

No: 6/89

Ref: EW/G88/05/13

Category: 1b

Aircraft Type and Registration: Cessna 401, G-OADS

No & Type of Engines: 2 Continental Motors Corp TSIO-520-E

Year of Manufacture: 1967

Date and Time (UTC): 13 May 1988 at 1015 hrs

Location: Leeds-Bradford Airport

Type of Flight: Private (business)

Persons on Board: Crew - 2 Passengers - 1

Injuries: Crew - None Passengers - None

Nature of Damage: Damage to right main landing gear and mechanism, aircraft underside, right wing tip and propeller

Commander's Licence: Commercial Pilot's Licence with Instrument, Night and Full Instructors ratings

Commander's Age: 58 years

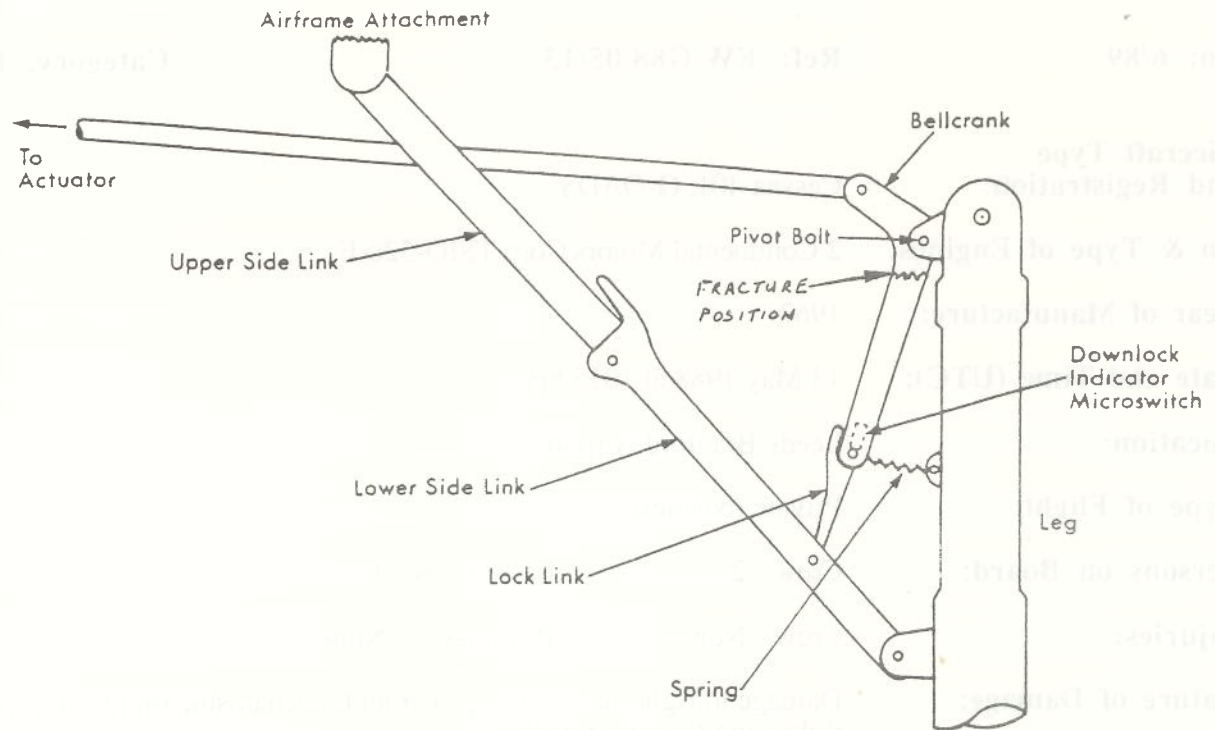
Commander's Total Flying Experience: 6000 hours (of which 200 were on type)

Information Source: Aircraft Accident Report Form submitted by the Pilot

The pilot reported that the landing was normal, but that after rolling 300-500 metres, the right main landing gear slowly collapsed. The aircraft continued further down the runway before coming to rest some 30 feet onto the grass to the right of the runway, orientated at right angles to the landing direction.

Examination of the right main landing gear carried out after some dismantling had taken place indicated that a failure had occurred in the bellcrank of the main-gear retraction linkage which also forms part of the geometric downlock. The fracture was a bending overload failure, the direction of loading being the same as that normally occurring during the final stages of gear extension. It was also the same direction as the loading to be expected if the leg had retracted whilst carrying the weight of the aircraft with the side links not in the geometrically locked position.

It was noted that the position of the fracture permitted the lower part of the bellcrank and the attached lock link to move under the influence of spring pressure to a position where the downlock micro-switch would operate, almost regardless of the leg position. There was evidence to suggest that a number of the pivot bearings associated with extension and retraction of the leg had received inadequate lubrication. Failures of this type of bellcrank component on Cessna 340 and 420 aircraft were reported in AIB Bulletins 5/85 and 7/85 respectively. Both occurred under generally similar circumstances to that of G-OADS, although the position of the fractures on those bellcranks were different from that in G-OADS. A further somewhat similar failure was reported in Bulletin 3/81.



Main Landing Gear Schematic