AEROSPACE INFORMATION REPORT

AIR1389™	REV. C

Issued 1984-08
Reaffirmed 2012-10
Revised 2022-06

Superseding AIR1389B

FAR - Regulatory Requirements
Covering the Use of Breathing Oxygen in Aircraft

RATIONALE

Revision of the document is required due the reference to document AIR6256 currently not published.

1. SCOPE

This report presents, paraphrased in tabular format, an overview of the Federal Aviation Regulations (FAR) for aircraft oxygen systems. It is intended as a ready reference for those considering the use of oxygen in aircraft and those wishing to familiarize themselves with the systems requirements for existing aircraft. This document is not intended to replace the oxygen related FAR but rather to index them in some order. For detailed information, the user is referred to the current issue of the relevant FAR paragraph referenced in this report.

2. APPLICABLE DOCUMENTS

The following publications form a part of this document to the extent specified herein. The latest issue of SAE publications shall apply. The applicable issue of other publications shall be the issue in effect on the date of the purchase order. In the event of conflict between the text of this document and references cited herein, the text of this document takes precedence. Nothing in this document, however, supersedes applicable laws and regulations unless a specific exemption has been obtained.

2.1 FAR Publications

Available from Federal Aviation Regulations, https://www.faa.gov.

FAR 23	Airworthiness Standards: Normal, Utility, Acrobatic and Commuter
FAR 25	Airworthiness Standards: Transport Category Airplanes
FAR 91	General Operating and Flight Rules
FAR 121	Operating Requirements: Domestic, Flag, and Supplemental Operations
FAR 135	Operating Requirements Commuter and On-Demand Operations

TO PLACE A DOCUMENT ORDER: **Tel: 877-606-7323 (inside USA and Canada)**
Tel: +1 724-776-4970 (outside USA)
Fax: 724-776-0790
Email: CustomerService@sae.org
SAE WEB ADDRESS: **http://www.sae.org**

For more information on this standard, visit
https://www.sae.org/standards/content/AIR1389C/

2.2 Other Publications

Similar publications regarding Aviation Regulations are available from European Authority (www.easa.europa.eu) or National Aviation Authorities. With regards to National Aviation Regulations, states are committed to the Convention on International Aviation. The extent of national regulations are governed by acknowledgement of the Convention on International Aviation (Chicago Convention).

3. TABLES

The following is an indexed list of the tables presented in this report. Each table has a set of notes applying to and used in that specific table:

3.1 Table 1 - Airworthiness Standards, FAR Parts 23 and 25

3.2 Table 2 - Operating Requirements: General, Commuter, and On-Demand FAR Parts 91 and 135

3.3 Table 3 - Operating Requirements, FAR Part 121

Table 1 - Airworthiness standards

PART FAR	CERTIFICATION ALTITUDE FEET	FAR REF PARA FOR CREW OXYGEN	FAR REF PARA FOR PAX OXYGEN	CREW MASK TYPE	PAX MASK TYPE	PAX MASK CONNECT	SYSTEM AUTO PRESENT	APPLICABLE NOTES
23 Airworthy Normal, Utility, Commuter	>10000 to 25000	23.1443(b)(2) or (3)	23.1443(b)(1) or (3)	CF	CF	No	No	1,2,3,4,5,6,7,8,9,12
	>25000 to 40000	23.1441(d)(1)	23.1443(b)(1) or (3)	DF/QD	CF	Yes	No	1,2,3,4,5,6,7,8,9,12
	Up to 40000	23.1443(c)	23.1443(b)(1) or (3)	DF/QD	CF	yes	Yes	1,2,3,4,5,6,7,8,9,12
	>40000	23.1441(d)(2)	--	PD/QD		--	--	1,2,3,4,5,6,7,8,9,12
25 Airworthy Transport Aircraft	Up to 40000	25.1443(a) or (b)	25.1443(c)	CF or DF	CF			1,2,3,6,8,9,10,11,12,13,14, 15
	Up to 25000	25.1447(a)(b)	25.1447(a)(b)	DF/QD	CF	Yes	No	1,2,3,6,8,9,10,11,12,13,14
	>25000 to 40000	25.1443(b) & 0.1447(c)(2) & 0.1447(c)(3)(ii)	25.1443(c)	DF/QD	CF	Yes	Yes	1,2,3,6,8,9,10,11,12,13,14, 16
	>40000	25.1441(d)	25.1441(d)	PD/QD	CF	Yes	Yes	1,2,3,6,8,9,10,11,12,13,14
	PBE	25.1439	--	--	--	--	--	--

ABBREVIATIONS (Valid also for Tables 2 and 3)

CF: Continuous flow means oxygen flow between a “flow generator” (source) and a mask where the flow between mask and wearer may not be of the same type like on phase dilution passenger mask.

DF: Demand flow means an oxygen flow between a “flow generator” (source) and a mask equal to an oxygen flow between mask and the wearer of a crew mask type.

PD: Pressure demand mask.

QD: Quick donning mask.

PAX: Passenger.

PBE: Protective breathing equipment.

