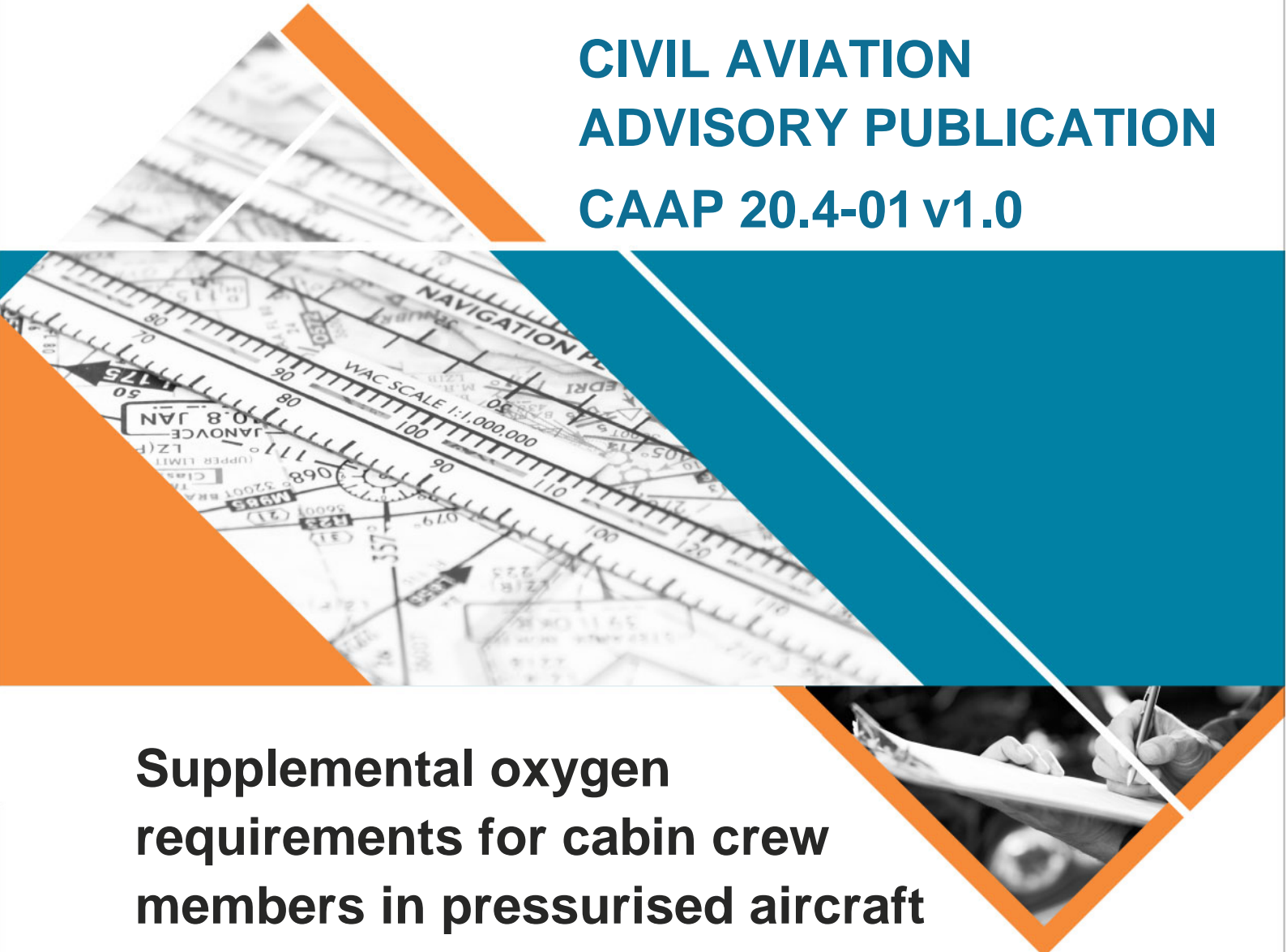




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A composite image featuring a navigation chart with various markings and a pilot's hands writing on a document. The navigation chart includes labels like 'NAVIGATION', 'WAC SCALE 1:1,000,000', and '0.8 JAN'. The pilot's hands are shown in a close-up, writing on a white document with a pen.

Supplemental oxygen requirements for cabin crew members in pressurised aircraft operating at flight level 250 and below

Date	January 2018
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This Civil Aviation Advisory Publication (CAAP) provides guidance, interpretation and explanation on complying with the Civil Aviation Regulations 1988 (CAR) or a Civil Aviation Order (CAO).

This CAAP provides advisory information to the aviation industry in support of a particular CAR or CAO. Ordinarily, the CAAP will provide additional 'how to' information not found in the source CAR, or elsewhere.

Civil Aviation Advisory Publications should always be read in conjunction with the relevant regulations/orders.

