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FUNCTIONAL REQUIREMENTS OF AIRCRAFT OXYGEN EQUIPMENT AND PRESSURE SUITS

Edition B, Version 1

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NORTH ATLANTIC TREATY ORGANIZATION

ALLIED AEROMEDICAL PUBLICATION

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NORTH ATLANTIC TREATY ORGANIZATION (NATO)

NATO STANDARDIZATION OFFICE (NSO)

NATO LETTER OF PROMULGATION

16 January 2025

1. The enclosed Allied Aeromedical Publication AAMedP-1.3, Edition B, Version 1, FUNCTIONAL REQUIREMENTS OF AIRCRAFT OXYGEN EQUIPMENT AND PRESSURE SUITS, which has been approved by the nations in the MILITARY COMMITTEE AIR STANDARDIZATION BOARD (MCASB), is promulgated herewith. The agreement of nations to use this publication is recorded in STANAG 3198.

2. AAMedP-1.3, Edition B, Version 1, is effective upon receipt and supersedes AAMedP-1.3, Edition A, Version 1, which shall be destroyed in accordance with the local procedure for the destruction of documents

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4. This publication shall be handled in accordance with C-M(2002)60.

Thierry POULETTE
Major General, FRA (A)
Director, NATO Standardization Office

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RECORD OF RESERVATIONS

CHAPTER	RECORD OF RESERVATION BY NATIONS
Note: The reservations listed on this page include only those that were recorded at time of promulgation and may not be complete. Refer to the NATO Standardization Documents Database for the complete list of existing reservations.	

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RECORD OF SPECIFIC RESERVATIONS

[nation]	[detail of reservation]
BEL	1. For transport aircraft: BEL does not wish to be more strict than civilian regulations concerning the requirement of PBA for flights above 38.000 Ft purely to protect the crew against rapid decompression. In case of intended flights with cabin altitudes above 38000 Ft, a PBA remains required. 2. For combat aircraft: PBA will activate automatically at cabin altitudes of 39,000 ft (not 38,000 ft) and above and provide pressurized 100% O2 from the BOS
BGR	The standard will not be implemented for aircraft Su-25 and helicopters AS 532 AL "Cougar", Bell-206, Mi-17 and Mi-24.
FIN	The manufacturer’s qualification approval and quality assurance form the basis for the equipment used and therefore Finland reserves the right to follow the standard as it conforms this principle.
FRA	The value of oxygen supplementation at 10000 ft cabin altitude (point 1.3) is recognised, but it is not currently possible for France to apply this point. This would require a revision of the doctrines and frameworks for the use of non-pressurised aircraft, and the fitting of oxygen systems on aircraft, which is not currently feasible.
HRV	Fleet of aircrafts in Croatian Air Force consists of eastern and western produced aircrafts, we can’t influence on standards that manufacturer of aircraft applies. This STANAG is acceptable on western produced aircraft.
SVK	SVK reserves the right not to modify equipment supplied by the manufacture which does not conform to the STANAG.
USA	The U.S. Navy must follow CNAF M-3710.7, Naval Air Training and Operating Procedures Standardization (NATOPS) General Flight and Operating Instructions, all flights above 10,000 ft through 13,000 ft require oxygen usage. Additionally, for mission essential flights in rotary wing aircraft, time above 10,000 feet shall not exceed one hour, and altitude shall not exceed 13,000 ft, if oxygen systems are not used. AAMedP-1.3 allows for flights without oxygen system usage below 14,000 ft but above 13,000 ft with a maximum time of 30 minutes. For the Air Force they must follow AFMAN11-202V3 10 JANUARY 2022: 3.21.1. Aircrew not breathing supplemental oxygen shall: 3.21.1.1. Not operate above 14,000 feet MSL. (T-2), 3.21.1.2. Not exceed 1 hour between 10,000 MSL and 12,500 feet MSL if any portion of the flight is conducted in IMC, at night, while employing weapons, conducting airdrop, air-refueling, or if performing high-g maneuvers. (T-2), 3.21.1.3. Not exceed 30 minutes between 12,500 MSL and 14,000 feet MSL. (T- 2), 3.21.2. If any passenger is not trained in accordance with AFMAN 11-403 the following restrictions apply: 3.21.2.1. Do not exceed 13,000 feet.

