



Accident to the DYN AERO MCR 01
registered **F-PJEA**
on Saturday 16 September 2023
at Prévencières

Time	Around 17:00 ¹
Operator	Private
Type of flight	Cross country
Persons on board	Pilot
Consequences and damage	Pilot fatally injured, aeroplane 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 external visual references,
collision with ground**

1 HISTORY OF THE FLIGHT

Note: the following information is principally based on data from the AvMap EngiBox computer, the pilot's tablet and telephone, radio-communication recordings, radar data and statements.

The pilot, unaccompanied, was carrying out a cross-country flight to Cassagnes-Bégonhes aerodrome where the aeroplane was based in order to return to his residence which was nearby. In the morning, he flew the first leg between Propriano airport where he took off at 11:06 and Vinon-sur-Verdon aerodrome where he landed at 12:33. At Vinon-sur-Verdon, he consulted several weather information sites and at 13:47, sent a message to his wife to say that he was blocked at Vinon-sur-Verdon due to the weather conditions and that he was not certain that he would be able to leave that same day.

He took off from Vinon-sur-Verdon at 16:14 (see **Figure 1**, point **①**).

At 16:27 (point **②**), he contacted the controller of the flight information service, Provence Info and specified that he had planned to fly to Cassagnes-Bégonhes passing by the Montélimar and Mende VORs². He added that he was taking an indirect route due to the weather conditions and was zigzagging a bit according to the weather. The controller acknowledged the message and suggested that he got back into contact with him if necessary.

At 16:39 (point **③**), shortly before Montélimar, he reported that he was heading towards Aubenas.

¹ The times given in this report are in local time.

² The glossary of abbreviations and acronyms frequently used by the BEA can be found on its [web site](http://www.bea.aero).

