 at the Garray
aerodrome (Soria)



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Notice

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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° 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.

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Abbreviations

° ' "	Sexagesimal degrees, minutes and seconds
°C	Degrees Celsius
AEMET	Spain's State Meteorological Agency
AESA	Spain's National Aviation Safety Agency
IAS	Indicated airspeed
GPS	Global positioning system
GS	Ground speed
CAMO	Continuing airworthiness management organisation
FCU	FES control unit
FES	Front electric sustainer
ft	Feet
h	Time
LT	Local time
hPa	Hectopascal
kg	Kilogram
km	Kilometer
km/h	Kilometer per hour
kV	Kilovolt
kW	Kilowatt
LAPL	Light aircraft pilot license
LED	Light-emitting diode
LEGY	ICAO code for the Garray aerodrome (Soria)
m	Meter
min	Minutes
No.	Number
MHz	Megahertz
MTOW	Maximum Take-Off Weight
N	North
NE	Northeast
NW	Northwest
ICAO	International Civil Aviation Organisation
QNH	Atmospheric pressure adjusted to mean sea level in the area of recording.
RD	Royal Decree
s	Seconds
SE	Southeast
SPL	Sailplane pilot license
EU	European Union
VFR	Visual Flight Rules
W	West

Synopsis

Owner and operator:	Private
Aircraft:	Sportine Aviacija LAK 17B FES, D-KSEO
Date and time of accident:	11 August 2019: 15:52 LT ¹
Site of accident:	Approach to runway 27 at the Garray aerodrome (Soria)
Persons on board:	One, unharmed
Type of flight:	General Aviation - Private
Phase of flight:	Landing
Date of approval:	24th February 2021

Summary of accident

On Sunday, 11 August 2019, the glider Sportine Aviacija LAK 17B FES (18 m wingspan), with registration D-KSEO, was involved in an accident after hitting the medium-voltage power line that runs east of the aerodrome, between the towns of Tardesillas and Garray.

The aircraft was carrying out a sport flight, taking off from the Garray aerodrome and destined for the Fuentemilanos aerodrome (Segovia). After flying for one hour and 18 minutes, the pilot decided to return to the Garray airfield because he believed he would be unable to reach the planned destination. Manoeuvring near the airfield shortly before landing, the pilot realised he could not reach the runway and decided to land in a nearby field, about 1300 m from the threshold of runway 27. When he was about to attempt the off-airfield landing, the aircraft struck an electric cable and crashed.

The pilot was unharmed.

The aircraft sustained significant damage.

The investigation has determined that the most probable cause of the accident was poor management of the approach to the landing runway, which led the pilot to attempt an emergency landing in a location where his view of any potential obstacles was obscured.

¹ Unless specified otherwise, all times in this report are local.

As a result of the investigation, the following safety recommendation has been issued to the Garray aerodrome:

REC 06/21: It is recommended that details of nearby power lines be included in the Garray aerodrome information.

1. FACTUAL INFORMATION

1.1. History of the flight

On Sunday 11 August 2019, the glider Sportine Aviacija LAK 17B (registration D-KSEO) took off from runway 27 at the Garray aerodrome (Soria), towed by a light aircraft, at around 13:27 LT. The pilot was accompanied by a companion in another glider (model ASH 31), as they planned to do the route together. This companion was also a co-owner of the aircraft involved in the incident.

The aircraft was carrying out a sport flight, taking off from the Garray aerodrome and destined for the Fuentemilanos aerodrome (Segovia). However, after one hour and eighteen minutes of flight, the pilot deemed the thermal activity to be insufficient for reaching Fuentemilanos and modified the original plan, opting to return to the Garray aerodrome for landing, separating from the other glider in the process. The return journey took one hour and twelve minutes. Once in the vicinity of the Garray aerodrome, the pilot estimated that he could not reach the runway and decided to land in a nearby field, approximately 1300 m east of runway 27. On making his approach to land on the selected field, the pilot flew over a line of trees on its boundary. A short distance behind the trees was a power line that the pilot had not seen. Despite trying to avoid the collision by diving the aircraft under the power line, the left wing snagged on the cable, causing the aircraft to pivot and hit the ground.

When the aircraft hit the medium-voltage wiring, a short circuit occurred causing damage to the left wing. The glider was briefly held back as it snagged on the line, causing it to pivot and absorbing some of the energy. The aircraft finally came to a stop a few meters from the power line, 1300 m east of runway 27 at the Garray aerodrome, at an altitude of 1015 m (Latitude 41°49'12" N, Longitude 2°27'21" W). At that time it was approximately 15:52 local time (The total duration of the flight was around 2 h 30 min). Once on the ground, the pilot was able to exit the aircraft unassisted, having escaped injury during the accident. However, the aircraft sustained significant damage.