	(T-2), 3.21.2.2. Do not exceed 3 hours above 10,000 feet. (T-2), 3.21.3. Supplemental oxygen will be used by all occupants between 14,000 feet MSL and FL250.
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CHAPTER 1 HYPOXIA PROTECTION

1.1 INTRODUCTION

It shall be the responsibility of each nation to ensure that its aircraft are fitted with appropriate oxygen equipment capable of affording the aircrew adequate protection against hypoxia throughout the operational envelope of the aircraft. Relevant civilian standards should be considered as a minimum requirement[1], but users should be aware that the additional cognitive, night vision and ventilatory demands of military aviation can require a higher degree of oxygenation than that provided for in civil standards.

1.2 UNPRESSURIZED AIRCRAFT

If flight altitude exceeds 10,000 ft (~3,050 m), unpressurized aircraft must be provided with an oxygen system with the capability of maintaining physiological protection for all aircrew members in accordance at least with civil requirements. While the maximum recommended altitude for unpressurized aircraft without oxygen is 10,000 ft (~3,050 m), it is recognized that at times aircraft without oxygen systems may exceed this altitude limitation due to operational imperatives. This activity creates a risk to flight safety and should only be undertaken exceptionally and with due regard to aeromedical advice limiting altitudes and exposure times of any single excursion as follows:

a. Below 14,000 ft (~4,300 m): max 30 mins.

b. Below altitudes of 12,500 ft (~3,800 m): max one hour.

1.3 PRESSURIZED AIRCRAFT

1.3.1 CABIN ALTITUDE LESS THAN 10,000 FT (~3,000 M) (IN NORMAL FLIGHT CONDITIONS) – HIGH CABIN DIFFERENTIAL PRESSURE, TRANSPORT-TYPE AIRCRAFT

All pressurized aircraft must be fitted with an oxygen system capable of providing physiological protection for all personnel in the event of decompression. Protection to

[1] See International Civil Aviation Organisation International Standards and Recommended Practices Annex 6 Part 1 and US Federal Aviation Regulation 91.211

meet relevant civil standards as a minimum[2]. In summary, if the aircraft flight altitude exceeds 25,000 ft (~7,600 m):

a. **Personnel Flying Aircraft**. Pilots require a quick-donning oronasal mask that can be positioned, fixed, sealed and made operational with one hand in less than 5 seconds. The oxygen system shall be compatible with other aircrew protection devices worn by the crewmember and its donning/doffing shall not delay or prevent performance tasks assigned to the aircrew member. If the aircraft flight altitude exceeds 40,000 ft (12,200 m), at least one pilot must don and use an oronasal mask routinely, as reactive delay to mask application and oxygen delivery would result in significant transient impairment.

b. **Operational Personnel**. Operational crew members require an oxygen supply system that can be donned in a time compatible with personal safety. The system shall be compatible with the other aircrew protection devices worn by the crewmember and shall not delay or prevent assigned performance tasks.

c. **Transported Personnel**. Passengers require an oxygen supply system if the aircraft altitude exceeds 25,000 ft (~7,620 m) or if it cannot be guaranteed, regardless of flight altitude, that the aircraft can descend to an altitude not exceeding 10,000 ft (~3,050 m) in less than 4 minutes after accidental cabin decompression.

   Where the aircraft role requires deliberate decompression, such as parachute dispatch, then oxygen equipment with additional features may be required to facilitate longer duration wear and support pre-oxygenation with 100% oxygen.

1.3.2 CABIN ALTITUDE GREATER THAN 10,000 FT (IN NORMAL FLIGHT CONDITIONS) - LOW CABIN DIFFERENTIAL PRESSURE, FIGHTER-TYPE AIRCRAFT

In normal and emergency operations, the crew of fighter-type aircraft require an oronasal mask providing supplemental oxygen to prevent hypoxia, a mask which is usually worn in all phases of flight.

[2] E.g. US Federal Aviation Regulations 25.1441-1450, European Aviation Safety Agency Regulations CS25.1441-1450.

