BEA
Bureau d'Enquêtes et d'Analyses
pour la sécurité de l'aviation civile
www.bea.aero
@BEA_Aero

SAFETY INVESTIGATION REPORT

Accident to the Ekolot JK-05L Junior identified 76PV on 14 July 2022 at Saint-Valéry - Vittefleur

Time	Around 11:30[1]
Operator	Private
Type of flight	Cross-country
Persons on board	Pilot and passenger
Consequences and damage	Pilot and passenger fatally injured, microlight destroyed
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.	

Loss of control after take-off, collision with ground

1 HISTORY OF THE FLIGHT

Note: The following information is principally based on statements and the examination of the wreckage.

The pilot, with his partner as a passenger, carried out a cross-country flight from Eu-Mers – Le Tréport aerodrome bound for Havre-Octeville with a stop at Saint-Valéry – Vittefleur aerodrome. He carried out this cross-country flight together with another pilot in another microlight.

The first leg was uneventful.

When he took off from Saint-Valéry – Vittefleur, a cloud layer pushed by the sea breeze was approaching the aerodrome.

The pilot of the second microlight took off first from runway 24 and turned at a low height during the initial climb to avoid entering the cloud layer which was on the runway axis.

Then the pilot of 76PV took off. A witness on the ground described the microlight's path: after an initial climb with a steep nose-up attitude, the microlight entered a sharp left turn and then a path resembling a spiral dive.

The microlight collided with the ground with almost zero roll, a steep nose-down attitude and a high speed.

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

RÉPUBLIQUE FRANÇAISE
Liberté
Égalité
Fraternité

June 2023 BEA2022-0322

2 ADDITIONAL INFORMATION

2.1 Pilot information

The 69-year-old pilot held a microlight pilot certificate issued in November 2017 with a class 3 fixed-wing rating and passenger-carrying privileges.

Except for nearly 17 flight hours on another fixed-wing microlight at the beginning of his training, he had carried out all his flight hours on 76PV. He had logged 308 flight hours, of which 16 hours in the previous 30 days.

The post-mortem examination of the pilot's body could not conclude about the possibility of a medical factor contributing to the loss of control.

2.2 Microlight information

76PV is a high-wing two-seated microlight with a Rotax 912UL engine. It was put into service in 2007.

The pilot had bought 76PV in July 2017. He held a logbook. According to the information recorded in this logbook, the microlight had logged 600 flight hours. A yearly maintenance check had been carried out in August 2021. The logbook did not mention any particular recent maintenance operation.

76PV was equipped with the standard instruments including a ball and needle turn indicator. It was not equipped with an artificial horizon.

2.3 Wreckage information

The microlight collided with the ground approximately 200 m left of runway 24, level with the middle of the runway. The wreckage was grouped together and located approximately five meters from the initial impact point.

The three propeller blades were found around this point of impact. They were broken near their root. These three ruptures showed a component in the aircraft's longitudinal axis and a component in the propeller's direction of rotation. These findings indicate that the engine was operating when the aircraft collided with the ground.

The fuel tank was found broken. A strong smell of fuel was perceived by the first persons who intervened on the accident site. The needle of the fuel indicator, found blocked, was indicating that the fuel tank was three-quarters full.

The examination of the control linkages did not reveal any malfunction prior to the collision with the ground.

The airspeed indicator needle was blocked and indicated an airspeed of 195 km/h[2].

[2] The colour marks of the airspeed indicator were not consistent with those of the microlight's flight manual: in particular, the Velocity Never Exceed (VNE) is 180 km/h in the flight manual and 205 km/h on the instrument.

Figure 1: airspeed indicator blocked at 195 km/h (source: BEA)

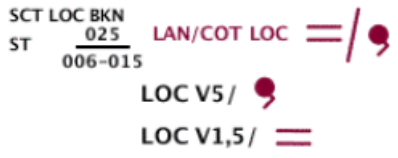
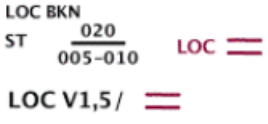
The elements observed on the wreckage showed that the microlight had collided with the ground with high energy and a steep nose-down attitude.

The examinations did not reveal any elements that could have contributed to the accident.

2.4 Meteorological information

According to the French met office Météo-France, the general situation on the day of the accident was conducive to the formation of pockets of fog, mist and stratus cloud which progressed from the sea towards the coast and dissipated rapidly as they came in land in the morning.

The significant weather (SIGWX France) charts for 08:00 and 11:00 indicated a zone of reduced visibility and low altitude clouds in the coastal areas, from Calvados to Pas-de-Calais.

Excerpt from SIGWX chart for 08:00	Excerpt from SIGWX chart for 11:00
	

Satellite images of the visible spectrum showed the presence and evolution of sea mist in the area of the accident.