Illustration 1: Aircraft Sportine Aviacija LAK 17B FES

1.2. Injuries to persons

Injuries	Crew	Passengers	Total in the aircraft	Other
Fatal				
Serious				
Minor				
None	1		1	N/A
Total	1		1	

1.3. Damage to the aircraft

The aircraft sustained significant damage to the left wing, the tip of the right wing, the underside of the fuselage and the landing gear, as well as to the blades of the electric engine.

1.4. Other damage

The power line involved in the accident is a medium-voltage 13.2 kV line. The power line poles closest to the place of impact are eleven meters tall, and the minimum height of the cables in that section is 8.4 m.

Despite the aircraft catching on the power line and the resulting short circuit, none of the cables snapped. However, according to the report from the company responsible for maintaining the lines (I-DE), the line's circuit-breakers tripped, causing an automatic and momentary disconnection of the current at 15:52. No line repairs were required following the incident.

1.5. Personnel information

- Age: 59 years
- Nationality: Spanish
- License: Sailplane pilot license (SPL) - issued in 1999
 - License issuing authority: Spain's National Aviation Safety Agency (AESA)
- Ratings:
 - Aerotow
- Medical certificate: Class 2 and LAPL valid until August 2020.
- Total flight hours: 588 h
- Hours in type of aircraft: 13 h
- Flight hours in the last year: 13 h
- Flight hours in the last 48 hours: 4:45 h
- Flights with take-off from Garray: two flights, including that of the accident.

1.6. Aircraft information

The aircraft involved in the accident is a Sportine Aviacija, model LAK 17B FES (version with 18 m wingspan), with an MTOW of 455 kg without water ballast, and 600 kg with water ballast. It was built in 2012.

This glider has a powerplant with a maximum power of 23 kW and a 1 m-diameter self-folding two-bladed propeller at the front of the aircraft. This system makes it possible to increase the autonomy of the aircraft, but it does not allow the aircraft to self-launch. It has airbrakes and flaps to control the aircraft.

The aircraft had a valid Restricted Certificate of Airworthiness, issued by the German Federal Civil Aviation Office. Its serial number was 213.

The pilot did not provide the aircraft maintenance book. However, he did provide the documentation from its last Airworthiness Review, dated March 2019 and being valid until April 2020, thus complying with the correct maintenance of the aircraft. The documentation provided verifies the aircraft's 912 total flight hours as of March 2019.

The aircraft was co-owned by three individuals; the pilot involved was one of the owners. The aircraft's documentation has not been provided.

1.7. Meteorological information

The State Meteorological Agency does not have data from the Garray aerodrome. The closest station with available data is located in Soria, about 6 km to the south. Based on data from the station in Soria, satellite images, radar, and warnings of adverse phenomena, the most probable meteorological situation at the time and place of the accident was as follows:

- Wind:
 - Direction: northwest - west.
 - Speed: average, 7 km/h.
 - Maximum gusts: average, 17 km/h.
- Visibility: good on the ground.
- Cloud cover: clear.
- Temperature: around 27°C.
- QNH: 894.2 hPa.
- Altitude (of the meteorological station): 1082 m
- Relative humidity: around 29%.
- There was no rainfall or warnings of adverse phenomena.

According to the AEMET meteorological report, winds in the central areas of the peninsula were mainly westerly, and due to medium and high clouds, the thermal currents were weak (corroborated by the two pilots). These two effects made it difficult to use thermal currents for non-motorised flight.

1.8. Aids to navigation

Not applicable.

1.9. Communications

The aerodrome has a radio system to communicate with aircraft in its circuit and the vicinity. The frequency used is 123.5 MHz.

The flight manager, who was present at the aerodrome at the time of the accident, stated that he did not receive any radio communication in the minutes leading up to the accident.

1.10. Aerodrome information

The ICAO call sign for the Garray aerodrome (Soria) is "LEGY". It is a restricted publicly-owned aerodrome belonging to the Provincial Council of Soria. It has an elevation of 1036.32 m (3400 ft), two paved runways, one facing 09/27 and measuring 1,357 x 23 meters, and the other facing 02/20 and measuring 492 x 18 m².

Currently, the aerodrome mainly serves as a general and commercial flight school, as well for glider activity, with the possibility of aerial towing.

At the Garray aerodrome, general aviation flights operating to/from runway 27 use the south circuit (see Illustration 2), while gliders use the north circuit (symmetrical with the south circuit with respect to the runway axis), although the latter is not published in the aerodrome information.

