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INVESTIGATION REPORT

Accident to the CIRRUS - SR22 registered PH-SJN

on 28 July 2020
at Nancy-Essey (Meurthe-et-Moselle)

Time	Around 13:00[1]
Operator	Private
Type of flight	Cross-country
Persons on board	Pilot and three passengers
Consequences and damage	Aeroplane substantially damaged

This is a courtesy translation by the BEA of the Final Report on the Safety Investigation published in December 2021. As accurate as the translation may be, the original text in French is the work of reference.

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

Abnormal contact with the runway, loss of control, re-application of power, runway veer-off

1 - HISTORY OF THE FLIGHT

Note: the following information is principally based on the flight recorder RDM[2], data recorded by the G1000 avionics system, statements, and radio communication recordings.

[2] Recoverable Data Module.

The pilot, accompanied by three passengers who were members of his family, took off from Valence-Chabeuil airport (Drôme) bound for Kempen (Netherlands), with a planned stopover at Nancy-Essey airport to refuel.

On arriving at Nancy-Essey airport, the AFIS officer told the pilot that he was alone in the circuit and asked him to call back once established at the start of the downwind leg for runway 21[3]. The pilot continued and then checked in on final approach, at which time the wind was 12 kt from 250°.

[3] Paved runway 03/21, measuring 1,600 m x 40 m

After the wheels touched down on the runway, the pilot lost control of the aeroplane, which bounced and banked left. The pilot re-applied power, the left wing tip hit a runway light. The aeroplane veered off the runway to the left, its nose wheel made contact with the ground and the plane bounced again. The pilot reduced the power. The aeroplane came to a stop on its belly after spinning 180° to the right.

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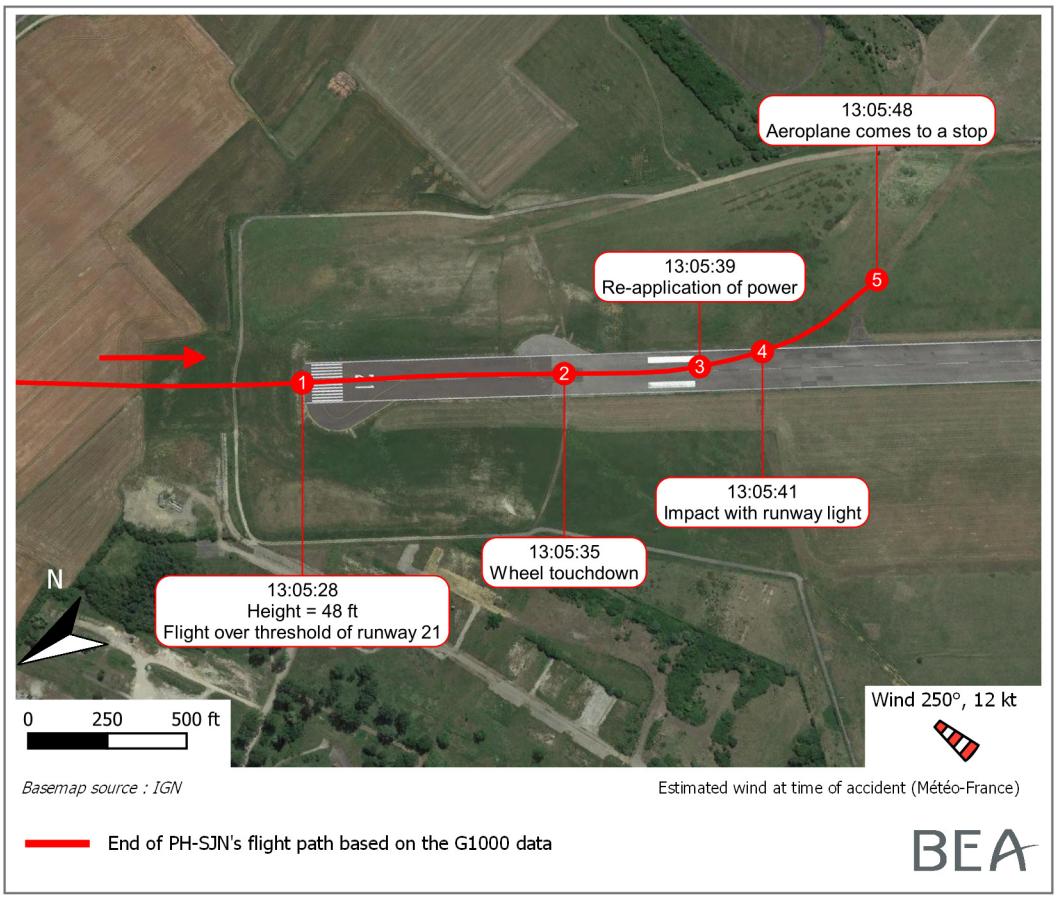
Égalité
Fraternité



