BEA
Bureau d'Enquêtes et d'Analyses
pour la sécurité de l'aviation civile
www.bea.aero
@BEA_Aero

INVESTIGATION REPORT

Accident to the ROLLADEN SCHNEIDER LS7-WL registered F-CGYB

on 15 October 2019
at Pic Saint-Loup in the commune of Cazevieille (Hérault)

Time	Around 14:50[1]
Operator	Centre de Vol à Voile Montpellier Pic Saint-Loup
Type of flight	Local
Persons on board	Pilot
Consequences and damage	Pilot fatally injured, glider destroyed

This is a courtesy translation by the BEA of the Final Report on the Safety Investigation published in May 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.

Collision with the terrain in slope soaring flight

1 - HISTORY OF THE FLIGHT

Note: the following information is principally based on statements and on the glider's Open Glider Network (OGN) and FLARM data.

The pilot carried out a towed take-off at around 14:25 from Saint-Martin-de-Londres aerodrome (Hérault) for a slope soaring flight at Pic Saint-Loup located three kilometres to the south-east.

Several minutes later, he reached Pic Saint-Loup at an altitude of approximately 700 m and started his manoeuvres, alternating turns in a figure-of-eight shape along the north slope and spirals above the terrain. He remained at an altitude of roughly 700 m.

At around 14:50, during these manoeuvres, the glider flew past the peak at a height of around 70 m and found itself downwind of the terrain. The pilot lost control of the glider, which collided with the ground with a steep nose-down attitude.

