



Accident to the CHAIZE - JZ - 25 F24
registered **F-HGMV**
on 3 May 2021
at Locqueltas

Time	Around 10:30 ¹
Operator	Montgolfière Communication
Type of flight	Sightseeing, commercial
Persons on board	Pilot and two passengers
Consequences and damage	Balloon envelope and power line substantially damaged

This is a courtesy translation by the BEA of the Final Report on the Safety Investigation published in May 2022. As accurate as the translation may be, the original text in French is the work of reference.

**Balloon taking-off again on landing,
collision with a power line, during a revenue flight**

1 HISTORY OF THE FLIGHT

Note: the following information is principally based on the pilot's statement.

The pilot, accompanied by two passengers, took off at approximately 09:00 for a revenue flight from private land west of Vannes (Morbihan). The wind was southwesterly not exceeding around 10 km/h. After around one hour and fifteen minutes of flight, the pilot chose to land in the northern part of a ploughed field that was not planted, because of a power line in its southern part. The pilot indicated that the approach had taken place normally and that he had turned off the pilot lights before landing. According to the pilot, a gust of westerly wind of more than 20 km/h made the balloon take off again. The pilot tried to pull the cord to open the manoeuvring vent and indicated that his action had been hindered by the tilt of the envelope caused by the gust of wind. The balloon rose to a height of around 10 m and passed over a line of trees. The basket touched the tops of the trees before making contact with the ground, approximately 150 m from the first point of contact in the field. The envelope fell over a high-voltage power line located north of the field selected for landing (see illustration).

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



Figure 1: balloon and power line (source: BGTA)

2 ADDITIONAL INFORMATION

2.1 Balloon information

2.1.1 Operation

The balloon registered F-HGMV was bought by the Gulf of Morbihan tourist office in October 2017 to offer flights to associations and to promote this site. The *Montgolfière Communication* association had been selected as the balloon operator. Established in 2017, the association was managed by two balloon pilots, one of whom was the pilot of the incident flight. The association was neither an approved training organisation nor an organisation created to promote aerial sport or leisure aviation. The association had not been declared to the French civil aviation safety directorate (DSAC), which therefore had no knowledge of its activity and did not provide any oversight services regarding this.

A partnership agreement set out the contract between the tourist office and the association for the balloon's operation. In particular, it stated that:

- The tourist office arranged for the annual maintenance inspection, insured the balloon and put it, as well as the trailer, only at the disposal of the association.
- The association was in charge of taking the balloon to the maintenance workshop every year and of taking out insurance for passengers and third parties.
- The association agreed to fly the balloon and to carry people at the request of the tourist office.
- The association had the option to carry persons of its choice outside the periods determined by the tourist office. In this context, it was stipulated that the association was allowed to market flights at its own expense.

The balloon's logbook indicated 35 flights in 2020, between 4 January and 22 October, and none in 2021. All of these flights had been performed by the pilot of the accident flight. According to the activity report of the Gulf of Morbihan tourist office, of these 35 flights, 12 had been requested and offered by the latter, and around 30 flights had taken place over the Gulf of Morbihan. In 2019, 39 flights were recorded in the logbook (35 of which had been carried out by the pilot of the incident flight). The tourist office activity report indicated that the balloon had taken part in several events (about 10 flights), that two other flights had been offered to associations, and that more than 30 flights had taken place over the Gulf of Morbihan².

2.1.2 Characteristics

F-HGMV is a hot air balloon consisting of a 2,500 m³ Chaize envelope, a double burner and a A201-type Chaize basket (maximum of four occupants). This is a non-partitioned basket. The last annual maintenance was performed in October 2020.

The balloon is also equipped with turning vents (which allow the balloon to rotate about its vertical axis) and a FDS³. This system is used to quickly release the air contained in the envelope by means of a red control cord. The FDS should only be used on landing at a height of less than four metres. It is used to rapidly decrease lift on landing and to reduce dragging when contact is made with the ground on landing.

Note: The certification specifications for hot air balloons (CS31) state that the maximum force required to operate the balloon control cords must not exceed 340 N. The force required to operate the cords of fast deflation systems must not be less than 110 N.

2.1.3 Procedures

Source: Flight Manual - Ballons Chaize

When placing the balloon on the take-off site, before inflating the envelope, the pilot must check that the manoeuvring vent is closed with the hook and loop fastener tapes ("velcro" tapes).

