



Accident to the MUDRY CAP232
registered **F-HKAP**
on Sunday 15 June 2025
at Villepreux

Time	Around 16:05 ¹
Operator	Association SEPTIEME CIEL
Type of flight	Ferry flight
Persons on board	Pilot
Consequences and damage	Aeroplane destroyed, pilot injured
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.	

Opening and loss of canopy mid-air, turn around, collision with ground on final

1 HISTORY OF THE FLIGHT

Note: the following information is principally based on statements, radar data and data from the Foreflight application on the pilot's tablet.

The pilot took off from runway 28² at Chavenay - Villepreux aerodrome at 13:56 to carry out a positioning flight to Rochefort - Charente-Maritime aerodrome in order to take part in an aerobatics course. The pilot planned to leave the RMZ³ by the south-west. Coming out of the zone, close to the incinerator, the reference point used by VFR⁴ pilots, the pilot noticed that the canopy had remained slightly open. He tried to close it but it completely opened and then suddenly separated from the fuselage. Part of his headset was torn off under the effect of the relative wind. Although his glasses stayed in place, the pilot had a lot of difficulty in keeping the external visual references and reading the flight instruments. Piloting became particularly difficult.

At the same time, the controller observed that the aeroplane had disappeared⁵ from his radar screen although the pilot had not left the frequency on exiting the RMZ. He tried to contact him several times, without success. The pilot understood that someone was trying to contact him. He tried to reply but realised that he could not communicate by radio.

The pilot turned around to land at the departure aerodrome. The controller saw that the pilot was returning to the aerodrome on his radar. He informed him that runway 05 was available and then, on not receiving a reply, he gave him freedom of movement.

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

² Unpaved runway measuring 710 m x 100 m.

³ Radio Mandatory Zone.

⁴ The glossary of abbreviations and acronyms frequently used by the BEA can be found on its [web site](#).

⁵ The investigation was not able to determine the cause of this loss of radar contact.

The pilot stayed south of the aerodrome and carried out a left-hand circuit for runway 28. The pilot indicated that he initiated a go-around on final and turned left in front of the control tower to join the left-hand circuit for runway 28 again. The controller saw that the aeroplane's canopy was missing.

The pilot carried out a second final approach, below the nominal slope, at low height. The aeroplane collided with the ground at around 350 m from the start⁶ of runway 28.

2 ADDITIONAL INFORMATION

2.1 Site and wreckage information

Apart from the canopy, the wreckage was complete and grouped together. The main part of the wreckage comprised the powerplant, the fuselage up to the pilot's seat and the wings. The four propeller blades had ruptured at the blade root, the ends of the wings were severed. The aft fuselage, from the pilot's seat to the tail plane, and the landing gear were destroyed in the impact. The flight control linkages were continuous; the only ruptures observed on these parts were caused by the impact. The canopy was found several days after the accident.



Figure 1: main part of wreckage (source: BEA)

2.2 Aircraft information

The Cap 232 is a single-seat aerobatic aircraft used for training and competitions. The cockpit is covered by a one-piece canopy with side opening by tipping to the right. This canopy acts as a windshield, can be jettisoned and is easily removed by means of its jettison system. In the open position, the canopy is held by hinges and a rope.

⁶ Around 500 m from the displaced threshold of runway 28.



Figure 2: Cap 232 registered F-HKAP (source: Matteo, jetphotos.com)

The canopy locking system (see **Figure 3**) is composed of:

- a linkage fastened to the canopy frame allowing the pilot to action a sliding rod by means of a handle, with a return spring holding the handle in the locked position;
- two tubes fastened to the interior of the fuselage corresponding to two possible housings for the sliding rod.

According to the position of the rod in one of the housings, the canopy can be locked in a slightly-open position or completely closed. In the slightly-open position, the rod exceeds the upper housing and its end is visible (see **Figure 3** and **Figure 4**).