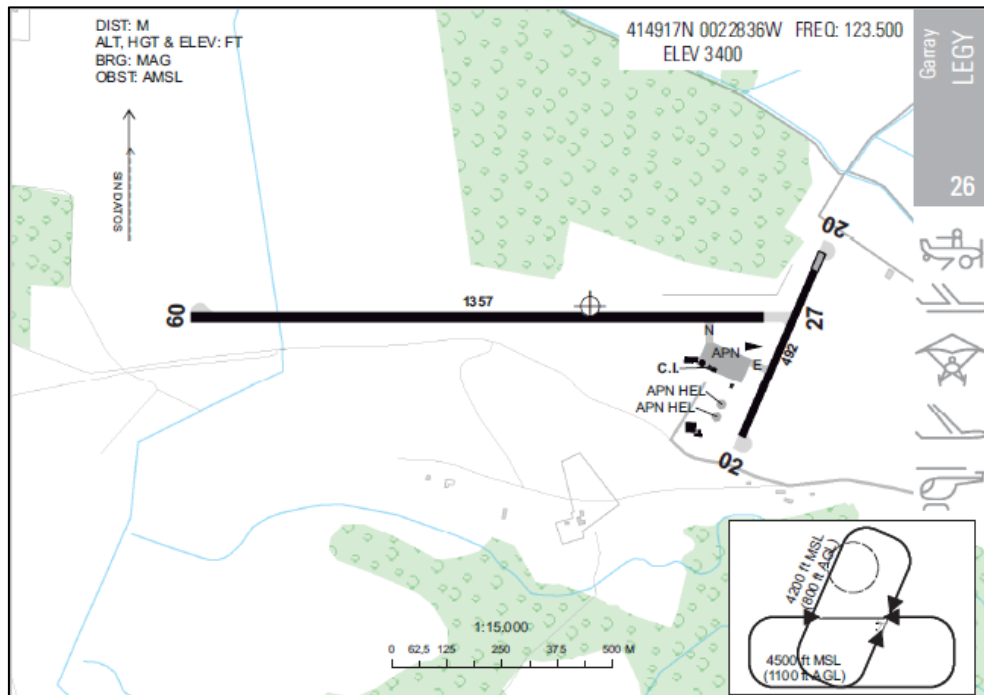


Illustration 2: Garray Aerodrome

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. However, the aircraft does have an LX NAV LX9000, which records specific flight data. The equipment records all flights by continually recording the GPS signal to track the aircraft's position and altitude, as well as its ground speed (GS), indicated airspeed (IAS), and information on wind direction and intensity. The information recorded by the LX NAV LX9000 has been used to carry out a study of the entire flight and, in particular, the moments before impact. The recorded flight information cuts out at around 1400 m from the accident site, which means no information on approximately the last minute of the flight available.

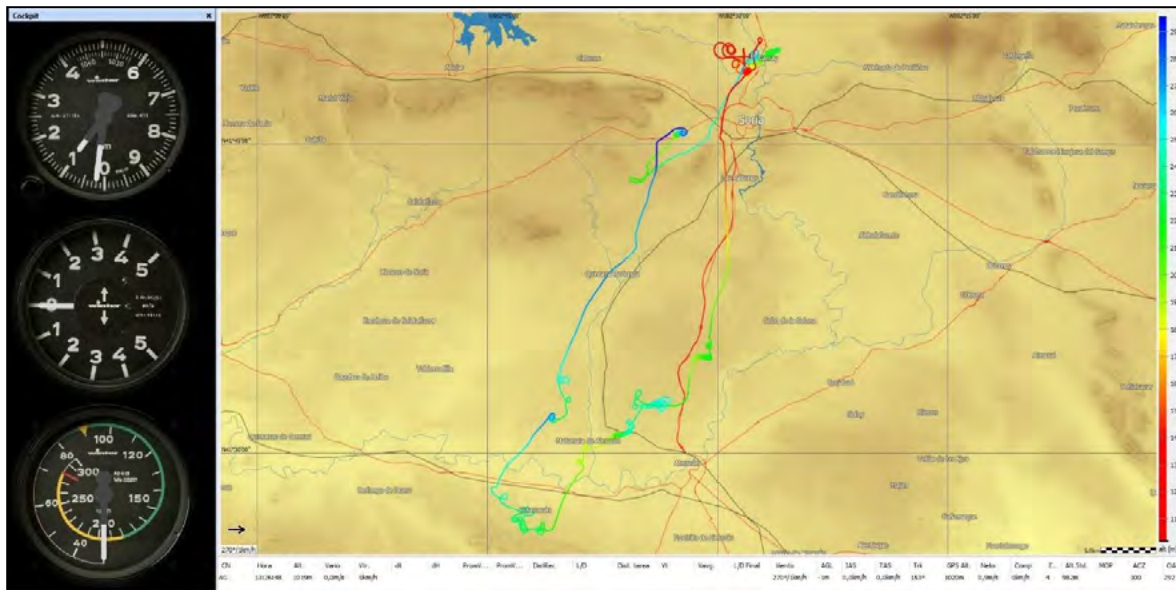


Illustration 3: Full flight log

Having analysed all the information recorded by the aircraft and the manufacturer's information on its performance, we have established the following:

