

**AAIB Bulletin No: 11/93**

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**Category: 1.2**

## **INCIDENT**

**Aircraft Type and Registration:** Shorts SC7 Skyvan 3A, G-OVAN  
**No & Type of Engines:** 2 Garrett Airesearch TPE 331-2-201A turboprop engines  
**Year of Manufacture:** 1971  
**Date & Time (UTC):** 26 August 1993 at 1740 hrs  
**Location:** Sibson Airfield, Peterborough  
**Type of Flight:** Parachute dropping  
**Persons on Board:** Crew - 1                      Passengers - 18  
**Injuries:** Crew - None                      Passengers - None  
**Nature of Damage:** Right-hand crew door separated, damage to propeller and puncture in fuselage skin  
**Commander's Licence:** Commercial Pilot's Licence with Instrument Rating  
**Commander's Age:** 32 years  
**Commander's Flying Experience:** 1,353 hours (of which 100 were on type)  
Last 90 days - 135 hours  
Last 28 days - 50 hours  
**Information Source:** AAIB Field Investigation

The pilot had performed his usual pre-flight external checks including security of the right-hand crew door which was rarely used. During the internal checks he again visually verified that the door was locked by checking that the door locking tongues were over the striker plates on the frame.

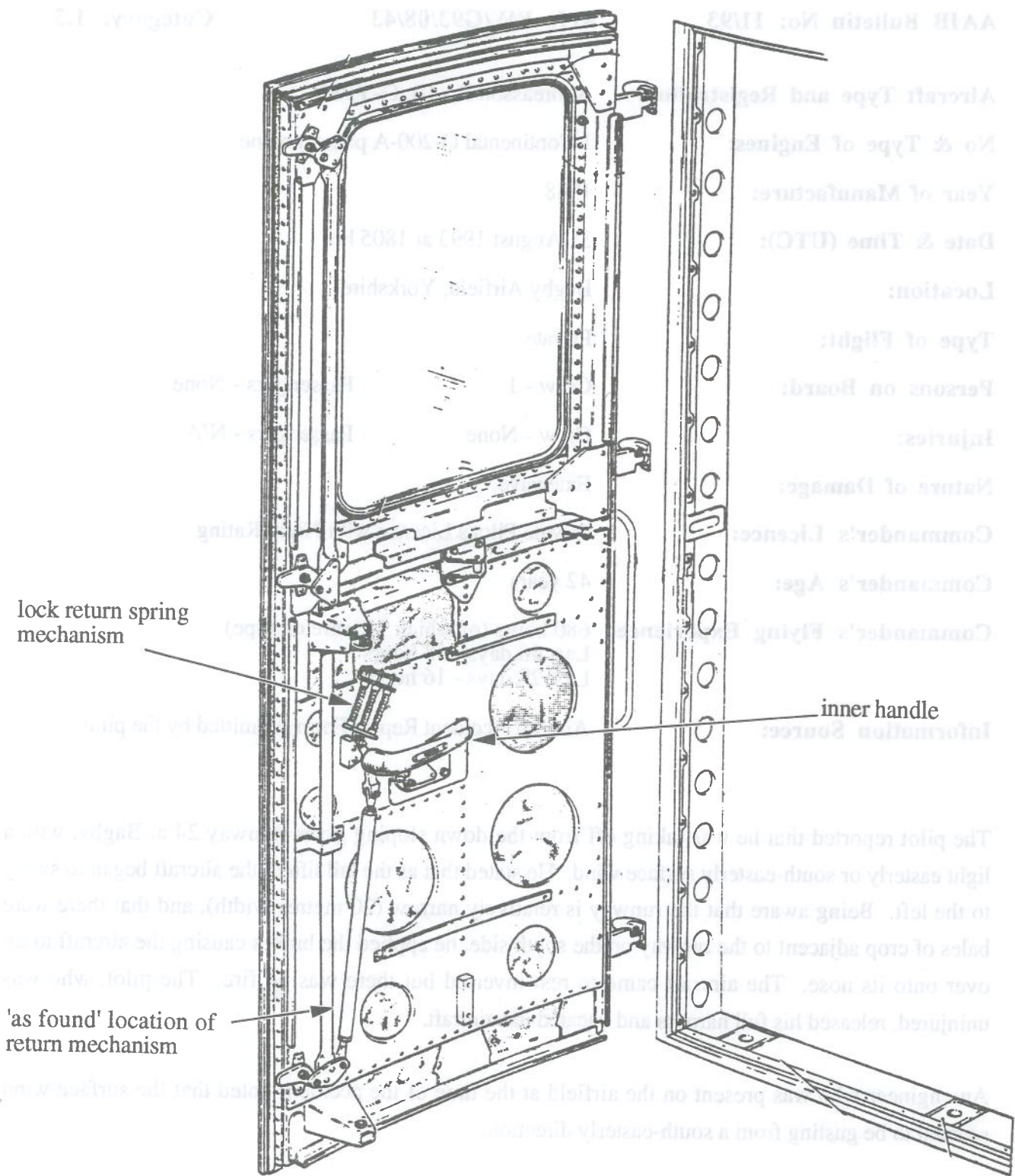
Start-up and taxi to Runway 33 were normal and the aircraft commenced its take-off roll. At about 50 kt. There was a bang and an increase in noise from the right side of the aeroplane. The pilot realised that the right-hand crew door had come open and he abandoned the take off. The aircraft was slowed to a halt on the runway using reverse pitch and braking and the parachutists disembarked via the rear door. It was found that the crew door had detached from the aircraft, striking the propeller and causing some damage to the blade tips. A piece of debris had been thrown through the fuselage skin but had not penetrated the inner lining.

The door was recovered from the runway. On the Skyvan, the crew doors are hinged at their trailing edge and have a strut which prevents the door from opening beyond the 90° position. The subject door had broken its three hinges and the check strut but the striker plates appeared unmarked. Despite damage to the upper frame it was found that the locking mechanism could still be functioned from the outside handle. It was noted, however, that the handle was very free to move and showed no spring bias towards the locked position as was observed on the left-hand door.

It was therefore decided to strip away the internal trim to reveal the mechanism. Having done this it was obvious that the lock return mechanism shown in the diagram had not been fitted. It was actually recovered lying loose in the door at the position shown. There could be no doubt that it had been omitted since it is fitted prior to, and on the same square-section shaft as the inner handle, the latter having been fitted without the return mechanism. The parts had evidently been in this location for some time since there was corrosion on the surfaces which should have interfaced whilst there was shiny chafing where the loose return mechanism had lain against the structure.

A search through the considerable amount of technical documentation did not reveal any obvious unscheduled occasion when the handle mechanism might have been disturbed neither could the present owners (who had operated the aircraft for about 6 years) recall any such work being required. The maintenance schedule did, however, call for the trim to be removed for internal inspection of the door at 6,000 hour intervals at which time the inner handle must be removed and the mechanism would have been clearly visible. The last such inspection had been carried out about 3 years previously.

The evidence was consistent with the handles being free to move under gravity and inertia with other variables such as air loads affecting the amount of friction preventing movement of the mechanism. The pilot recalled that, at the time, the aircraft was running over a particularly bumpy part of the grass runway.



**G-OVAN.** View of crew door with trim removed to show handle mechanism