Source: BEA

Figure 1: Path of PH-SJN

2 - ADDITIONAL INFORMATION

2.1 Accident site and wreckage information

The wreckage was located on the left side of runway 21 in a grassy area. The landing gear had failed and the aeroplane was lying on its belly. A runway light was found broken.

All damage resulted from the runway excursion. The three blades of the metal propeller were bent rearward, with friction marks on the upper surface of the blades and distortions on the leading edges. This damage is consistent with an engine running at low speed.

2.2 Meteorological information

The meteorological conditions estimated by the French Met Office, Météo-France, at Nancy-Essey airport at the time of the accident were as follows: wind of 7 to 11 kt varying from 210 to 290°, visibility greater than 10 km, overcast sky with broken clouds at 5,600 ft.

The METAR report on the day of the accident forecast possible gusts from 14:30.

2.3 Read-out of computers

The aeroplane was equipped with an RDM computer, which recorded flight and engine parameters, as well as a GARMIN G1000 avionics suite, which recorded flight parameters only on an SD card.

The RDM was removed by the BEA at the accident site and the data from the G1000 avionics system was downloaded by the owner and transmitted to the BEA for analysis. It was possible to synchronise the two data sources. The recorded flight parameters are similar as they come from the same source.

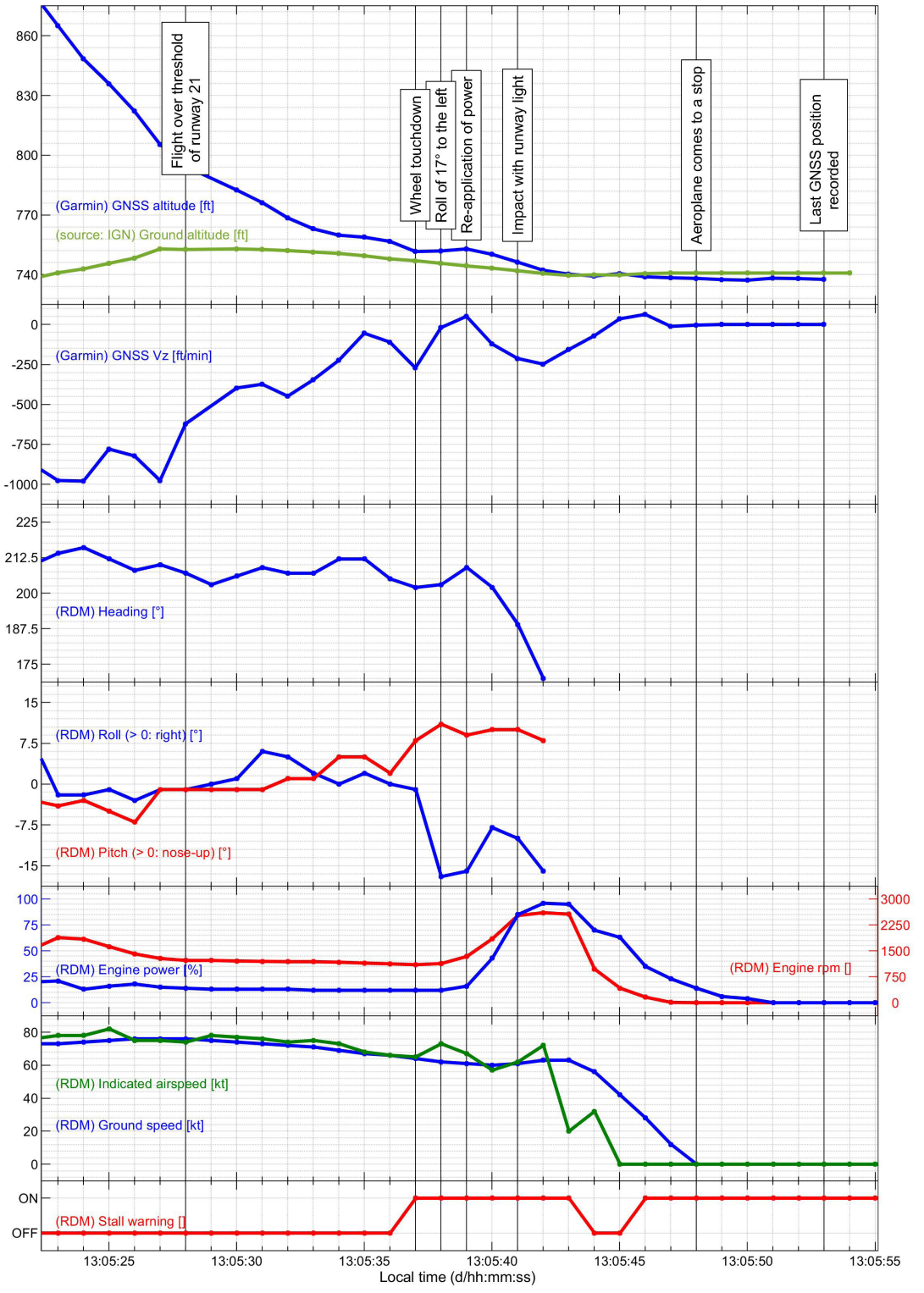


Figure 2: Parameters recorded from the threshold of runway 21

When flying over the runway threshold at 13:05:28, the aeroplane was at a height compliant with standard procedures, on the runway centreline, in the "*100% flap*" configuration, and the indicated airspeed was consistent with that recommended in the flight manual.

Throughout the final approach and at the moment the wheels touched down, the wind calculated by the G1000 avionics system was consistent with the Météo-France forecasts, i.e. an average wind of 12 kt from 250°.

When the wheels touched down at 13:05:37, the aeroplane had a nose-up attitude of 8° and the stall warning sounded.

At 13:05:38, a roll of 17° to the left and a nose-up attitude of 11° were recorded. One or two seconds later, the pilot re-applied power. The yaw of the aeroplane increased to the left. The stall warning remained active.

At 13:05:41, the left wing tip of the aeroplane hit a runway light.

At 13:05:48, the aeroplane came to a stop.

2.4 Pilot and AFIS officer's experience and statements

2.4.1 Pilot

The 68-year-old pilot owned the aeroplane. He held a Private Pilot Licence - Aeroplanes (PPL(A)) issued in July 2012 and a SEP land rating valid up to September 2022. He had logged 491 flight hours, around 310 hours of which on type and 11 hours of which on type in the last 90 days.

