

**INCIDENT**

**Aircraft Type and Registration:** Cessna T310Q, G-BKSB

**No & Type of Engines:** 2 Continental TSI0-520-B+BB piston engine

**Year of Manufacture:** 1973

**Date & Time (UTC):** 11 March 1994 at 1445 hrs

**Location:** English Channel, near Guernsey, C.I.

**Type of Flight:** Private

**Persons on Board:** Crew - 1                      Passengers - 1

**Injuries:** Crew - None                      Passengers - None

**Nature of Damage:** Loss of pilot's emergency window and frame from aperture

**Commander's Licence:** Airline Transport Pilot's Licence with Flying Instructor Rating

**Commander's Age:** 55 years

**Commander's Flying Experience:** 9,725 hours (of which 80 were on type)  
Last 90 days - 80 hours  
Last 28 days - 31 hours

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

The aircraft was being operated on a Certificate of Airworthiness (C of A) air test prior to the aircraft returning to the United Kingdom register from the register of the Cayman Islands.

As part of the air test, the aircraft was put into a shallow dive in order to achieve the  $V_{ne}$  airspeed of 227 kt. However, on passing approximately 210 kt, a gap appeared around the lower forward area of the pilot's emergency window and, almost immediately, the complete emergency window assembly separated from the aircraft. The pilot and the passenger report that the lack of the window did not seem adversely to affect the handling of the aircraft but the cockpit rapidly became cold and radio communication became very difficult because of the wind noise. The pilot was able to report the event to ATC and advised them of their intention to return immediately. The approach and landing were without further incident.

Examination of the aircraft showed that the emergency window had caused no further damage to the airframe after its separation. In the design of Cessna 310s of the era of G-BKSB, the emergency window was retained in position by a total of four bayonet-type pins holding the window within its aperture, three of the pins being mounted along the lower sill of the aperture and one on the forward window pillar. However, later models of the Cessna 310 incorporated an improved design and the manufacturer introduced a modification kit in multi-engine Service Letter ME77-9. This modification stiffened the window pillar at the forward edge of the emergency window's aperture and, in place of the single bayonet-type pin on the window pillar, introduced two substantial piano-type hinges, where the hinge pin would be withdrawn by operation of an emergency release lever. This modification had not been incorporated into G-BKSB, where inspection of the aircraft after the occurrence showed that the four pins had been sufficiently distorted by aerodynamic loading to release the emergency window.

There are reported to have been a number of instances in the United States where unmodified emergency windows have become detached from Cessna 310 aircraft. A review of the CAA's SDAU database also showed a previous occurrence to a Cessna 310, on 27 July 1983, where the emergency window had become detached while the aircraft was near  $V_{NE}$  in an Air Race. At about that time, the modification described in the manufacturer's Service Letter ME77-9 became mandatory in the United Kingdom, by the issue of an Airworthiness Directive (CAA AD009 12/82).

In the case of G-BKSB, inspection of the aircraft's log books after the occurrence on 11 March 1994 showed the UK mandatory requirement as having been 'signed off' in 1983, shortly after the issue of the CAA's AD. This was during the period that the aircraft had previously been on the United Kingdom's register and when it was being maintained by a different maintenance organisation. As stated above, inspection of G-BKSB showed that the modification had never, in fact, been incorporated.