

Piper PA-28-161, G-BUJP

AAIB Bulletin No: 11/2000 **Ref:** EW/G99/08/27 **Category:** 1.3

Aircraft Type and Registration: Piper PA-28-161, G-BUJP

No & Type of Engines: 1 Lycoming O-320-D3G piston engine

Year of Manufacture: 1979

Date & Time (UTC): 27 August 1999 at 1605 hrs

Location: 1 nm North of Mid-Wales (Welshpool) Airfield

Type of Flight: Private

Persons on Board: Crew - 1 - Passengers - 1

Injuries: Crew - None - Passengers - None

Nature of Damage: Tree impact damage to right wing fuel tank, and wing attachments

Commander's Licence: Private Pilot's Licence

Commander's Age: 71 years

Commander's Flying Experience: 150 hours (of which 42 were on type)
Last 90 days - 15 hours
Last 28 days - 3 hours

Information Source: Aircraft Accident Report Form submitted by the pilot

History of the flight

Following a short flight from Welshpool Airfield, the pilot returned and descended to the circuit height of 1,500 feet agl. Throughout the flight the engine had run normally, including during those occasions when he had applied carburettor heat.

The pilot reduced his airspeed to 90 kt and carried out his downwind checks, which included temporary selection of carburettor heat. On turning onto base leg, he reduced his airspeed to 80 kt and selected 2 stages of flap. The pilot normally selected carburettor heat before reducing the throttle on base leg, but could not remember positively doing so on this occasion. He did, however, recall that the circuit up to that time had been quite normal. After turning onto final approach, he set the throttle to give about 1,500 RPM and the aircraft descended on the normal approach path. The pilot then made RT contact with the pilot of another aircraft which was ahead of him on the approach, and was informed that the other pilot intended to make a glide approach to land. The pilot of G-BUJP therefore considered that he might have to go-around. Subsequently, when about half way down final approach, his aircraft became slightly low and so he advanced the throttle in

order to regain the correct approach angle. However, the engine did not respond and so he checked that the electric fuel pump was ON and changed from the right fuel tank to the left tank. Since the engine did not respond, he changed back to the right tank and the engine then responded briefly to the throttle, before losing all power.

The pilot selected a suitable field for a forced landing and transmitted a Mayday call. After the aircraft had descended over some trees, he selected 3rd stage flap and executed a good touchdown in the field. However, during deceleration braking action was affected adversely by the rough ground in the field, which was only some 200 metres in length. In addition, as the pilot steered the aircraft towards a gap in the field boundary, it became apparent that it contained bushes and barbed wire. The aircraft continued through the boundary and the right wing struck a tree before the aircraft came to rest some 20 metres into the field beyond. The engine was stopped and the pilot was going through shutdown checks when his passenger, who had vacated the aircraft, called back to say that fuel was running from the right wing. The pilot withdrew the ignition key and immediately left the aircraft.

Inspection of the aircraft on site

After assessing the situation and judging it to be safe, the pilot went back to the aircraft and checked the fuel in both tanks. Each tank had been half full at the time of his pre-flight inspection, and he found that the left tank was still about half full. (The right tank had been used exclusively in the earlier stages of the flight.) He was not able to assess how much fuel remained in the damaged right fuel tank, where the wing leading edge had been compressed by some 15 cm as a result of the tree strike, but noted that fuel was still leaking from the tank. The pilot commented that during the flight, the left fuel tank gauge had become faulty, changing from indicating the correct half tank contents, to indicating 'full'.

The pilot subsequently asked the senior engineer, who had inspected the aircraft on site, what carburettor heat control setting he had found on checking the aircraft. The engineer replied that he could not recall what the setting had been, but he did say that the engine had been run subsequently while the aircraft had still been in the field.

Air temperature and dew point information

The weather at the time of the accident reported by the pilot (calculated by the Meteorological Office for 500 feet agl at Welshpool) included an air temperature of 17°C, with a dew point of 10°C; Shawbury was reported as recording a corresponding temperature of 20°C and a dew point of 11°C. Reference to a standard carburettor icing chart indicated that both conditions would have been well inside the regime where moderate carburettor icing should be expected at cruise power, with serious icing at descent power.

Previous engine problems

The pilot stated that he had received anecdotal reports of prior instances of engine problems on this aircraft, including one instance of problems in the circuit followed by engine stoppage after landing on the 23 August, which the engineer reported he had cured by adjustments to the carburettor slow running control. In addition, this aircraft had also apparently experienced similar problems in the circuit on the day preceding this accident, and the engine had again cut on the runway.