

Aircraft type and registration: Piper PA23 — 250D G-AZRG (Light single engined fixed wing aircraft)

Year of manufacture: 1970

Date and time (GMT): 26 June 1984 at 2105 hrs

Location: Aldergrove Airport

Type of flight: Private (business)

Persons on board: Crew — 1 Passengers — Nil

Injuries: Crew — Nil Passengers — N/A

Nature of damage: Underside of nose damaged.

Commander's Licence: Commercial Pilot's Licence, with instrument rating.

Commander's Age: 45 years

Commander's total flying experience: 4712 hours (of which 1060 hours were on type)

Information Source: Accident Report by Pilot and information ex Chief Engineer.

The aircraft had previously landed at Eglinton Airfield, where the pilot had noticed that the undercarriage lowering appeared sluggish, although flap operation was normal.

After departure, en route for Aldergrove at 3000 feet the pilot became aware that the nosewheel was visible. Re-selection of the undercarriage lever to 'UP' fully retracted the nosewheel, but the lever had to be manually centred. Whilst on downwind approach to runway 26 at Aldergrove the pilot selected undercarriage down but did not obtain any green lights and observed the nose undercarriage 'trailing'. The pilot informed the tower control and subsequently elected to hold to the north east of the airfield to operate the emergency hydraulic system. He then repeatedly used the emergency hand pump without any effect. Manoeuvre induced 'G'-forces and yaw similarly appeared to have no effect on the undercarriage. The pilot then decided to try the emergency carbon dioxide undercarriage extension system and after some difficulty due to unfamiliarity managed to pull the associated ring under his seat. He then informed the tower that he had obtained two greens on the main undercarriage, but that the nose undercarriage had still not locked down. After a visual inspection by the tower which confirmed the nose undercarriage status, the aircraft was landed on runway 35 with both propellers feathered and horizontal to minimise damage. Towards the end of the landing roll, the nose undercarriage collapsed as it made contact with the runway and the aircraft slid to rest on its nose.

Subsequent examination of the aircraft found that an internal seal in the starboard undercarriage hydraulic jack 'up-side' had split and allowed loss of most of the hydraulic fluid during subsequent pressurization of the system. The emergency carbon dioxide bottle which is activated by one cable from the pull-ring was found undischarged, but the priority valve had opened via the other (shorter) cable from the ring. This was attributed to the pilot not pulling the ring up from the floor sufficiently to activate the second (one inch longer) cable to the carbon dioxide bottle. It is probable that the opening of the priority valve removed the nominal 600 psi pressure restriction to residual hydraulic pressure within the 'up-side' of the hydraulic circuit, allowing the main undercarriage to fall and lock-down, causing the pilot to believe that the carbon dioxide bottle had in fact discharged.