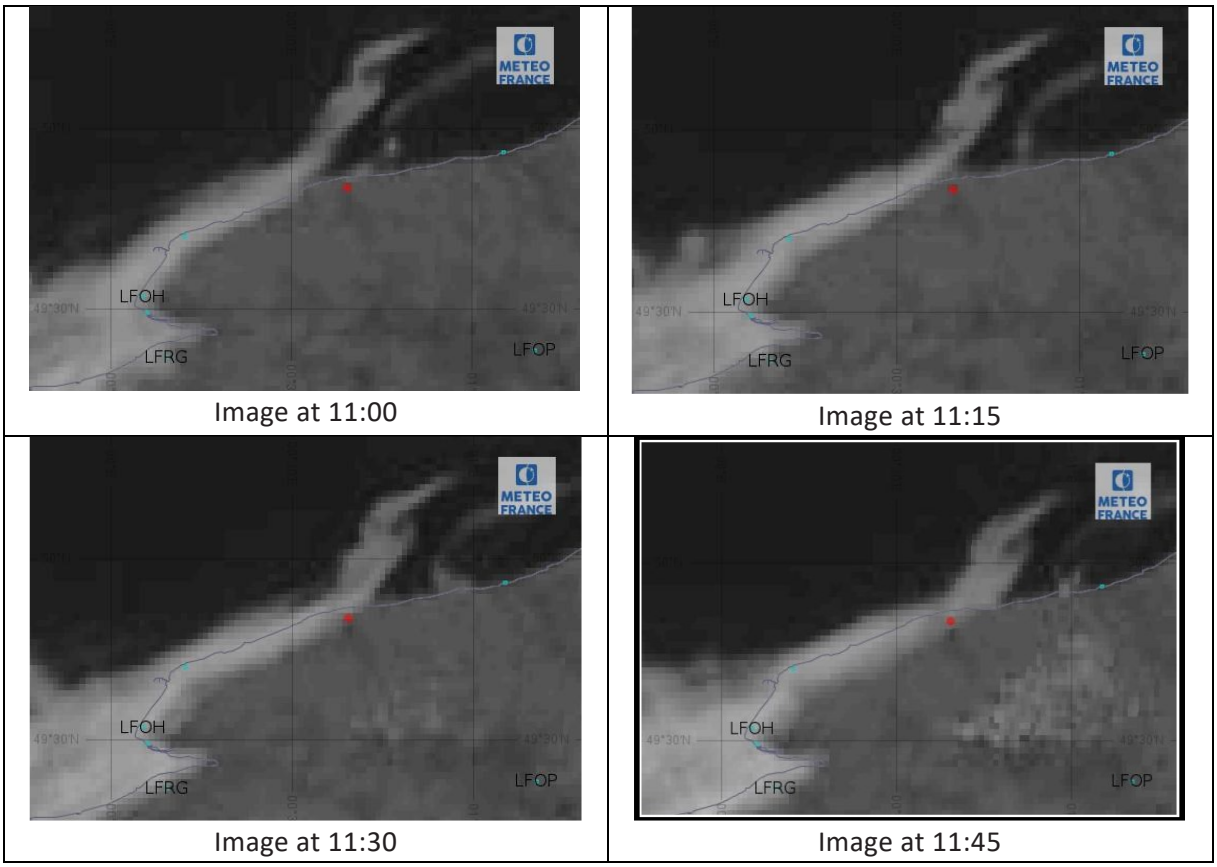


Figure 2: visible satellite images (source: Météo-France)
(The red dot shows Saint-Valéry – Vittefleur aerodrome)

These images, available on the Météo-France Aeroweb site, were published online a few minutes after they were taken.

The meteorological reports and forecasts for the destination aerodrome, Le Havre – Octeville, were also available.

The Terminal Area Forecast (TAF) issued at 07:00 did not mention any low visibility or presence of clouds:
140500Z 1406/1506 28008KT CAVOK BECMG 1407/1410 34010KT BECMG 1422/1424 VRB03KT=

The aerodrome meteorological reports (METAR) showed that the visibility on Le Havre – Octeville aerodrome had decreased after 10:00 and had started to increase at approximately 11:30:
140800Z AUTO 30009KT 9999 SCT003 19/17 Q1021 NOSIG
140830Z AUTO 31010KT 1000 0500 R22/1400U BCFG VV/// 17/16 Q1021 BECMG CAVOK
140900Z AUTO 32009KT 0800 0550 R22/1400D FG VV/// 18/17 Q1021 BECMG CAVOK
140930Z AUTO 33010KT 3000 BR VV/// 18/17 Q1021 BECMG CAVOK
141000Z AUTO 33011KT 6000 OVC002 18/16 Q1022 TEMPO 0500 BCFG VV///

An amendment to the forecast message was emitted at 11:22, including the forecast of reduced visibility and temporary patches of fog between 11:00 and 13:00:
140922Z 1409/1506 33010KT CAVOK TEMPO 1409/1411 0500 BCFG VV/// BECMG 1422/1424 VRB03KT=

2.5 Aerodrome information

Saint-Valéry – Vittefleur aerodrome is a non-controlled aerodrome, open to public air transport. It has an unpaved runway 06/24 measuring 900 x 50 m.