Audience

This Civil Aviation Advisory Publication (CAAP) applies to aircraft operators generally, but it is intended to apply primarily to:

- operators of pressurised aircraft conducting charter or regular passenger transport operations at or below Flight Level 250
- flight crew members
- cabin crew members
- airline cabin safety managers

Purpose

This CAAP clarifies temporary non-compliance with cabin crew supplemental oxygen requirements as set out in Civil Aviation Order 20.4 during emergency situations where cabin crew may not be able to promptly access a supply of supplemental oxygen.

The CAAP sets out factors that would offer extenuating circumstances for short-term deviation from regulatory requirements.

For further information

For further information on this CAAP, contact CASA's Cabin Safety Team (telephone 131 757).

Status

This version of the CAAP is approved by the Manager, Flight Standards Branch.

Version	Date	Details
v1.0	January 2018	This is the first initial CAAP on this subject.

Contents

1	Reference material	4
1.1	Acronyms	4
1.2	Definitions	4
1.3	References	5
2	Background	6
2.1	Introduction	6
3	Regulatory compliance	7
3.1	The CASA enforcement approach	7
3.2	Supply of supplemental oxygen equipment in certain types of aircraft that operate at FL250 and below	7
4	Departure from supplemental oxygen requirements	9
4.1	Acceptable temporary departure from supplemental oxygen requirements	9
4.2	Unacceptable departure from supplemental oxygen requirements	9

1 Reference material

1.1 Acronyms

The acronyms and abbreviations used in this CAAP are listed in the table below.

Acronym	Description
AOC	Air Operator's Certificate
CAAP	Civil Aviation Advisory Publication
CAR	<i>Civil Aviation Regulations 1988</i>
CASA	Civil Aviation Safety Authority
CASR	<i>Civil Aviation Safety Regulations 1998</i>
CAO	Civil Aviation Order
ICAO	International Civil Aviation Organization
FL	flight level
RPT	regular public transport
TUC	time of useful consciousness

1.2 Definitions

Terms that have specific meaning within this CAAP are defined in the table below.

Term	Definition
hypoxia	A medical condition where the human body is deprived of an adequate supply of oxygen, leading to symptoms of light-headedness, fatigue, difficulty processing visual information, impaired reasoning and judgement, hyperventilation, muscular weakness and eventually loss of consciousness and death of brain cells.
operator	A person, organisation or enterprise engaged in, or offering to engage in, an aircraft operation.
supplemental oxygen	Oxygen that is provided to an occupant of an aircraft by purpose-designed equipment to supplement the oxygen available in the atmosphere inside the aircraft.
time of useful consciousness	The period of elapsed time from the interruption of normal air supply or exposure to an oxygen-poor environment until the time when the ability to function usefully is likely to be lost.

1.3 References

Regulations

Regulations are available on the Federal Register of Legislation website <https://www.legislation.gov.au/>

Document	Title
<i>Civil Aviation Act 1988</i>	
<i>Section 10.3 of the Criminal Code Act 1995</i>	Sudden or extraordinary emergency
CAR 207 (2)	Requirements according to operations on which Australian aircraft used
CAO 20.4	Provision and use of oxygen and protective breathing equipment
CAO 20.11	Emergency and lifesaving equipment and passenger control in emergencies

Other reference material

Document	Title
	Section 4.3.8 of Annex 6, Operation of Aircraft to the Convention on the International Civil Aviation (the Chicago Convention).

2 Background

2.1 Introduction

- 2.1.1 The requirements for carriage and supply of supplemental oxygen are set out in Civil Aviation Order (CAO) 20.4. Subsection 7 of CAO 20.4 applies to pressurised aircraft that do not fly above flight level (FL) 250.
- 2.1.2 CASA has received enquiries from regular public transport (RPT) aircraft operators regarding compliance with supplemental oxygen requirements in situations where, in an emergency, there may be insufficient time or increased risk of harm for cabin crew to reach their station and access supplemental oxygen. The higher priority is to immediately secure themselves for the descent.
- 2.1.3 In special emergency circumstances *Section 10.3 of the Criminal Code - Sudden or extraordinary emergency* applies to the temporary deviation from compliance with cabin crew supplemental oxygen requirements.
- 2.1.4 CASA considers that compliance with safety regulations may be reasonably departed from during emergency situations where there are competing safety priorities, provided that regulatory compliance is resumed at the earliest and safest opportunity to do so.
- 2.1.5 This CAAP clarifies the acceptable, temporary deviation from compliance with cabin crew supplemental oxygen requirements on the grounds of necessity in an emergency situation.