- Throughout the flight the aircraft's equipment recorded wind coming predominantly from the west. During the last recorded minutes before the accident specifically, the wind was 244° / 12 km/h. In other words, there was a westerly wind aligned to runway 27 of the Garray aerodrome.
- The flight commenced with an aircraft tow (aerotow) at 13:27 LT, on 11 August 2019, and the data ends at 15:51:39, about 1400 m from the accident site, which is also 1275 m from the end of runway 27.
- The pilot performed the flight at speeds of between 90 and 150 km/h, respecting the indications in the *Flight manual*. He typically flew at 110 km/h, which, according to the *Flight manual*, is close to the speed of the maximum horizontal to vertical displacement ratio (the speed at which the aircraft travels more meters for each meter it descends).
- The pilot managed to use nineteen thermals for lift, through which he increased his altitude by a total of 4401 m, for a descent of 1234 m, with a variometer average of 1 m/s, in 52 minutes and 34 seconds.
- The pilot attempted to use twelve thermals, with an average variometer loss of -0.5 m/s, in which he descended 502 m in altitude compared to a 236 m ascent, in eight minutes and ten seconds.
- The pilot managed to perform twenty straight glides for a total of 01:19:53 h, with an average GS of 121 km / h, and IAS of 107 km/h.
- The pilot activated the electric sustainer motor on several consecutive occasions, for a total of two minutes and 44 seconds in the vicinity of Soria, from 02:15:11 to 02:17:55.
- By the time he made the decision to return, after 1:18 hours of flight, the

pilot had travelled about 45 km from the Garray aerodrome. At that point, taking into account thermals and glides, he had covered a distance of 154 km.

- During the return, the pilot travelled some 40 km of distance in 58 min to the town of Soria in 107 km of flight manoeuvres, continuing to perform the flight in challenging gliding conditions. Given the loss of altitude, with the town of Soria in sight, the pilot activated the electric support motor on four consecutive occasions with a total of two minutes and 44 seconds of use, disconnecting it when the Garray aerodrome came into view.
- At 15:50, the glider crossed the extension of the runway centreline at a distance of 800 m horizontally and about 200 m above it (see Illustration 4). At 15:51:38, when the information from the aircraft's recorder was lost, it was located north of the town of Tardesillas, 1875 m in a straight line from the head of runway 27 and 86 m above it. At that point, it had travelled 275 km in a total time of two hours and 26 minutes.

