

**No: 9/87**

**Ref: 1c**

**Aircraft type and registration:** Piper PA-34-200-20 G-BBZJ

**No & Type of engines:** 2 Lycoming IO-360-CIE6 piston engines

**Year of Manufacture:** 1974

**Date and time (GMT):** 5 April 1987 at 1255 hrs

**Location:** Blackbushe Airport, Camberley, Surrey

**Type of flight:** Training

**Persons on board:** Crew — 2                      Passengers — None

**Injuries:** Crew — None                      Passengers — N/A

**Nature of damage:** Damage to starboard wing tip, flap and propeller

**Commander's Licence:** Private Pilot's Licence

**Commander's Age:** 29 years

**Commander's Total Flying Experience:** 1800 hours (of which 200 were on type)

**Information Source:** Aircraft Accident Report Form submitted by the pilot and metallurgical report.

The aircraft was engaged on its second training sortie of the day. After some familiarisation exercises, the aircraft returned to Blackbushe where the undercarriage was lowered and raised to demonstrate the indication sequence to the student.

Upon joining the circuit for a full stop landing on runway 26, the undercarriage was lowered on the downwind leg and all indications were specifically noted as normal.

On final approach, with the student handling the aircraft, the instructor noted that they were about 7 knots too fast and instructed the student to close both throttles at about 50 feet.

Anticipating some degree of 'float', the instructor assisted the student with actual touchdown, which was reportedly gentle on the main wheels. The aircraft then started to slew to the right and the starboard wing dropped. The aircraft came to rest on the grass to the right of the runway, heading about 030°. The crew evacuated the aircraft without further incident.

It was found that the starboard main undercarriage trunnion housing P/No 67926-015 had fractured into two pieces, allowing the leg to collapse. Metallurgical investigation of the fracture showed evidence of a pre-existing fatigue crack of about one inch circumferential length which has propagated from two origins either side of the forging flash line. The location of the crack was identical to that described in Piper Service Bulletin No 787A, which calls for a visual inspection of the area every 100 flying hours after 1000 hours from new and offers modified housings. Although the Service Bulletin states "Piper considers compliance mandatory" there was no corresponding CAA or FAA airworthiness directive to this effect.

The subject housing had reportedly been inspected in accordance with the Service Bulletin approximately 30 hours prior to the accident, and no crack was detected. A simplified calculation of the residual strength of the housing in bending with a crack of this length suggests that a reduction in strength of 75—80% would occur.