

Discontinuation notice

Section 21 (2) of the *Transport Safety Investigation Act 2003* (TSI Act) empowers the ATSB to discontinue an investigation into a transport safety matter at any time. Section 21 (3) of the TSI Act requires the ATSB to publish a statement setting out the reasons for discontinuing an investigation. The statement is published as a report in accordance with section 25 of the TSI Act, capturing information from the investigation up to the time of discontinuance.

Overview of the investigation

On 27 December 2021, a Fokker F100, registered VH-FNU, was being operated on a scheduled passenger flight between Newman and Perth, Western Australia. There were 5 crew and 7 passengers on board.

During cruise at flight level (FL) 340 (34,000 ft), a cabin crew member began to feel unwell and was treated with portable oxygen by the other cabin crew members. Suspecting air sickness due to light turbulence, the flight crew climbed to FL350. A few minutes later the other two cabin crew members also began feeling unwell and reported to the flight crew that they suspected possible hypoxia.

The first officer later reported that they also felt light-headed and experienced slight nausea. As a precaution, the flight crew donned oxygen masks, manually deployed the passenger oxygen masks and conducted an emergency descent to 10,000 ft. The aircraft landed at Perth Airport and one cabin crew member was taken to hospital for assessment. The passengers did not report any symptoms to the crew.

As part of its investigation, the ATSB:

- interviewed the flight and cabin crew
- analysed recorded data from the aircraft's flight data recorder (FDR)
- reviewed the aircraft maintenance records
- reviewed air traffic control recordings
- reviewed other depressurisation occurrences involving Fokker 100 aircraft
- reviewed post-occurrence testing and evaluation reports from the aircraft manufacturer for the cabin indication panel
- reviewed the material safety data sheets and the possibility of a dangerous goods spill.

Additional information

Recorded data

According to the FDR data, about 50 minutes after establishing cruise at FL340 the aircraft climbed to FL350, which took about 1 minute. The aircraft remained at this level for 3.5 minutes and then descended to 10,000 ft over a 5-minute duration (during the emergency descent). This aligned with flight crew and cabin crew recollections.

The parameters that were available for analysis from the FDR did not include the cabin altitude or cabin differential and did not provide detail about the cabin altitude at the time of the event. The FDR recorded any cabin altitude warnings; none activated during the flight.

Pressurisation system

- The normal cabin altitude for the Fokker F100 at FL350 is 8,000 ft.
- The flight crew recalled that the cabin altitude reached about 8,300 ft.

- The excessive cabin altitude warning (which activates at 10,000 ft) did not activate during the flight.
- The drop-down cabin oxygen masks automatically deploy at a cabin altitude of 13,500 ft on the Fokker F100 aircraft. The masks did not automatically deploy and were manually deployed by the flight crew.

Maintenance inspection results

Inspections and tests were conducted in accordance with the aircraft maintenance manual and in consultation with the aircraft manufacturer. Although there were defects identified, none were considered contributory to a depressurisation event or to the symptoms and subsequent incapacitation reported by the crew members. Several components were changed as a precaution.

ATSB comment

The available evidence indicates that the aircraft's cabin altitude remained below 10,000 ft. The reasons for the cabin crew and flight crew symptoms could not be established.

The decision by the flight crew to don oxygen masks and descend to a safe altitude was sound. If there is any doubt as to whether the flight crew's ability to operate the aircraft may be affected by a possible oxygen supply problem, the safest course of action is to go onto oxygen as soon as possible.

Reasons for the discontinuation

Based on a review of the available evidence, the ATSB considered it was unlikely that further investigation would identify any systemic safety issues or important safety lessons. Consequently, the ATSB has discontinued this investigation.

The evidence collected during this investigation remains available to be used in future investigations or safety studies. The ATSB will also monitor for any similar occurrences that may indicate a need to undertake a further safety investigation.