



Accident to the SUPER GUÉPARD 912 ULS
identified **12HP**
on Saturday 30 September 2023
at Dragey-Ronthon

Time	Around 20:50 ¹
Operator	Private
Type of flight	Cross country
Persons on board	Pilot
Consequences and damage	Pilot fatally injured, microlight destroyed

This is a courtesy translation by the BEA of the Final Report on the Safety Investigation. As accurate as the translation may be, the original text in French is the work of reference.

**Get-home-itis, fuel exhaustion, activation of airframe
parachute at low height, collision with ground, at night**

1 HISTORY OF THE FLIGHT

Note: the following information is principally based on statements, radio-communication recordings and radar data.

On Friday 29 September, at around 16:30, the pilot, accompanied by his wife, landed at Dragey microlight base² to meet up with members of his family. After landing, he observed that the nose gear strut was deformed (see **Figure 1**). He contacted Aeroservices, the manufacturer of the microlight, to find out if it would be possible to repair the landing gear the next day at Villefranche-de-Rouergue aerodrome, where the manufacturer was based. The appointment was fixed for Saturday 30 September at around noon.

The next day, the pilot took off at 08:20. After landing at Villefranche-de-Rouergue aerodrome at 11:45, the pilot replenished the microlight's fuel tanks before finding the Aeroservices person contacted the day before. The latter started repairing the landing gear after lunch and observed that the main landing gear also needed repair work (see **Figure 2**).

¹ Except where otherwise indicated, the times in this report are in local time.

² The microlight base has a grass runway 04-22 measuring 300 m in length. Access to the microlight base is subject to an authorization by the manager, which the pilot had obtained.



Figure 1: photo taken by the pilot after landing at Dragey microlight base
(Source: Aeroservices)



Figure 2: photo taken by the pilot after landing at Dragey microlight base
(Source: Aeroservices)

On completion of the repair work on the main landing gear, the pilot took off from Villefranche-de-Rouergue aerodrome at 17:00 to return to Dragey microlight base. He climbed to 7,500 ft before descending to 4,500 ft and then 3,000 ft which he reached at 20:00, when west of Angers. The pilot indicated in an SMS message sent to his daughter that he expected to arrive at Dragey microlight base 30 minutes later. The pilot continued the descent. Radar contact was lost at 20:13, five minutes after the start of the aeronautical night, when the microlight descended through 1,500 ft, 4 NM south-west of Laval-Entrammes aerodrome³.

At 20:20, the pilot specified in an SMS message sent to his daughter, that he would be arriving in 15 minutes and that he could no longer see anything. He also asked her to light the runway. At 20:37, the daughter of the pilot told him that she was positioned about 30 m from the first markers at the end of runway 04 that she was lighting with her car headlights. The pilot tried to land three times, during the fourth RH runway circuit, his daughter heard the engine shut down. The pilot activated the airframe parachute which did not completely deploy. The microlight collided with the ground with a nose-down attitude and rolled over onto its back.

2 ADDITIONAL INFORMATION

2.1 Microlight information

The Super Guépard 912 ULS is a high-wing microlight equipped with a 100 hp ROTAX 912 ULS engine providing 5,800 rpm. The fuel tanks are two 30-litre containers. The unusable fuel is 4 l (2 l per container). The microlight was not equipped with an artificial horizon or an emergency locator transmitter.

³ Aerodrome open to public air traffic and equipped with a paved runway 14/32 measuring 1,662 m long and an unpaved runway measuring 1,440 m long. The presence of Pilot Control Lighting (PCL) and a PAPI on the paved runway means that the aerodrome can be used both day and night.

2.1.1 Performance

The estimated fuel consumption during the accident flight was approximately 15 l/h, based on the following data:

- take-off from Villefranche-de-Rouergue aerodrome at around 17:00;
- engine shutdown at around 20:50;
- average speed of around 160 km/h, given the distance covered, slightly less than 600 km⁴;
- 56 l of usable fuel;
- climb to 7,500 ft, descent and then three go-arounds on arrival.

This estimate is consistent with the performance described in the flight manual for the microlight fitted with a ROTAX 912 ULS engine (see **Figure 3**) and in the engine operator’s manual (see **Figure 4**).

	Economic flight	Normal flight	Maximum continuous flight
Engine rating (rpm)	4,000	4,800	5,200
Speed (km/h)	145	180	195

Figure 3: microlight’s speed according to engine rating (Source: flight manual)