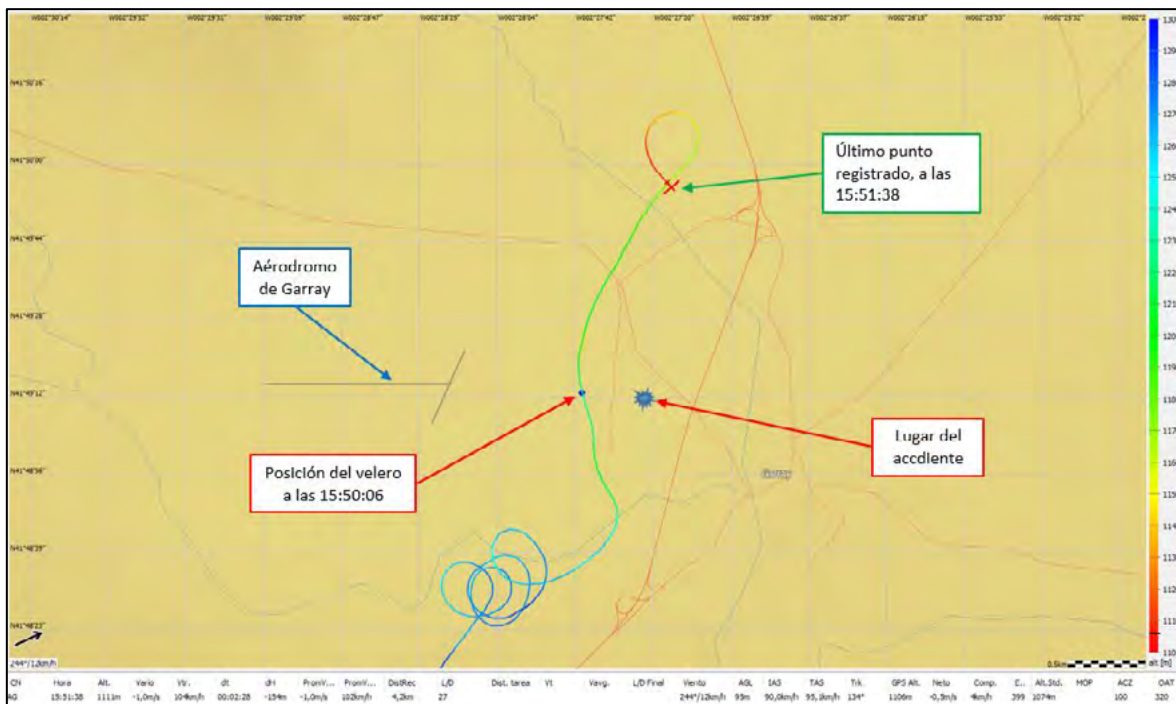


Illustration 4: Illustration depicting the last movements recorded by the aircraft's avionics

1.12. Aircraft wreckage and impact information

The accident site is located about 1300 m east of runway 27 at the Garray aerodrome, in a grain field. A medium-voltage power line runs across the field. A few meters away, at the edge of the field, there is a line of trees with varying heights. The field was harvested approximately one month prior to the accident.

Moments before the accident, the aircraft was practically aligned with the approach to said runway but didn't have enough altitude to reach it. As a result, the pilot decided to land in a nearby field. When he was a few meters from the ground, the left wing caught the power line, and the aircraft struck and slid along the ground, having turned 180° by the time it came to a halt. It's estimated trajectory before coming to a halt is shown in the following diagram.

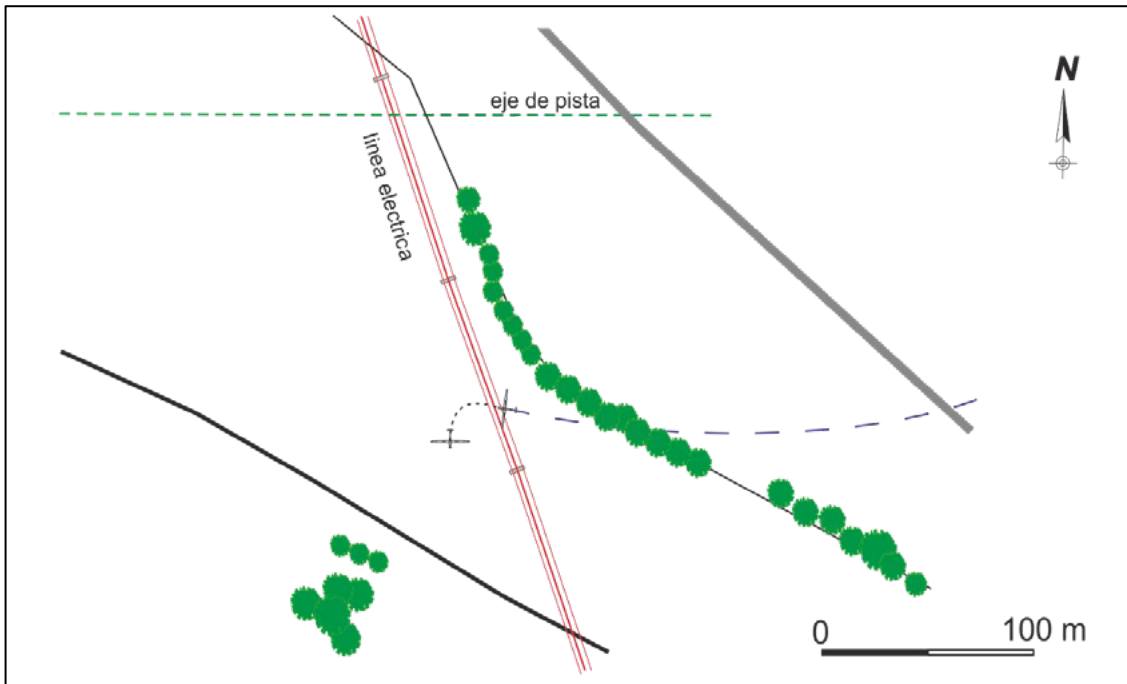


Illustration 5: Manoeuvres and final position of the aircraft

The estimated angle of the aircraft at the moment of impact is shown in Illustration 6: Estimated angle of the aircraft at the moment of impact Illustration 6.

