

**ACCIDENT**

<b>Aircraft Type and Registration:</b>	1) Piper PA-28-151 Cherokee Warrior, G-CCZV 2) Piper PA-28-161 Cherokee Warrior III, G-BZBS
<b>No &amp; Type of Engines:</b>	1) 1 Lycoming O-320-D3G (MODIFIED) piston engine 2) 1 Lycoming O-320-D3G piston engine
<b>Year of Manufacture:</b>	1) 1977 (Serial no: 28-7715089) 2) 2000 (Serial no: 2842080)
<b>Date &amp; Time (UTC):</b>	30 September 2016 at 1443 hrs
<b>Location:</b>	Near Elstree Aerodrome, Hertfordshire
<b>Type of Flight:</b>	1) Training 2) Private
<b>Persons on Board:</b>	1) Crew - 1                      Passengers - None 2) Crew - 1                      Passengers -1
<b>Injuries:</b>	1) Crew - None                  Passengers - N/A 2) Crew - None                  Passengers - None
<b>Nature of Damage:</b>	1) Damaged left landing gear wheel, tyre and fairing 2) One propeller blade bent, tyre marks on left wing
<b>Commander's Licence:</b>	1) Student 2) Private Pilot's Licence
<b>Commander's Age:</b>	1) 57 years 2) 72 years
<b>Commander's Flying Experience:</b>	1) 136 hours (of which all were on type) Last 90 days - 21 hours Last 28 days - 8 hours  2) 127 hours (of which all were on type) Last 90 days - 12 hours Last 28 days - 6 hours
<b>Information Source:</b>	Aircraft Accident Report Forms submitted by the pilots

**Synopsis**

G-CCZV and G-BZBS were approaching each other on a collision course. Neither pilot saw the other aircraft in time to take avoiding action. Each pilot's attention was inside the cockpit immediately before the collision.

**History of the flight**

The pilot of G-CCZV was a student on a navigation exercise flying from Leicester Airport to Elstree Aerodrome. He was heading towards Elstree Aerodrome which he could see in

what he described as excellent visibility<sup>1</sup>. Near the junction of the M1 and M25 motorways, at approximately 2,000 ft (using a pressure setting of 1010 hPa), he contacted Elstree Information on the radio and, after receiving instructions to join for Runway 26, looked inside the cockpit to set the QFE (999 hPa) on the altimeter. While his attention was inside the cockpit he heard a “substantial thump” to the left wing of his aircraft and saw a “flash” of an aircraft passing by. He realised that he had been involved in a collision but the aircraft and engine appeared to be performing normally and he continued to Elstree and landed. After landing, damage was observed to the left landing gear, wheel and tyre as shown in Figures 1 and 2.



**Figure 1**

G-CCZV left landing gear



**Figure 2**

G-CCZV left wheel and tyre

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**Footnote**

<sup>1</sup> The track from the M1/M25 junction to Elstree Aerodrome is 148°M.

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G-BZBS was flying from Stapleford Aerodrome to White Waltham Aerodrome, and was on a track from abeam Banbury Reservoir VRP<sup>2</sup> to Bovingdon VOR<sup>3</sup> at 2,200 ft on a pressure setting of 1021 hPa. The pilot reported that he was flying towards a “bright sun” which was low in the sky and reducing visibility in the direction of flight. He looked at his map to verify his position before calling Farnborough LARS on the radio when he saw a “flash” overhead and felt an impact. Although aircraft controllability was not affected, he declared a PAN on the Farnborough LARS frequency and stated his intention to divert to Elstree Aerodrome where he landed without further incident. After landing, damage was observed to the aircraft’s propeller blade and left wing upper surface as shown in Figures 3 and 4.

### Assessment of cause

Figures 2 and 3 show that G-BZBS’s propeller blade struck G-CCZV’s left wheel and tyre and Figure 4 shows that G-CCZV’s left tyre then struck the upper surface of G-BZBS’s wing. The tracks of the aircraft were approximately 148°M (G-CCZV) and 274°M (G-BZBS) giving a closing angle of approximately 54° which, given that the aircraft were flying straight and level at constant speed and altitude, would have remained constant in the lead-up to the collision. Neither pilot saw the other aircraft in time to take avoiding action. It is likely that the poor into-sun visibility, the constant angle between the tracks of the aircraft, and the fact that the attention of both pilots was inside their respective cockpits before the collision, contributed to the breakdown of the see-and-avoid principle for flight in Class G (uncontrolled) airspace<sup>45</sup>.



**Figure 3**  
G-BZBS propeller blade

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#### Footnote

<sup>2</sup> VRP: Visual reporting point.

<sup>3</sup> The track from north-abeam Banbury Reservoir VRP to Bovingdon VOR is 274°M.

<sup>4</sup> For a full discussion on limitations of the see-and-avoid principle, see the following Australian Transport Safety Bureau document: [https://www.atsb.gov.au/media/4050593/see\\_and\\_avoid\\_report\\_print.pdf](https://www.atsb.gov.au/media/4050593/see_and_avoid_report_print.pdf)

<sup>5</sup> For the Civil Aviation Authority report on its project to develop a new industry standard for a low-cost conspicuity device for use on light aircraft, see Civil Aviation Publication (CAP) 1391. Available: <http://publicapps.caa.co.uk/docs/33/CAP1391%20DEC16.pdf>

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**Figure 4**  
G-BZBS left wing