Before take-off, once the balloon has been inflated and raised to the vertical position, the pilot must check that the manoeuvring vent and the FDS are operational. The operation of the FDS is checked by actuating the red cord of the FDS and by verifying that there is a crown of visible sky between the parachute and the balloon envelope. The parachute must then be closed by pulling the red and white parachute cord. It may be necessary to pull this cord a second time to ensure the positioning and sealing of the parachute. During these checks, the velcro tapes come off, which may require significant force. These tapes then remain detached during the entire flight.

On landing:

- the manoeuvring vent must be partially open to begin the descent;
- as the ground comes closer, the rate of descent must be slowed down by means of successive blasts;
- the pilot light must be turned off before contact is made with the ground;
- the red cord of the FDS must be pulled just before contact with the ground;
- any cylinder valves left open must be closed;
- the gas lines supplying the burners must be vented.

² Number of flights given by the pilot of the association.

³ Fast Deflation System.

2.2 Pilot information

On the day of the accident, the 75-year-old pilot held a European Balloon Pilot Licence (BPL) issued in 2019 by converting his French free balloon pilot licence issued in 1987. His BPL came with a hot air balloon class rating, groups A, B, C and D. He had logged approximately 600 flight hours. His last flight was on 22 October 2020, a year during which he had logged 48 flight hours (35 take-offs and landings). He had not performed any flights with an instructor for approximately five years. His class 2 medical certificate (on which handwritten notes regarding issuance and validity dates were overwritten) had expired in January 2021.

The pilot explained that he had checked the weather forecast using several applications on the Internet. According to him, the forecast indicated a southerly-to-southwesterly wind of 5 km/h which would increase from 11:00.

The pilot indicated that the vent and FDS cords are difficult to pull to check their operation once the envelope is inflated. He thinks that this is due to the velcro tapes fastening the vent to the envelope. The pilot explained that he usually asks his crewmate or a passenger to help him during these checks. He didn't know if these tapes were detached when the balloon had landed on the day of the accident.

The pilot added that it had been difficult to pull the vent cord before first contact with the ground because of the tilted position of the balloon envelope which had started to deflate. He stated that since he had been unable to actuate the vent, he had not attempted to pull the FDS cord.

The pilot explained that the flights performed in the balloon were flights requested either by the Gulf of Morbihan tourist office or by passengers who had obtained his personal details through the tourist office. He added that the tourist office thanked him (telephone, messages) for all the balloon flights in the Vannes area, and in particular those with private individuals.

2.3 Meteorological information

In the morning, the conditions were anticyclonic and the sky was clear to few clouds, with cumulus appearing from 10:30 over the Vannes area. The light wind varying in direction at the beginning of the day, turned southwesterly and increased in strength during the morning.

The meteorological conditions estimated at the time of the accident, based on the nearest automatic weather station located at Vannes-Meucon airport (approximately 5 km southeast of Locqueltas), were as follows:

- CAVOK until 10:30, then Cumulus 2 to 4/8 with a base around 2,000 ft;
- southwesterly wind of approximately 10 km/h with gusts close to 20 km/h;
- visibility greater than 10 km.

With regard to the wind, the forecast models of Météo-France indicated that at the time of take-off at around 09:00, the wind at a height of 10 m had been 5 to 10 km/h on average without gusts, in a prevailing south-to-southeasterly direction. These models stated that the wind had increased in strength, reaching 10 to 15 km/h on average at around 10:30, with gusts close to 20 km/h from the south-to-southwest. The wind strength continued to increase thereafter.

2.4 Passengers' statements

During the landing, both passengers were in the safety position at the request of the pilot. They indicated that they had obtained the pilot's personal details by calling the switchboard of the Gulf of Morbihan tourist office. This was a revenue flight, and the passengers stated that the cheque given to the pilot had been made out in his name for the amount of €250 per person. They had not been given any tickets or invoice.

2.5 Balloon operations

Balloon operation is governed by Regulation (EU) 2018/395 of 13 March 2018, as amended by Regulation (EU) 2020/357 of 4 March 2020⁴.

2.5.1 Air operations

Annex II of Regulation (EU) 2018/395 covers Air Operations. It is divided into two subparts called "BAS" (BASic operational requirements) and "ADD" (ADDitional requirements for commercial operations). Subpart BAS therefore applies to all operators, regardless of their operation. Subpart ADD applies in addition to Subpart BAS for operators engaged in commercial operations. Commercial balloon operators subject to Subpart ADD shall declare their activity to the local competent DSAC and shall draw up in particular an operations manual.