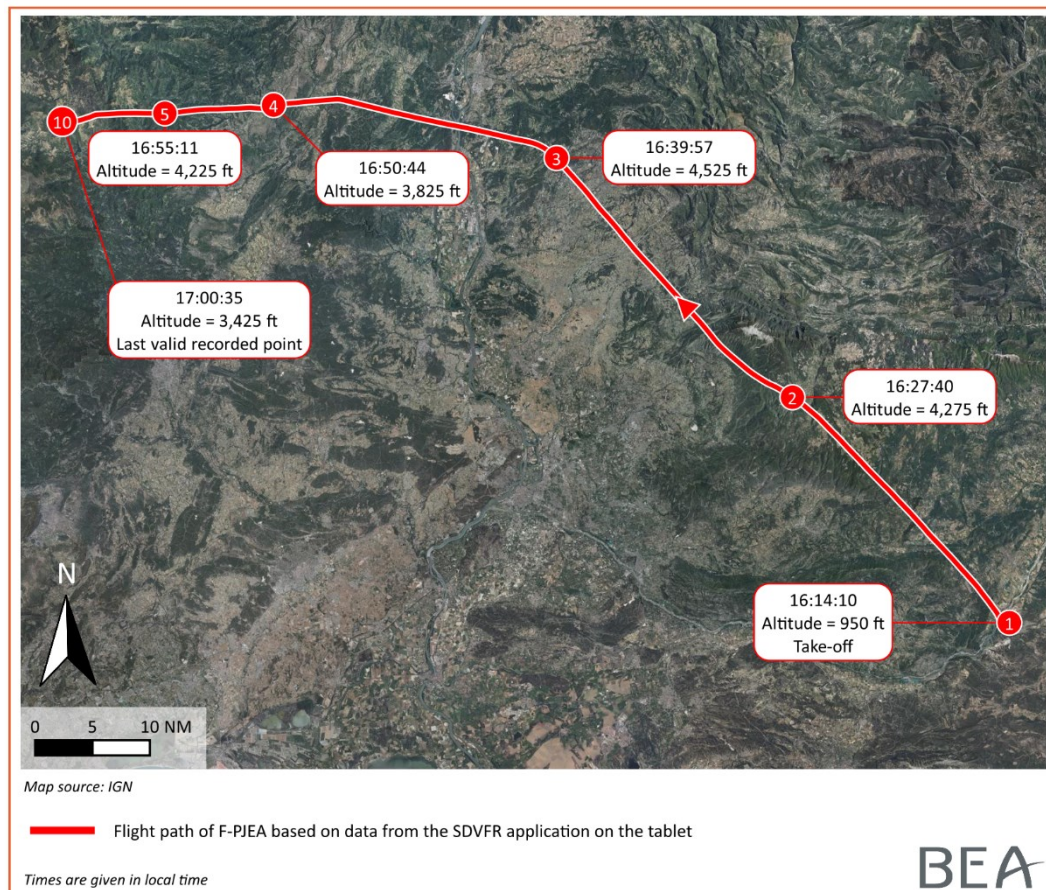


Figure 1: flight path of F-PJEA based on the data recorded by the SDVFR application on the pilot's tablet

At 16:51 (point 4), he left the Provence Info sector and contacted the flight information service Marseille Info. A short time later, he reported that he was 15 min from Mende in not very good conditions. The controller specified that around 20 min earlier, another aeroplane had passed further north. The pilot replied that he would see but did not modify his flight path. The controller recommended to the pilot that he stay in VMC conditions to which the pilot replied that he was trying to.

At 16:55 (point 5), the controller called back the pilot to specify that, based on the information at his disposal, the weather conditions were better after Mende. The pilot replied that he had the information that Rodez was supposed to be CAVOK, and that the problem was going to be passing Mende.

At 16:59 (see Figure 2, point 6), at around 4,400 ft, the pilot started a LH 360° turn with a high rate of turn, twice that of a standard turn, which implies a steep bank angle. During this turn, the aeroplane substantially descended to around 4,000 ft and flew over the terrain at a height of less than 85 m (point 7). The pilot then quickly climbed to 4,725 ft (point 8).

