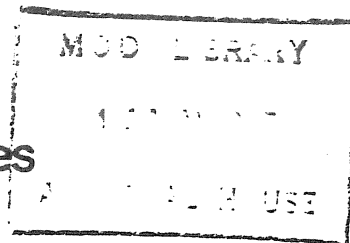




# MINISTRY OF DEFENCE

## Military Aircraft Accident Summaries



MAAS 8/85/2

13 May 1985

### AIRCRAFT ACCIDENT INVOLVING ROYAL AIR FORCE

#### CANBERRA T17 WJ625

Date:	3 August 1983
Parent Airfield:	RAF Wyton
Place of Accident:	Gibraltar
Crew:	One Pilot, one Navigator, one Air Electronics Officer
Casualties:	Three Killed

#### CIRCUMSTANCES

1. On 3 August 1983, 3 Canberra T17 aircraft took off from Gibraltar at 30 second intervals for a return flight to their UK base. The weather conditions although satisfactory for take-off, deteriorated in the direction of the aircraft's flight path with the cloud base quickly lowering to merge with a glass-like sea surface. After take-off, each aircraft was seen to enter cloud at approximately 100ft in a normal climbing attitude. Shortly afterwards, the formation leader ordered a radio frequency change but there was no response from the pilot of the second aircraft in the stream. At the same time, air traffic control reported only 2 contacts on radar. The Gibraltar crash procedure was therefore activated and a rescue craft and a helicopter were despatched to search the area in the direction of the aircraft's take-off path. Meanwhile, the crew of a Spanish fishing vessel had heard the aircraft's impact with the sea and, on proceeding through fog patches towards the sound, had located debris and fuel. There were no survivors from the aircraft's crew of three.

#### CAUSES

2. From a detailed investigation of the available evidence, including the salvaged aircraft wreckage, it was concluded that the aircraft had climbed to about 120ft before entering a shallow descent from which the aircraft had impacted the sea in a 5-10° nose down, slightly right wing low, attitude. There was no evidence of a technical malfunction or of a natural hazard such as a birdstrike, crew incapacitation or meteorological phenomenon. However, the investigation found that the weather conditions had been ideal for the onset of a somotogravic illusion which has the effect of distorting a pilot's perception of attitude, especially during a climb after take-off when no visual references are available. In these circumstances, an aircraft's acceleration creates an impression of pitch-up which is magnified by an nose down correction made by the pilot. It was calucated

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that the trajectory and speed of the accident aircraft would have produced a longitudinal acceleration of 0.26g which could have resulted in an illusory pitch-up of some 7 or 8°. If the pilot had made a correction to counter this illusion without paying adequate attention to the flight instruments, the aircraft would have begun a descent to enter the sea at a point very near the actual point of impact. The investigation concluded that this explanation was the most likely cause of the accident although it was acknowledged that distraction of the pilot by an untoward event could also have caused him to fly into the sea. Without evidence from the crew and in the absence of eye witnesses to the accident, the cause must remain conjecture.

#### SUBSEQUENT ACTION

3. The dangers of disorientation, including the somotogavic illusion, are being given extra emphasis throughout the RAF. In addition, operating procedures for Canberra aircraft have been amended to require rear crew members to monitor height increase after take-off.

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