



PRELIMINARY REPORT

AIC 20-2001

QANTAS AIRWAYS LIMITED

VH-QOE

DHC-8-402

In-flight smoke in the cabin

Less than 30 nm south of Jacksons International Airport

Port Moresby

PAPUA NEW GUINEA

16 March 2020

About the AIC

The Accident Investigation Commission (AIC) is an independent statutory agency within Papua New Guinea (PNG). The AIC is governed by a Commission and is entirely separate from the judiciary, transport regulators, policy makers and service providers. The AIC's function is to improve safety and public confidence in the aviation mode of transport through excellence in: independent investigation of aviation accidents and other safety occurrences within the aviation system; safety data recording and analysis; and fostering safety awareness, knowledge and action.

The AIC is responsible for investigating accidents and other transport safety matters involving civil aviation, in PNG, as well as participating in overseas investigations involving PNG registered aircraft.

A primary concern is the safety of commercial transport, with particular regard to fare-paying passenger operations.

The AIC performs its functions in accordance with the provisions of the *PNG Civil Aviation Act 2000* (as amended), and the *Commissions of Inquiry Act 1951* and *Annex 13* to the Convention on International Civil Aviation.

The object of a safety investigation is to identify and reduce safety-related risk. AIC investigations determine and communicate the safety factors related to the transport safety matter being investigated.

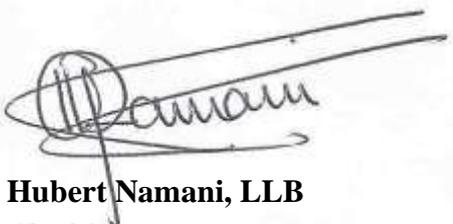
On 16th March 2020 at 03:43 UTC (13:43 local time), the Civil Aviation Safety Authority of PNG (CASA PNG) notified the AIC via email of the serious incident occurred on the same date, involving a Bombardier DHC-8-402 aircraft, registered VH-QOE, owned by Qantas Airways Limited and operated Sunstate Airlines (QLD) PTY Limited. The AIC immediately commenced an investigation and dispatched a team of investigators to perform on-site activities.

This Preliminary Aircraft Serious Incident Investigation Report was produced by the AIC, and contains facts known to the AIC before the official release date. It is released by the Commission in accordance with Para 7.1 of *ICAO Annex 13*. The report is also publicly available on the AIC website: www.aic.gov.pg.

The report is based on the initial investigation carried out by the AIC in accordance with *Papua New Guinea Civil Aviation Act 2000 (as amended)*, *Chapter 31* of the *Commissions of Inquiry Act, Annex 13* to the *Convention on International Civil Aviation*, and the *PNG AIC Investigation Policy and Procedures Manual*. It contains factual information. Analysis of that information, findings and contributing (causal) factors, other factors, safety actions, and safety recommendations are reserved for the *Final Report*.

The sole objective of the investigation and the Preliminary Report is the AIC's obligation to the *Convention on International Civil Aviation* and in accordance with *ICAO Annex 13*, and thereby promote aviation safety. (Reference: *ICAO Annex 13, Chapter 7*). Readers are advised that in accordance with *Section 219* of the *Civil Aviation Act 2000 (as amended)* and *Annex 13*, it is not the purpose of the Commission's aircraft accident investigation to apportion blame or liability. Fact based statements in the report should not be interpreted as apportioning blame.

Consequently, AIC reports are confined to matters of safety significance and may be misleading if used for any other purpose.



Hubert Namani, LLB

Chief Commissioner

15 April 2020

Occurrence details

On 16 March 2020, at about 01:30 UTC¹ (11:30 local), shortly after departure from Jackson's International Airport, Port Moresby, National Capital District, Papua New Guinea, on a scheduled international flight to Cairns, Queensland, Australia the flight crew of a Bombardier DHC-8-402 aircraft, registered VH-QOE, owned by Qantas Airways Ltd and operated by Sunstate Airlines (QLD) PTY Ltd, declared a PAN² due to fumes in the cabin and subsequently returned and landed at Jackson's International Airport. No injuries or damage were reported.