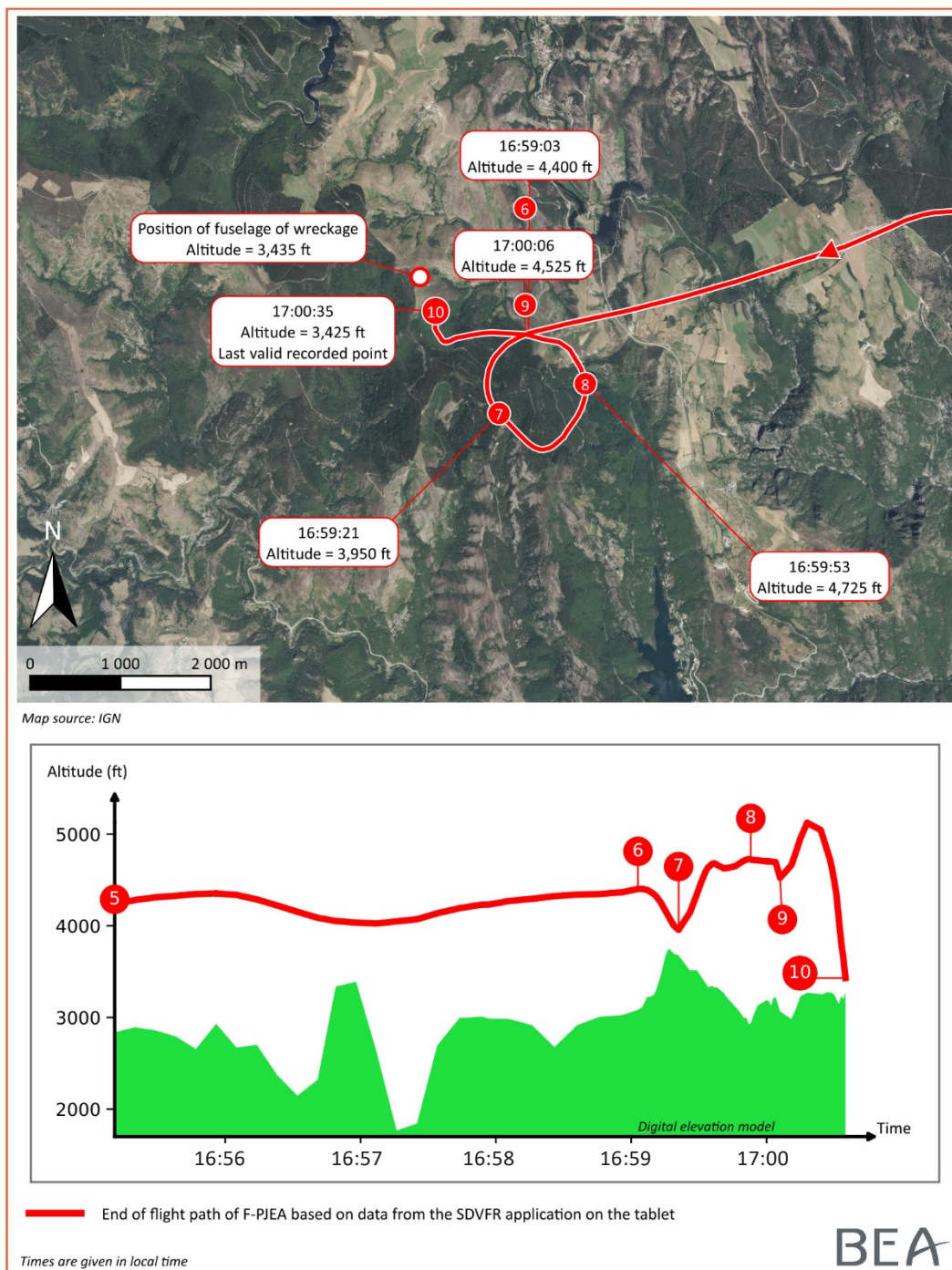


Figure 2: end of flight path of F-PJEA

At 17:00 (see point 9), at the end of this 360° turn, the pilot took a westerly heading, in climb. He reported that he was now in IMC and asked for a heading to return to Aubenas. Thereafter, he no longer responded to the controller's messages.

A few seconds later, the flight path of the aeroplane described a tight RH turn, in steep descent until the last valid point recorded at 17:00:35 (see point 10), at 3,430 ft. This sudden change in flight path very probably corresponded to a loss of control.

The wreckage of the aeroplane was found on the side of a hill, at an altitude of 1,030 m (3,380 ft), around one kilometre after the last valid point recorded by the pilot's tablet.

2 ADDITIONAL INFORMATION

2.1 Pilot information

The 67-year-old pilot held an aeroplane private pilot licence obtained in 1981 along with a night rating obtained in 2009. He had obtained the instrument flight rating in 1993, valid until 2004.

He had been a member of the air navigation engineering corps from 1991 to 2004 and had held an aeroplane commercial pilot licence from 1994 to 1999.

Since 2021, he had held a fixed-wing microlight pilot certificate.

He had logged 1,180 aeroplane flight hours. In the last three months, he had flown 19 h 40 min on F-PJEA and 1 h 25 min on the Jodel DR-1050 registered F-BLRQ, that he had also owned since 2002.

The autopsy did not reveal any element that may have contributed to the accident. The pilot's medical fitness certificate did not have any restrictions.

2.2 Aircraft information

The MCR 01 registered F-PJEA was a carbon two-seater aeroplane equipped with a Rotax 912 UL engine and a MT PROPELLER variable-pitch, three-blade propeller. It was built in 2000 and the pilot had been the owner of it since 2016.



Figure 3: photo of F-PJEA (Source: Bruno Magrez – [Les FoxPapa en images](#))

The aeroplane had an AvMap EngiBox computer which displayed and recorded the parameters associated with the Rotax engine (see paragraph 2.3).

The avionics on F-PJEA were conventional and included an artificial horizon, but did not enable flight under IFR.