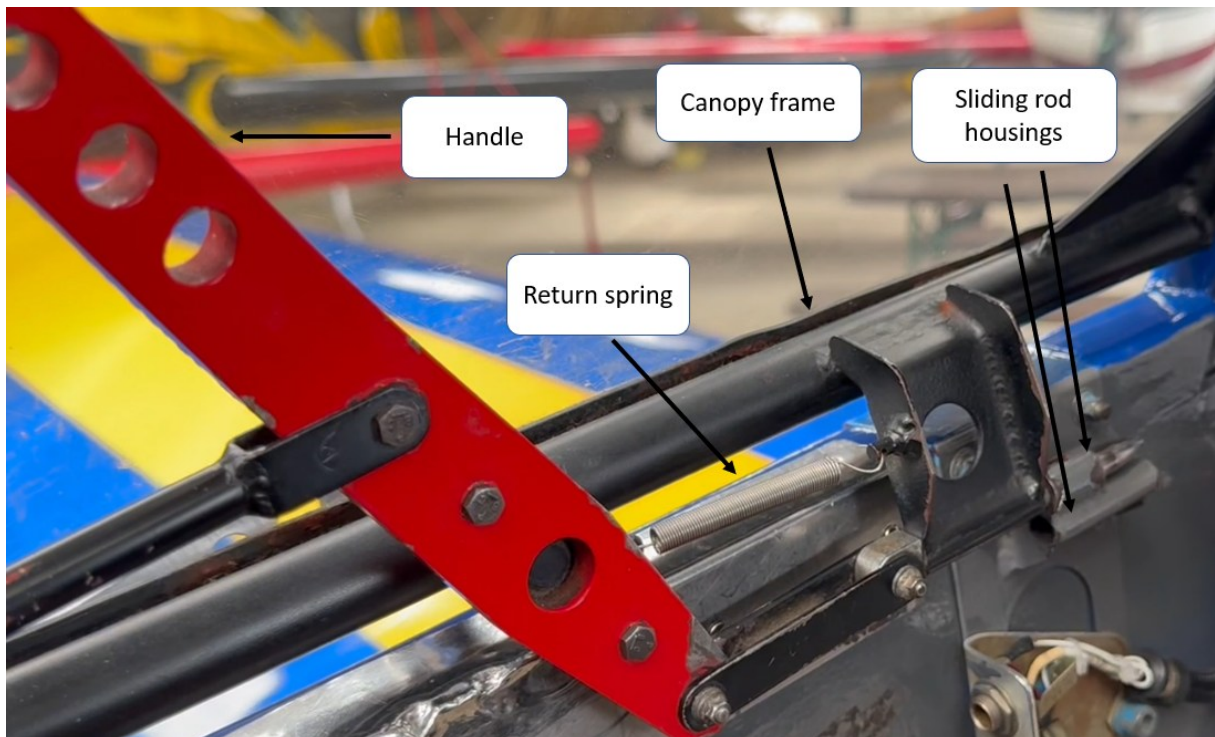


Figure 3: canopy in slightly-open position and locking mechanism (source: pilot, annotations BEA)