Some balloon operations, although performed against remuneration, fall solely under Subpart BAS and are not subject to Subpart ADD. This is the case, for example, for the following operations listed in the regulation:

- *"cost-shared operations by four individuals or less, including the pilot, provided that the direct costs of the flight of the balloon and a proportionate part of the annual costs incurred for the storage, insurance and maintenance of the balloon are shared by all those individuals;"*
- *"introductory flights with four individuals or less, including the pilot [...], performed either by a training organisation [...] or by an organisation created for the purposes of promoting aerial sport or leisure aviation, provided that the organisation operates the balloon on the basis of either ownership or a dry lease agreement, that the flight does not generate profits distributed outside of the organisation and that such flights represent only a marginal activity of the organisation."*

The French general civil aviation authority (DGAC) defines "marginal activity" as commercial activity representing less than 8% of flights, excluding introductory flights carried out as part of open days or air exhibitions.

Note: An introductory flight is defined as any air operation against remuneration or other valuable consideration consisting of an air tour of short duration for the purpose of attracting new trainees or new members, performed either by a training organisation approved in accordance with Commission Regulation (EU) No 1178/2011 or by an organisation created with the aim of promoting aerial sport or leisure aviation.

⁴ Commission Regulation laying down detailed rules for the operation of balloons as well as for the flight crew licensing for balloons (version in force on the day of the accident).

2.5.2 Balloon pilots

Annex III of Regulation (EU) No 2018/395 sets out the requirements for the issuance of a BPL.

Curtailment as a function of age for commercial operation

BPL holders who have attained the age of 70 years shall not act as pilots of a balloon engaged in commercial passenger balloon operations.

Privileges and conditions

The privileges of a BPL holder are to act as pilot-in-command in balloons without remuneration in non-commercial operations. In commercial balloon operations, the BPL must come with the commercial extension (see Commercial operation rating below).

Recency requirements

A BPL holder shall only exercise the privileges of his or her licence if he or she has completed in the relevant balloon class:

1. within the last 24 months before the planned flight, at least six hours of flight time as PIC, including 10 take-offs and landings, as PIC or flying dual or solo under the supervision of a FI(B) instructor, and within the last 48 months before the planned flight, at least one training flight with a FI(B); or
2. within the last 24 months before the planned flight, a proficiency check.

Note: Due to the conversion of national licences into European licences with the implementation of Regulation (EU) No 2018/395, the recency and BPL continued validity conditions depend on the date of conversion of national licences. As a consequence, pilots have 24 months from the issuance of their BPL to meet the recency requirements and 48 months to perform a flight with an instructor (point 1 above), or 24 months for a proficiency check (point 2 above). The pilot's licence, converted in 2019, was thus valid on the date of the accident.

Commercial operation rating

A BPL holder shall exercise the privileges of his or her licence during commercial operations with balloons only if he or she holds a commercial operation rating.

A pilot who holds a commercial operation rating shall exercise the privileges of that rating in commercial passenger ballooning only if he or she has completed:

1. within the 180 days preceding the planned flight at least three flights as PIC in balloons, or one flight as PIC under the supervision of an instructor; and
2. within the 24 months preceding the planned flight, a proficiency check or a refresher course at an approved training organisation (ATO) or a declared training organisation (DTO), tailored to the competence required for commercial balloon operations.

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

During the landing in a field, the pilot was probably confronted with an increase in wind strength, while he experienced difficulties pulling the vent cord and thus deflating the envelope. The balloon took off again, and flew over and touched a line of trees about 10 m high before landing in another field. In this context, the pilot could not prevent the envelope from coming into contact with the cables of a power line.

Contributing factors

The following factors may have contributed to the balloon taking off again:

- Insufficient force applied to pull the vent cord on first contact with the ground, possibly due to partial detachment of the hook and loop fastener tapes between the vent and the envelope as well as physical capacity limitations related to the age of the pilot. This input did not empty the balloon sufficiently to prevent it from taking off again.
- The lack of use of the fast deflation system during the first landing, which meant that the balloon was not deflated quickly before the gust made it take off again.
- The pilot's lack of recent experience and lack of recent flight with an instructor.

The transmission by the tourist office of the pilot's personal details to the persons wishing to make an introductory flight, and the consequent lack of intentional solicitation of passengers by the operator, may have led its managers, and thus the pilot, to consider the activity as being leisure aviation for passenger entertainment, and not a commercial operation or professional activity. The balloon owner's lack of knowledge of commercial air transport requirements and the owner's reliance on the operator also contributed to the carrying out of passenger flights that did not meet commercial air transport requirements.

In particular, this activity was not declared to the DSAC; it was therefore not subject to any dedicated oversight. In addition, the pilot, whose class 2 medical certificate had expired, had exceeded the age limit to act as pilot of a balloon engaged in commercial air transport operations and did not hold a commercial operation rating.

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