

Accident to the SCHEMPP HIRTH - JANUS B registered F-CFAJ

on 2 August 2019

at Val-des-Prés (Hautes-Alpes)

⁽¹⁾ Unless otherwise stated, all times given in this report are in local time.

Time	Approximately 14:45 ⁽¹⁾
Operator	Aéroclub de Saint-Rémy Les Alpilles
Type of flight	Local flight
Persons on board	Pilot and passenger
Consequences and damage	Glider destroyed
This is a courtesy translation by the BEA of the Final Report on the Safety Investigation published in August 2020. As accurate as the translation may be, the original text in French is the work of reference.	

Collision with trees during an off-field landing, fall into a river

1 - HISTORY OF THE FLIGHT

Note: the following information is based mainly on statements and on data from the glider's FLARM.

⁽²⁾ The person in charge of the session organized the formation of the crews.

During a gliding course organized by the Aéroclub de Saint-Rémy Les Alpilles at Mont-Dauphin Saint-Crépin Aerodrome (Hautes-Alpes), the pilot took off at 13:22 on a winch launch, with the person in charge of the day's session⁽²⁾ in the rear seat. The purpose of the flight was to go to the Maurienne Valley and then explore the Queyras.

⁽³⁾ A height of about 330 m in relation to the altitude of Le Rosier safe landing area.

At about 14:30, when they were near Briançon at an altitude of about 3,300 m, the pilots observed low cloud over the Maurienne Valley. They then decided to head westward towards Névache (Hautes-Alpes). On the way, the glider lost altitude and was no longer local to Mont-Dauphin Saint-Crépin Aerodrome. On arriving at Névache, the pilot did not find any lift so he turned around and went back to the ridges at Plampinet where he did some slope soaring in turbulent aerological conditions for about 30 minutes, in the vicinity of Le Rosier safe landing area (Hautes-Alpes). The glider continued to descend until it reached an altitude of about 1,700 m⁽³⁾.

The pilot in the rear seat then took over the controls and made a few alternating turns in a figure-of-eight in an attempt to find lift **1**, to no avail. He decided to abort the flight and to make an off-field landing on Le Rosier safe landing area. He went on to the left-hand downwind leg **2** and then to the base leg **3** to land facing south. In the middle of the base leg, because the glider was too high on the path, and he turned away **4** to lose altitude to the northeast of the field. On final, seeing that the glider was still not descending sufficiently, he extended the speedbrakes fully, set the flaps to the landing position, and asked the pilot in the front seat to deploy the drag chute. The pilot in the front seat jettisoned it by mistake.

The glider flew over the whole field. Both pilots retracted the speedbrakes and pulled the elevator control to clear the trees at the edge of the field and attempt to land in another field further on. The glider struck the trees, fell into a river, and rolled over **5**. The pilot in the front seat evacuated the glider unaided. The pilot in the rear seat managed to free himself and evacuated the glider with the help of witnesses who had come to help.