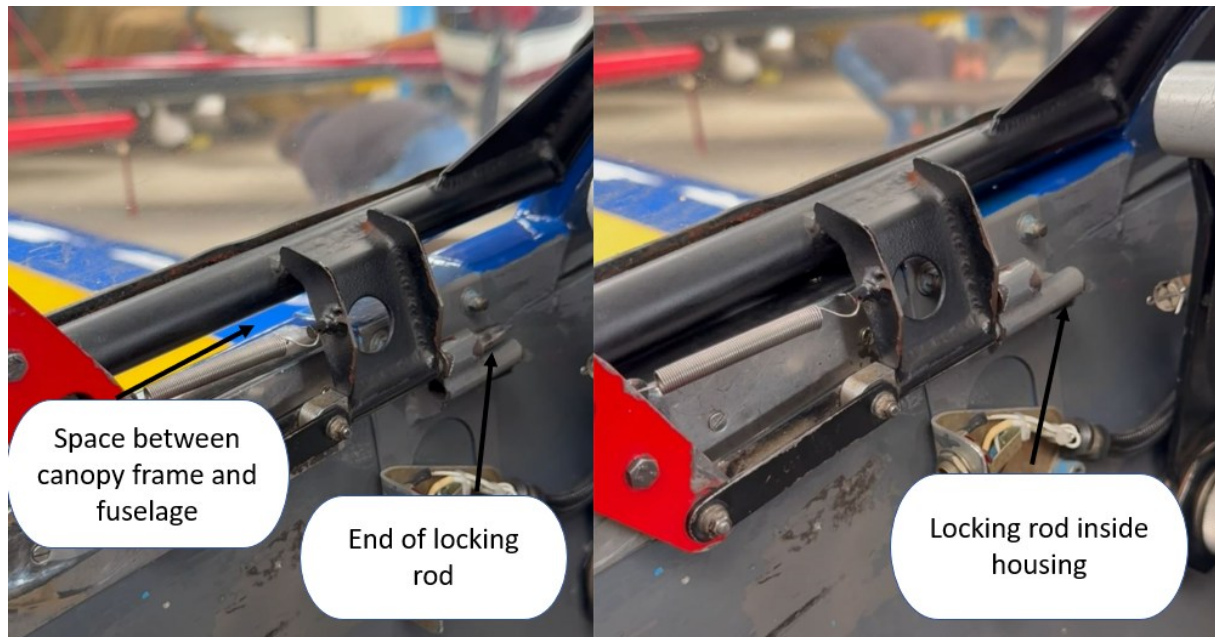


Figure 4: comparison between slightly-open position (on left side) and closed position (on right side) (source: pilot, annotations BEA)

The Cap 232 flight manual describes, in the normal procedures, the before take-off checks in the form of the mnemonic “ACHEVER”. The V corresponds to “verrière” (canopy) which must be closed and locked.

The flight manual does not have a specific abnormal procedure for the case of an unlocked canopy in flight.

2.3 Meteorological information

Météo-France indicated that the weather was clement in the Chavenay area at the time of the accident, without any significant phenomenon.

The 16:00 METAR for Toussus-le-Noble aerodrome situated at around 14 km from Chavenay mentioned:

- mean wind from 300 at 6 kt, varying between 280 and 350;
- visibility greater than 10 km;
- few clouds at 4,200 ft, scattered clouds at 6,000 ft, overcast at 7,200 ft;
- temperature 22°C, dew point temperature 12°C;
- QNH 1024 hPa.

2.4 Aerodrome information

Chavenay - Villepreux aerodrome is a controlled aerodrome but does not have a CTR: a RMZ has been defined around the aerodrome. It has two unpaved runways oriented 05/23 and 10/28. The runway circuits are carried out in the north, therefore right-hand for runway 28. The control tower is south of the intersection of the two runways (TWR shown by a triangle on the VAC chart, see Figure 5).

A local directive allows home-based aircraft to return to the aerodrome in the event of a radio failure during the operating hours of the control service. If this failure occurs in flight before clearance to join the circuit, the directive asks the pilot to arrive opposite the control tower at an altitude slightly above the runway circuit altitudes.

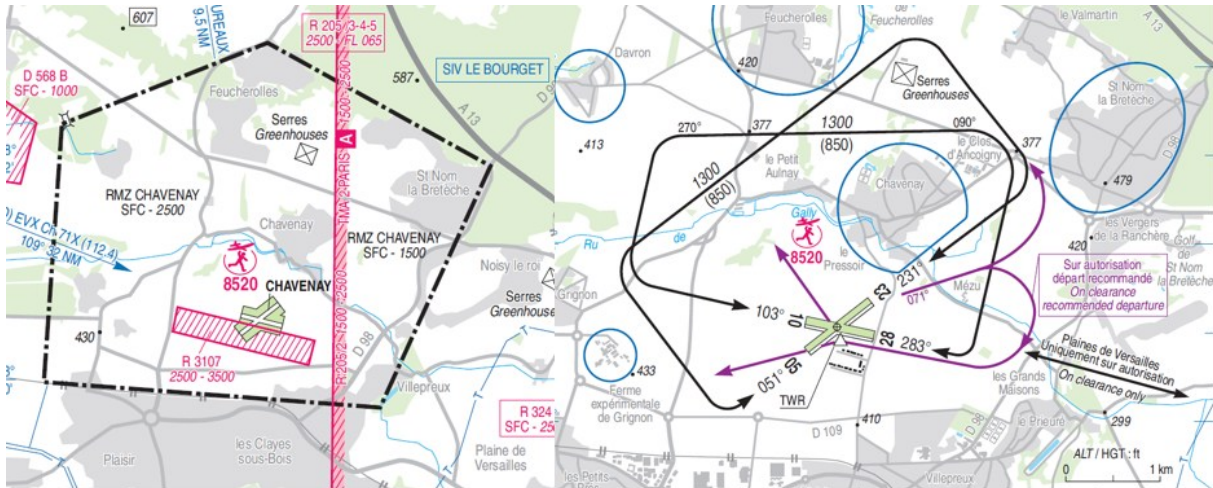


Figure 5: excerpts from Chavenay - Villepreux aerodrome VAC chart, RMZ shown by line of dashes on left side, runway circuits on right side (source: SIA)

2.5 Pilot information

2.5.1 Qualifications and experience

The 39-year-old pilot held an aeroplane Commercial Pilot Licence (CPL (A)) obtained in 2016 along with MEP, SEP and multi-engine IR ratings. He also held night and aerobatic ratings and had been participating in aerobatic competitions since 2018. He held a valid class 2 medical certificate.