3 Regulatory compliance

3.1 The CASA enforcement approach

- 3.1.1 The *Civil Aviation Regulations 1988* (CAR) and Civil Aviation Orders (CAO) provide the requirements for the carriage and use of supplemental oxygen. These requirements follow the standards set out in Part 1 of Annex 6, Section 4.3.8, to the Convention on International Civil Aviation.
- 3.1.2 Under *section 10.3 of the Criminal Code* a person is not criminally responsible for an offence if their conduct was in response to circumstances of 'sudden or extraordinary emergency' and the person reasonably believes that in the emergency situation, committing the offence is the only reasonable way to deal with the emergency and the conduct is a reasonable response.
- 3.1.3 Cabin crew must use their professional judgment to deal with any number of threats to the aircraft, passengers and themselves during an emergency.
- 3.1.4 Departure from regulatory compliance may be excusable in situations where the evidence shows that the departure was necessary due to a sudden or extraordinary emergency.

3.2 Supply of supplemental oxygen equipment in certain types of aircraft that operate at FL250 and below

- 3.2.1 CAO 20.4.7.7 requires all non-flight crew members to use supplemental oxygen at all times when the cabin altitude exceeds FL140. Certain types of charter and regular public transport (RPT) aircraft that operate at FL250 and below have no automatic drop down supplementary oxygen masks. In a depressurisation, cabin crew are required to access portable oxygen from stowage locations. Depending on the location of the cabin crew member at the time of the emergency event, this may mean that cabin crew may not be in close proximity to a supplemental oxygen supply.
- 3.2.2 An operator's procedures may instruct cabin crew to prioritise securing themselves and other movable items in their immediate vicinity from physical danger, and to move about the cabin (allowing access to the supplemental oxygen) only after the pilot-in-command has informed cabin crew that it is safe to do so.
- 3.2.3 Sudden emergency—cabin depressurisation and descent. In aircraft cabin altitudes above 10,000ft, the risk of experiencing hypoxia is greater due to lower ambient oxygen concentration and also lower atmospheric pressure, which reduces a person's ability to breathe normally, for example at a cabin altitude of FL250 the time of useful consciousness (TUC) is 3 to 5 minutes and at FL180 TUC is 20-30 minutes. At these altitudes the onset of hypoxia does not occur immediately when a cabin is depressurised.
- 3.2.4 When flight crew have detected a cabin depressurisation event, flight crew are trained to immediately don oxygen masks and rapidly descend the aircraft to the safe altitude of 10,000ft where aircraft occupants can regain normal breathing. Deviation from the

requirements of the provision is excusable when flight crew commence an emergency descent in response to cabin depressurisation — in the situation where risk of movement in the cabin to obtain access to oxygen outweighs the risk of not using oxygen.

- 3.2.5 In the event of a rapid cabin depressurisation event at FL250 where the TUC is 3-5 minutes, the flight crew will begin descending immediately to 10,000ft (terrain permitting). Within 3-5 minutes the aircraft (and cabin altitude) will be passing FL180 giving the occupants 20-30 minutes TUC. As the aircraft passes FL140 and the aircraft levels, subject to aircraft and flight conditions, the pilot-in-command will advise the cabin crew that they are safe to move around the cabin. The cabin crew may then retrieve the supplemental oxygen for use. However, as the aircraft cabin is below FL140 the oxygen requirement is now not mandatory.

4 Departure from supplemental oxygen requirements

4.1 Acceptable temporary departure from supplemental oxygen requirements

- 4.1.1 Strict compliance with Paragraph 7.4 of CAO 20.4 requires an operator to ensure cabin crew use supplemental oxygen immediately regardless of the nature of the emergency and at every moment that cabin pressure altitude exceeds FL140. In the event of a loss of cabin pressure below FL250 the safety risk of achieving this outweighs the risk of not using the supplemental oxygen.
- 4.1.2 CASA will excuse regulatory non-compliance if there is a greater risk to the crew member in moving about the cabin to obtain access supplemental oxygen.
- 4.1.3 There is a relatively lower risk to the safety of aircraft occupants in a depressurisation event occurring between FL250 and FL140, compared with the same event occurring above FL250. An emergency decent from FL250 to a safe altitude of 10,000ft would usually take no more than 6 minutes. The TUC gradually increases as the aircraft lowers its altitude, increasing a person's time to effectively function and respond to the emergency.

4.2 Unacceptable departure from supplemental oxygen requirements

- 4.2.1 Relying only on the grounds of, or claiming an emergency, is insufficient to justify irresponsible, negligent or reckless departure from regulatory requirements. A reduced availability of fitted-out supplemental oxygen, or inadequate access points or supply, does not excuse an aircraft operator of the regulatory obligation to supply oxygen facilities to cabin crew.
- 4.2.2 Employers have obligations under CASA legislation. There should be proper training of flight crew and cabin crew on responding to oxygen deprived situations including recognising the symptoms of hypoxia, and recovering with supplementary oxygen.