BEA
Bureau d'Enquêtes et d'Analyses
pour la sécurité de l'aviation civile
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SAFETY INVESTIGATION REPORT

Accident to the SCHEMPP HIRTH - ARCUS registered F-CVMP on Saturday 22 July 2023 at Puigmal

Time	Around 12:40[1]
Operator	Centre de vol à voile de Montpellier Pic Saint-Loup
Type of flight	Local
Persons on board	Pilot and instructor
Consequences and damage	Instructor injured, glider substantially damaged
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 terrain while slope soaring, in instruction

1 HISTORY OF THE FLIGHT

Note: the following information is principally based on statements and data from the glider's on-board computers.

The instructor and the pilot in instruction carried out a towed take-off from La Llagonne - La Quillane aerodrome (Pyrénées-Orientales) at 12:29. They released the cable at 12:35 (see **Figure 1**, point 1) at an altitude of around 2,300 m and headed south following the terrain of the right side of Llo valley.

A short time later, the instructor took the controls in order to show the pilot how to best use the uplifts which are weak at the entrance to the valley. He perceived a rocky outcrop (spur) on the flight path and thought he would be able to fly over it at a low height. He believed that after this obstacle, he would be able to use the uplifts in the cirque further on. He indicated that shortly before arriving over the spur, a downdraft caused the glider to drop. The instructor could not avoid the collision with the terrain, the fuselage struck the ground and the left wing was immediately torn off. The glider slid down the steep slope, coming to a stop against a fir tree 150 m further down.

