

Piper PA-28RT-201, N83196

AAIB Bulletin No: 2/2001

Ref: EW/G2001/01/10 - Category: 1.3

Aircraft Type and Registration: Piper PA-28RT-201, N83196

No & Type of Engines: 1 Lycoming IO-360-C1C6 piston engine

Year of Manufacture: 1981

Date & Time (UTC): 6 January 2001 at 1034 hrs

Location: Shoreham Airport, West Sussex

Type of Flight: Private

Persons on Board: Crew - 1 - Passengers - None

Injuries: Crew - None - Passengers - N/A

Nature of Damage: Left aileron and flap damaged

Commander's Licence: FAA Commercial Pilot's Licence with Instrument Rating

Commander's Age: 46 years

Commander's Flying Experience: 2,393 hours (of which 502 were on type)
Last 90 days - 5 hours
Last 28 days - 1 hour

Information Source: Aircraft Accident Report Form submitted by the pilot and correspondence with the maintenance organisation

History of the flight

On returning to Shoreham after a local flight, on selecting the landing gear down, the left main landing gear 'green' down and locked light failed to illuminate. The pilot followed the checklist procedures, including re-cycling of the landing gear, but still could not achieve a 'green' for the left main landing gear. Following a low fly-by of the tower he was informed that the landing gear appeared to be in the normal, down position. The pilot elected to land on Runway 21 (1,036 x 18 m asphalt) and as the aircraft touched down the left main gear gently folded. The left wing tip contacted the runway and the aircraft departed from the left side of the runway, coming to rest on the soft grass. The airfield fire crew were quickly in attendance and discharged foam extinguishant over the left wing. The pilot completed a normal shutdown and vacated the aircraft.

Landing gear

The aircraft is equipped with retractable tricycle air-oil strut type, landing gear, hydraulically operated by an electrically powered, reversible pump. A selector handle is mounted on the instrument panel to the left of the control quadrant. Landing gear positions are indicated by three green lights located below the selector lever for gear down and locked, and a red light at the top of the instrument panel for landing gear unsafe. There is no light to indicate that the gear has fully retracted, which is indicated by all lights extinguishing. As the landing gear swings to the extended position and each downlock hook moves into its down position, a switch at each downlock actuates to indicate by one of the green lights that the individual gear leg is down and locked. The activation of all three downlock switches will also shut the hydraulic pump off.

Aircraft recovery and repair

The aircraft wing was lifted using air bags and the left main landing gear was manually pulled down and locked. After towing to a hangar the aircraft was jacked up and the landing gear functioned. The airborne condition was repeated and the left main gear would not lock down.

The downlock and squat switches were all checked and the terminals found to be slightly corroded. New terminals were fitted and all switch functions were tested and found satisfactory. The landing control circuit wiring was then checked and the left landing gear downlock switch, hydraulic pump wire was found to be broken at a location in the fuselage. The effect of this broken wire, during a landing gear down sequence, would be for the hydraulic pump to shut off when the right main and nose landing gears had activated their respective downlock switches. The broken wire was spliced and secured. The landing gear was then cycled numerous times and all functions and indications worked normally.