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

Accident to the SCHLEICHER - ASK13 registered F-CDYD

on 25 June 2020
at Montagnole, locality of Pas de la Fosse (Savoie)

Time	Around 16:50[1]
Operator	Centre savoyard de vol à voile alpin
Type of flight	Local
Persons on board	Pilot and one passenger
Consequences and damage	Pilot injured, glider substantially damaged

This is a courtesy translation by the BEA of the Final Report on the Safety Investigation published in March 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 trees in slope soaring flight

1 - HISTORY OF THE FLIGHT

Note: the following information is principally based on the pilot statement and FLARM data from the glider.

The pilot, accompanied by one passenger, took off on a winch launch from Chambéry Challes-les-Eaux aerodrome (Savoie) for a local flight.

He used the uplifts over the mountains in the vicinity of the aerodrome to reach an altitude of approximately 1,400 m. He then headed northwards up to Bange mountain where he made a U-turn and headed in the direction of the Cirques de Montagnole, located south of the departure aerodrome, which he reached at an altitude of approximately 1,000 m. After gaining altitude in the first cirque (point ❸, see illustration), he joined the second cirque (point ❹ see illustration). With the glider losing altitude, the pilot decided to make a U-turn and moved away from the slope. The glider then suddenly lost altitude.

Knowing that he would not be able to avoid collision with the vegetation, the pilot issued a distress call[2] over the air/air frequency[3] used by the Challes-les-Eaux glider pilots. Seeing the top of the trees approaching, he fully pitched the glider nose up and landed on the treetops. The glider fell flat into the trees.

[2] The chief-pilot of the centre alerted the emergency services upon receipt of this call.

[3] 122.5 MHz.

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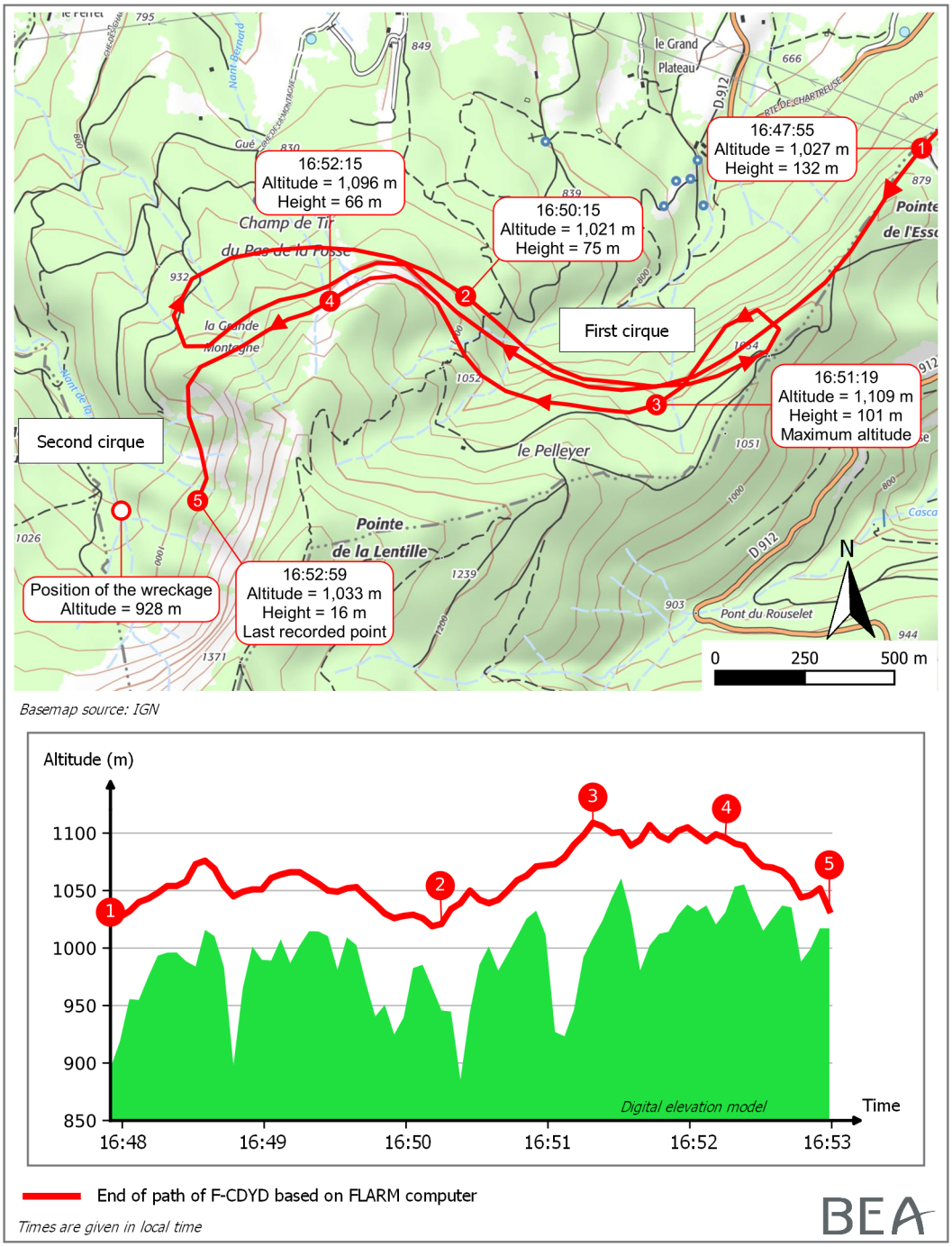
2 - ADDITIONAL INFORMATION