CHAPTER 2 MINIMUM FUNCTIONAL REQUIREMENTS

2.1 OXYGEN SOURCES

2.1.1 Aircraft Oxygen Sources

Aircraft oxygen sources may be described as either ‘primary oxygen systems’, or as ‘backup oxygen systems’. Oxygen for these systems may be from a pure oxygen source produced by a reserve of liquid, gaseous or chemical oxygen, or from a Molecular Sieve Oxygen Generating System (MSOGS), a form of On Board Oxygen Generating System (OBOGS).[3]

2.1.2 Ejection Oxygen Source

The aircraft ejection system shall be fitted with an emergency oxygen system to be used if ejection occurs >25,000 ft (~7,600 m). This system will be activated automatically as the crewmember is disconnected from the aircraft.

2.2 OXYGEN CHARACTERISTICS AND REQUIREMENTS

1. Sources of pure oxygen shall guarantee a supply of gas containing at least 99.5% oxygen. Gas provided from MSOGS is usually derived from engine ‘bleed air’ and is at the most 94% oxygen, the remainder being mostly argon. With traditional air-mix systems (using gaseous or liquid oxygen sources), the diluent gas is air. With MSOGS, dilution may be achieved with air mixing at the breathing regulator, or by adjusting the performance of the MSOGS to provide a targeted concentration that is less than 94% oxygen.

2. The minimum concentration of oxygen within mixed inspired gas in pressurized cabins shall be sufficient to:

   a. Maintain an alveolar oxygen tension (alveolar oxygen partial pressure) of at least 100 mmHg (13.3 kPa), recognizing that alveolar gas also includes a water vapor partial pressure of 47 mmHg (63 kPa) and CO_2 partial pressure during normocapnia of 40 mmHg (5.3 kPa). The alveolar gas equation gives alveolar oxygen tension as a function of inspired oxygen fraction, total pressure at the cabin altitude, and estimated ratio of metabolic CO_2 production rate to oxygen uptake rate.

[3] An MSOGS cannot deliver pure oxygen. The maximum is approximately 94% O_2, 6% Ar.

b. Prevent the alveolar oxygen tension from falling below 30 mmHg on rapid cabin decompression.

3. Protection against the risk of CBRN contamination of inhaled gas is the subject of a separate agreement.

2.3 LEVEL OF ACCEPTABLE HYPOXIA

1. The concentration of oxygen required to prevent hypoxia at any particular altitude depends on the aircraft cabin pressurization schedule. Aircraft with different pressurization schedules require different oxygen concentration schedules. Appropriate oxygen concentration schedules can be calculated using the alveolar gas equation described above, but an additional factor to be considered is that the level of hypoxia experienced after rapid decompression is dependent on the partial pressure of oxygen breathed before decompression. Therefore, for some pressurization schedules, a step adjustment to the oxygen concentration schedule may be required, sometimes referred to as the “Ernsting notch”. This notch in the oxygen concentration schedule ensures that at least 30 mmHg alveolar oxygen tension is maintained during a rapid decompression. The magnitude of the required “notch” is dependent on system design including cabin pressurization schedule, inspired oxygen concentration, breathing pressures provided by the aircrew's breathing regulator, and can be calculated.

2. As an example, Figure 1 shows the required oxygen concentration schedule for a fighter aircraft with a 5 psi (34.5 kPa or 259 mmHg) cabin pressurization schedule and a ceiling of 50,000 ft (15240 m) pressure altitude, which is a commonly used arrangement. This shows an “Ernsting notch” is required between 16,000 and 23,000 ft (~4880 to ~7010 m) to prevent hypoxia when >99.5% oxygen is breathed following rapid decompression, assuming in addition that pressure breathing for altitude (PBA) is provided above 38,000 ft (~11,600 m) to mitigate the fall in environmental pressure (see paragraph 2.9).

