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INVESTIGATION REPORT

Accident to the Evektor Aerotechnik Team Eurostar EV 97 identified 59CVF

on 31 July 2015
at Berck-sur-Mer (Pas de Calais)

Time	Around 17:10[1]
Operator	Private
Type of flight	Local
Persons on board	Pilot
Consequences and damage	Pilot fatally injured, microlight destroyed
This is a courtesy translation by the BEA of the Final Report on the Safety Investigation published in December 2020. 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.

Untimely opening of the canopy during take-off, loss of control, collision with the ground

1 - HISTORY OF THE FLIGHT

Note: the following information is principally based on statements and videos.

The pilot, alone on board, took off from runway 24[2] at Berck-sur-Mer aerodrome for a local flight. Witnesses on the ground stated that after rotation, they had seen the microlight's canopy open. Following variations in attitude from nose-down to nose-up, the microlight stabilised in level flight. It then started a turn to the left and its left bank angle increased. The pilot lost control of the microlight which collided with the ground 710 m from the threshold of runway 24 and 190 m to the left of the runway centreline, opposite the hangars.

[2] Unpaved runway 900 m x 50 m.

2 - ADDITIONAL INFORMATION

2.1 Examination of the canopy

The microlight canopy, swivelling around two pins, tilts forwards to open with the help of two push-up damper-actuators and is held in the open position by these two damper-actuators fixed near the instrument panel.

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Figure 1: Photograph of the Evektor canopy

The locking handle is located on the rear arch of the tilting part of the canopy; it is equipped with a hook that fastens to a locking pin anchored on the arch of the fixed part of the canopy. A safety system comprising a leaf spring keeps the handle in the locked position.

The examination of the wreckage revealed that the locking handle of the canopy was not in its "*closed*" position (see figure 2). The canopy broke away from its front fastenings upon impact as evidenced by the tearing off of the damper-actuators (see figure 3). The locking pin was not damaged. These elements confirm that the canopy was not locked during the flight.

Figure 2: Handle in unlocked position (not inserted in its retaining spring)

Figure 3: Broken damper-actuator

2.2 Meteorological information

The 17:00 Le Touquet Côte d'Opale airport METAR indicated wind from 330° at 13 kt, visibility greater than 10 km, few clouds at 4,100 ft.

2.3 Pilot information

The 68-year-old pilot owned the microlight. He had held a microlight pilot licence since May 2004.

A witness, a person close to the pilot involved in the accident, stated that the pilot had logged around 200 flight hours. A second witness stated that the pilot had not flown for approximately two months.

2.4 Analysis of video footage

The examination of the images from the video-surveillance camera installed at the aerodrome made it possible to reconstruct a section of the microlight's flight path. During take-off, at a height of around 20 metres, the microlight adopted a nose-down attitude followed by a nose-up attitude. The microlight's path then stabilised in level flight. After this, the microlight was no longer in this camera's field of vision.

A second camera recorded the last seconds preceding the collision with the ground. These recordings show that the canopy was open before the impact and that the microlight had a moderate nose-down attitude with a left bank angle.

2.5 Actions taken by manufacturer

On 2 April 2012, the manufacturer published a service bulletin[3] recommending an emergency procedure in the event of the untimely opening of the canopy. This emergency procedure points out that, before a flight, it is essential to check that the canopy is correctly and fully closed and locked. It specifies that if the canopy opens during flight, the turbulence caused by the canopy in the open position will cause vibrations on the horizontal tail and the controls, impacting control of the path. The pilot must then hold firmly onto the stick to reduce the vibrations, adjust the speed and trim the aircraft. The procedure points out that the priority remains keeping control of the microlight's path and states that it is possible, conditions permitting, to attempt to close the canopy. The pilot must then make an emergency landing.

[3] Mandatory Bulletin No.: EV97-018a.

On 16 June 2014, the manufacturer published a service bulletin[4] requesting modification of the locking system of composite frame canopies. The microlight involved in the accident was equipped with a metal frame canopy and was not subject to this modification.

[4] Mandatory Bulletin No.: EV97-027a SR.

On 24 November 2015, after the accident, the manufacturer published a service bulletin[5] requesting the addition of a mechanical catch on the frame of metal frame canopies. This modification means that the canopy is held and prevented from opening fully in the event of untimely opening.

[5] Mandatory Bulletin No.: EV97-033a SR.

3 - LESSONS AND CONCLUSION

The microlight canopy opened during take-off. The investigation was able to establish that the canopy had not been locked or had only been partially locked before take-off. Once the canopy was open, the pilot had not been able to maintain control of the microlight.

The following factors may have contributed to the loss of control:

- The pilot's surprise at the unexpected situation.
- Diminished aerodynamic performance and controllability of the microlight.