

Cessna 152, G-BSTO

AAIB Bulletin No: 3/2003 Ref: EW/G2002/11/19

Category: 1.3

INCIDENT

Aircraft Type and Registration:	Cessna 152, G-BSTO	
No & Type of Engines:	1 Lycoming O-235-L2C piston engine	
Year of Manufacture:	1978	
Date & Time (UTC):	29 November 2002 at 1815 hrs	
Location:	Plymouth Airport, Devon	
Type of Flight:	Private	
Persons on Board:	Crew - 1	Passengers - 1
Injuries:	Crew - None	Passengers - None
Nature of Damage:	Minor damage to left wheel brake assembly	
Commander's Licence:	Commercial Pilots Licence	
Commander's Age:	58 years	
Commander's Flying Experience:	676 hours (of which approximately 290 were on type)	
	Last 90 days - 9 hours	
	Last 28 days - 4 hours	
Information Source:	Aircraft Accident Report Form submitted by the pilot and subsequent AAIB enquiries	

Plymouth Airport

Runway 31 at Plymouth is 1,170 metres long and 30 metres wide with turning circles at each end. The threshold of Runway 31 is displaced leaving a landing distance available of 1,045 metres. At night, the approach to the runway is marked by a coded centreline with five bars leading up to the start of the paved surface. The approach end of the turning circle is marked by a tangential row of red lights and the displaced threshold is marked by high intensity green lights; the distance between the two sets of transverse lights is approximately 40 metres. A set of Precision Approach Path Indicator (PAPI) lights is installed on the left side of the runway 172 metres beyond the threshold;

these lights are set to a glidepath of 3.5°. The Runway End Safety Area (RESA) in the undershoot of Runway 31 is limited to 30 metres in length.

History of flight

The pilot did not hold an instructors rating, but was cleared by his flying club to undertake check flights on members whose club currency requirements had lapsed. On the day of the accident the pilot had conducted such a check on a club member during daylight hours. This club member had not flown at night and wished to accompany the pilot on a night flight as a passenger later that same day. That evening, the check pilot completed a solo night circuit to renew his night flying currency before taking the club member on board, as a passenger in the right hand seat, and departing for the local area.

After an uneventful flight, the check pilot commenced an approach to Runway 31 using the PAPIs for approach angle guidance. However, on short finals the pilot changed his approach path so that his aiming point was the runway threshold lights. The remainder of the approach seemed normal to the pilot but on landing it was immediately apparent to him that he had landed short of the runway and the aircraft had touched down in the grass undershoot area. It traversed the grass and quickly regained the paved runway surface where it was slowed down and taxied back to the parking area.

Inspection that night revealed damage to one centreline approach light and one runway end light which was consistent with marks found on the aircrafts left tyre and wheel brake assembly. Further inspection the next day revealed that the aircraft had touched down in the RESA about 14 metres short of the turning circle, midway between the end of the circle and a 3 metre high fence.

The weather was fine and the surface wind was essentially down the runway at 4 kt but the wind at circuit height was much stronger at between 15 and 20 kt. There was no turbulence or thermal mixing of layers but the aerodrome chart for Plymouth contains a warning that *Significant differences may occur between the surface wind velocity reported by ATC and the actual wind at approximately 100 AAL*. The pilot wondered if he had lost airspeed at a very late stage on finals due to windshear but he was able to flare the aircraft and the touchdown was soft, so this seems an unlikely explanation. However, the pilot also stated that during daylight flying, he habitually aimed to touchdown at the threshold, especially when using short strips. He intended to use the same touchdown aiming point that night but he may, during a brief check of the instruments, have looked up again without realising that he had transposed the runway end lights for the threshold lights.