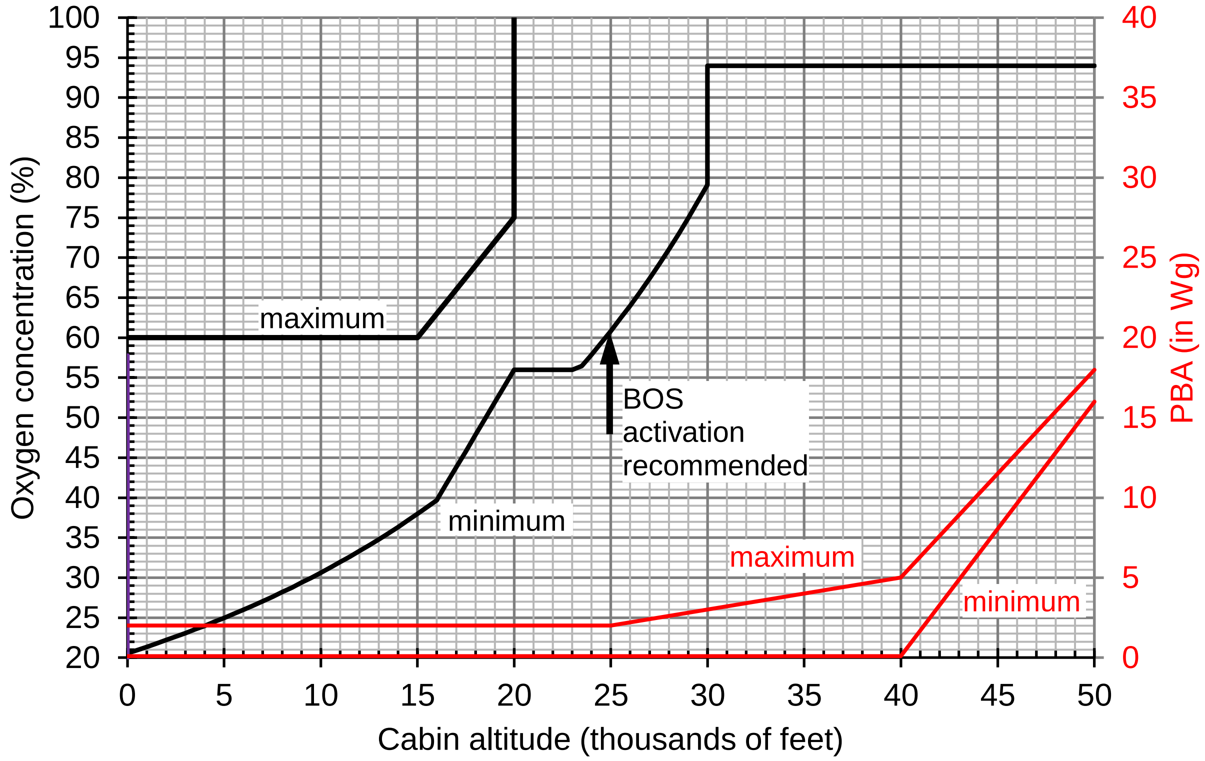

Figure 1: Example of recommended minimum and maximum oxygen concentrations for an OBOGS on a military aircraft with a pressurization schedule of 5 psi differential and a maximum aircraft altitude of 50,000 ft (~15,200 m). The required pressure breathing for altitude schedule for this arrangement is shown in red. Back-up Oxygen Supply (BOS) is usually activated at and above 25,000ft (7620 m) to provide >99.5% gaseous oxygen.

2.4 RAPID DECOMPRESSION OF THE CABIN

2.4.1 PHYSIOLOGICAL REQUIREMENTS FOLLOWING RAPID DECOMPRESSION

Following a rapid decompression of the cabin, the mean alveolar pressure of oxygen will drop briefly, but shall stabilize at a minimum of 60 mmHg (8 kPa) for all personnel flying aircraft, operational, or transport personnel; and 53 mmHg (7 kPa) for passengers. In such circumstances, the aircraft must descend to 18,000 ft (~5,500 m) if oxygen is available and to 10,000 ft (~3,050 m) if oxygen supply is limited.

2.4.2 CONCENTRATION OF OXYGEN IN THE INSPIRED GAS FOLLOWING RAPID DECOMPRESSION

1. In the event of rapid (0.1 to 90 s duration) decompression to a cabin altitude greater than 30,000 ft (~9,200 m), the concentration of oxygen in the gas delivered to the mask cavity must rise to 99.5% when no more than 0.7 liters (ATPD) of gas has been inspired for the “Ernsting notch” calculation to be valid. If the decompression is to a cabin altitude above 38,000 ft (~11,600 m), then PBA must also be supplied.

2. Automatic Back-up Oxygen Supply (BOS) activation is recommended above 25,000 ft (~7,620 m) to minimize the time taken to switch to high concentration oxygen and to reduce the risk of spurious warnings from OBOGS control. BOS is often part of the ejection seat assembly to provide oxygen following ejection at high altitudes although some aircraft have an ejection bottle that is separate from the BOS.