The pilot stated that during the final approach and before the wheels touched down, the aeroplane was aligned with the centreline of runway 21. He added that the parameters were stable and normal. He also stated that during flare, he lost too much speed and attempted to correct this by applying full throttle. He specified that when full throttle is applied in the Cirrus, the right pedal also has to be pressed hard, otherwise the aeroplane makes a sudden movement to the left. He remembered that he did not make an input on the pedals, and thought that this caused the aeroplane to veer off the runway to the left. He stated that the landing gear was substantially damaged due to the holes and bumps in the grass field adjacent to the runway.

2.4.2 AFIS officer

The AFIS officer stated that the left wing tip struck the runway after the aeroplane had crossed the threshold of runway 21. The aeroplane came down hard on the nose wheel and then bounced before coming back down in the grass, causing the landing gear to fail. The aeroplane veered off the runway to the left and came to a stop on its belly after spinning 180° to the right. The AFIS officer said that he had not noticed any gust of wind during the final approach of the aeroplane.

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

As the wheels touched down on the runway, the stall warning sounded. The aeroplane's attitude increased, the aeroplane bounced, and the pilot lost control of the aircraft which banked left. The pilot then re-applied power without being able to counter the effects of the engine torque, which accentuated the destabilisation. The aeroplane bounced again in the grassy area before coming to a stop on the side of the runway.

Safety lessons

When a pilot is faced with an unexpected situation during landing, a previous BEA report[4] has highlighted that it is difficult for a pilot to choose between continuing the landing (with the risk of damaging the aeroplane) or initiating a go-around. Between 2010 and 2017, the BEA was notified of approximately 350 landing accidents involving a light aeroplane. Five events caused fatal injuries and eight caused serious injuries. An aborted landing was initiated in all five fatal accidents and in five of the eight accidents in which the occupants were seriously injured.

[4] Report on the accident to the microlight identified 09BO on 23 July 2019, available on the BEA website: https://bea.aero/en/investigation-reports/notified-events/detail/accident-to-the-bf-light-aircraft-fk9-mark-4-identified-09bo-on-23-07-2019-at-calviac-lot/