

ACCIDENT

Aircraft Type and Registration:	Pierre Robin HR100/210 Safari II, G-BLWF	
No & Type of Engines:	1 Continental Motors Corp IO-360-D piston engine	
Year of Manufacture:	1973	
Date & Time (UTC):	17 April 2010 at 1511 hrs	
Location:	Bourn Airfield, Cambridgeshire	
Type of Flight:	Private	
Persons on Board:	Crew - 1	Passengers - None
Injuries:	Crew - None	Passengers - N/A
Nature of Damage:	Right landing gear detached from spar and bent back into wing and flap. Nose gear and frame pushed up into engine bay and firewall	
Commander's Licence:	Private Pilot's Licence	
Commander's Age:	66 years	
Commander's Flying Experience:	808 hours (of which 2 were on type) Last 90 days - 2 hours Last 28 days - 2 hours	
Information Source:	Aircraft Accident Report Form submitted by the pilot	

Synopsis

The aircraft contained about 50 litres of fuel in each of the inner wing tanks, with the outer wing tanks virtually empty. For the flight, the pilot selected the left outer tank on the fuel selector cock in the mistaken belief that this was the position for the left inner tank. The identification placard on the fuel selector cock was badly scratched and barely legible. After 35 minutes of flight the engine began to misfire, prompting the pilot to head back to the airfield, approximately five miles away. A short distance from the runway the engine stopped and the aircraft landed heavily in a field of crops. The aircraft suffered significant damage to the right and nose landing gear and also to the right wing, engine bay and firewall. The pilot was uninjured.

History of the flight

Prior to the flight, the pilot checked the contents of each of the aircraft's fuel tanks by reading the fuel gauges and physically checking the fuel level in the left inner tank. He noted that the gauges indicated about 50 litres in each of the inner tanks and just above empty in the outer tanks. For the flight the pilot selected the left outer tank on the fuel selector cock in the mistaken belief that this was the position for the left inner tank. The Figure 1 shows the fuel cock with the left inner tank (INT L) selected. The next position anticlockwise is the left outer tank (AUX L) that was selected.

The pilot took off from the airfield for a local flight to familiarise himself with the handling qualities of the

aircraft (which he had purchased four days earlier). About 35 minutes later, approximately five miles south of the airfield, the engine started to misfire. The pilot confirmed that engine temperature and oil pressure were normal and that the fuel contents in the tank he thought he had selected (left inner) were sufficient. He then turned on the fuel pump and checked his selection of fuel tank¹. The engine misfire stopped briefly with the fuel pump on but then resumed, so the pilot turned the pump off and headed back towards the airfield.

As the pilot lined up with the runway the engine stopped and, unable to reach the airfield, the aircraft crash landed heavily in a field of crops, 150 metres short of the runway. During the landing the right landing gear detached for the wing spar and folded backwards into the wing and flap and the nose gear assembly was pushed upwards into the engine bay and firewall. The pilot, who was wearing a full harness, was uninjured.

Fuel system

The aircraft's fuel system consists of two (inner) wing-mounted tanks and two auxiliary (outer) wing-mounted tanks, each with a maximum fuel capacity of 113.5 litres and separate fuel gauges on the instrument panel labelled L INTERIEUR, L SUP, R SUP and R INTERIEUR. Fuel tank selection is made with a fuel-selector cock located on the cockpit floor (see Figure 1) with five positions labelled OFF, INT L, AUX L, AUX R and INT R. The flight manual includes a diagram

Footnote

¹ The pilot remembered that the flight manual recommended the use of left inner tank because surplus fuel from the fuel injection dump is returned to this tank; however, this recommendation was "for start-up and take-off whenever this tank is full. The use of any other tanks may lead to overflowing in the left main tank and the loss of fuel when overfull."

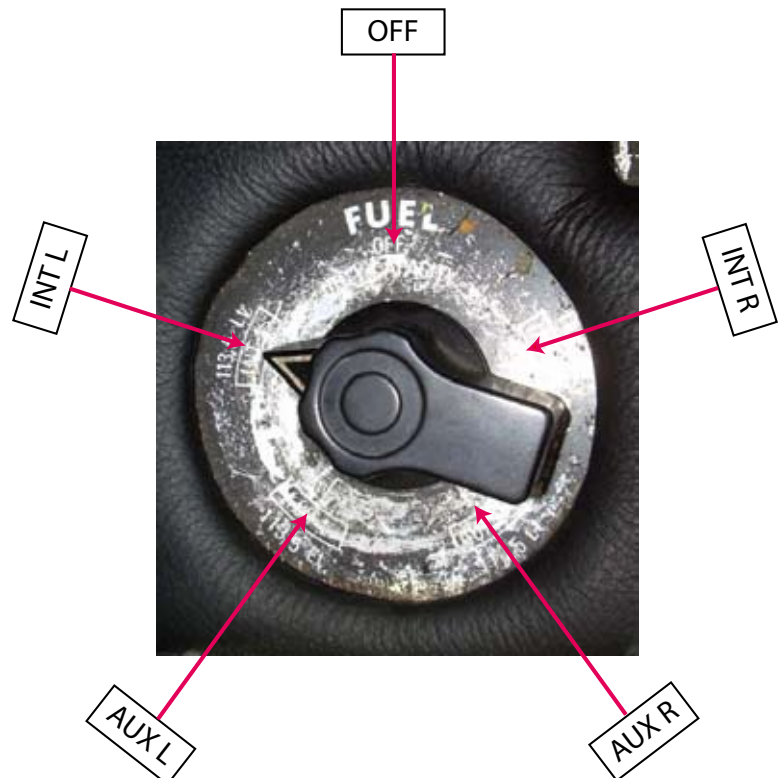


Figure 1

Fuel selector clock

of the fuel system and illustrates the fuel cock with the five selections in the same relative position to that on the actual selector cock; however, these positions are not explicitly labelled. As can be seen in Figure 1, the identification placard for the five detent positions of the fuel selector in G-BLWF was badly scratched and barely legible.

The pilot's assessment of the cause of the accident was a misreading of the worn fuel selector cock placard and a misinterpretation of the aircraft's flight manual description of the fuel system.