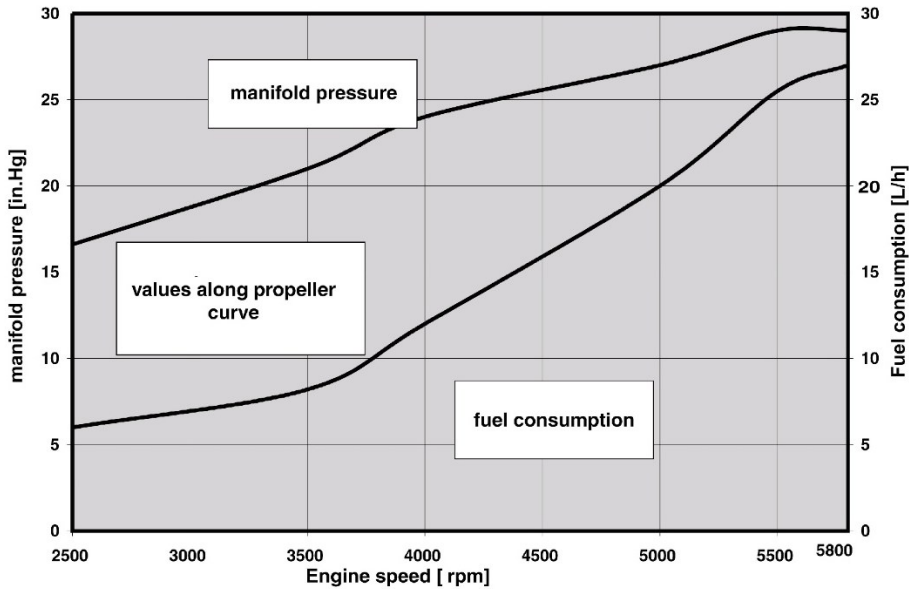


Figure 4: performance curves for ROTAX 912 ULS engine (Source: ROTAX Operators Manual)

⁴ Estimated distance based on radar data.

The microlight was equipped with a MAGNUM 501 type STRATOS 07 airframe parachute. The parachute user manual indicated that the minimum height for using the parachute in level flight is 180 m and the parachute opening time is three seconds.

The microlight flight manual recommends immediately activating the parachute in the case of a desperate situation or accident, whatever the height may be.

2.2 Site and wreckage information

The microlight was lying inverted in a field of cut corn, around 750 m south of the runway of Dragey microlight base, probably at the end of the RH downwind leg for runway 04. The microlight wreckage was grouped together and oriented on a 250° flight path. The propeller and the front part of the cockpit were substantially damaged. The wings were in place and the tail plane had very little damage. The microlight had collided with the ground with a nose-down attitude and a nearly-zero bank before turning over onto its back (see **Figure 5**).



Figure 5: site and wreckage (Source: BEA)

The flight controls were continuous and functional. The flaps were in the landing configuration. Only one of the three propeller blades⁵ had broken, probably during the collision with the ground. The presence of a torque limiter between the Rotax engine and the propeller meant that it was not possible to determine the level of power delivered by the engine at the time of impact with the ground.

Less than one litre of fuel was found in the two microlight fuel tanks. Signs of fluid on the ground underneath the microlight were limited and did not indicate a major fuel leak. Two soft jerrycans each holding 20 l were present on board the microlight. The first jerrycan contained no fuel (no odour) and there were a few remaining centilitres in the second.

No damage prior to the accident was observed.

The parachute was activated in flight. It was not completely deployed which suggested that it was activated at an insufficient height (see Figure 6) during the last runway circuit.

⁵ The blades were made of carbon composite.



Figure 6: part of parachute not deployed (Source: BEA)

2.3 Pilot information

The 63-year-old pilot held a microlight pilot certificate obtained in December 2022. He had logged around 70 flight hours. He was the owner of 12HP since 11 May 2023.

On arriving at Villefranche-de-Rouergue aerodrome, the pilot had replenished the microlight with 59 l of fuel. It was not possible to determine how this fuel was divided between the microlight fuel tanks and the two jerrycans present on board the aircraft.

The violence of the impact with the ground and the deformations to the microlight meant that there was no chance of survival for the pilot despite the use of the harness.

2.4 Light conditions at time of accident

The sun set at Dragey-Ronthon at 19:48⁶. The moon, in its first phase after the full moon (waning between the full moon and the last quarter), rose at 20:20 in the east-north-east. Despite the light from the moon, it is probable that the night was still dark when 12HP arrived at Dragey microlight base.

2.5 Meteorological information

The estimated meteorological conditions at around 20:50 at the accident site and in the vicinity were:

- clear sky, no clouds;
- visibility greater than 10 km;
- south-easterly wind of 5 kt;
- temperature 17°C, dew point temperature 12°C;
- QNH 1024.

⁶ Aeronautical night from 20:18.

3 CONCLUSIONS

The conclusions are solely based on the information which came to the knowledge of the BEA during the investigation.

Scenario

After flying to Villefranche-de-Rouergue aerodrome for repair work on his microlight, the pilot took off later than initially planned from this aerodrome to return to Dragey microlight base. The end of the flight was flown at night.

The pilot carried out three missed approaches very probably due to him not having sight of the runway. During the fourth runway circuit, the engine shut down due to fuel starvation. The pilot then activated the airframe parachute at a height that was too low to allow its complete deployment.

It is probable, given the messages sent to his daughter, that the pilot had not envisaged carrying out a precautionary landing before the start of the night. On his arrival, he could not see the runway. He performed three go-arounds and runway circuits probably at a low height at night. The engine shut down at the end of the downwind leg due to fuel starvation. The pilot activated the microlight's airframe parachute at a height that was probably less than the minimum height for using the parachute. The microlight collided with the ground with a nose-down attitude before rolling over onto its back.

Contributing factor

The following factor contributed to the fuel starvation and the collision with the ground at night:

- the pilot's determination to get to his destination to join his family which led him to continue the flight at night.

The BEA investigations are conducted with the sole objective of improving aviation safety and are not intended to apportion blame or liabilities.