2.3 Recorded data information

The pilot was in contact, in succession, with controllers in the Provence Info and then Marseille Info flight information service. The radar recordings from these two centres were retrieved by the BEA along with the radio communications between the pilot and the controllers.

The pilot was in the habit of using the SDVFR navigation application on his tablet which was found in good condition. The data from the tablet was downloaded and analysed. The last recorded data corresponded to the accident flight. The data was synchronized with the recordings of the air traffic control services (audio and radar) and a more accurate flight path than that based on the radars was obtained.

Nevertheless, the BEA has determined that the detection of GNSS tracks recorded on tablets can be lost and present inaccurate information, particularly during dynamic phases. The accuracy of the data does not therefore permit a close analysis to be systematically carried out for short time intervals.

The AvMap EngiBox computer was damaged and the data that it contained was downloaded by the manufacturer AvMap, in Italy. The comparison between the recorded data, in particular the flight time, in the SDVFR and AvMap EngiBox made it possible to confirm that the last flight recorded by AvMap EngiBox corresponded to the accident flight. This data notably showed that the engine parameters were nominal throughout the flight and were consistent with the manoeuvres of the aeroplane.

2.4 Site and wreckage information

The accident site was situated around 3 km south-west of the district of Prévencières, at an altitude of 1,030 m (3,380 ft), on the side of a hill. The debris of the aeroplane was spread over a distance of around 150 m. The condition and distribution of the debris indicated that the aeroplane had flown alongside the slope on a rough heading of 330° before colliding with the ground with a high horizontal energy.

The extent of the dislocation of the wreckage meant that it was not possible to determine, with certainty, if the aeroplane was complete and the controls continuous at the time of the accident. Nevertheless, all the damage observed was the result of the collision with the ground.

Likewise, the condition of the engine and the fuel supply system could not be checked. Nonetheless, the AvMap EngiBox recordings indicated that the engine was operating normally until the collision with the ground. Furthermore, the profile of the flight path observed on the accident site with high horizontal energy, along with the damage observed on the propeller, were consistent with an engine providing power.

2.5 Meteorological information

2.5.1 Forecast and reported meteorological conditions

No METAR or TAF was available for the immediate proximity of the accident site. The closest METAR and TAF were for the Orange airbase (LFMO), situated halfway between Vinon-sur-Verdon and Prévencières, and for Rodez - Aveyron aerodrome (LFCR), situated 28 km north of Cassagnes-Bégonhes.

The aeronautical information available to the pilot before his departure from Vinon-sur-Verdon at 16:14 was:

METAR and TAF for Orange airbase

- 16:00 METAR: Wind 130°/10 kt, visibility greater than 10 km, few clouds at 5 400 ft, overcast at 6,400 ft, temperature 27°C, dew point 16°C, atmospheric pressure 1014 hPa. Temporarily, wind 350°/12 kt, visibility 2,500 m, rainstorms, scattered clouds at 6,000 ft with cumulonimbus.
- 16:00 TAF: Wind 130°/8 kt, visual flight conditions, maximum temperature 30 °C on 17 September at 17:00, minimum temperature 18°C on 18 September at 05:00. Temporarily, on 16 September between 18:00 and 21:00, visibility 4,000 m, light rain, scattered clouds at 6,000 ft with cumulonimbus.

METAR and TAF for Rodez - Aveyron aerodrome

- 16:00 METAR: Wind 120°/16 kt, visual flight conditions, temperature 26°C, dew point 15°C, atmospheric pressure 1013 hPa. Temporarily wind from 140° of 16 kt with gusts at 26 kt.
- 13:00 TAF: Wind 150°/12 kt, visual flight conditions. Temporarily between 16 September at 14:00 and 16 September at 19:00, wind from 140° of 16 kt with gusts of 26 kt. Becoming on 17 September, between 09:00 and 11:00, wind from 140° of 18 kt with gusts of 28 kt.

Marseille FIR SIGMET

- Valid 16 September between 15:00 and 17:00. Frequent storms in the Marseille FIR region affecting an area delimited by points N4330 E00345, N4330 E00245, N4430 E00345 and N4430 E00415, with cloud tops at FL 430, stationary, not moving.