NOTES:

1. Portable equipment acceptable per 23.1441(a) or 25.1445(b) and secured per 23.561(b)(3) or 25.561(c)(1).
2. Oxygen supply indication required per 23.1441(c) or 25.1441(c).
3. Delivery to mask indication required per 23.1449 or 25.1449.
4. Manual backup to auto present system per 23.1447(f).
5. Oxygen shutoff available to crew per 23.1441(e).
6. If first aid oxygen installed, per 23.1443(c) or 25.1443(d).
7. Nasal cannula allowed to 18000 feet per 23.1447(b)(2).
8. Chemical oxygen generators acceptable per 23.1450 and 25.1450.
9. Oxygen equipment over 40000 feet per 25.1441(d) and 23.1441(d)(2).
10. Provision for crew communication per 25.1447(a).
11. Crew and passenger oxygen supply may be common or separate per 25.1445(a).
12. Presentation of dispensing equipment before cabin pressure exceeds 15000 feet per 23.1447(e) and 25.1447(c)(1).
13. Portable oxygen must be immediately available to each cabin attendant per 25.1447(c)(4).
14. 10% extra passenger masks per 25.1447(c)(1).
15. Definition of minimum mass flow.
16. Relevant equipment standards for dispensing Units.

Table 2 - Operating requirements: general, commuter, and on-demand FAR parts 91 and 135

FAR PART	ALTITUDE - FEET, MSL		OXYGEN USAGE		OXYGEN SUPPLY		FAR REF PARA	APPLICABLE NOTES
	CABIN	FLIGHT DECK	CREW	PAX	CREW	PAX		
91 General Operation & Flight Rules	>12500 to 14000	>12500 to 14000	>30 minutes	No	(note 1)	(note 1)	91.211(a)(1)	
	>14000 to 15000	>14000 to 15000	Yes	No	(note 1)	(note 1)	91.211(a)(2)	
	>15000	>15000	Yes	Yes	(note 1)	(note 1)	91.211(a)(3)	
	Pressurized	>FL250 to FL350	No	No	10 minutes	10 minutes	91.211(b)(1)(i)	7
	Pressurized	>FL350 to FL410	Yes (notes 2,3)	No	10 minutes	10 minutes	91.211(b)(1)(ii)	7
135 Air Taxi & Commercial Operators of Small Aircraft	Unpressurized						135.89(a) & .157(a)	8,9,10,11,12
	>10000 to 12000	Same	>30 minutes	10% >30 minutes	(note 1)	(note 1)	135.89(a)(1) or .157(a)(1)	8,9,10,11,12
	>12000 to 15000	Same	Yes	10% >30 minutes	(note 1)	(note 1)	135.89(a)(2) or .157(a)(1)	8,9,10,11,12
	>15000	Same	Yes	Yes	(note 1)	(note 1)	135.157(a)(2)	8,9,10,11,12
	Pressurized						135.89(b) & .157(b)	8,9,10,11,12
	<10000	>10000 to 15000	No	No	(note 1)	(note 1)	135.157(b)(2)(i)	8,9,10,11,12
	<10000	>15000 to 25000	No	No	(note 1)	60 minutes (note 4)	135.157(b)(2)(ii)	8,9,10,11,12
	<10000	>25000	No if QD	No	2 hours	10 minutes (note 6)	135.157(b)(1) & (b)(2)	8,9,10,11,12
	<10000	>25000 to 35000	Yes (notes 2,3)	No	--	--	135.89(b)(2) & (b)(4)	8,9,10,11,12
	<10000	>35000 MSL	Yes, 1 crew	No	(note 1)	(note 1)	135.89(b)(3)	5,8,9,10,11,12

NOTES:
1. As required by flight profile at these cabin altitudes.
2. One pilot must wear and use oxygen mask unless there are two pilots with QD masks available (135.89(b)(2)(i) or 91.211(b)(1)(ii)).
3. One pilot must wear and use oxygen mask if for any reason other pilot must leave his station (135.89(b)(4) or 91.211(b)(2)).
4. If safe descent can be made to 15000 feet within 4 minutes, only a 30 minute supply is required. If flight is between 10000 to 15000 feet, oxygen supply shall be adequate for 10% of occupants after 30 minutes.
5. One pilot must wear and use oxygen mask (135.89(b)(3)).
6. For descent profile.
7. 10 minute supply is in addition to that required for flight at cabin altitudes above 12500 feet.
8. Oxygen supply indication per 135.157(c)(1).
9. Mask flow indicators required per 135.157(c)(2).
10. If flight is above 12000 feet oxygen briefing is required per 135.117(a)(7).
11. Oxygen for PAX medical use is described in 135.91.
12. Above 25000 feet pilots shall have access to undiluted oxygen at their discretion per 135.157(c)(3).

Table 3 - Operating requirements: domestic, flag, and supplemental

FAR PART	ALTITUDE - FEET OR FL		OXYGEN USAGE		OXYGEN SUPPLY		FAR REF PARA	APPLICABLE NOTES
	CABIN	FLIGHT DECK	CREW	PAX	CREW	PAX		
121.327 Supplemental Oxygen; Reciprocating Engine Powered	>10000 to 12000	>10000 to 12000	>30 minutes (note 16)	--	(note 2)	--	121.327(b)(1)	1
	>12000	>12000	Yes	--	(note 2)	--	121.327(b)(2)	1
	>8000 to 14000	>8000 to 14000	--	10%	--	30 minutes (note 3)	121.327(c)(1)	
	>14000 to 15000	>14000 to 15000	--	30%	--	(note 2)	121.327(c)(2)	
	>15000	>15000	--	100%	--	(note 2)	121.327(c)(3)	
121.331 Supplemental Oxygen, Reciprocating Engine Powered, Pressurized	>8000 to 14000	>10000	per 121.327		2 hours (notes 2,4,9)		121.331(b)	10
	--	<FL250	--	10%	--	30 minutes	121.331(c)(1)	11
	>8000 to 14000	<FL250	--	10%	--	30 minutes	121.331(c)(2)(iii)	12
	>14000 to 15000	or	--	30%	--	(note 2)	121.331(c)(2)(ii)	12
	>15000	>FL250	--	100% after 4 minutes	--	(note 2)	121.331(c)(2)(i)	12