3. In some circumstances, the use of 94% oxygen following rapid decompression may be acceptable if the “Ernsting notch” and the PBA schedule have been adjusted appropriately.

2.5 MAXIMUM CONCENTRATION OF OXYGEN

1. In order to reduce the incidence of atelectasis and/or delayed otitic barotrauma, the concentration of oxygen in the inspired gas shall not exceed 60% at cabin altitudes between 0 and 15,000 ft (~4,600 m), or 75% at a cabin altitude of 20,000 ft (~6000 m).

2. Independently of the requirement specified in paragraph 2.2 above, a dilution - demand oxygen system must allow personnel to close the dilution orifice and to select 100% of the gas provided by the breathable gas source or, when OBOGS is used as the primary source, to select either maximal OBOGS output or an alternative source which must contain >99.5% oxygen.

2.6 RESPIRATORY DEMAND

The work of breathing shall be minimized during all phases of flight. Accordingly, the operation of the oxygen system shall meet the requirements of this specification at pulmonary ventilations between 5 and 100 L/min (ATPD) and peak inspiratory and expiratory flow of up to 3.3 L/s, with maximum rates of change of 10 L/s^2 at peak flows of 1.5 L/s and 20 L/s^2 at peak flows of 3.3 L/s. For some applications, such as high anti-G straining demand, a peak flow of 5.3 L/s at a maximum rate of change of flow of 30 L/s^2 may be desirable. Peak, average and safety pressures can be determined using methods described in ISO 16900-12.

2.7 SAFETY PRESSURE

When pressure demand oxygen regulators are used, they shall deliver a positive safety pressure sufficient for preventing the admixture of inboard leaks during the respiratory cycle. Safety pressure shall be selectable by the crewmember at any altitude. When the inspiratory flows do not exceed 1.4 L/s, the safety pressure delivered to the crewmember must be sufficient to maintain a positive pressure in the oronasal mask cavity. At greater inspiratory flows, it is desirable for negative mask cavity pressures to be avoided.

2.8 MASK CAVITY PRESSURE AT ALTITUDES LOWER THAN OR EQUAL TO 38,000 FT (11,600 M)

The minimum pressure, maximum pressure and total pressure variation (swing) in the mask cavity, during a ventilation cycle at cabin altitudes lower than or equal to 38,000 ft (11,600 m) shall not exceed the values given in Tables Ia and IIa below. Tables Ib and IIb show desirable values for high performance aircraft applications. The limits given herein shall apply to assessment using a breathing simulator and during human trials.

Flow (L/s)	Mask Cavity Pressure kPa (inch H_2O gauge)		
	Lower Limit	Upper Limit	Max Permissible Swing
0.5	-0.38 (-1.5)	+0.38 (+1.5)	0.50 (2.0)
1.5	-0.55 (-2.2)	+0.65 (+2.6)	0.85 (3.4)
2.5	-1.12 (-4.5)	+1.00 (+4.0)	1.75 (7.0)
3.3	-1.90 (-7.6)	+1.5 (+6.0)	3.00 (12.0)

Table Ia: Without Safety Pressure

Acceptable mask cavity pressure limits at various peak inspiratory flow values. These values are applicable between 0 and 38,000 ft (~11,600 m) when safety pressure is not present. If assessed using a breathing simulator, a sinusoidal breathing waveform is to be used.

Flow (L/s)	Mask Cavity Pressure kPa (inch H_2O gauge)		
	Lower Limit	Upper Limit	Max Permissible Swing
3.3	-1.20 (-4.8)	+1.20 (+4.8)	Not applicable
5.3	-1.2(-4.8)	+1.2 (+4.8)	Not applicable

Table Ib: Without safety pressure

Desirable mask cavity pressure limits at various peak inspiratory flow values for high performance aircraft applications. These values are applicable between 0 and 38,000 ft (~11,600 m) when safety pressure is not present. If assessed using a breathing simulator, a breathing waveform simulating an anti-G straining pattern is to be used. A series of four breathing cycles is to be assessed. The anti-G straining pattern should comprise inspiratory and expiratory phases each lasting less than one second; following inspiration, there should be a respiratory pause of 3 seconds before expiration.

