BEA
Bureau d'Enquêtes et d'Analyses
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SAFETY INVESTIGATION REPORT

# Accident to the RANS S12 identified 55JU on Sunday 16 April 2023 at Billy-sous-Mangiennes

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|---|---|
| **Time** | Around 10:45[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. | |

## Loss of control on short final, collision with ground

### 1 HISTORY OF THE FLIGHT

*Note: the following information is principally based on a statement.*

The pilot, accompanied by a relative, arrived at Billy-sous-Mangiennes microlight strip at around 09:00 to carry out runway circuits. After the pre-flight check, the pilot taxied back and forth several times on the runway. He then took off, unaccompanied, from runway 25[2] for a first runway circuit.

On short final, the pilot lost control of the microlight. The aircraft collided with the ground before the runway threshold with a high nose-down attitude and then rolled over onto its back.

### 2 ADDITIONAL INFORMATION

#### 2.1 Pilot information

The 78-year-old pilot held a fixed-wing microlight pilot certificate issued in April 2004 and had obtained passenger carrying privileges in December 2007. He had been the owner of the microlight identified 55JU for the last twenty years.

In November 2015, he had totalled 947 flight hours, nearly all of them carried out on this microlight. The investigation was not able to determine his experience more accurately. Based on the information collected during the investigation, the accident flight was a refresher flight after not flying for seven years for medical reasons.

The pilot held a medical certificate indicating that there were no contra-indications to him flying microlights, issued on 1 February 2023 by his general practitioner who had been treating him for several years.

[1] Except where otherwise indicated, the times in this report are in local time.
[2] Unpaved runway measuring 250 m x 20 m.

The autopsy performed on the pilot's body revealed numerous advanced arterial lesions, particularly in the aorta. In the heart, the coronary arteries showed numerous narrowings of up to 80% to 90%. In these conditions, myocardial perfusion can be severely compromised in the event of stress or even moderate exertion. This can lead to faintness or even death.

During the seven years when he had not flown, due to serious pathologies, the pilot had undergone medical treatments which can aggravate the arterial lesions associated with aging. He had not contacted the federal doctor to seek their opinion on this matter.

## 2.2 Meteorological information

Météo-France estimated that the meteorological conditions at the accident site were:

- north-north-west wind of 10 to 12 kt[3];
- scattered clouds at 1,300 ft and sky overcast at 3,000 ft;
- temperature 8°C;
- QNH 1021.

## 2.3 Microlight information

### 2.3.1 General

The RANS S12 is equipped with a fixed tricycle landing gear, a 65-hp Rotax 582 UL DCDI engine and a pusher propeller.

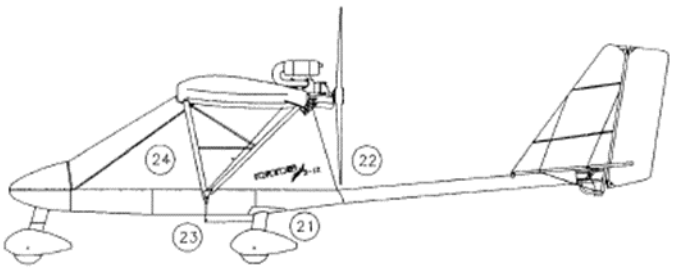


Figure 1: RANS S12 (source: manufacturer flight manual)

### 2.3.2 Maintenance

The maintenance information concerning 55JU that the BEA was able to collect was limited and based on the indications given by the pilot's grandson, witness to the accident.

Two weeks before the accident, the pilot himself had carried out maintenance actions on the microlight which consisted of draining the engine and replacing the spark plugs. The witness specified that many of the parts were new and had been changed by the pilot.

## 2.4 Examination of site and wreckage

The wreckage was located in a field, close to Billy-sous-Mangiennes microlight strip, at 345 m from the threshold of runway 25 (see Figure 2).

[3] The glossary of abbreviations and acronyms frequently used by the BEA can be found on its web site.


Figure 2: overall view of accident site (source: Géoportail)

Figure 3: wreckage of 55JU (source: BEA)

The aircraft was found inverted, the nose was destroyed, the RH wing was bent by almost 90° and the top of the vertical stabilizer was lying on the ground (see Figure 3).

The wreckage was examined by the BEA. Certain parts of the elevator control system were removed and underwent a detailed examination in the BEA laboratory.

The damage observed was consistent with a high nose-down attitude at the time of the collision with the ground. It is probable that the RH wing contacted the ground before the LH wing. The ruptures to the structure and the flight controls show the characteristics of a sudden failure consistent with the collision with the ground.

The visual examination of the powerplant revealed no anomalies, and the engine was free to rotate.

## 2.5 Statement

The witness, the pilot's 20-year-old grandson, stated that the microlight was kept in a hangar on the microlight strip. He also indicated that every three weeks during the seven-year period when the pilot did not fly, the latter taxied up and down the runway one or more times in order to run up the engine.

After taking the microlight out of the hangar, he and the pilot carried out the pre-flight check covering the engine, brakes, wing attachments, bodywork and tires.

He indicated that the pilot then decided to start up the engine and as always, taxied up and down the runway several times, before taking off unaccompanied, from runway 25.

The witness, near the hangar, remembered that the engine was "running normally" while the microlight taxied up and down the runway various times and during the runway circuit. He specified that on short final for runway 25, the microlight was stable, its wings "straight", and that it then suddenly "dived" towards the ground. He added that the engine stopped after the collision with the ground, and that fuel was leaking from the tank.

# 3 CONCLUSIONS

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

## Scenario

On short final, the pilot lost control of the microlight, which took a high nose-down attitude with a slight RH bank, until it collided with the ground.

The investigation was unable to determine the cause of this loss of control. However, the results of the medical examinations carried out on the pilot revealed the existence of significant arterial lesions, in particular coronary lesions. It is possible that the accident was the result of a sudden impairment of his ability to fly.

## Safety lessons

### Resuming flights

In 2018, the FFPLUM set up a Refresher Flight Operation (REV) for when a pilot resumes flights after a break, to encourage a licensed pilot and an instructor to carry out an hour's flight together, in instruction, with the pilot's microlight. This is at the pilot's initiative, and the federation offers an allowance to finance part of the associated costs and encourage this type of initiative.

### No contra-indication medical certificate for flying a microlight.

When a pilot applies for a FFPLUM federal license for the first time, or if they have not held a federal license for more than one year, they must be in possession of a no contra-indication medical certificate issued within the previous 12 months, attesting to the absence of contra-indications to flying a microlight. The FFPLUM medical commission specifies that in no case is this an aeronautical medical examination, and that all medical doctors working in the European Community or Switzerland, and in particular family doctors, are authorized to issue this certificate.

In the event of health problems or a break in flying, a ***federal doctor*** is available to FFPLUM members to examine with them the aspects of their medical condition relating to flying microlights. In its 2023 annual review of microlight accident reports, the BEA discussed the medical aspects of flying microlights, and in particular the use of the federal doctor.

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