

No: 11/88

Ref: EW/G88/07/11

Category: 1b

Aircraft Type and Registration: Cessna 310R, G-BGTT

No & Type of Engines: 2 Continental Motors Corp IO-520-MB piston engines

Year of Manufacture: 1979

Date and Time: 9 July 1988 at 1948 hrs

Location: Guernsey Airport, Channel Islands

Type of Flight: Airline Scheduled Cargo

Persons on Board: Crew - 1 Passengers - None

Injuries: Crew - None Passengers - N/A

Nature of Damage: Scrape damage to port wing tip, bent propeller, broken rod end fitting in landing gear retraction mechanism

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

Commander's Age: 23 years

Commander's Total Flying Experience: 822 hours (of which 71 were on type)

Information Source: Aircraft Accident Report Form submitted by the pilot and component examined by AAIB

On approach to Guernsey the pilot selected the landing gear to "DOWN". The left main landing gear green light did not illuminate and the red "LANDING GEAR UNSAFE" light remained lit. The pilot elected to overshoot. Following a flypast the tower reported that the left landing gear leg was extended and in a similar position to the right leg. The pilot followed the appropriate procedures for some 15 minutes and then attempted extension of the landing gear using the manual system. However, the unsafe indications remained unchanged.

The emergency services were alerted and the pilot carried out a normal landing. As the aircraft slowed to between 30 and 40 kt, with the engines having been shut down, the left main landing gear collapsed.

Inspection revealed that an "eye-end" on one of the left landing gear actuating rods had failed, disconnecting it from the actuator.

The eye-end appears as item 27 in Fig 3 on Page 7 of Chapter 04 of the Cessna 310 Illustrated Parts Catalogue, and has a part number HMX 5FG. The eye-end had failed in fatigue initiating from the bore of a hole in which is located a grease-nipple. The reason why the fatigue developed in the hole has not been fully determined. The surface condition within the hole was rough and grooved on a microscopic scale, and the grooves may have acted as local stress-raisers. An engineer reported that there was no unusual stiffness in the retraction mechanism when it was examined after the crash, but the fatigue would have initiated some time previously. Any problem of stiffness or maladjustment in the past could have initiated the fatigue process.

Following the final rupture of the fatigue crack the eye-end had opened out in a very ductile manner. It is not suspected that material qualities increased the component's fatigue sensitivity. The eye-end has been returned to the manufacturer for identification as the correct part.