Australian Government
Australian Transport Safety Bureau

Failure to pressurise, Beech Aircraft Corp B200T

34 km west south-west of Northam, WA, on 27 September 2022

ATSB Transport Safety Report
Aviation Occurrence Brief
AB-2022-014
Final – 16 December 2020

AB-2022-014

Occurrence Briefs are concise reports that detail the facts surrounding a transport safety occurrence, as received in the initial notification and any follow-up enquiries. They provide an opportunity to share safety messages in the absence of an investigation.

What happened

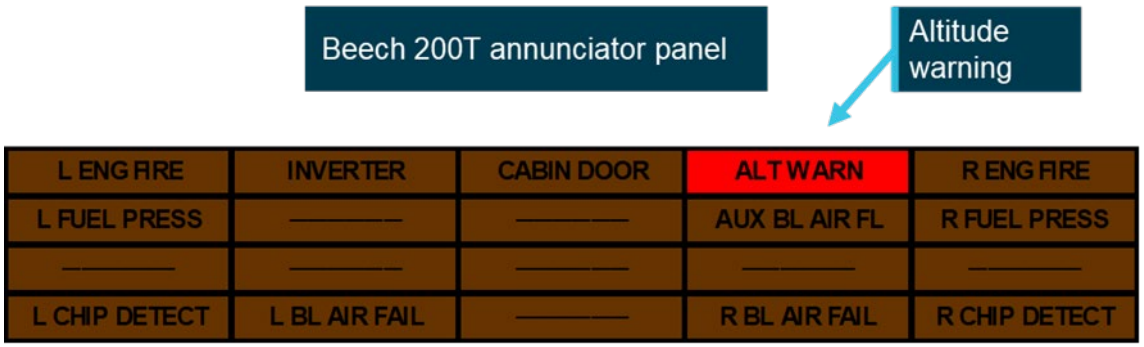
On 27 September 2022 at 0845 local time, the pilot of a Beech Aircraft Corp B200T was conducting a ferry flight from Jandakot to Kalgoorlie-Boulder, Western Australia. Prior to departure, the pilot conducted engine run-up and cabin pressurisation checks confirming serviceability. During the initial climb, the pilot conducted the after take-off checks, including to ensure the bleed air valves[1] were open and the cabin was pressurising. This was confirmed by a positive rate of climb indication on the pressurisation vertical speed indicator. Normal operation of the pressurisation system was confirmed again passing 10,000 ft on climb.

At an altitude between flight level (FL) 180[2] and FL 200, the pilot observed the illumination of the altitude warning annunciator (Figure 1) and the master warning. The pilot noticed the cabin altitude and aircraft altitude gauges matching and then observed the passenger oxygen masks in the cabin had dropped.

The pilot donned an oxygen mask and commenced an emergency descent to 10,000 ft. During the descent, the pilot was unable to get oxygen due to the oxygen mask's microphone dislodging from its mount. The pilot increased the oxygen flow rate and conducted a return to Jandakot.

The engineering inspection revealed the door seal was not inflating correctly.

Figure 1: Pilots are alerted to pressurisation faults via an illuminated alert



Source: Operator, annotated by ATSB

Pilot comments

The pilot reported feeling unwell and noted a longer than usual response time for actioning the descent.

Safety action

The operator advised the ATSB that pilots will undergo a revision briefing for pressurisation system faults and recognising the signs of hypoxia. The operator will also ensure pilots check the serviceability of oxygen masks as part of the first flight of day checks.

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1 An automatic bleeding valve or air release valve (ARV) is a plumbing valve used to automatically release trapped air from a heating system.

2 Flight level: at altitudes above 10,000 ft in Australia, an aircraft's height above mean sea level is referred to as a flight level (FL). FL 370 equates to 37,000 ft.

Safety message

This incident highlights the importance of ensuring crew oxygen masks are checked for serviceability as part of the daily inspection. This incident further highlights the importance for pilots to have a thorough understanding of the pressurisation system, in particular recognising and reacting to faults in a timely manner. The Beech B200T aircraft alerts the pilot of pressurisation faults with a visual alert only in the form of an illuminated light on the annunciator panel.

Mild hypoxia is not known to impair complex cognition but it has been found to increase fatigue and decrease vigour. Further information about hypoxia can be found in the ATSB research report *Depressurisation, Accidents and Incidents Involving Australian Civil Aircraft*, and in the Flight Safety Australia article *Do not go gentle: the harsh facts of hypoxia*.

About this report

Decisions regarding whether to conduct an investigation, and the scope of an investigation, are based on many factors, including the level of safety benefit likely to be obtained from an investigation. For this occurrence, no investigation has been conducted and the ATSB did not verify the accuracy of the information. A brief description has been written using information supplied in the notification and any follow-up information in order to produce a short summary report, and allow for greater industry awareness of potential safety issues and possible safety actions.

General details

Occurrence details

Date and time:	27 September 2022 – 0845 WST	
Occurrence class:	Serious incident	
Occurrence categories:	Depressurisation	
Location:	34 km west south-west of Northam, Western Australia	
	Latitude: 31º 43.425' S	Longitude: 116º 20.538' E

Aircraft details

Manufacturer and model:	Beech Aircraft Corp B200T	
Type of operation:	Part 138 Aerial work operations	
Activity:	Ferry flight	
Sector:	Turboprop	
Departure:	Jandakot, Western Australia	
Destination:	Kalgoorlie, Western Australia	
Actual destination:	Jandakot, Western Australia	
Persons on board:	Crew – 1	Passengers – 0
Injuries:	Crew – Nil	Passengers – N/A
Aircraft damage:	Nil	