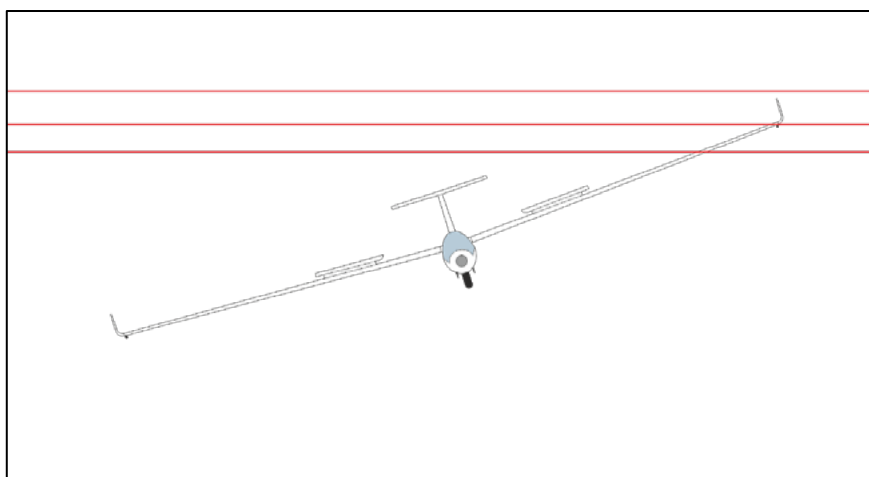


Illustration 6: Estimated angle of the aircraft at the moment of impact

Although the aircraft suffered significant damage, no part of it broke off entirely.

The pilot declared he didn't see the power lines until he passed the line of trees partially obscuring it. The line of trees was lower than the height of the poles in several sections but also higher in others, as can be seen in Illustration 7, which is the view from the estimated trajectory of the aircraft (Northeast), at ground level.



Illustration 7: View of the line of trees and the power line poles behind them, from the northeast

1.13. Medical and pathological information

As a result of the accident, the pilot was transferred to hospital. He reported suffering from back pain for a few days after the accident but recovered without further intervention.

There is no evidence that physiological factors or disabilities affected the pilot's performance.

1.14. Fire

Not applicable.

1.15. Survival aspects

The aircraft's cabin was not deformed during the accident. The pilot's seat and restraint system functioned as designed, preventing him from sustaining injuries. The low height of the aircraft (which was below the cables when it struck them), the gradual deceleration from the moment it hit the power line to the moment it reached a static position on the ground, and the fact that the aircraft crashed into a crop field with relatively soft soil, were also contributing factors.

The pilot was able to exit the aircraft unassisted. The Guardia Civil attended the scene of the accident and took the pilot to the hospital.

1.16. Tests and research

1.16.1. Study of the aircraft's movements after the last recorded point of the flight

The aircraft recorder did not record the trajectory of the aircraft during the last moments of the flight (approximately the last minute). This is usually because the recorder writes the data to a buffer and then flushes it to the memory. Due to the force of the impact, the buffer may have been lost before the data was transferred. In this case, the aircraft's trajectory during the final moments of the flight must be estimated.

At the moment when the information from the aircraft's recorder was lost, it was located north of the town of Tardesillas, 1875 m in a straight line from the head of runway 27 and 86 m above it. At that point it had just made a 270° turn to the left, changing its orientation from Northeast to Southeast.

The glide ratio on the straight leg before the turn was approximately 28.3 (GS 102 km/h and rate of descent 1 m/s, with a tailwind of approximately 12 km/h).

We can estimate what the aircraft's glide ratio would have been should the aircraft have returned to the runway in the opposite direction and into the wind, by calculating the maximum glide ratio with a headwind and a tailwind in the same pressure and temperature conditions and applying it to the ratio of 28.3. The estimated ratio with a headwind would have been 22.6. Based on these calculations, the pilot could have covered 1943 m. Although it's more than the distance he needed (1875 m), perhaps it was too late to return because by extending the landing gear, the glide ratio would have decreased. Also, we haven't taken into account that the distance to travel would have been somewhat greater because he would have had to line up with the runway landing.

However, if the aircraft's last turn had been 180° directly towards the runway, it would have been able to reach it because having turned 180° it would be positioned 114 m above the runway and 1950 m away from it. Therefore, it would have been able to travel 2576 m, with more time to manoeuvre and extend the landing gear.

1.16.2. Inspection of the wreckage

The aircraft's left wing was lacerated and burnt at both the tip and approximately three-quarters of the way along the wingspan. (see Illustration 8). The damage was compatible with having made contact with at least two different cables of the medium-voltage line and the electric arc that would have been produced as a result.



Illustration 8: Evidence of striking the cable and the resulting electric arc

The right wing had scratches along the leading edge, and the wheel fairing at the end of the wingspan was split around one of the wing's anchor bolts (see Illustration 9).

The undercarriage of the fuselage was dented in some places and had scratches compatible with a short forward-right drag along the ground (relative to the aircraft).