The day of the accident, he had logged 1,583 flight hours, including 124 hours on the Cap 232. In the three months prior to the accident, he had carried out around 54 flight hours, of which 17 hours on the Cap 232 as pilot-in-command.

2.5.2 Statement

According to the pilot, as the aeroplane is used for aerobatics, the documents in the cockpit are limited. He therefore did not use a paper checklist but checked the different items from memory before taking off. In the summer, to circulate air in the cockpit while taxiing, the pilots sometimes left the canopy locked in the slightly open position and then closed and locked it before taking off. He indicated that he remembered for this flight, having left the canopy in the slightly open position while taxiing in order to have some air.

In flight, when he arrived close to the incinerator, he saw that the canopy was slightly open. He explained that at this point, he thought he would be able to close it. When he actioned the locking handle to move the canopy from the slightly open to closed position, the canopy completely opened and was torn away. The pilot explained that he then had no protection from the relative wind. He indicated that he had a lot of difficulty in keeping the external visual references even with his glasses, which he still had on. He turned around to return to the aerodrome. As part of his headset had been torn off, he could not precisely hear the controller's messages but understood that the latter was trying to communicate with him. As he was unable to reply to the controller, he tried pushing the radio push-to-talk button several times to communicate.

He explained that in order to show the controllers the nature of the problem and to assess the behaviour of the aeroplane on approach, he decided to carry out a low pass near the control tower. For this pass, he joined a left-hand circuit, south of the aerodrome, for runway 28. On final, he indicated that he observed that piloting was even more difficult than in level flight. He carried out a go-around and banked the aeroplane towards the control tower to show that the canopy was missing.

After his pass, without being certain that the controller had understood the situation, the pilot tried to carry out a left-hand circuit to land on runway 28.

He indicated that after the last turn, he had great difficulty in assessing his position with respect to the runway centreline and approach slope. He thought that he was at a speed of around 150 km/h and indicated that it was very difficult for him to clearly see outside and the instrument panel. He indicated that during the collision with the ground, he was not flaring and thought he was higher. He was surprised by the impact.

The pilot considered that the procedure in such a case is to turn around to land at the aerodrome rather than trying to close the canopy in flight. He considered that the canopy must be moved once on the ground, after landing.

The pilot explained that he was concentrated on piloting which took up a lot of his resources. He did not therefore display the transponder code 7700 and did not particularly think about the local directive in the event of a radio failure.

2.6 Controller's statement

The controller indicated that when he saw the pilot turn around and that he was unable to communicate, he suspected a problem and quickly gave him freedom of movement. He explained that he was not aware that the pilot had lost his canopy until the aeroplane was close to the control tower. He indicated that the pilot was flying at an abnormally low altitude. According to him, on the left-hand downwind leg, the pilot was already at the altitude of the beginning of the final.

2.7 Operational procedures information

According to the type of aircraft and locking system equipping the canopy, the in-flight consequences of an unclosed canopy can range from a more or less minor inconvenience that does not immediately affect flight parameters, to an emergency situation.

The VFR instructor's guide⁷ published by ENAC indicates that if all the flight parameters are under control and will continue to be so in the short and medium term, it is not an emergency situation but an abnormal situation. This guide specifies that an abnormal situation must be dealt with in a methodical and thorough way, the time factor having little influence.

The procedures associated with canopies as well as knowledge of the locking system form part of the subjects which can be covered by instructors during the training course.

⁷ Available on <https://www.enac.fr/fr/les-formations-au-pilotage>, in the section, Documents to be downloaded.

3 CONCLUSIONS

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

Scenario

Due to the heat, the pilot had left the canopy locked in the slightly open position while taxiing. He took off with the canopy in this position. In flight, while approaching the edge of the RMZ, he saw that the canopy had remained slightly open. Wanting to close it and while unlocking the canopy, the latter completely opened and was then torn from the structure. Without protection from the relative wind, the pilot encountered great difficulties in holding external visual references and monitoring his flight parameters. He turned around to land on runway 28 at Chavenay - Villepreux aerodrome. During the final approach, as his perception of the altitude was impaired, he held a flight path below the nominal approach slope and flew at an insufficient altitude. The aeroplane collided with the ground before runway 28.

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