Météo-France indicated to the BEA that the readings at the time of departure from Vinon-sur-Verdon aerodrome (situated at an altitude of 903 ft) indicated an overcast sky with a cloud base between 3,000 and 6,500 ft.

On following the flight path from Vinon-sur-Verdon to the accident site, the cloud base started to rise with a clearer sky overhead the Vaucluse. Further on, in the Gard and Lozère, low clouds were once again present with the approach of a rainstorm disturbance. Visibility was reduced over the Cévennes and in the vicinity of the accident site.

The readings transmitted by Météo-France indicated that the pilot was flying north of a very active storm zone. The flight path taken avoided most of the precipitation.

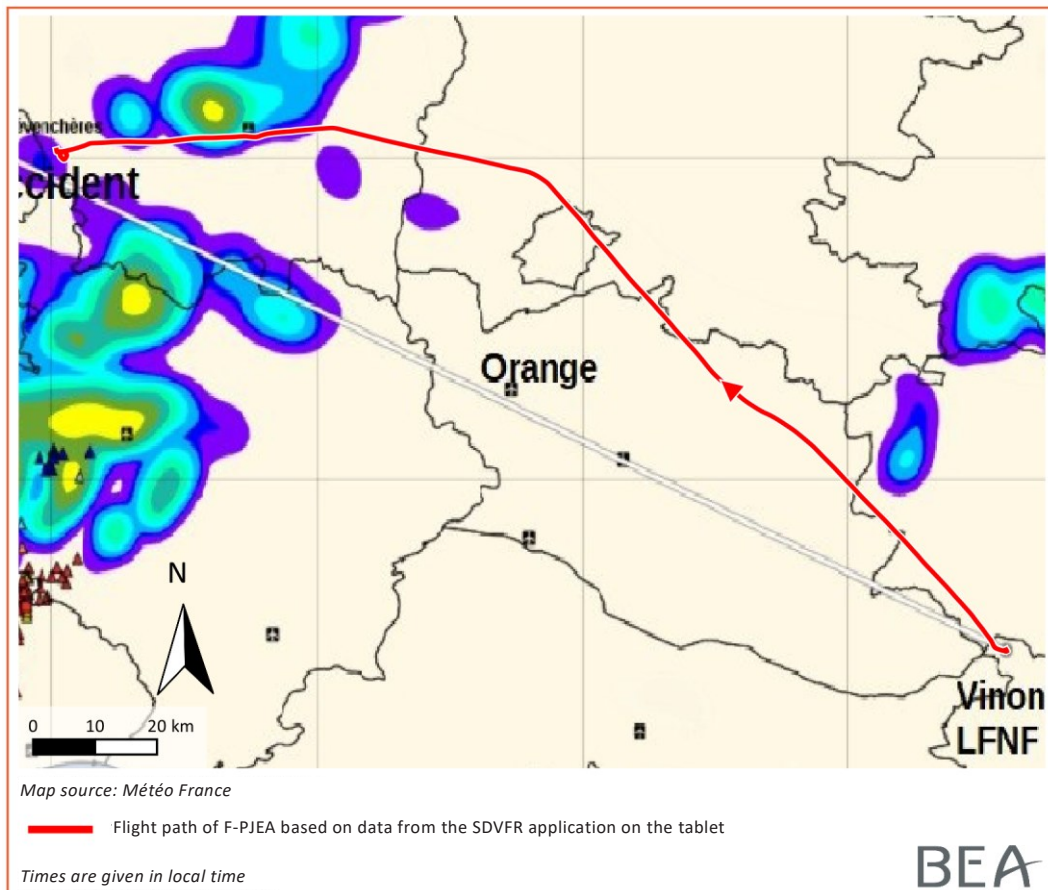


Figure 4: rainstorm situation at around 17:00 (Source: Météo-France)

The triangles indicate lightning strikes. The yellow zones indicate heavy rain and the dark blue zones, moderate rain.