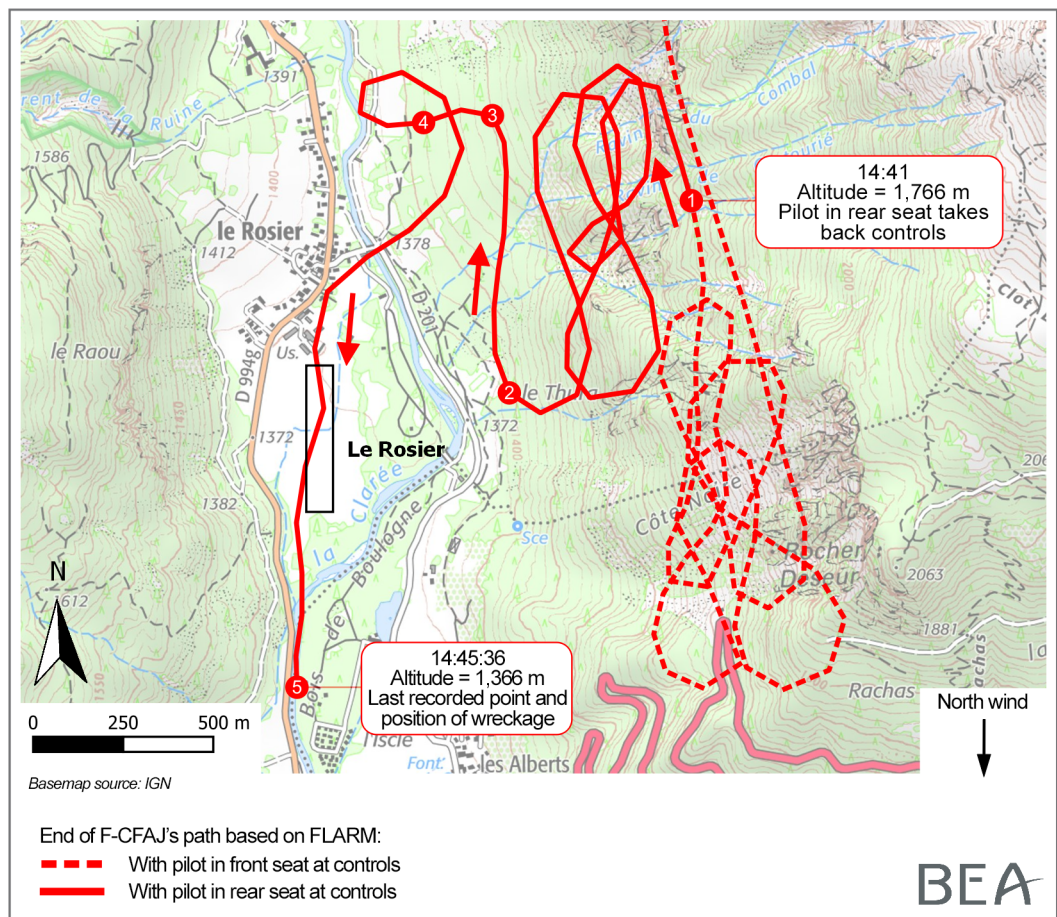


Figure 1: End of F-CFAJ's path based on FLARM data

2 - ADDITIONAL INFORMATION

Note: due to an imminent flooding risk, the wreckage had to be disassembled and removed from the site soon after the accident. Examinations of the wreckage were conducted on the basis of photos taken by those first on the scene. In particular, it was not possible to determine the flap position at the time of the accident.

2.1 Site and wreckage

The glider was found on its back, half submerged in a river at a place where the water depth was 40 cm. The left wing was fractured and showed evidence of impact with a tree at the leading edge. The canopy was broken.

The glider's drag chute was not found. The chute opening control lever was in the rear position. This position is probably due to the return spring on the lever. The pictogram corresponding to the "jettisoned" position was not visible because it was hidden by the shell of the front seat (Figure 2).