Flow (L/s)	Mask Cavity Pressure kPa (inch H_2O gauge)		
	Lower Limit	Upper Limit	Max Permissible Swing
0.5	+0.02 (+0.1)	+0.75 (+3.0)	0.50 (2.0)
1.5	-0.20 (-0.8)	+0.95 (+3.8)	0.85 (3.4)
2.5	-0.90 (-3.6)	+1.25 (+5.0)	1.75 (7.0)
3.3	-1.75 (-7.0)	+1.65 (+6.6)	3.00 (12.0)

Table IIa: With Safety Pressure

Acceptable mask cavity pressure limits at various peak inspiratory flow values. These values are applicable between 0 and 38,000 ft (~11,600 m) when safety pressure is present. If assessed using a breathing simulator, a sinusoidal breathing waveform is to be used.

Flow (L/s)	Mask Cavity Pressure kPa (inch H_2O gauge)		
	Lower Limit	Upper Limit	Max Permissible Swing
3.3	-0.9 (-3.6)	+1.6 (+6.2)	Not applicable
5.3	-0.9 (-3.6)	+1.6 (+6.2)	Not applicable

Table IIb: Without safety pressure

Desirable mask cavity pressure limits at various peak inspiratory flow values for high performance aircraft applications. These values are applicable between 0 and 38,000 ft (~11,600 m) when safety pressure is present. If assessed using a breathing simulator, a breathing waveform simulating an anti-G straining pattern is to be used. A series of four breathing cycles is to be assessed. The anti-G straining pattern should comprise inspiratory and expiratory phases each lasting less than one second; following inspiration, there should be a respiratory pause of 3 seconds before expiration.

2.9 POSITIVE PRESSURE BREATHING FOR ALTITUDE (PBA)

Above 38,000 ft (~11,600 m) cabin altitude, the breathable gas shall be supplied at a sufficient positive pressure to mitigate hypoxia and permit emergency descent or other action by the pilot. When the breathable gas is supplied from a pure oxygen source, altitude positive pressure (PBA) shall begin at a cabin altitude of 38,000 ft (~11,600 m). If a lower concentration of oxygen is breathed, PBA shall begin at a lower altitude to achieve the partial pressure of oxygen required.

2.10 MASK CAVITY POSITIVE PRESSURE BETWEEN 38,000 FT (11,600 M) AND 50,000 FT (~15,200 M) IN THE ABSENCE OF COUNTER PRESSURE EQUIPMENT

Above 38,000 ft (~11,600 m) and in the absence of counter pressure equipment, the mask cavity pressure is to increase linearly with the fall of environmental pressure up to 50,000 ft (~15,200 m). If >99.5% oxygen is breathed, the mean mask cavity pressure (averaged over the ventilatory cycle) is to lie within the limits +0.1 to +1.0 kPa (0.4 to 4.0 inch H_2O gauge) at 40,000 ft (12,200 m) and 4.0 to 4.5 kPa (16 to 18 inch H_2O gauge) at 50,000 ft (~15,200 m). If a lower concentration of oxygen is delivered, then a higher PBA profile will be required to achieve the required partial pressure of oxygen. At these altitudes, the total change of mask cavity pressure during a ventilatory cycle is not to exceed 0.5 kPa (2.0 inch H_2O gauge) with peak inspiratory flow of 0.5 L/s or 1.0 kPa (4.0 inch H_2O gauge) at peak inspiratory flow of 1.8 L/s.

2.11 OPERATION OF THE ALTITUDE POSITIVE PRESSURE PRESS-TO-TEST FUNCTION IN THE ABSENCE OF COUNTER PRESSURE EQUIPMENT

Operation of the altitude positive pressure press-to-test function shall raise the mask cavity pressure to between 3.5 kPa (14.0 inch H_2O gauge) and 4.5 kPa (18.0 inch H_2O gauge). The total change of pressure during the respiratory cycle shall not exceed 0.75 kPa (3.0 inch H_2O gauge) when the peak inspiratory flows are 0.5 L/sec.

2.12 ALLOWABLE INCREASES OF MASK CAVITY PRESSURE

When the crewmember must continually wear the oxygen mask, the rise of mask cavity pressure induced by realistic head movements or throughout the maximum rate of climb of an aircraft shall not exceed 0.25 kPa (1.0 inch H_2O gauge). The rise of mask cavity pressure produced by either the oxygen regulator failing in the open position, or rapid or explosive decompression, up to an altitude of 50,000 ft (15,240 m), shall not exceed 5.5 kPa (22.1 inch H_2O gauge).