2.1 Examination of FLARM computer

The glider was equipped with a FLARM computer. Reconstruction of its path was possible based on data from the computer read-out.



End of the path

2.2 Meteorological information

The meteorological conditions estimated by Météo-France in the accident area were as follows: northerly wind of 3 to 5 kt, visibility greater than 10 km, scattered cumulus, temperature 30 °C.

2.3 Pilot information

The 67-year-old pilot held a glider pilot licence and had logged 1,200 flight hours in a glider. He also held a Private Pilot Licence - Aeroplanes (PPL-(A)) and had logged around 890 flight hours in an aeroplane.

2.4 Statements

The pilot stated that the flight took place normally and that he used the uplifts on the west slopes of the terrain without any problem. He remembered that he had reached the sector of the cirques at an altitude of 1,150 m[4] which was compatible with the recommended altitude of 1,100 m. He added that he did not find the uplifts straight away once there. When he managed to gain altitude, he joined the second cirque where the glider immediately lost altitude. He specified that when he moved away from the slope to make a U-turn, the glider was subjected to a strong downdraft.

He thought that the wind conditions in the sector of the cirques were not the same as during the rest of the flight.

He did not know the aeronautical emergency call number 191[5]. He did not remember receiving an SMS message after calling the emergency services.

2.5 Survival aspects

The glider remained stuck in the trees several metres off the ground. The pilot managed to detach himself and alight the glider, then helped the passenger evacuate the glider. They then climbed down a tree trunk.

As the glider was concealed by the vegetation and there was no mobile telephone network coverage in this area, they decided to walk away from the wreckage to alert the emergency services. They walked along the bank of the Vard stream for around one hour until they reached a clearing and were able to dial 18 to reach the emergency services.

The Aeronautical Rescue Coordination Centre (ARCC) was informed at 17:06 by the Bureau de Transmission des Informations de Vol (BTIV) at Aix-en-Provence, which had itself been informed of the accident by the chief-pilot of the flying club. After determining the search area based on the chief-pilot's statement and data from the OGN[6], a helicopter took off at 17:48. At 17:51, a location attempt was made using the GEND LOC[7] tool. Shortly after, the helicopter crew saw the occupants of the glider on a track. They were hoisted by helicopter to the fire services mobile command post located lower down, at the limit of the zone suitable for motor vehicles.