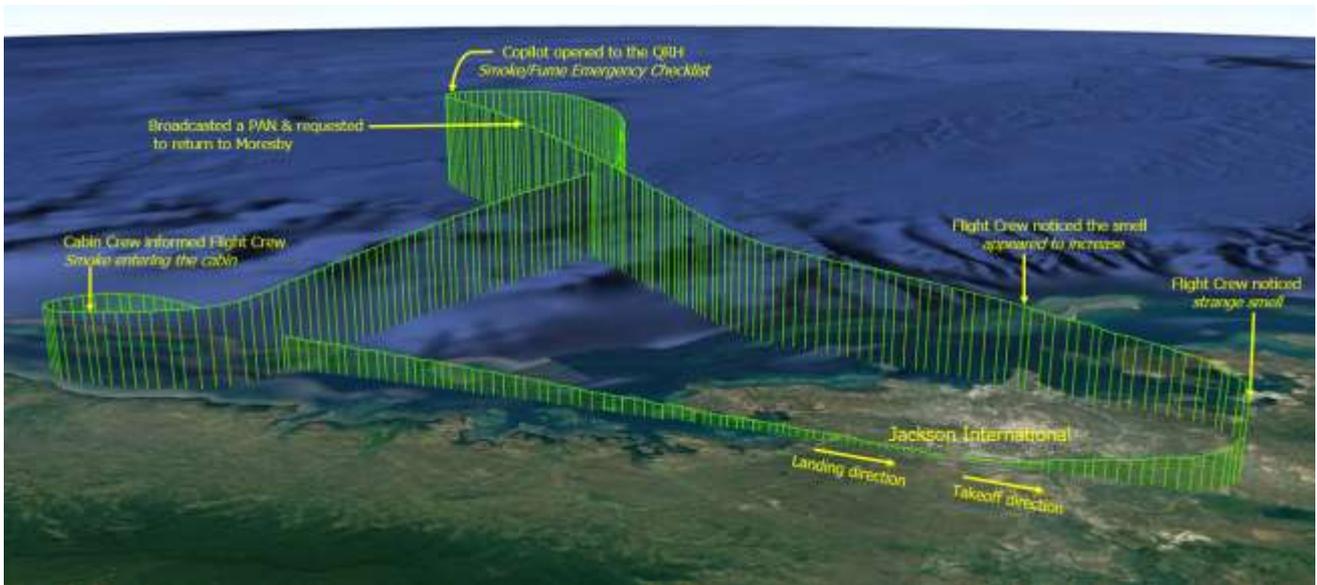


Figure 1: Depiction of VH-QOE flight path.

At about 01:22, during the climb and as soon as the normal *After Takeoff* procedures checklist was completed, the flight crew noticed the presence of a “strange smell” inside the cockpit, later described to AIC investigators as a smell similar to “dirty socks”.

The Pilot in command (PIC) indicated to the investigators that at the time the smell was detected by the flight crew it was not too strong and there was no alert or fault indication in the annunciator panel. For these reasons, they initially decided to continue climbing.

As the aircraft climbed through FL³ 100, the flight crew noticed the smell appeared to increase and fumes were entering the flight deck. The examinations conducted at the initial stages of the investigation, revealed that the source of the fumes was located in the No. 2 engine compressor bleed air section.

The PIC called the cabin crew through the intercom⁴ and they confirmed the presence of a “strong weird smell” throughout the cabin. When the aircraft was approaching FL 150, the flight crew donned their oxygen masks and opted to return to Port Moresby and the PIC briefed the cabin crew accordingly.

¹ The 24-hour clock, in Coordinated Universal Time (UTC), is used in this report to describe the local time as specific events occurred. Local time in the area of the serious incident, Papua New Guinea Time (Pacific/Port Moresby Time) is UTC +10 hours.

² A radiotelephony urgency signal consisting of the spoken words ‘PAN, PAN’ mean that an aircraft has a very urgent message to transmit concerning the safety of a ship, aircraft or other vehicle, or of some person on board or within sight. *ICAO Annex 2 – Rules of the Air, Appendix 1. Signals*, paragraph 1.2.2.

