

**No: 5/87**

**Ref: 1b**

**Aircraft type and registration:** Cessna 310Q G-BCTJ

**No & Type of engines:** 2 Continental Motors Corp I0-470-V0 piston engines

**Year of Manufacture:** 1974

**Date and time (UTC):** 23 February 1987 at 1503 hrs

**Location:** Perth Aerodrome

**Type of flight:** Test flight

**Persons on board:** Crew — 1                      Passengers — None

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

**Nature of damage:** Minor structural damage to lower forward nose area and all propeller tips bent.

**Commander's Licence:** Airline Transport Pilot's Licence

**Commander's Age:** 50 years

**Commander's Total Flying Experience:** 9595 hours (of which 4940 were on type)

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

The aircraft was being operated on a local test flight after maintenance and, after a normal take-off, the pilot selected landing gear UP and noted the usual thump as the main-wheels completed their retraction. About ten seconds later there was a loud mechanical bang from the nose area, accompanied by a slight yaw.

With the landing gear still selected UP, a low pass over ATC showed the main-wheels apparently fully retracted but the nose-wheel only partially retracted. Selecting landing gear DOWN resulted in green lights for the main-wheels only, and the red (Gear Unlocked) light on, with the Gear Unsafe warning-horn sounding. Inspections from ATC and another aircraft indicated that there was no change in the nose-leg position, and that, behind the angled nose-wheel, there appeared to be the end of a broken strut.

In view of the indications of mechanical damage, the pilot elected not to attempt to use the mechanical hand-crank to lower the nose-leg, but to land with the main-wheels locked down. After the arrival of the appliances of the Tayside Fire Brigade, the pilot made his approach, unlocking the cabin door and turning off the auxiliary fuel pumps and strobe-lights on finals; immediately after touch-down he pulled the mixture controls back to Idle Cut-Off (ICO) and used the gang-bars to switch off the magnetos, battery and alternator switches. The nose was lowered at an indicated airspeed of about 70 knots and the aircraft came to a halt close to the runway centre-line. The nose-down attitude resulted in a stream of fuel from both main fuel vents, and the firemen treated this with foam.

On the Cessna 310, the nose-leg oleo needs to extend fully to ensure a proper retraction.

Subsequent engineering examination of this aircraft showed that a phenolic bearing had failed within the nose-leg oleo, with the result that, after take-off, the oleo had not extended fully and the leg had fouled on the nose-gear doors during retraction. The actuating gearbox had continued to drive, leading to mechanical failure of the retraction linkage.