Illustration 9: Damage to the wheel at the tip of the right wing



Illustration 10: Front underside view of the fuselage

The damage to the main landing gear and its cover, as well as the marks left on the field, confirm that the aircraft slid to its right once on the ground (see Illustration 11).



Illustration 11: Main landing gear

1.16.3. Pilot testimony

According to the pilot, on the day of the incident, he travelled to the Garray aerodrome intending to make a cross-country flight to Fuentemilanos aerodrome in Segovia. He had planned to follow a linear route of approximately 180 km together with another aircraft, taking off with the help of a tug plane at 13:27 LT.

On realising the meteorological conditions were unsuitable for the long-distance flight, the pilot changed his destination and began his return to the Garray aerodrome for landing.

During the flight back to Garray, the pilot engaged the electric support motor to the west of the town of Soria, disengaging it when the runway came into sight according to procedure. However, as he adjusted to the approach path, he deemed he would be unable to reach the runway and decided to make an off-airfield landing in a grain field.

With the emergency field insight, he flew over a line of trees and immediately encountered the power lines. He attempted to use a dive manoeuvre to fly the aircraft under them, but the left wing caught on the power line, and the aircraft crash-landed.

1.16.4. Testimony of the accompanying pilot in the other glider

The statements made by the accompanying pilot in the other aircraft corroborate the information provided by the pilot up to the point where he decided to return, approximately 45 km from the Garray aerodrome, above the town of Velamazán (Soria). The accompanying pilot arrived at the Garray aerodrome an hour and a half after the accident, by which point, the aircraft involved had already been rescued.

He stated that the conditions on the day were challenging for glider flight, requiring an advanced level of piloting.

1.17. Organisational and management information

Not applicable.

1.18. Additional information

1.18.1. Aircraft flight manual

The flight manual details the following restrictions for operating the electric engine:

- The engine should be started with a +2 flap configuration.
- The engine should only be started with an indicated airspeed (IAS) of between 80 and 160 km/h.
- To start or stop the engine, the indicated speed (IAS) must be at least 8 km/h greater than the stall speed in the selected configuration.
- Do not fly the glider with the engine running when travelling at more than 160 km/h.
- The engine must not be used in flight less than 150 m above the ground.

The procedure for starting the electric engine described in the manual is as follows:

1. The electric engine control instrument must be switched on (FCU).
2. Activate the switch.
3. Check the LED light at the bottom left of the panel is on. Check the voltage.
4. If the light is not on or flashing, read the FCU instructions to establish the cause.
5. Gently turn the potentiometer clockwise to increase the engine power.

To slow the engine, turn the potentiometer anti-clockwise to zero, and one step beyond to engage the electric blade brake. The retraction of the blades should start automatically as soon as the rev counter shows 0.

The pilot stated that once he assumed he couldn't make it to the runway, he decided not to use the engine due to the added complication of having to use a checklist at such a critical time.

The stall speed with a +2 flaps configuration (which the pilot reported as being in use during the last minutes of the flight) is 82 km/h. This flap configuration is the one recommended by the manual for cruise flight, and the one the pilot stated was in use up until the accident.

1.19. Useful or effective investigation techniques

Not applicable.

2. ANALYSIS

2.1. History of the flight

On the day of the accident, there was scant convective activity in the central area of the country, with low atmospheric pressures and medium wind, making it difficult to create and use the thermal currents needed for non-motorised flight. These aspects meant that the day was not conducive to gliding, a fact reflected by the nineteen thermals used for the ascent and the twelve failed attempts in full flight. Therefore, the pilot abandoned his original intention of landing at Fuentemilanos.

On his return to the aerodrome, the pilot approached 200 meters above and 800 meters east of the head of runway 27. However, instead of joining the aerodrome circuit and landing, he continued to fly to the North-Northeast.

As we have seen in point 1.16.1, at the moment when the aircraft's recording is lost, it was positioned too far away to be able to return to the runway. Furthermore, it was heading in a direction that moved it even further away. This indicates that the pilot had not yet realised he could no longer land on the runway.

The wind direction of 244° and 12 km/h, contributed to the aircraft moving further away from the aerodrome and made it difficult to return, which may have been a factor in the pilot's miscalculation. That said, the wind intensity was moderate and not unusual, so the pilot would likely have taken this factor into account.

The pilot says he chose not to use the engine because he didn't want to complicate things with an extra procedure at such a delicate time. According to the flight manual, the procedure for starting the electric engine is straightforward. However, the manual itself warns that it should not be used below 150 m in height, so it was too late to turn it on by the time the pilot had become aware of the predicament.