2.13 OSCILLATORY ACTIVITY

There shall be minimal oscillatory activity when the oxygen system is used by the crewmember. In the mask cavity the double amplitude (peak to peak) of any oscillation of pressure with a period of 0.25 s or longer shall not exceed 0.06 kPa (0.24 inch H_2O gauge).

2.14 ALARMS

Aircrew oxygen equipment shall be fitted with a device to warn the crewmembers when a component of the oxygen system is defective or inoperative. BOS activation should usually be shown visually.

2.15 COUNTER PRESSURE SUITS

2.15.1 Definitions

Pressure suits are categorized:

a. **Full Pressure Suit**. A full body garment that pneumatically pressurizes the whole of the body surface, to include the head.

b. **Partial Pressure Suit**. Protection offered by separate garments, each of which mechanically pressurizes only part of the body surface, eg a chest counter-pressure garment for respiratory protection used in combination with an anti-G garment to provide lower body counter-pressure.

2.15.2 Scope of use

The use of pressure suits at altitudes exceeding:

a. 45,000 ft (~13,720 m): partial pressure suit strongly recommended.

b. 50,000 ft (~15,240 m): partial pressure suit mandatory; full pressure suit to be considered.

c. 60,000 ft (~18,288 m): full pressure suit recommended.

d. Prolonged exposure: full pressure suit recommended.

2.15.3 Mode of Operation

Partial pressure and full pressure suits should conform to the following modes of operation:

a. **Respiratory counter-pressure**. To balance onset of PBA, an automatically pressurized respiratory (chest) counter pressure garment must be used above 50,000 ft (15,240 m) or if PBA pressure is greater than 4.5 kPa gauge (34 mmHg). Respiratory counter pressure provided by the garment should be no less than 0.86 times the mask cavity pressure. This difference isolates the garment from safety pressure and allows inflation only during periods of PBA or PBG.

b. **Lower body counter-pressure**. Automatically pressurized lower limb and abdominal counter-pressure should be used when PBA pressure is greater than 4.5 kPa gauge (34 mmHg) or with prolonged PBA. This function can be provided by an anti-G garment or similar suit which applies lower body counter-pressure: mask cavity pressure at a ratio of between 1:1 and 1.5:1. The lower body counter-pressure provides support to venous return to reduce the risk of pressure breathing syncope and also minimizes downward expansion of the diaphragm.

c. **Full body counter-pressure**. If a full pressure suit is used, it should maintain the pressure altitude inside the suit at 38,000 ft (11,600 m) or lower. The use of full pressure suits in aviation is usually for emergency use only; any requirement for prolonged full-body pressure suit use are outside the scope of this agreement.

2.15.4 Breathable Gas Supply

Under all operational conditions, the main and emergency gas supplies to both full and partial pressure suit designs must ensure that the pressure and breathing gas composition delivered to the aircrew are sufficient to meet the provision of paragraphs 2.3 and 2.9.

2.15.5 Compatibility

The use of counter-pressure garments must not adversely affect operational performance and shall not compromise:

a. Vision.

b. Hearing.

c. Speech.

d. Mobility (including the ability to check the 6 o'clock position).

e. Thermal comfort.

f. Emergency egress.

ANNEX A DEFINITIONS

The following definitions shall be employed when implementing the provisions of this document:

Ambient Temperature and Pressure Dry Gas (ATPD)	Volume of gas expressed as dry gas (water vapor removed) at the prevailing atmospheric pressure and temperature. The ambient pressure is the absolute pressure of the gas within the volume of interest. In this document, all the volumes and gas flows are expressed in ATPD units.
Operational Personnel	Crewmembers not in primary control of the aircraft.
Personnel Flying Aircraft	Crewmembers in primary control of the aircraft.
Transported Personnel	All personnel on board an aircraft but having no role for the performance or the safety of the aircraft itself.

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ANNEX B ACRONYMS

MSOGS	Molecular Sieve Oxygen Generating System
OBOGS	On Board Oxygen Generating System
PBA	Positive Pressure Breathing for Altitude
PBG	Pressure Breathing for G Protection

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