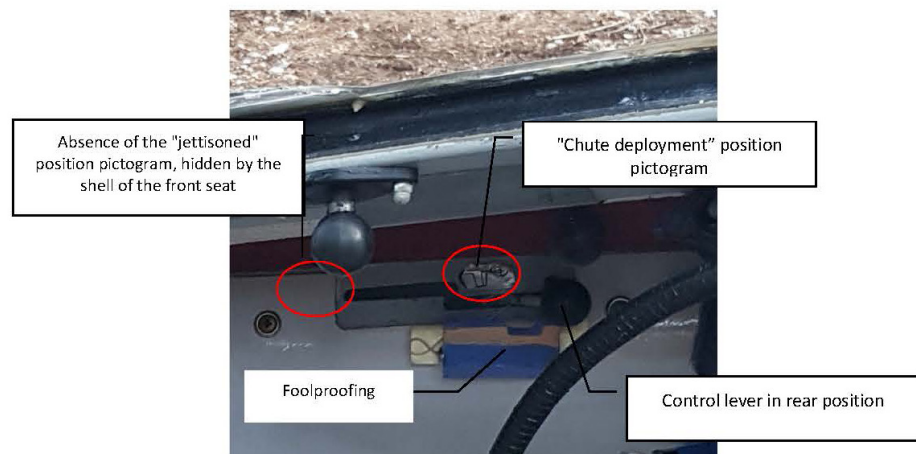


Figure 2: Post-accident photograph showing the drag chute control device

2.2 Drag chute information

The Janus B is equipped with a drag chute in the tailfin, unlike the Janus C⁽⁴⁾. It is recommended that it should be released when crossing the landing zone threshold, in order to increase drag and prevent levelling off during landing by decreasing the speed. The drag chute can be operated by means of a control lever from either the rear or front seat.

The drag chute control lever slides in a rail and can be set to three positions: "retracted" (rear stop position – [Figure 3](#)), "chute deployment" (centre position – [Figure 4](#)), or "jettisoned" (front stop position – [Figure 5](#)). To operate the lever, it is first necessary to remove a foolproofing device from the rear of the rail (blue block in [Figures 3 to 5](#)). To deploy the drag chute, it is necessary to reposition the foolproofing device to the front part of the rail and move the control lever forward from the rear stop to the central position, where there is an intermediate stop. To jettison the chute, it is necessary to remove the foolproofing device, clear the intermediate stop and push the lever to the front stop.

⁽⁴⁾ Newer version with better performance.



Figure 3: "Retracted" position



Figure 4: "Chute deployment" position



Figure 5: "Jettisoned" position

Note: the photos in Figures 3 to 5 were taken after removal of the front seat shell.

The flight manual contains illustrations of the various pictograms on board the glider. These include the pictograms associated with the drag chute control lever (Figure 6).



Figure 6: presentation of the pictograms associated with the drag chute control lever in the flight manual

2.3 Pilot information and crew statements

2.3.1 Pilot in front seat

The pilot had held a glider pilot licence since 2006. He had logged 1,576 flight hours, including 63 in the preceding three months, with 86 in a Janus C, including 10 in the preceding three months, and 4½ hours in a Janus B (the last flight being in September 2017). He explained that he usually flew alone in high-performance single-seat gliders. He said he had logged about 1,000 flight hours in mountains and was used to flying circuits of between 200 and 500 km.

He had reconnoitred Le Rosier field on foot three or four years earlier but had never landed there.

He explained that he wanted to fly in the Queyras with the other pilot because the other pilot knew the region better than he did. He said that, given his limited flight hours in the Janus B, it had seemed obvious to him before the flight that the pilot in the rear seat, who was an instructor, the course leader, and someone familiar with the region, would be the pilot-in-command and instructor. However, they did not discuss this, either on the ground or during the flight.

He added that, at an altitude of about 2,300 m near Névache, the pilot in the rear seat told him that he was "*narrowing down his options*" and that they were going to "*end up at Le Rosier*", but left the initiative to him.

He explained that they continued to lose altitude until they were beside the field, where they observed a slight valley breeze⁽⁵⁾ and decided to land into the wind. He then said aloud, "*look at the axis/field/aiming point.*"

⁽⁵⁾This was a wind blowing roughly from the south. The pilot explained that during the briefing at 10:30 in the morning, a mountain breeze had been forecast from 16:30.

⁽⁶⁾ The pre-flight checklist in the glider's flight manual says that the position of the drag chute control lever should be checked to make sure it is locked at the rear stop.

⁽⁷⁾ This guide is published by the PACA regional gliding committee in collaboration with the National Gliding Centre in Saint-Auban.

⁽⁸⁾ The term refers to a flight in which two qualified pilots are on board a two-seater but not in an instruction situation. A pilot-in-command must still be designated, particularly for decision-making. In practice, it is necessary for these statuses to be clearly defined at all times during the flight.

