# Piper PA-28RT-201T, G-BOWY

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| **AAIB Bulletin No: 7/2002** | **Ref: EW/G2002/05/15** | **Category: 1.3** |
| **Aircraft Type and Registration:** | Piper PA-28RT-201T, G-BOWY | |
| **No & Type of Engines:** | 1 Continental Motors Corp TSIO-360-FB piston engine | |
| **Year of Manufacture:** | 1981 | |
| **Date & Time (UTC):** | 25 May 2002 at 1222 hrs | |
| **Location:** | Redhill Aerodrome, Surrey | |
| **Type of Flight:** | Training | |
| **Persons on Board:** | Crew - 2 | Passengers - 1 |
| **Injuries:** | Crew - None | Passengers - None |
| **Nature of Damage:** | Damage to right flap outboard edge | |
| **Commander's Licence:** | Basic Commercial Pilot's Licence with Instrument and Instructor Ratings | |
| **Commander's Age:** | 36 years | |
| **Commander's Flying Experience:** | 910 hours (of which 8 were on type)<br>Last 90 days - 69 hours<br>Last 28 days - 46 hours | |
| **Information Source:** | Aircraft Accident Report Form submitted by the pilot | |

The instructor carried out a pre-flight inspection and taxied the aircraft from the apron below the tower to a grass area outside the flying club for refuelling. The flight, to be conducted in the circuit, was to carry out a 'type' check for a club member who was a PPL holder. Additionally a passenger was to be carried for air experience. After a pre-flight briefing the 'student' completed a further pre-flight inspection.

The landing gear was selected up normally after take off. On finals for the first approach the gear was selected down. The green 'down and locked' indications illuminated for the nose and left main landing gear but a red 'gear unsafe' indication remained for the right main landing gear. During the down selection the instructor had confirmed, by observing the ammeter reading, the operation of the electrically powered hydraulic pump which retracts and extends the landing gear. Subsequently a low approach and go-around was flown, and ATC personnel confirmed that the right main landing gear was partially extended.

The instructor continued the flight for a further two hours in the local area during which the landing gear was cycled approximately 30 times and the emergency gear extension procedure, which comprises high 'g' and yawing manoeuvres, was carried out. The red 'gear unsafe' indication remained. The Chief Engineer from the maintenance organisation, who was informed of the situation, took off in another aircraft to carryout an airborne inspection of the right landing gear. Following this the instructor decided to carry out a landing at Redhill on Runway 26L with the nose and left main landing gear extended. He conducted several circuits before the final landing in order to assess the wind which was south westerly at 20-34 kt.

The final approach was flown deliberately higher than normal so that the aircraft could complete the later stages of the approach with idle power and full flap selected. Shortly after touchdown on the left main gear, the right wing tip contacted the ground. The pilot kept the aircraft straight using gentle braking and left rudder. As the aircraft slowed however it turned to the right and came to rest on the right hand side of the runway. Both crew members and the passenger vacated the aircraft through the main door without difficulty. The damage to the aircraft was limited to distortion of the outboard tip of the right flap.

Subsequent examination by the club's maintenance organisation revealed that the torque link bolt and its associated castellated nut and split pin retainer, connecting the two arms of the torque link scissor assembly on the right hand leg, were missing. This had allowed the right wheel to swivel through around 30°, resulting in the leg becoming jammed inside the wheel well. The corresponding bolt on the left leg was checked and showed no signs of abnormal wear.

This aircraft had an incident on 8 June 2000 during taxi when the right main wheel skewed through approximately 70° due to the absence of the torque link bolt. Since that event the maintenance organisation has replaced these bolts during the aircraft's annual inspection, the last of which was carried out in August 2001.

The student and the instructor had carried out independent pre-flight inspections and neither could recall conclusively the presence of the bolt. If the bolt had been missing prior to take off the wheel would probably have become skewed during the taxi.