



Accident to the DTA Magic
identified **30SR**
on 28 May 2021
at Vairé microlight strip

Time	Around 11:00 ¹
Operator	Private
Type of flight	Local
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.

Collision with vegetation during approach

1 HISTORY OF THE FLIGHT

Note: the following information is principally based on statements and data from the pilot's phone.

During the final approach to runway 13 at Vairé private strip, the microlight identified 30SR struck the tops of trees located approximately 90 m before the runway threshold, then collided with the ground.

2 ADDITIONAL INFORMATION

2.1 Examination of site and wreckage

30SR comprised a DTA Magic wing, a trike and a BMW K1200S engine.

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

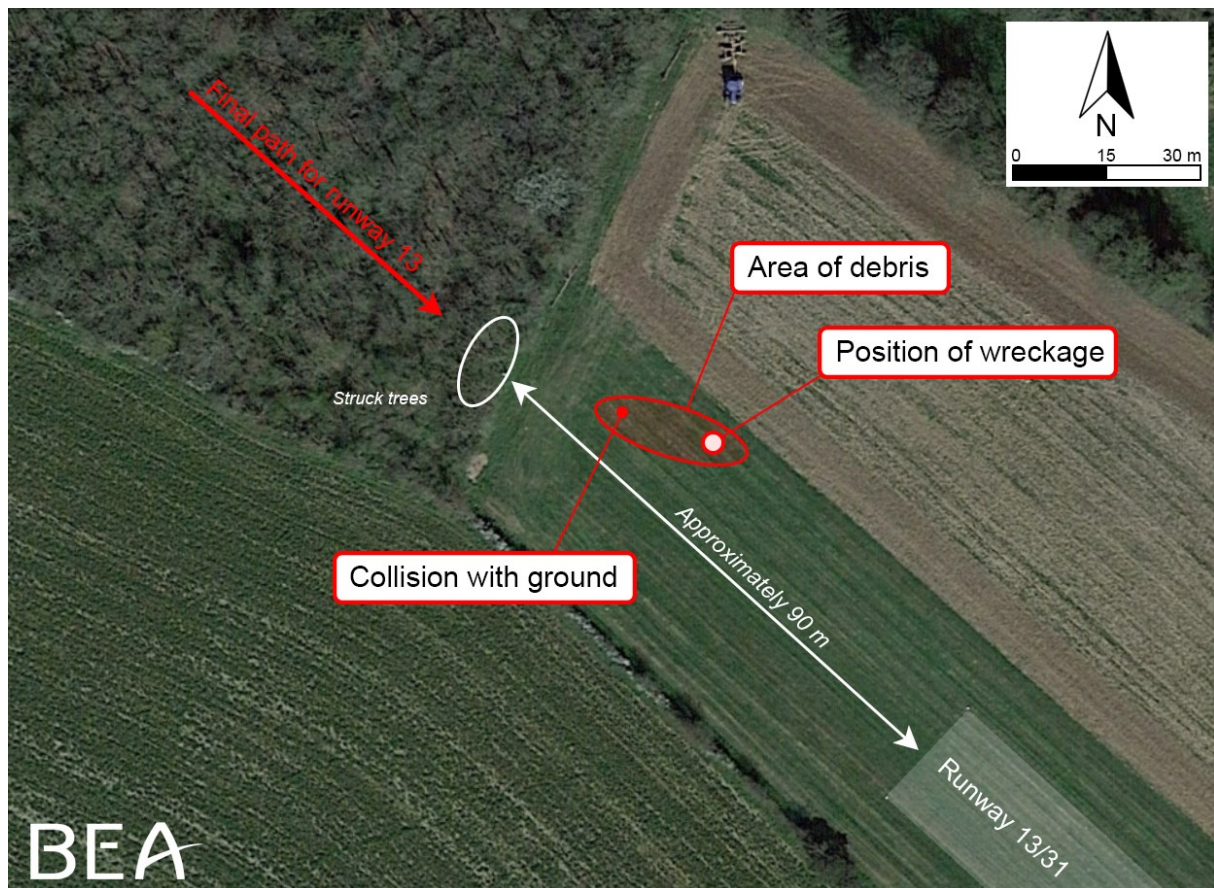


Figure 1: accident site (Source: BEA)

The marks in the vegetation indicated that the microlight struck the tops of trees about 10 m high, at the edge of the wood (see Figure 1). A branch split lengthwise was found about five metres from the tree that was struck.

The microlight collided with the ground about 15 m from the trees it struck, then it came to a stop about 30 m from the edge of the wood.

Most of the debris from the microlight as well as branches were spread between the point of impact and the main wreckage.

The wing was complete and had several rub marks from the trees. It was properly connected to the trike and all pins were in place. Branches were found in the LH strut and at the front of the trike. All of the distortion and failures observed on the trike and the control bar resulted from the collision with the ground.

The engine power control linkage was continuous and operational. The observation of the propeller indicated that the engine was operating up to the collision with the ground.

The emergency services detected a strong smell of fuel. The tank which had burst open was found empty.

The microlight was equipped with an emergency parachute which had not been activated by the pilot.