[4] Data from the FLARM shows that he was in fact at a lower altitude (approximately 1,000 m).

[5] This is a free number that can be called from landline or mobile telephones available around-the-clock, providing direct access to the rescue coordination centre.

[6] Open Glider Network. This is a community system that receives data from FLARM computers installed on board gliders in real time using a network of ground reception antennas. This information is shared with the ARCC.

[7] GSM geolocation tool of the police force. The telephone number used to call the emergency services is entered in the GEND LOC tool, a link is sent via SMS message to this number requesting its validation to authorise the sharing of the position. The telephone is then geolocated on a map using a point and GPS coordinates.

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 slope soared in the Cirques de Montagnole and found himself downwind of the terrain. With the glider losing altitude, he decided to move away from the terrain to make a U-turn. The glider suddenly lost altitude and the pilot was unable to avoid collision with the vegetation.

As the glider was not equipped with an emergency locator transmitter and was concealed in the vegetation, the pilot and his passenger decided to leave the accident site to reach an area from which they could contact the emergency services by mobile phone. This decision no doubt enabled the emergency services, which had not been able to locate the glider during the search phase, to find them more quickly.

Contributing factors

The following factors may have contributed to the collision with the vegetation:

- The pilot's decision to continue the flight in the cirques despite not being able to easily find the uplifts.
- The pilot's possible misperception of the wind.

Safety lessons

Since 2000, the BEA has investigated nine glider accidents during which the emergency services were not immediately alerted. Yet one of the ways of mitigating an accident is to provide first aid to the occupants as quickly as possible.

3.1 Emergency locator transmitters

ELTs[8] installed on aircraft, such as PLBs[9] , enable the search to start rapidly. Once activated, these transmitters emit over the emergency frequency and the signal is transmitted to the ARCC. In France, it is not mandatory for gliders to carry an emergency locator transmitter.

An ELT is activated upon impact but can also be activated manually by the pilot. This system therefore enables the emergency services to be alerted automatically.

A PLB is manually activated by the user. Activation of this beacon adds to the workload of the pilot, who may not have the opportunity to activate it before the accident. If the pilot is injured or unconscious, he will not be able to manually activate the beacon after the accident. Nevertheless, this system has the advantage of being robust, low-cost, simple to use and applicable in other domains such as hiking.

The BEA has no plans to recommend the mandatory carrying of an ELT on board gliders but encourages individual pilots to carry a PLB.

3.2 Use of OGN data

An alternative to carrying an ELT or a PLB could be the use of OGN data (see §2.5) which permits gliders to be located in real time and which, today, is only used once an alert has been received to determine the search area around the last known position.

[8] Emergency Locator Transmitter.

[9] Personal Location Beacon.

[10] French Gliding Federation.

[11] Search and Rescue.

The BEA contacted the different stakeholders (OGN, FLARM, FFVP[10], SAR[11] service, the DGAC) to study the feasibility of using OGN data to initiate search and rescue operations in the event of a glider accident. OGN system experts estimate that it is possible to develop a software which, based on this data, would be able to detect an accident and trigger an alert as required. A cross-check will be necessary to verify the data and assess whether it is an actual accident, a landing in a field that does not necessitate the intervention of the emergency services or a false alarm. The ARCC thinks that it can provide this cross-check and will initiate emergency operations if the accident is confirmed or if a cross-check is not possible.

The BEA encourages the DGAC to continue to discuss this matter with the different stakeholders so as to develop a detection tool for aircraft in distress and a feedback tool.

[12] http://www.ato.cnvv.net/logiciels/actions-vitales/

Issue 15 published in September 2020 of the FFVP's "*Actions Vitales*"[12] magazine presents the OGN system in detail and describes how to find a missing glider using this system. Issue 4 published in February 2018 describes the procedure to be followed in the event of a missing glider and provides a summary sheet entitled "*disparition d'un planeur*" (disappearance of a glider). The aeronautical emergency number 191 is given in both of these publications.