³ Flight Level (FL). A surface of constant atmospheric pressure which is related to a specific pressure datum, 1,013.2 hectopascals (hPa), and is separated from other such surfaces by specific pressure intervals. *ICAO Annex 2 – Rules of the Air, Chapter 1. Definitions*.

⁴ Ccommunications between stations within the aircraft, selection and monitoring of audio on the communications and navigation receivers, and selection for transmission on the communications transceivers.

At about 01:30, approximately 30 nm from Port Moresby the aircraft was levelled at FL 180. After broadcasting a PAN and obtaining the clearance from the Air Traffic Control (ATC)⁵, the flight crew commenced to return to Port Moresby, making a right turn and descending to FL 100.

During descent, the flight crew conducted the *Smoke/Fumes Emergency procedure* in accordance with the Quick Reference Handbook (QRH)⁶.

The flight crew levelled the aircraft off at FL 100 as it entered the Islok holding pattern. The cabin crew subsequently called the flight crew reporting smoke was entering the cabin.

As cleared by the ATC, the flight crew performed a ‘visual approach’⁷ and landed on runway 32R. According to the PIC statement, the approach and landing were normal.

The aircraft continued its landing roll to exit the runway via taxiway Foxtrot (figure 2) where it came to a complete stop. In that position, the passengers and the crew exited the aircraft through the main door.



Figure 2: Touch down and final position of the aircraft.

AIC Comment

The investigation is continuing and will include environmental, operational, organisational and technical aspects and other areas as applicable.

The investigation analysis and findings will be included in the Final Report.

Safety Actions

At the time of the issue of this Preliminary report, no *Safety Actions* have been taken.

Recommendations

At the time of the issue of this Preliminary report, no *Safety Recommendations* have been issued by the AIC.

⁵ It is a service provided by ground-based air traffic controllers who direct aircraft on the ground and through controlled airspace, and can provide advisory services to aircraft in non-controlled airspace.

⁶ It is an approved (by some overseeing entity) document specific to an airplane and operator that contains checklists for just about anything the airplane can experience.

⁷ It is an approach to a runway at an airport conducted under instrument flight rules (IFR) but where the pilot proceeds by visual reference and clear of clouds to the airport.

General Details

Date and time:	16 March 2020, 01:22 UTC
Occurrence class:	Serious Incident
Primary occurrence type:	Fire/smoke – non impact (F-NI)
Location:	Less than 30 nm South of Jacksons International Airport, Port Moresby.
Latitude: 08° 58'06" S	Longitude: 147° 55' 35" E

Type of Operation, Injury and damage details

Type of operation:	Scheduled	
Persons on board:	Crew: 4 (PIC, FO, SCC & CC)	Passengers: 8
Injuries:	Crew: None	Passengers: None
Damage	None	

Crew details

Pilot In Command (PIC)

Nationality:	Australian
Licence type:	ATPL(Australian)
Licence number:	574310
Total hours:	7366:21
Total hours in Command:	6182:39
Total hours on type:	2289:15

First Officer (FO)

Nationality:	Australian
Licence type:	CPL
Licence number:	772788
Total hours:	2234:38
Total hours on type:	363:49

Cabin Crew 1 (CC1)

Nationality:	Australian
Certificate type:	Emergency Procedures Training
Certificate expiry date:	29/03/2020
Total hours last 90 days:	91.7
Total hours on type last 90 days:	88.8

Cabin Crew 2 (CC2)

Nationality:	Japanese
Certificate type:	Emergency Procedures Training
Certificate expiry date:	6/05/2020
Total hours last 90 days:	183
Total hours on type last 90 days:	183

Aircraft Details

Aircraft manufacturer and model:	Bombardier Inc, DHC-8-402
Registration:	VH-QOE
Serial number:	4125

Engine Data

Engine type:	PW150 Turboprop Engine
Manufacturer:	Pratt & Whitney Canada
Model:	PW150A
Engine number one (Left)	
Serial number:	PCE-FA0273
Total Time since new:	21835.6
Cycles since new:	23910
Engine number two (Right)	
Serial Number:	PCE-FA1139
Total Time since new:	9218
Cycles since new:	9656