Australian Government
Australian Transport Safety Bureau

Smoke event involving Airbus A380, VH-OQD

1,500 km WSW of Dallas-Fort Worth, Texas, United States, 16 May 2016

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Published by: Australian Transport Safety Bureau
Postal address: PO Box 967, Civic Square ACT 2608
Office: 62 Northbourne Avenue Canberra, Australian Capital Territory 2601
Telephone: 1800 020 616, from overseas +61 2 6257 4150 (24 hours)
Accident and incident notification: 1800 011 034 (24 hours)
Facsimile: 02 6247 3117, from overseas +61 2 6247 3117
Email: atsbinfo@atsb.gov.au
Internet: www.atsb.gov.au

Addendum

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Smoke event involving Airbus A380, VH-OQD

What happened

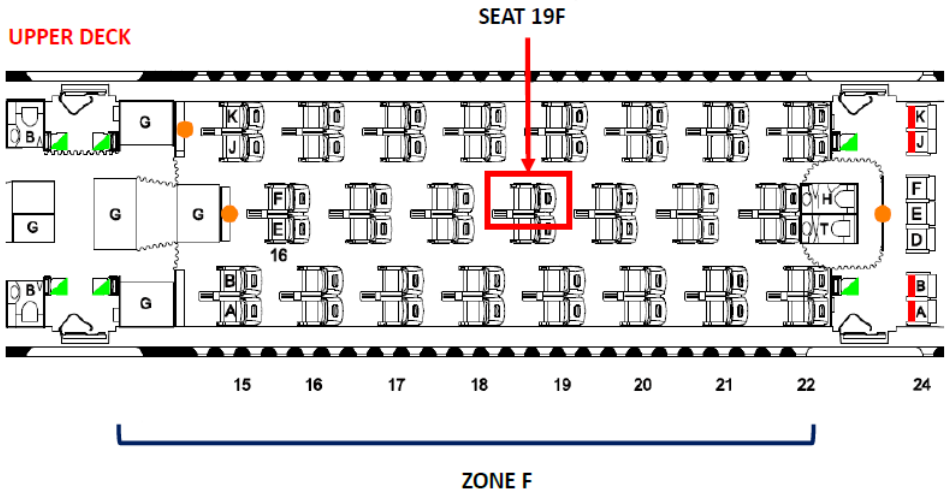
On 15 May 2016, a Qantas Airways Airbus A380 aircraft, registered VH-OQD, operated flight QF7 from Sydney, New South Wales to Dallas-Fort Worth, Texas, United States.

About two hours prior to the aircraft's arrival in Dallas-Fort Worth, a passenger alerted the cabin crew to the presence of smoke in the cabin. The cabin crew then initiated the basic fire drill procedure.

Two of the cabin crew proceeded to the source of the smoke with fire extinguishers. At the same time, the customer services manager (CSM) made an all stations emergency call on the aircraft interphone to alert flight crew and other cabin crew to the presence of smoke.

The cabin crew located the source of the smoke at seat 19F, in Zone F, on the upper deck (Figure 1). The crew removed the seat cushions and covers from seat 19F while the CSM turned off the power to the centre column of the seats. When the seat was further dismantled, the crew found a crushed personal electronic device (PED) wedged tightly in the seat mechanism. The cabin crew assessed that the crushed PED contained a lithium battery.

Figure 1: Cabin diagram showing the seat from where the smoke emanated



Source: Qantas, modified by ATSB

By that time, the PED was no longer emitting smoke, however, a strong acrid smell remained in the cabin. The crew then manoeuvred the seat and freed the PED (Figure 2). The crew placed the PED in a jug of water, which was then put in a metal box and monitored for the remainder of the flight.

The flight crew did not receive any abnormal indications or warnings.

No passengers were injured and the aircraft was not damaged in the incident.

Figure 2: Crushed PED after removal from seat

Source: Qantas

Operator comments

The aircraft operator commented that it has been estimated over one billion lithium batteries are transported by air every year, with potentially hundreds carried on single sectors on large aircraft. As such, both cabin crew and passenger education remains a key component to managing these events. Raising passenger awareness of the potential hazards of PEDs commences at check-in, through to the pre-flight safety demonstration, and aims to minimise the risk of PED thermal runaway events.

Qantas Airlines' basic fire drill is based on a teamwork approach, with the division of duties between three central crew and as many supporting crew as available and required. This division of duties allocates the responsibilities of fighting the fire, retrieving equipment and ensuring lines of communication with the flight deck remain uninterrupted.

ATSB comment

Similar occurrences

The ATSB has received 17 notifications of similar incidents of lithium battery thermal events in aircraft over the past 6 years.

The ATSB investigation AO-2014-082 details an example where a short circuit between lithium batteries initiated a fire in an aircraft cargo hold.

Safety message

This incident provides an excellent example of an effective response to an emergency situation. The crew were able to quickly implement the basic fire drill procedure which defined the roles and responsibilities of the responding crew. This enabled a rapid and coordinated response to the smoke event using all available resources. The effective implementation of this procedure also ensured the flight crew were kept informed as the situation developed.

This incident also highlights the hazards of transporting lithium-ion battery powered PEDs. The Civil Aviation Safety Authority web page *Travelling safely with batteries* and pamphlet *Is your luggage safe?* provide information on the safe carriage of lithium-ion batteries and lithium-ion powered devices aboard aircraft.

General details

Occurrence details

Date and time:	16 May 2016 – 1535 UTC	
Occurrence category:	Serious incident	
Primary occurrence type:	Smoke event	
Location:	1,500 km WSW of Dallas-Fort Worth Airport, United States	
	Latitude: 28° 59.48' N	Longitude: 111° 36.39' W

Aircraft details

Manufacturer and model:	Airbus A380	
Registration:	VH-OQD	
Operator:	Qantas Airways	
Serial number:	0026	
Type of operation:	Air transport high capacity – Passenger	
Persons on board:	Crew – 24	Passengers – Unknown
Injuries:	Crew – Nil	Passengers – Nil
Aircraft damage:	Nil	

About the ATSB

The Australian Transport Safety Bureau (ATSB) is an independent Commonwealth Government statutory agency. The ATSB is governed by a Commission and is entirely separate from transport regulators, policy makers and service providers. The ATSB's function is to improve safety and public confidence in the aviation, marine and rail modes of transport through excellence in: independent investigation of transport accidents and other safety occurrences; safety data recording, analysis and research; and fostering safety awareness, knowledge and action.

The ATSB is responsible for investigating accidents and other transport safety matters involving civil aviation, marine and rail operations in Australia that fall within Commonwealth jurisdiction, as well as participating in overseas investigations involving Australian registered aircraft and ships. A primary concern is the safety of commercial transport, with particular regard to operations involving the travelling public.

The ATSB performs its functions in accordance with the provisions of the *Transport Safety Investigation Act 2003* and Regulations and, where applicable, relevant international agreements.

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

It is not a function of the ATSB to apportion blame or determine liability. At the same time, an investigation report must include factual material of sufficient weight to support the analysis and findings. At all times the ATSB endeavours to balance the use of material that could imply adverse comment with the need to properly explain what happened, and why, in a fair and unbiased manner.

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, a limited-scope, fact-gathering investigation was conducted in order to produce a short summary report, and allow for greater industry awareness of potential safety issues and possible safety actions.