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

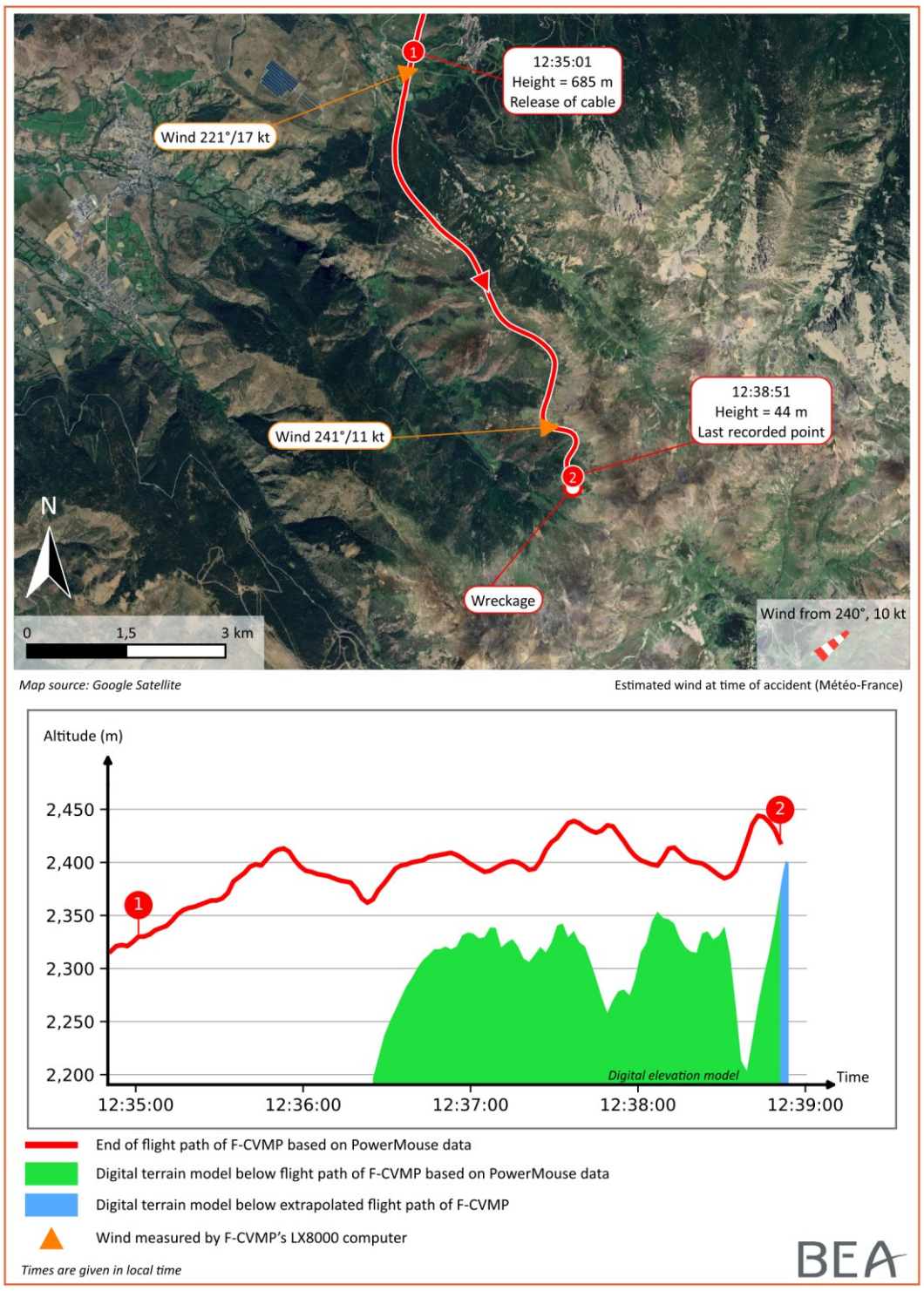

Figure 1: end of flight path of F-CVMP (Source: BEA)

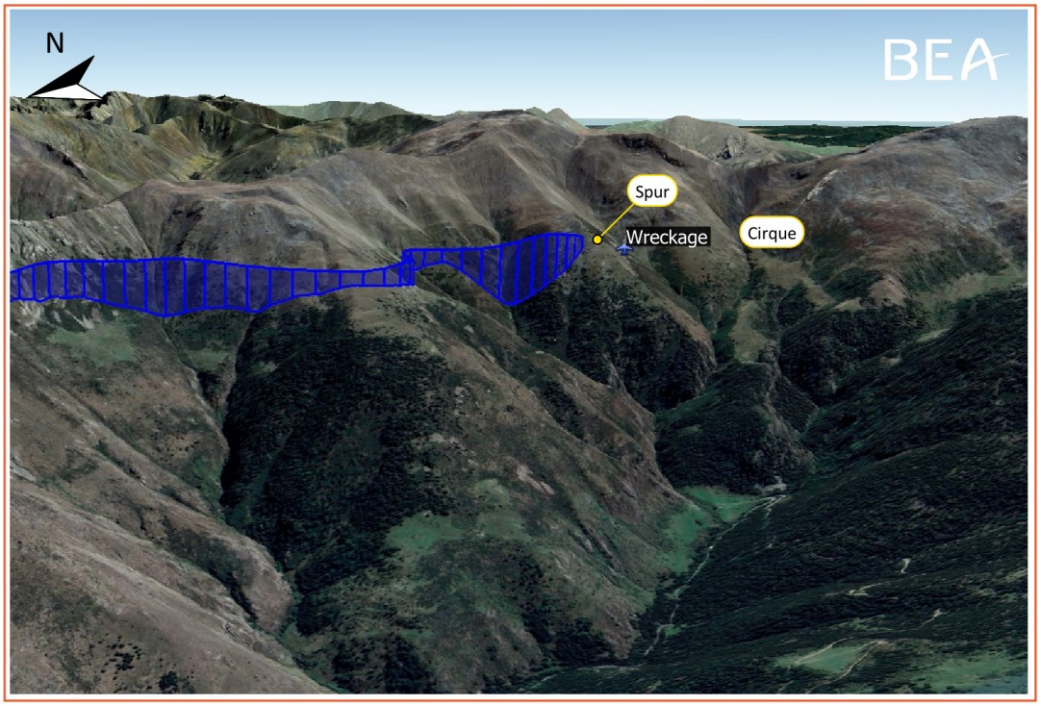

Figure 2: 3D view of end of flight path of F-CVMP (Map source: Google Earth)

2 ADDITIONAL INFORMATION

2.1 Site and wreckage

The wreckage was lying at 2,400 m on a steep slope covered with grass, stones and a few trees. The airframe and right wing, still integral with the fuselage, were wedged against a tree. The left wing was lying about 50 m further up the slope from the wreckage (see **Figure 3**).