When the pilot in the rear seat took over the controls, he deliberately adopted a passive attitude so as not to interfere at the controls. He heard him say "... *preparing for landing*" and saw the flaps move; he then heard "*deploy the chute*" and spent a few seconds understanding what he had to do before quickly moving the control lever.

He explained that he had not thought at all about the presence of a drag chute on the glider during the pre-flight check⁽⁶⁾. He stated that he had never been trained in how to use it.

2.3.2 Pilot in rear seat

The pilot had held a glider pilot licence since 1999 and a glider instructor rating since 2007. He had logged over 3,000 flight hours, including 196 in the Janus B and 90 in the preceding three months, 29 of which were in the Janus B.

He had reconnoitred Le Rosier field on foot more than eight years earlier and had never landed there. He had the Alps safe landing area guide⁽⁷⁾ and had opened it to confirm the runway circuit.

Making the most of the fact that he was available, he agreed to fly with the pilot in the front seat to show him the Queyras region. He explained that, in his view, it was "*mutual flying*"⁽⁸⁾ in which he was the pilot-in-command. He added, however, that he let the pilot in the front seat take the controls and that his function was simply to guide him in the Queyras. He stated that it was not an instruction flight because he considered that they were at an equivalent level. However, they had not sufficiently defined "*who was who*". As the pilot in the front seat had not told him that he did not have much experience on the Janus B, no briefing on the presence of a drag chute was given.

During the flight, finding that they were flying fast and losing a lot of altitude, he remarked to the pilot in the front seat that he was "*really narrowing down his options*". However, he remained passive and did not touch the controls because he knew he was in the vicinity of Le Rosier field. They had a brief exchange during which he said he would prefer to go towards the Col du Granon. When the pilot in the front seat continued towards Névache, he did not dare to argue with him. In his view, if it had been an instruction flight with another pilot, he would have made him go back to the Col du Granon just before Névache. He admitted that he had been slightly stressed when they were trying to find lift on the Plampinet slope, where the glider was not gaining altitude.

In the vicinity of Le Rosier field and just before the downwind leg, when the glider was at an altitude of 1,700 m, he believed that the pilot in the front seat could not see the landing axis. He then took over the controls, announcing this to the pilot. He reflected that perhaps he was not in the best position due to stress and his lack of involvement before taking over the controls and that he had not properly prepared his circuit. He could not see the wind and believed that it was weak. He preferred to land facing south. He stated that on final he said, "*I'm preparing for landing*" and configured the glider for landing and then, as he had his hands full and was busy managing the path, he asked the pilot in the front seat to deploy the drag chute.

2.3.3 Chief pilot at Aéroclub de Saint-Rémy Les Alpilles

The chief pilot explained that, before flying a new type of glider, pilots must first read the flight manual. If they are switching to a single-seat glider, a ground briefing on the specifics of the new glider is given by an instructor. If they are switching to a two-seater glider, a dual-command flight is carried out before release. The chief pilot added that several reminders had been given at the club of the procedure for opening and jettisoning the drag chute, but that not all pilots had done it in practice.

2.4 Information about Le Rosier safe landing area

Le Rosier safe landing area, listed in the Alps safe landing area guide, is a grass field at an altitude of about 1,370 m; it is 400 m long and oriented in a north-south direction. It is classed as a difficult emergency field to land in. A perpendicular ditch crosses the middle of it. The advice is therefore to make the approach over the first part of the field and then land in the second part. The guide states that reconnaissance on foot is essential.

2.5 Meteorological information

The meteorological conditions estimated by Météo-France at the site at the time of the accident were as follows: valley wind, visibility greater than 10 km, a few cumulus clouds with their base at an altitude of 3,600 m, moderate turbulence that was locally fairly strong.