It is located approximately 1.8 NM from the coast. The Visual Aerodrome Chart (VAC) mentions the following special instruction, relating to air navigation hazards: "*Site likely to be covered by sea haze in few minutes*."

The VACs of the departure aerodrome, Eu-Mers – Le Tréport, and of the destination aerodrome, Le Havre – Octeville, give the same instruction.

2.6 Statements

2.6.1 Pilots from Aéroclub Cauchois de Saint-Valéry - Vittefleur

An instructor pilot was returning from a cross-country flight from Rouen. He indicated that he saw the low cloud bank progressing in land when he was at around 10 NM from the aerodrome. He stated that when he landed, the beginning of the runway was clear but that the conditions deteriorated from the middle of the runway. He estimated that the ceiling was less than 300 ft over this part of the runway. After landing, as he was taxiing to the hangar, he heard one of the microlight pilots announce his take-off on the radio and he emitted a message to inform him of the presence of sea mist and that it was not safe to take-off. According to him, the pilot of the microlight answered that it was for this reason that he was in a hurry to take off.

A private pilot had come to the aerodrome for a local flight. After taking off and noticing the presence of mist around Veulettes-sur-Mer[3], he decided to perform runway circuits instead of the planned local flight. As he joined the downwind leg, he noted that the mist was approaching rapidly the aerodrome and decided to carry out a full stop landing. After landing, as he was taxiing on the taxiway parallel to the runway, he saw the first microlight take off. He thought that the pilot started the turn in initial climb at a fairly low height, probably to avoid entering the cloud layer. He explained that the pilot of the second microlight, 76PV, performed a fairly steep initial climb and then a very sharp turn. He then described the path as similar to a spiral dive, with the microlight banked to approximately 90°, and what looked like significant acceleration. He thought that at the time the microlight took-off, the runway was not covered with mist, but that mist was clinging to the ground further ahead.

2.6.2 Pilot of the microlight ahead of 76PV

The pilot of the other microlight indicated that before leaving Eu-Mers – Le Tréport, the pilot of 76PV and himself had consulted the weather information on SD-VFR and Windy[4]. He mentioned specifically the METAR, TAF and SIGWX charts available on SD-VFR. He explained that they were

[3] Veulettes-sur-Mer is located on the coast, at 2.5 NM and 280° from Saint-Valéry – Vittefleur.

[4] Pilots can use SD-VFR to consult the TAF and METAR reports, and SIGWX and WINTEM charts published by Météo-France. Windy provides meteorological information from various sources in a graphic and animated form. Satellite and radar images can also be consulted on Windy.

aware that there might be sea mist and they had agreed to turn back if the cloud cover did not allow them to reach their destination.

The two pilots left Eu at approximately 10:00. They stopped at Saint Valéry – Vittefleur for 30 to 45 minutes. They noticed that the mist was coming in land and decided to leave quickly before the mist reached the aerodrome.

He indicated that he turned left shortly after take-off, at a height of 100 to 150 ft to avoid entering the mist bank ahead of him. He thought that at this time, the mist was near the wood located after the runway 06[5] threshold.

He added that being based at Eu-Mers – Le Tréport, the pilot of 76PV and himself had often faced the sea mist phenomenon.

3 CONCLUSIONS

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

Scenario

At the time of the take-off from Saint-Valéry – Vittefleur aerodrome, a sea mist was coming in land. The pilot carried out a non-standard take-off manoeuvre to avoid entering the mist ahead of him. He probably took a steep initial nose-up attitude and a sharp turn at low height.

He lost control of the microlight's flight path during this manoeuvre.

Contributing factors

The following factors may have contributed to the decision to take-off despite the probably unfavourable conditions:

- insufficient consideration given to the hazard posed by the incoming sea mist;
- insufficient consideration given to the warning signs of the immediate proximity of this hazard;
- the pilot's possible over-confidence having often faced this sea mist phenomenon;
- the pilot possibly being influenced by the take-off of the pilot of the microlight ahead of him and with whom he had planned to carry out this flight.

BEA Safety Investigations are conducted with the sole objective of improving aviation safety and are not intended to apportion blame or liability.

[5] This wood is approximately 900 m from the runway 06 threshold.