As the accessibility was limited, the BEA investigators did not join the site. No malfunction was identified during the examination of the wreckage after it had been moved. The pilots did not report any abnormal behaviour of the glider prior to the accident.

2.2 On-board computers

The PowerMouse is a computer which incorporates a FLARM module to help detect obstacles and traffic in the vicinity. It records the GNSS[2] tracks in a non-volatile memory. The PowerMouse model records at a frequency of 0.5 Hz.

The LX9000 computer is an on-board navigation system which records the GNSS tracks on an internal memory card. It also measures the direction and strength of the wind.

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

Figure 3: position of wreckage (Source: Gendarmerie)

2.3 Meteorological information

The general situation was anticyclonic and the associated weather was dry and calm. The forecast models predicted wind from 235° of 10 kt as well as weak vertical movements ranging from +1 to -1 m/s. Visibility was greater than 10 km and there were a few clouds over the border ridges. The temperature was 13°C. Wind from 241° of 11 kt was recorded by the glider's LX 8000 about one minute before the collision with the terrain.

3 PILOT INFORMATION

3.1 Instructor

The 70-year-old pilot held a Sailplane Pilot Licence (SPL) obtained in 2010. He had logged approximately 6,000 glider flight hours, including 110 hours in the previous three months. He regularly flew in mountainous regions.

3.2 Pilot

The 35-year-old pilot obtained his SPL in 2019. He had logged 500 flight hours, including 40 hours in the previous 3 months. He also held an aeroplane Private Pilot Licence PPL(A).

4 STATEMENTS

4.1 Instructor's statement

The instructor indicated that they had planned a circular flight from Llagone to the peak of Aneto and back. A flight plan had been filed for crossing the border with Spain. The instructor had already flown in this sector on previous days with other students. The instructor explained that he regularly organised advanced mountain flying courses for pilots from the Montpellier Pic Saint-Loup gliding centre.

After releasing the cable at the entrance to the Llo valley, the aerological conditions were as he expected. He estimated a south-westerly wind of around 20 km/h. The uplifts were weak (around 1 m/s) and a few downdrafts were also present. The instructor indicated that he wanted to head for the large cirque he knew, at the end of the valley. He had seen birds of prey climb very quickly in the area and was hoping to find stronger uplifts.

To reach the cirque, he had to cross a spur. He estimated that with the speed and height of the glider and a vertical speed of -2 m/s, he could pass over the obstacle. The instructor indicated that on approaching the obstacle, a strong downburst made the glider lose altitude and hit the ground.

He added that they alerted the emergency services by telephone.

4.2 Pilot's statement

The pilot indicated that he wanted to train in mountain flying. During the morning briefing with the instructor, they had emphasised the south-westerly wind that was forecast and which was expected to strengthen.

After releasing the cable at the entrance to the Llo valley, he looked for upifts, but the glider soon found itself low. The instructor then took the controls and slope soared below the ridge line. He wanted to head towards the cirque that closes off the valley, as there were several indications that the uplifts would be stronger there. During this slope soaring phase, the pilot indicated that he was impressed by the proximity of the ground. He added that he thought the instructor was going to fly around the obstacle they struck.

5 CONCLUSIONS

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

Scenario

After slope soaring for about five minutes, with aerological conditions that were difficult to use to gain altitude, the instructor approached a low-height spur. The glider then found itself downwind in a descending south-westerly flow. The instructor had no margin left to divert towards the valley. He lost control of the glider's flight path and was unable to avoid the collision with the ground.

Contributing factors

The following factors may have contributed to the decision to continue on the direct flight path towards the cirque:

- the difficulty of anticipating the presence of a marked downdraft on the downwind side of the relief;
- overconfidence, perhaps linked to recent flights in the same sector.

Safety lessons

The subject of **safety margins in relation to the terrain** is a recurring one. It is discussed on the gliders page of the accidentology section of the BEA's website.

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