2.6 Survival aspects

Neither pilot lost consciousness in the accident. With the glider lying on its back in a river, the cockpit quickly filled with water, approximately to the base of the broken canopy. The two pilots had to release their harnesses while holding their breath, with their heads down. The pilot in the rear seat managed to release himself quickly and turn around in the cabin so that his head was above water. The pilot in the front seat had difficulty releasing the buckle of his harness quickly. Once he did so, his leg was trapped but he still managed to slide out of the cabin unaided through the broken canopy. He then called for help from the witnesses present to lift the glider and assist the pilot in the rear seat, who was still inside.

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

Two experienced pilots undertook a flight in a two-seater glider. The pilot in the front seat considered the other pilot to be the pilot-in-command because he held an instructor rating and knew the area better than him. The pilot in the rear seat considered the flight to be a “mutual flight”, in which he assumed the role of pilot-in-command but left the controls and initiative to the other pilot. However, neither of the pilots discussed the assignment of roles before the flight.

At a certain point during the flight, the pilot in the front seat continued the flight in conditions that the pilot in the rear seat disapproved of though he did not clearly express this. From that point on, the pilot in the rear seat was tense because landing in Le Rosier field seemed inevitable. However, he left the controls and initiative to the pilot in the front seat.

When the pilot in the front seat could no longer find lift, he decided to abort the flight and land in Le Rosier field. He joined the circuit, giving a commentary out loud of what he was doing. Thinking that he was in difficulty, the pilot in the rear seat took over the controls. He tried unsuccessfully to gain altitude and then resolved to land.

He flew the downwind leg quite close to the landing area. During this, the glider lost little altitude. It was too high on the base leg and the pilot in the rear seat was forced to turn away to lose altitude. On final, with the glider still too high, he extended the flaps and then ordered the pilot in the front seat to deploy the drag chute. The pilot in the front seat, who had been doing nothing since the pilot in the rear seat took over the controls, after a few seconds of hesitation pushed the drag chute control lever to the front stop, causing it to be jettisoned.

In an attempt to avoid a high hedge, they both simultaneously retracted the speedbrakes and pulled the elevator control. The glider struck a tree and came to rest on its back in a river, submerging the occupants.

Contributing factors

The following factors may have contributed to the failed landing:

- The lack of an explicit definition of the flight context and the precise roles of each of the two pilots before take-off⁽⁹⁾. The flight took place within a tacit framework consisting of assumptions based on a combination of status (instructor/student) and experience (knowledge of the region/long circuit flights).
- The pilot in the front seat’s lack of knowledge of how to operate the drag chute.
- The lack of explicit training or briefing on the presence of a drag chute and how to operate it. The pilot in the rear seat was not aware that the pilot in the front seat did not know that the drag chute existed or how to operate it.
- The passivity of the pilot in the rear seat, as pilot-in-command, before he took over the controls, which meant that he was unable to plan the approach path sufficiently far in advance.
- The non-visibility of the pictogram indicating the “jettisoned” position of the drag chute, which meant that the pilot in the front seat did not realise he would jettison the drag chute by putting the control in the front stop position.

⁽⁹⁾ Part SAO. GEN.125 (Sailplane Air Operations) of Regulation (EU) 2018/1976 states that the operator shall designate a pilot in command who is qualified to act as pilot-in-command.

Safety lessons

Following the accident, the *Aéroclub de Saint-Rémy Les Alpilles* decided to implement mandatory training for pilots released on the Janus B in the use of the drag chute.

⁽¹⁰⁾ <https://fr.calameo.com/read/004721610c441814880a4>

“*Mutual flying*” was the subject of an article in the special issue of “*Actions Vitales*” published by the French Gliding Federation (FFVP) in January 2019⁽¹⁰⁾. In a two-seater aircraft, it must be remembered that only four statuses exist for the occupants: pilot-in-command, instructor, student pilot or passenger. If the flight is not an instruction flight, the only possible configuration is pilot-in-command/passenger. It is therefore important to clarify the role of each person before departure. The pilot-in-command must make or at least validate any decisions, and must decide who is at the controls in a particular situation, particularly during an off-field landing.