RÉPUBLIQUE FRANÇAISE
Liberté
Égalité
Fraternité

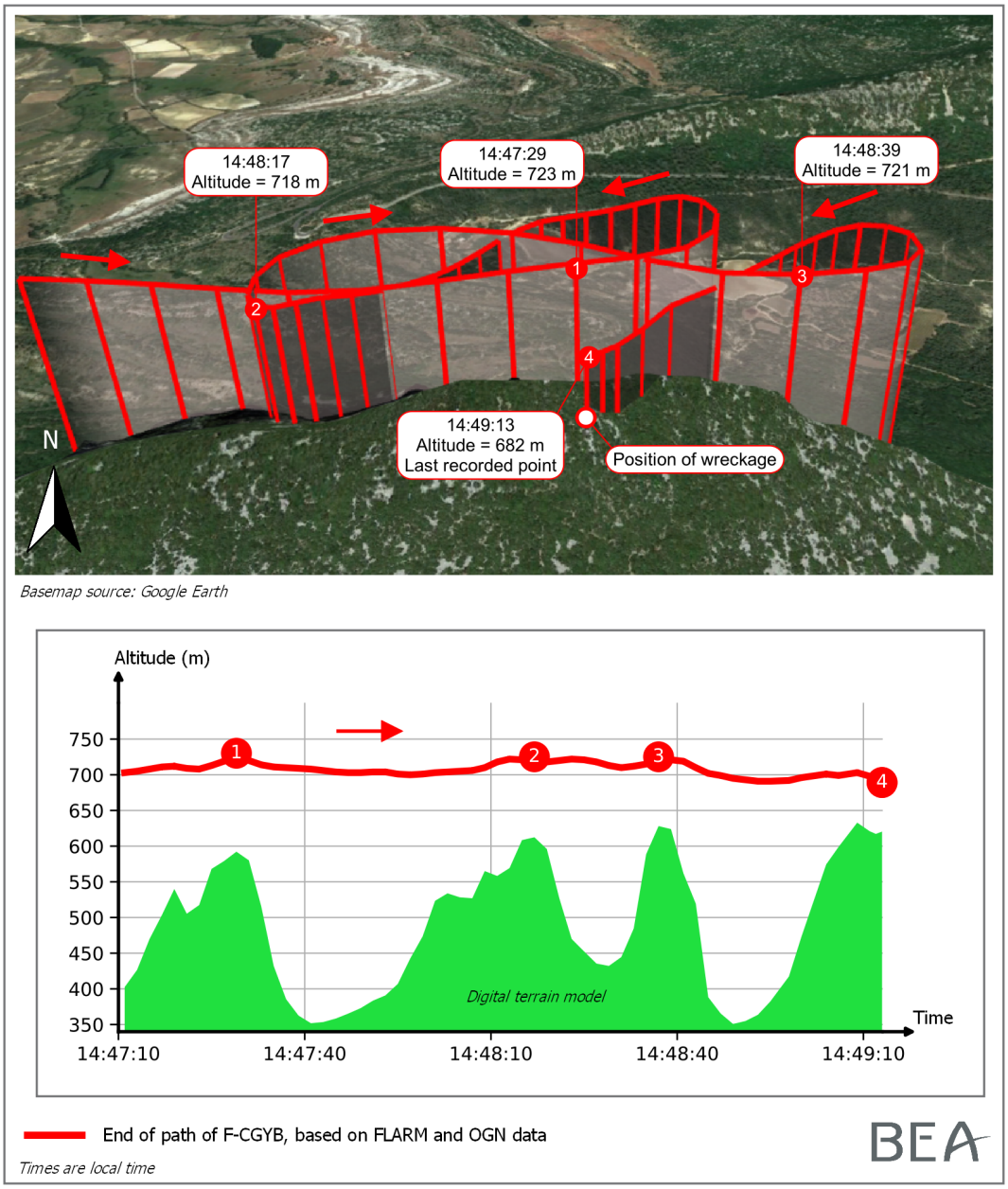

Figure 1: End of the glider's path

2 - ADDITIONAL INFORMATION

2.1 Examination of site and wreckage

The wreckage was positioned vertically in a steep area. The examination of the site indicated that the glider collided with the ground with a steep nose-down attitude.

The wreckage was not dispersed. All of the damage observed on the glider's structure was caused when the glider collided with the ground and the vegetation.

The flight control linkages were continuous. The flight controls were unrestricted in travel. The air brakes were retracted at the time of the impact with the ground. The position of the controls was as follows: air brakes retracted and locked, landing gear retracted and locked.

2.2 Pilot experience

The 58-year-old pilot held a glider pilot licence (SPL) issued on 16 March 2018. He had logged 190 flight hours in gliders, 46 of which in the LS7 and 29 hours in the previous three months, 4 hours of which in the LS7. He also held an Airline Transport Pilot Licence - Aeroplanes (ATPL(A)) with 15,500 flight hours of experience. Lastly, he held a fixed wing microlight pilot licence and a glider towing rating.

The pilot had completed slope soaring training comprising a theoretical briefing and instruction flights. His instructor stated that they had made many flights at Pic Saint-Loup. He added that, in the aerological conditions on the day of the accident, slope soaring flight was only possible in certain places and that these had been shown to the pilot.

As he had not yet carried out a reconnaissance with an instructor of the flight sectors defined by the club, he was considered to be a pilot "in progress" and restricted to imposed flight sectors and lift-drag speeds. In particular, he had to limit slope soaring flight to the Pic Saint-Loup and Seranne terrains and exclusively above the level of the peaks and with the agreement of an instructor.

2.3 Meteorological information

An area of high pressure over Spain and an area of low pressure over Ireland accelerated the wind from the west or north-west sector at altitude and generated a fairly strong and humid Atlantic flow with a localised wave effect on the Cévennes mountain range, that was likely hardly noticeable above and in the vicinity of the accident site.

The meteorological conditions estimated by Météo-France at the accident site were as follows: 300° wind at 20 kt, gusting up to 30 kt, CAVOK, strong turbulence near the terrain, with the possibility of small rotors formed downwind of the terrain (south slopes) and at very low level.