2.2 Vairé microlight strip

Vairé microlight strip² has a grass runway 13/31 measuring 450 m long and 20 m wide. An authorisation to land there is mandatory for pilots who are not based there.

The presence of the trees requires an approach slope of more than 11 % on final if the aiming point is the threshold of runway 13. This value does not take into account a reasonable clearance margin that should be applied.

2.3 Pilot information

The 59-year-old pilot had co-owned 30SR since March 2019. He held a flex-wing microlight pilot licence issued on 25 June 2020. His training, which lasted a total of six hours and eight minutes, took place from July 2019 to June 2020. He was also a paramotor pilot. The investigation could not determine the pilot's paramotoring experience.

According to the statements, he was familiar with the environment of Vairé microlight strip, where he had been based since June 2020. He had been flying solo on 30SR for just over one year. Between June 2020 and March 2021, he had logged approximately 40 flight hours and made 114 landings at the controls of 30SR. All flights had been made departing from Vairé strip.

2.4 Meteorological conditions

The conditions estimated by the Météo-France services at the time of the accident were a light north-easterly wind, visibility greater than 10 km, clear or few clouds, and a temperature of 19 °C.

2.5 Statements

2.5.1 Statement from people near the accident site

There were no onlookers to the accident. Witnesses said that they heard an engine stop and then an accident noise a few moments later. They stated that the meteorological conditions were CAVOK with no wind. One of the witnesses, who is himself a pilot, is the owner of the microlight base.

2.5.2 Statement from pilot's instructor

The instructor who had trained the pilot indicated that the training comprised 12 sessions lasting between 25 and 55 minutes.

The solo flight made to obtain the licence took place on 30SR, which belonged to the pilot. He specified that this was the last time he saw the pilot.

² Reference No LF8570 in the BASULM database of the French Microlight Federation (FFPLUM).

2.5.3 Statement from a technician at microlight manufacturer's

A technician working for the microlight manufacturer indicated that the microlight was overhauled in October 2018, when it was sold by DTA to the two co-owners.

This technician, who is also an instructor, explained that the trike, engine and wing formed a lightweight unit with safe behaviour, characterised by a low sink rate.

2.5.4 Statement from second co-owner

The second co-owner indicated that the pilot planned to take the passenger carrying privileges examination in July 2021. He thought that the flight performed that day was part of the pilot's preparation for this. He specified that the examination for this privilege involves precision landings with an instructor. He added that, as part of his training for this privilege, the pilot landed with the engine at idle.

2.6 Passenger carrying privileges programme

The training programme to obtain passenger carrying privileges includes several skills that the pilot must master, in particular two types of approach:

- approach with power: e.g. to maintain a conventional approach slope of 5 %;
- approach with the engine at reduced speed (see para. 2.7): this is the preferred configuration for short landings.

2.7 Approach with engine at reduced speed in a flex-wing microlight

It is not uncommon for pilots of flex-wing microlights to conduct approaches with the engine at reduced speed. In these cases, the approach slope to be adopted depends on the microlight's performance, in particular its lift-to-drag ratio. It can be between 5 and 15 %.

The performance of the wing/trike/engine assembly equipping the microlight involved in the accident is not published. For information, the declared lift-to-drag ratio for the DTA Magic wing combined with different engines (including Rotax engines) is 8.8. Since the maximum lift-drag speed is generally close to the recommended approach speed, this value suggests an approach slope of approximately 11 % with the engine at reduced speed. A steeper approach slope (for example, to maintain a greater obstacle clearance margin) would cause an increase in speed that would not be conducive to a short landing.

2.8 Read-out of the pilot's mobile phone data

The pilot was using a navigation application on his mobile phone. Its read-out allowed the flight's GNSS data to be retrieved, in particular the final approach data. This was the first landing after a local flight.

The following observations were made:

- the descent to the runway started at an altitude of approximately 150 m, the microlight was then in the final turn;
- the initial approach slope would have led the microlight far beyond the runway threshold;
- the approach slope steepened approximately 200 m from the runway threshold;
- it seems that no evasive manoeuvre was performed before the collision with the trees.

3 CONCLUSIONS

The conclusions are solely based on the information which came to the knowledge of the BEA during the investigation. They are not intended to apportion blame or liability.

Scenario

The pilot probably undertook the flight to train for his passenger carrying privileges, with a view to obtaining them in the summer. In this context, it is possible that he wanted to make a short landing with the engine at reduced speed, for practise purposes. The increase in the approach slope could have been an attempt by the pilot to join an approach path to the threshold of runway 13.

The path followed by the pilot did not allow him to clear the trees located at the edge of the wood, before the runway threshold. The absence of an apparent evasive manoeuvre suggests that the pilot did not perceive the conflict.

Safety action

The presence of trees before runway 13 requires a specific and precise final approach when the runway threshold is used as the aiming point. In this context, the safety margins are extremely reduced, or even non-existent, even though the approach is carried out with the engine at reduced speed and with a steep slope. The FFPLUM plans to contact the strip owner to suggest that a displaced threshold be defined to provide more reasonable safety margins.

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