Victa Airtourer 100, G-ATJC

AAIB Bulletin No: 2/98 Ref: EW/G97/12/11 Category: 1.3

Aircraft Type and Registration:	Victa Airtourer 100, G-ATJC
No & Type of Engines:	1 Lycoming O-320-E2A piston engine
Year of Manufacture:	1965
Date & Time (UTC):	16 December 1997 at 1230 hrs
Location:	South of Crewe, Cheshire
Type of Flight:	Private
Persons on Board:	Crew - 1 - Passengers - 1
Injuries:	Crew - None - Passengers - None
Nature of Damage:	One propeller blade slightly bent
Commander's Licence:	Private Pilot's Licence with Night Rating
Commander's Age:	57 years
Commander's Flying Experience:	525 hours (of which 114 were on type)
	Last 90 days - 33 hours
	Last 28 days - 18 hours
Information Source:	Aircraft Accident Report Form submitted by the pilot and enquiries by the AAIB

The pilot had planned a flight from Cumbernauld to Prestwick, where he would pick up a passenger and then fly direct to Oxford (Kidlington). His route planning was based on an initial usable fuel figure of 24 imperial gallons; this fuel figure was the maximum allowed, taking into account the solo flight to Prestwick, to enable him to pick up his passenger and stay within the aircraft weight limitations. From Prestwick, he estimated the aircraft had an endurance of three hours and decided on a maximum flight time of two and a half hours before refuelling. The flight to Prestwick lasted 25 minutes and G-ATJC was only on the ground for five minutes before taking off again. After a further two hours flying and with the pilot considering a landing in the next 15 minutes for fuel, the engine suddenly stopped and the pilot made a successful forced landing in a field. After landing, the pilot checked the fuel tank and confirmed that it was empty.

Subsequent calculations confirmed the accuracy of the expected endurance based on an initial fuel figure of 24 gallons. The same pilot had flown the aircraft on the previous flight which was on 12 December. Prior to that earlier flight, he had confirmed his initial fuel load as 17 gallons and estimated that he used about 7 gallons on the flight. Then, the day before his flight to Oxford, he contacted the agent who manages the aircraft and asked that it be refuelled to 24 gallons for his intended flight. On 16 December, the pilot arrived at the airfield and used the 'Dip stick' to confirm his fuel. The internal fuel gauge has not worked for some time and, even when working, is known to be unreliable; the standard procedure is to use the 'Dip stick' to check the amount of fuel in the single fuel tank. The pilot believed that the indications confirmed that he had 24 gallons on board. However, there was no indication on the aircraft paperwork of the last fuel uplift although a figure of '24G' was marked on the sheet.

The pilot stated that the winds were as forecast and that he had flown G-ATJC many times on cross-country flights and had always achieved the expected fuel consumption. Additionally, following the recovery of the aircraft, an engineer confirmed that there was no indication of a fuel leak. The most likely scenario was that the aircraft had less than 24 gallons on board prior to the flight. A check revealed that G-ATJC had been uplifted with 7 gallons of fuel on the afternoon of 15 December; based on the fuel at the end of the previous flight, this would mean that the aircraft had approximately 17 gallons for the flight to Oxford. The subsequent flying time of two hours and 25 minutes is consistent with this fuel load.

In his report, the pilot acknowledged this likely sequence of events and his responsibility for ensuring that sufficient fuel was on board. However, in mitigation he was sure that he had planned the flight correctly and had accurately checked the fuel load. He also commented that the paperwork was misleading and incomplete, and that misreading of the 'Dip stick' may have occurred because of the poor quality of the 'Dip stick' and the fact that the aircraft may not have been on a level surface.

Guidance on fuel planning is included in General Aviation SafetySense Leaflet 1B, Good Airmanship Guide.