BEA
Bureau d'Enquêtes et d'Analyses
pour la sécurité de l'aviation civile

www.bea.aero

REPORT
ACCIDENT

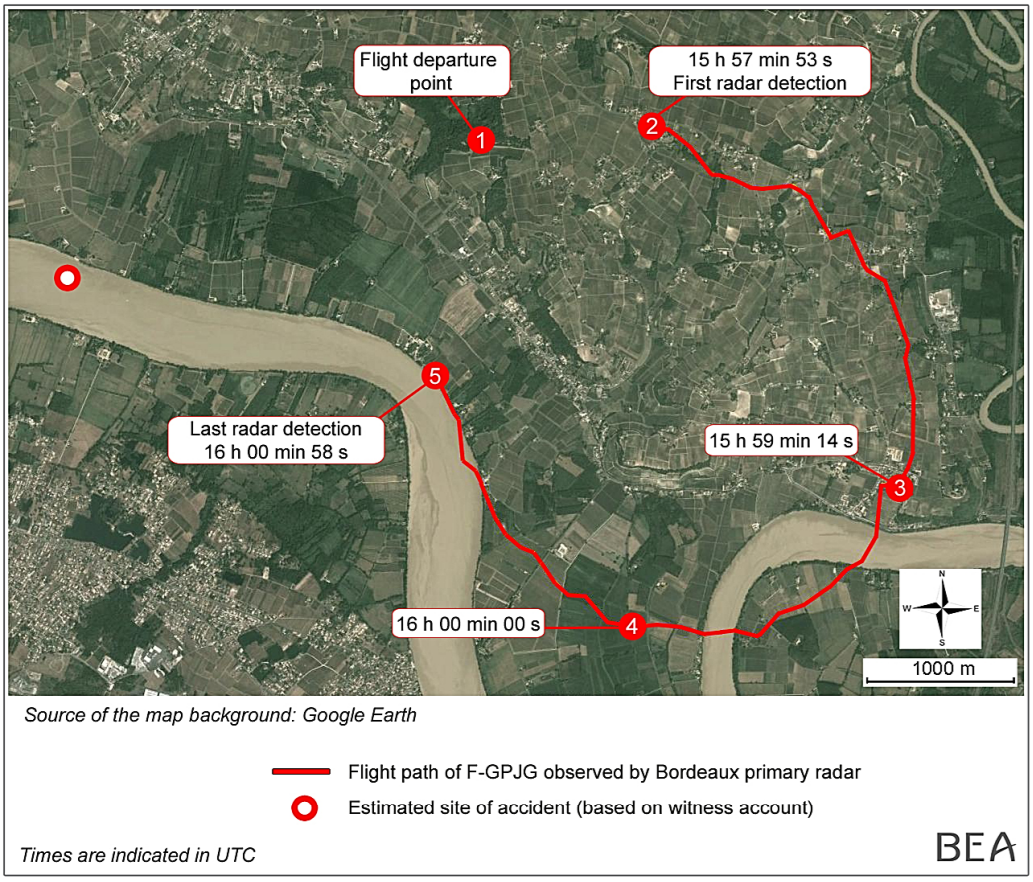
Flight at a low height, collision with water

Aircraft	Robinson R 44 helicopter registered F-GPJG
Date and time	20 December 2013 at about 17 h local time
Operator	Private
Place	Lugon and Ile du Carney (33)
Type of flight	General aviation
Persons on board	Pilot and three passengers
Consequences and damage	Pilot and passengers killed, helicopter destroyed

1 – HISTORY OF FLIGHT

Following a lunch to celebrate the sale of his property, the pilot decided to perform a pleasure flight with the buyer and two other people. The pilot took the right-side front seat in the helicopter and the buyer the left-side front. The two other passengers sat in the rear seats.

The pilot took off from the helipad on the property. Radar recordings show that he first flew towards the east, then began a wide turn to the right to the west of Libourne which took him along the Dordogne. He overflew the water on a westerly heading then all trace was lost. At the place where the radar detection was interrupted, several witnesses on the ground saw the helicopter descend close to the water and fly at a low height for a few moments. The helicopter was found during the night at the bottom of the river at about 2,000 m from the last radar detection point.



BEA

2 - ADDITIONAL INFORMATION

2.1 Site and the Wreckage Information

The wreckage was at the bottom of the Dordogne. The body of the person in the right rear seat was still attached to the seat. The bodies of the three other occupants were only found in the river several days after the accident.

A complete examination of the airframe and of the engine did not reveal any evidence of a mechanical anomaly previous to the helicopter's collision with the surface of the water. It showed that the rear part of the helicopter struck the water first. The vertical speed was low and the horizontal speed high. The first impact caused a rupture of the tail beam near the tail rotor. The helicopter then tipped forward causing significant damage to the airframe.

The engine was running at the time of the collision with the water. It was not possible to determine precisely the engine power at the time of the impact.

Examination of the instrument panel lights showed that the *''governor off''* light was illuminated at the time of the impact. The state of the *''engine fire''* and *''oil pressure''* lights did not make it possible to conclude anything about their functioning before the impact. All of the other lights were off.

Examination of the engine parameter indicators did not make it possible to determine the values that they were showing at the time of the impact. The on-board clock was indicating 5h44.

2.2 Summary of Testimony

Some witnesses that had attended the lunch and the takeoff stated that the pilot had consumed a little wine during the meal, tough it was not possible to evaluate the quantity. However, it seemed to them that he was fit to undertake the flight.

Several people that had flown with the pilot stated that he often took an identical flight path to that taken on the day of the accident. They added that he was used to flying at the height of the tops of the poplars above the river.

Four witnesses on the ground described a helicopter with a westerly heading, stabilised between ten and fifteen metres above the water. Two witnesses saw it descend steeply before this period of stabilised flight. None of them saw the collision with the surface of the water.

2.3 Meteorological Information

The meteorological conditions estimated at the site were as follows: slight wind from the north at 2kt, meteorological visibility greater than 10 km, a few cumulus at 3,500 ft, temperature 11 °C.

At the time of the accident the angle of the sun was 230° and the site 2°.

2.4 Pilot's Licence and Experience

The pilot held a PPL (H) licence issued in 1998. He had a total of 640 flying hours on helicopter, most of them on type. He also held a PPL (A) licence and glider pilot's licence.

2.5 Additional Information

Based on the fuel quantity data recorded in the log and the flight time stated by the pilot, based on the on-board tachometer, the average hourly consumption can be evaluated at between 53 and 55 litres per hour for the flights over the previous four months.

Supposing that a complete fill-up had been made at the time of the last refuel, as indicated by the log, the helicopter had a minimum of 39 litres of fuel before undertaking the flight. The helicopter having flown for about ten minutes, it is not possible to suggest a hypothesis of fuel starvation. This fact is confirmed by the low fuel light being off at the time of the impact.

The governor detects variations in engine RPM and applies a correction on the thrust control when the RPM differs from its nominal value. Its engagement controlled by the pilot during startup with the aid of the switch located at the end of the collective pitch control. Flying with the governor in the off position is possible.

It is not possible to know whether the pilot engaged the regulator after start-up, but it is entirely possible that this button had been activated involuntarily after the first impact, thus explaining the illuminated *"governor off"* light in the on position.

3 - LESSONS LEARNED AND CONCLUSION

The accident was caused by the decision to continue a flight at a very low height above water.

Several factors contributed to this event:

- the difficulty of appreciating height above an expanse of water;
- the difficulties caused by the position of the sun facing the pilot and low on the horizon;
- the atmosphere on the day, which may have led the pilot to undertake some improvised manoeuvres.