Federal Aviation Administration, DOT § 23.1449

§ 23.1449 Means for determining use of oxygen.

There must be a means to allow the crew to determine whether oxygen is

above 25,000 feet (MSL), the dispensing units must meet the following:

1. The dispensing units for passengers must be connected to an oxygen supply terminal and be immediately available to each occupant wherever seated.

2. The dispensing units for crewmembers must be automatically presented to each crewmember before the cabin pressure altitude exceeds 15,000 feet, or the units must be of the quick-donning type, connected to an oxygen supply terminal that is immediately available to crewmembers at their station.

3. If certification for operation above 18,000 feet (MSL) is requested, each oxygen dispensing unit must:
   (a) Be designed to operate at flight altitudes above 25,000 feet (MSL), the dispensing units must meet the following:
   (1) Be capable of being readily placed into position on the face of the user.
   (2) Be equipped with a suitable means to retain the unit in position on the face.
   (3) If radio equipment is installed, the flightcrew oxygen dispensing units must be designed to allow the use of that equipment and to allow communication with any other required crew member while at their assigned duty station.
   (b) If certification for operation up to and including 18,000 feet (MSL) is requested, each oxygen dispensing unit must:
      (1) Cover the nose and mouth of the user; or
      (2) Be a nasal cannula, in which case one oxygen dispensing unit covering both the nose and mouth of the user must be available. In addition, each nasal cannula or its connecting tubing must have permanently affixed—
         (i) A visible warning against smoking while in use;
         (ii) An illustration of the correct method of donning; and
         (iii) A visible warning against use with nasal obstructions or head colds with resultant nasal congestion.
   (c) If certification for operation above 18,000 feet (MSL) is requested, each oxygen dispensing unit must cover the nose and mouth of the user.
   (d) For a pressurized airplane designed to operate at flight altitudes

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§ 23.1450 Chemical oxygen generators.

(a) For the purpose of this section, a chemical oxygen generator is defined as a device which produces oxygen by chemical reaction.

(b) Each chemical oxygen generator must be designed and installed in accordance with the following requirements:

1. Surface temperature developed by the generator during operation may not create a hazard to the airplane or its occupants.

2. Means must be provided to relieve any internal pressure that may be hazardous.

(c) In addition to meeting the requirements in paragraph (b) of this section, each portable chemical oxygen generator that is capable of sustained operation by successive replacement of a generator element must be placarded to show:

1. The rate of oxygen flow, in liters per minute;

2. The duration of oxygen flow, in minutes, for the replaceable generator element; and

3. A warning that the replaceable generator element may be hot, unless the element construction is such that the surface temperature cannot exceed 100 °F.

§ 23.1451 Fire protection for oxygen equipment.

Oxygen equipment and lines must:

(a) Not be installed in any designated fire zones.

(b) Be protected from heat that may be generated in, or escape from, any designated fire zone.

(c) Be installed so that escaping oxygen cannot come in contact with and cause ignition of grease, fluid, or vapor accumulations that are present in normal operation or that may result from the failure or malfunction of any other system.

§ 23.1453 Protection of oxygen equipment from rupture.

(a) Each element of the oxygen system must have sufficient strength to withstand the maximum pressure and temperature, in combination with any externally applied loads arising from consideration of limit structural loads, that may be acting on that part of the system.

(b) Oxygen pressure sources and the lines between the source and the shut-off means must be:

1. Protected from unsafe temperatures; and

2. Located where the probability and hazard of rupture in a crash landing are minimized.

§ 23.1457 Cockpit voice recorders.

(a) Each cockpit voice recorder required by the operating rules of this chapter must be approved and must be installed so that it will record the following:

1. Voice communications transmitted from or received in the airplane by radio.

2. Voice communications of flight crewmembers on the flight deck.

3. Voice communications of flight crewmembers on the flight deck, using the airplane’s interphone system.

4. Voice or audio signals identifying navigation or approach aids introduced into a headset or speaker.

5. Voice communications of flight crewmembers using the passenger loudspeaker system, if there is such a system and if the fourth channel is available in accordance with the requirements of paragraph (c)(4)(ii) of this section.

6. If datalink communication equipment is installed, all datalink communications, using an approved data message set. Datalink messages must be recorded as the output signal from the communications unit that translates the signal into usable data.

(b) The recording requirements of paragraph (a)(2) of this section must be met by installing a cockpit-mounted area microphone, located in the best position for recording voice communications originating at the first and