



**Accident** to the PIPER PA25 - 235 “Pawnee”  
registered **F-HPMO**  
on 5 September 2021  
at Bedous (Pyrénées-Atlantiques)

<b>Time</b>	Around 13:20 <sup>1</sup>
<b>Operator</b>	Centre école vol à voile du Haut-Béarn (CEVVHB)
<b>Type of flight</b>	Glider towing
<b>Persons on board</b>	Pilot
<b>Consequences and damage</b>	Aeroplane substantially damaged
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.	

**Reduction in engine power in climb during a glider towing flight, off-field landing, collision with trees**

**1 HISTORY OF THE FLIGHT**

*Note: the following information is principally based on statements and FLARM data from the aeroplane.*

The pilot took off from Oloron-Herrère aerodrome (Pyrénées-Atlantiques) for a towing flight.

During the climb, when the aeroplane reached an altitude of approximately 8,000 ft, the pilot noticed a reduction in engine power. He asked the pilot of the towed glider to release the cable, then he headed towards the departure aerodrome. As the engine power decreased again and the engine was making abnormal noises, the pilot moved the throttle lever to the “idle” position and decided to make an off-field landing. The glider pilot gave him the position of a nearby listed field.

When he saw the field, the pilot released the tow cable, increased power to 1,500 rpm to see if he could use the engine if necessary on final approach, and then moved the throttle lever back to the “idle” position. On final approach, he noticed that the aeroplane was too low on the approach path, so he increased the power. The engine shut down. The pilot tried to land in the field located before the one he had chosen. During the run, the aeroplane hit the line of trees separating the two fields and came to a stop.

<sup>1</sup> Except where otherwise indicated, the times in this report are in local time.

## 2 ADDITIONAL INFORMATION

### 2.1 Aeroplane information

The club's mechanic, who held a Part-66 licence, carried out a "50-hour" inspection on 04 September 2021 at the request of the aeroplane's airworthiness manager. Having detected a leak in the exhaust system, at the connection between the engine exhaust pipe manifold and the muffler, he carried out a temporary repair, in agreement with the airworthiness manager, pending the end of the season and the aeroplane's return to the workshop. He did not seek the advice of the workshop that usually ensured the aeroplane follow-up, nor did he use any supporting documents.

The repair consisted of the addition of high-temperature-resistant tape and an aluminium sheet to secure the tape, all attached with two metal clamps. The mechanic did not know where the sheet used had come from and was unaware that this had a much lower temperature resistance than the temperature reached by the exhaust (between 500 and 700 °C).

The flight which followed this inspection took place without any problems. During the second flight on the day of the accident, the pilot at the controls, who knew about the repair, detected a smell of heat in flight. He aborted the flight and landed without incident. After landing, he warned another pilot. As they were unable to contact the mechanic, they carried out a brief inspection of the engine, in particular in the area of the repair. No burn marks or damage were found. The other pilot decided to perform the subsequent flights.

The repair had not been recorded in any of the logbooks. The smell of heat was recorded in the aeroplane's logbook after the accident.

### 2.2 Examination of site and wreckage

The wreckage was found at the edge of the listed field. The wings were substantially damaged due to contact with the trees.

Examination of the engine revealed that the aluminium sheet surrounding the high-temperature tape had melted, causing damage to part of the wiring under the exhaust. All of the magneto wiring in this area had also been damaged.

No other damage was found, in particular to the engine fuel supply line running near the affected area.

### 2.3 Pilot information

The 64-year-old pilot held an Airline Transport Pilot Licence - Aeroplanes (ATPL(A)). He also held a glider pilot licence. He had logged more than 12,000 flight hours, five hours of which on type in the previous three months. He was the chief-pilot of the Oloron flying club and a tug pilot at the CEVVHB.

## 2.4 Meteorological information

The meteorological conditions estimated by Météo-France at the accident site were as follows: wind from 360° of 5 kt, gusts up to 10 kt, visibility greater than 10 km, a few clouds, temperature 29 °C.

## 2.5 Additional observations

The CEVVHB representative stated that the following findings were observed during the engine disassembly and associated inspections:

- the exhaust valve of the left front cylinder was particularly white compared to the other valves and was not lubricated, contrary to the other valves;
- the exhaust muffler bellows were substantially damaged, with signs of oxidation at high temperature. The outer skin also showed the white colour seen on the valve.

A further examination of the engine was scheduled to be performed by the workshop in charge of the reconditioning. A few days before the anniversary date of the accident, this examination had still not been carried out.

## 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 aeroplane's last "50-hour" inspection, the mechanic carried out a temporary repair to the exhaust system by adding high-temperature-resistant tape and an aluminium sheet. He did not realise that the temperature resistance of the sheet used for this repair was lower than the temperature reached by the exhaust, making this repair inappropriate. In addition, he did not seek the advice of the workshop that usually ensured the aeroplane follow-up, nor did he use any supporting documents.

During the third flight after this repair, the pilot at the controls detected a smell of heat and aborted the flight. After landing, he reported the problem to another pilot, who knew about the repair. As they were unable to contact the mechanic, they carried out a brief inspection of the engine together and did not find any damage. The second pilot then decided to perform the subsequent flight himself to see if the problem persisted.

During the flights which followed the repair, the aluminium sheet melted, gradually damaging the wiring under the exhaust. During the accident flight, damage to the magneto grounding cables resulted in a reduction in engine power. The pilot decided to make an emergency landing. Despite the throttle lever being set to the "idle" position, the damage to the grounding cables of both magnetos developed until the engine electrical supply cut off and the engine shut down while the aircraft was on final. The pilot had to land in the field located before the one he had chosen. During the run, he did not manage to stop the aeroplane before the line of trees separating the two fields, and the aeroplane collided with the trees.

In the absence of the results of the further examination of the engine by the workshop responsible for its return to service, it was not possible to confirm whether the engine had also run at an abnormally high temperature, as the findings observed after the engine disassembly may suggest.

## **Contributing factor**

The pilot's decision to undertake a towing flight despite knowing about the repair on the exhaust system and about a problem during the previous flight, without waiting for the mechanic's advice, contributed to the accident.

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