At around 17:00, in the vicinity of Prévencières, the cloud mass descended to the ground, surrounding the terrain. The cloud tops were situated between 6,000 and 6,500 ft and there was another cloud layer between around 9,800 ft and more than 15,000 ft.

A witness present near the accident site specified that there had been thick fog since the morning. He had heard, without seeing, an aeroplane turning and then flying away in a northerly direction before hearing an explosion. When the fog cleared some twenty minutes later, he saw the wreckage of the aeroplane on the side of a hill.

Beyond the accident site in the direction of the planned destination of the flight, the low clouds were scattered and the sky clear overhead Aveyron.

2.5.2 Pilot's knowledge of the weather situation

The investigation determined that the pilot had an appointment on the Monday. He had indicated in his exchanges that he hoped to be back from Corsica in time for it. On the Friday, he was already aware that the weather conditions would not be good for the planned flight on the Saturday with a low cloud ceiling. On the Saturday morning, he consulted the weather site [Aéroweb](#) before his departure from Corsica. On arriving at Vinon-sur-Verdon, he confirmed to his wife that the weather conditions were mediocre, that he was not certain that he would be able to get back home that day and that he might be obliged to push his flight back to the next day. He then consulted four different weather information sites (Aéroweb, [Météociel](#), [Météo-France](#) and [Meteo-Weather](#)).

Shortly after, he had a telephone conversation with his wife before sending her a photo of the sky taken from Vinon-sur-Verdon aerodrome. His wife added that she had expected him to postpone his return until the Sunday or the Monday.



Figure 5: photo sent by pilot at 13:47

3 CONCLUSIONS

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

Scenario

The pilot was carrying out a cross-country flight between Corsica and Cassagnes-Bégonhes aerodrome where his aeroplane was based, with a stop at Vinon-sur-Verdon. He was aware that the weather conditions were degraded on the second part of the route and had planned to take an indirect path in order to circumnavigate via the north, the most disturbed areas. The pilot indicated several times that he envisaged delaying this leg due to the bad weather conditions which finally, he did not do.

Over the Cévennes, as a rainstorm approached, the cloud mass reached the ground with reduced visibility.

At around 4,000 ft, the pilot lost visual references and performed a steep-bank 360° turn during which he descended and then climbed again at high vertical speeds. The pilot flew over the terrain at low height, possibly without being aware of it.

He then requested radar vectors from the controller in order to turn around and return to Aubenas. A few moments later, and before the controller had given him a heading, the pilot lost control of his aeroplane.

Contributing factors

Although the pilot was aware that the weather conditions were degraded and was prepared to delay his flight, he nevertheless undertook the flight and lost visual references in cruise in a mountainous area.

The investigation was not able to determine with certitude, the reasons which made him take off to fly to his destination that same day.

The pilot's knowledge that there were good weather conditions at the end of his planned route and his flying experience, and in particular the fact that he had held an instrument rating between 1993 and 2004, may have delayed his decision to turn back as visibility conditions deteriorated.

Safety lesson: get-home-itis

Once in flight and confronted with adverse weather conditions for the continuation of the flight, a diversion or even a precautionary landing are solutions which generally lead to a positive outcome.

In the [Safety Lessons General Aviation](#) section of its website, the BEA identified the "get-home-itis" theme in its [2021](#) and [2022](#) light aeroplane reviews. The BEA has recently published the investigation report into the [accident to the Robin DR400 registered F-GMXY on 15 August 2023 at Lavau-sur-Loire](#) linked to this safety topic.

The loss of visual references during VFR flights is frequently associated with accidents, the consequences of which are usually fatal. The DGAC and the FFA have on several occasions, reiterated the risks associated with loss of visual references, stressing the danger of get-home-itis and the obstinacy of continuing a flight.

The FFA has also published several bulletins on this subject, in particular [Flash Sécurité des Vols n°30](#) covering flight safety and [Règles Pratiques n°28 "objectif destination, obstination"](#) concerning get-home-itis and obstinacy.

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