

**Aileron flutter on arrival, roll control failure,  
ground loop during emergency landing**

|                      |  |
|----------------------|--|
| <b>Aircraft</b>      | Centrair ASW 20 F glider registered F-CFLP             |
| <b>Date and time</b> | Wednesday 20 July 2010 at about 16 h 55 <sup>(1)</sup> |
| <b>Operator</b>      | Private  |
| <b>Place</b>         | Buno-Bonnevaux (91)                                    |
| <b>Consequences</b>  | Glider damaged substantially                           |

<sup>(1)</sup>All times given  
are local.

**CIRCUMSTANCES**

The pilot was taking part in the regional Ile-de-France competition organised on the Buno-Bonnevaux aerodrome. It was the fifth flight of the competition, which was a time trial over sectors.

The pilot was towed to take off at 13 h 32. He explained that on the return, at 16 h 50, he announced that he was 10 km out on a direct route to the finishing line, located at the runway 28 threshold. He planned to pass over runway 28 to land on runway 01. He was at a height of 700 m, above the flight path with a gliding ratio of 25, with flaps at notch 1 (-11°). A moment later, he felt that he was entering an ascent and pushed the stick forward in order not to climb again. He then felt "glider wing flutter". He extended the airbrakes and noticed that the beating phenomenon stopped. He then noticed that his roll inputs had no effect. He added that after considering evacuating the glider in flight, he noticed that he could control the glider by inputs on the rudder and the stabiliser. He decided to land in a field located before runway 28. He extended the landing gear and positioned the flaps on +8°. When landing, the glider did a ground loop.

The phenomenon of wing flutter that the pilot felt was identified as aileron flutter. On the ground, it was reported that the connecting rod end yoke between the stick base and the ailerons control bellcrank was broken. Examination of the rod end showed that it had failed from buckling overload. The loads that led to this failure were consistent with opposition to ailerons movement, that is to say a stick maintained firmly during the flutter phenomenon.

The *water-ballasts* each contained 40 litres of water. Weight and balance was within the limits defined by the manufacturer. The pilot was using a GPS receiver linked to his PDA; as the accuracy of the data from this system is not known, this data was not used. The pilot explained that his indicated speed was about 170 km/h when the phenomenon began<sup>(2)</sup>. The meteorological conditions were favourable to gliding, with a number of thermal up-draughts present. The outside temperature was 32 °C on the ground.

<sup>(2)</sup>F-CFLP flight  
manual indicated a  
VNE of 265 km/h

<sup>(3)</sup>The type of velocity was not specified.

Ailerons and flaps weight and balance were measured after the event. These measurements did not reveal anything that could have triggered the flutter. The condition of the aileron and flap linkage at the time of the event could not be precisely determined since the play reported afterwards could have been the result of the flutter.

The ASW 20 F type airworthiness certificate was issued in November 1978 to SA Centrair, which became Société Nouvelle Centrair in 1988. The ASW 20 F is technologically identical to the ASW 20 glider manufactured in Germany by Schleicher.

In June 1987, Schleicher issued a service bulletin (technical note n°31) giving preventive measures against aileron flutter. Two cases of flutter had been reported, and the following factors were identified as triggering the phenomenon:

- ☐ Flaps on notch 1;
- ☐ Velocity<sup>(3)</sup> exceeding 200 - 210 km/h;
- ☐ Missing seal tape (used to seal the gap between the underwing and the flaps and ailerons).

Under these conditions, the air can circulate via the gap between the underwing and the upper surface of the wing and in this way cause an aileron flutter phenomenon.

Centrair repeated the Schleicher service bulletin (SB). It was made mandatory by the DGAC's AD 87-139(A). The SB called for checks on the ailerons slot sealing.

The glider was serviced by its owner. The checks carried out were in compliance with the approved maintenance programme. The owner had replaced the seal strip during the last annual check, in March 2010. No anomalies were observed on these strips after the accident.

## CONCLUSION

The accident was due to ailerons flutter being triggered, for a reason which could not be established. The pilot held onto the stick by reflex and the roll control failed.