In light of the points mentioned above, we can conclude that the pilot's inadequate knowledge of the area (it being only the second time he had flown out of the Garray aerodrome), coupled with poor aircraft management on approach and a westerly wind that carried the aircraft away from the aerodrome, resulted in it missing the approach path to the runway, leading, therefore, to the pilot's decision to attempt an off-airfield landing.

2.2. Location chosen for the emergency landing

The pilot stated he didn't see the power lines because the trees (growing along the boundary of the field chosen for the landing) blocked the view of the poles. He also stated that once he flew over the trees and saw the power line, he tried to dive the aircraft under it. It's evident, therefore, that the pilot made a mistake with his choice of

landing site because his view of it was obscured, preventing him from identifying possible obstacles.

Garray's Aerodrome is widely used by sailplanes (which need to perform off-field landings more often than motorized planes). In addition, there are multiple zones suitable for emergency landings in the aerodrome surroundings (thanks to level terrain and relative lack of obstacles). However, nearby power lines pose a danger to airplanes forced to perform an off-field landing, since they are difficult to spot from a certain height, especially the ones present in the prolongation of the landing strips and in the aerodrome surroundings. If the location of these power lines is made available to pilots using the aerodrome, it would help them to take these power lines into account when performing an off-field landing in the proximity of the aerodrome.

2.3. Final trajectory and impact

Based on the pilot's testimony that he attempted to dive the aircraft under the cables when he saw them, and the damage to the left wing which is compatible with striking the cables, we conclude that the aircraft was banking to the right at the time of the impact (shown in Illustration 6). The cable dragged along the leading edge of the left wing until at one point it snagged, causing the aircraft to pivot, yawing to the left. This is consistent with the marks on the ground, which suggest the aircraft slid to the right.

The wheel at the end of the right wing was split around one of the wing anchor bolts (see Illustration 9). Given that it would have taken a considerable amount of force to split it, we can conclude that the tip of the right wing was probably the first part of the aircraft to make contact with the ground. Furthermore, based on the orientation of the fracture surface, the impact came from the right as the aircraft was travelling sideways. This is compatible with the aircraft yawing to the left when snagged on the cables and, through inertia, continuing to move forward while yawing. For these reasons, we estimate the aircraft had an orientation of approximately 270° when it hit the cables (shown in Illustration 5), almost in alignment with runway 27 of the Garray aerodrome.

Because the significant damage at the end of the right wing was concentrated in the wheel, it's probable the roll angle and dive position of the aircraft on impact was not especially pronounced. If it had been, considering the small size of the wheel, the tip of the wing would also have hit the ground and incurred damage.

Observing the height of the trees near the accident site (Illustration 7), the group of trees most likely to have blocked the pilot's vision are those located northeast of the point of impact, so the aircraft was probably approaching from that direction. Approaching from that direction at a low altitude would have resulted in the trees obscuring the view of the cable and the poles.

Several factors contributed to the fact that the pilot was unharmed during the accident:

- The aircraft struck a field used for farming grain. Even though the crop had been harvested approximately a month before the accident and the ground was fairly settled, it helped cushion the blow.
- The cable on which the aircraft snagged on slowed it down and absorbed some of its energy without snapping.
- Because the aircraft's centre of gravity was below the cables (which were at a height of approximately 9 m), and it had a wingspan of 18 m and a slight roll when the tip of the right wing hit the ground, the fuselage only travelled a short distance in free fall, and the wing itself absorbed most of the impact.

3. CONCLUSIONS

3.1. Findings

- The documentation of both the pilot and the aircraft was in order.
- The pilot had flown thirteen hours in the last year, all in the aircraft involved in the incident. He had only taken off from the Garray aerodrome on one previous occasion.
- The meteorological conditions were suitable for visual flight.
- The meteorological conditions meant that there was little thermal activity and, therefore, the conditions for gliding were challenging.
- The pilot had planned to fly to Fuentemilanos aerodrome. However, halfway through the flight, he decided to return to Garray, believing he wouldn't make it to his original destination.
- Upon returning, the aircraft was positioned 800 m east of runway 27, but the pilot decided to continue the flight away from the airfield instead of landing.
- The aircraft snagged on a power line.

3.2. Causes/contributing factors

The most probable cause of the accident was poor management of the approach to the landing runway, which led the pilot to attempt an emergency landing in a location where his view of any potential obstacles was obscured.

4. OPERATIONAL SAFETY RECOMMENDATIONS

As the aerodrome is frequently used by gliders, in the interest of preventing a similar event from occurring again, we recommend the nearby power lines be made known to the pilots.

The Garray aerodrome flight manager states that he mentions the existence of a power line in the vicinity of the aerodrome during his briefings.

In addition to the actions already taken by the aerodrome, the following recommendation is issued:

REC 06/21 It is recommended that details of nearby power lines be included in the Garray aerodrome information.