2.4 Statements

2.4.1 Pilot of another LS7 glider registered F-CGYC

The pilot of F-CGYC stated that he had helped the pilot to take out his glider at around 12:30. They had then each made a flight in their glider lasting around 30 minutes in the Hérault Valley region. The pilot of F-CGYC estimated that the day was difficult and required experience.

He reported having taken off again at around 14:30 just after the pilot of F-CGYB and having joined him in the vicinity of Pic Saint-Loup. He stated that the aerological conditions and in particular the direction of the wind that he estimated to be practically parallel to the slope had not been ideal for gaining altitude. He remembered that, during the flight, the pilot of F-CGYB had told him that the conditions were bad. They made out-and-back flights along the slope line at a height of between 50 and 200 m above the terrain according to an east-west path. He regularly saw F-CGYB.

When he was approximately two kilometres to the west of the Pic Saint-Loup cross, he saw F-CGYB suddenly lose altitude, nose down, then disappear behind the terrain.

Having seen the tail of the glider in the vegetation, he reported the accident to the starter over the frequency.

2.4.2 Club president

The club president stated that he was the instructor on duty on the day of the accident. He remembered that the pilot of F-CGYB telephoned him at around midday to find out the meteorological conditions and he had told him that it was windy and that there were mountain waves.

2.4.3 Training manager of the gliding club

The training manager stated that he did not consider the conditions on the day to be dangerous. As a general rule, it is difficult to gain altitude at Pic Saint-Loup when the wind is blowing from the west/north-west. He stated that if a glider passes downwind of the terrain, the directives are to land in an identified field located south-east of the bottom of the terrain or to return to the windy side of the terrain passing via the east or west of the terrain.

2.5 Safety distances when flying the ridge in high winds

The following information is an excerpt from the Safety in Mountain Flying document , first edition-December 2011, published by the Centre National de Vol à Voile de Saint Auban (http://www.ato.cnvv.net/logiciels/documents-de-reference/).

Chapter 3 "Control of the flight path, safety distances, recurring problems" indicates the following about flying the ridge in high winds:

- The turbulence is extreme in the vicinity of the slope.
- Flying in the lee of crests is extremely dangerous.
- If, against your will, you find yourself in the lee of a crest, nearby its top or lower, the best solution is to flee tailwind, towards the valley, then reach a landable area, and eventually try to climb again.

Figure 2 below illustrates the flight zone to be avoided when flying the ridge in high winds.

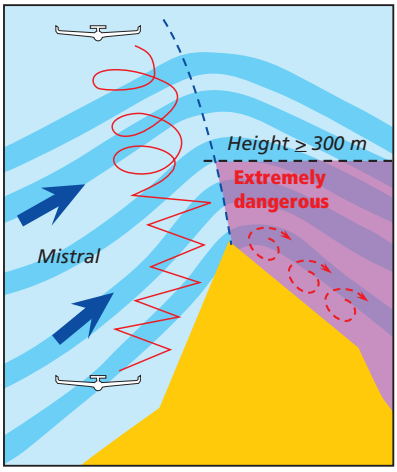

Figure 2: Flight zone to be avoided in high winds

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 took off a first time to carry out a wave soaring flight. Having failed to take up the wave, he returned to land at the aerodrome before taking off again to make the slope soaring flight at Pic Saint-Loup. Taking into consideration the direction of the wind (approximately 40° to the terrain) and its strong turbulent characteristics, the slope soaring flight at Pic Saint-Loup was possible but it was difficult to gain altitude. During his manoeuvres, the pilot found himself downwind of the terrain at low height. He probably flew into rotors and lost control of the glider. His proximity to the terrain did not allow him to quickly regain control to move away from the terrain before collision with the ground.

The investigation was unable to determine the reason for which the glider found itself in this dangerous flight area.

Safety lessons

Flying the ridge in high winds comes with strong turbulence near the ground, as well as strong downdrafts and rotors on the downwind side of the terrain. In these conditions, it is extremely dangerous to penetrate the zone located downwind of the peak.