Advance copy pending issuance of revised pages for FAR Parts 103, 121, 123 and 135.

Title 14—Aeronautics and Space

CHAPTER I—FEDERAL AVIATION ADMINISTRATION, DEPARTMENT OF TRANSPORTATION

[Docket No. 12169; Amdt. Nos. 103-22; 121-113; 123-5; and 135-40]

CARRIAGE OF OXYGEN FOR MEDICAL USE

Storage, Use, and Restriction in Aircraft Passenger Compartments

The purpose of these amendments to Parts 103, 121, and 135 of the Federal Aviation Regulations is to allow the carriage of oxygen for medical purposes, in addition to that already carried as supplemental and first-aid oxygen, in the passenger compartment of aircraft operated by the holders of a Part 121 or Part 135 certificate.

Interested persons have been afforded an opportunity to participate in the making of this amendment by a Notice of Proposed Rule Making (Notice 73-19) issued on June 7, 1973, and published in the FEDERAL REGISTER on June 18, 1973 (38 FR 15852). Due consideration has been given to all comments presented in response to the Notice. Except for minor editorial changes, and except as specifically discussed hereinafter, these amendments and the reasons therefor are the same as those in Notice No. 73-19.

The FAA received 30 public comments in response to Notice 73-19. Most of the comments generally favored the adoption of the proposed amendments. Some commentators recommended certain changes that are discussed hereinafter. Several commentators made suggestions that were not within the scope of the Notice, and, accordingly, those comments are not discussed, but will be retained by the FAA for consideration with regard to future rule-making proceedings.

A number of commentators asserted that allowing passengers to bring on board their own high pressure gaseous oxygen units, which are uncontrolled and could be contaminated with grease, oil, or other flammable materials, would create a potential for serious fire and explosion. One commentator, a manufacturer of oxygen dispensing equipment, stated that there is no way to ensure that these units have not been contaminated with grease or other flammable lubricants during maintenance or refilling. Another oxygen equipment manufacturer asserted that it is impossible for an airline operator, and sometimes even the owner, to know how a piece of equipment has been serviced, altered, or repaired, i.e. whether cleanliness has been observed in its filling, and whether it has been subjected to abuse, resulting in damage. In addition, several commentators, including the Air Transport Association (ATA), contended that it would be impractical to place on the operator the burden of determining the acceptability of equipment supplied by a passenger.

After consideration of these comments and further study, the FAA has concluded that the objections voiced by these commentators have merit. In order to avoid the problem of possible internal contamination the rule as adopted provides that no pressurized oxygen cylinder may be used unless it has been maintained in accordance with an FAA approved maintenance program by a Part 121 or Part 135 certificate holder since either its purchase new or its last hydrostatic test.

Moreover, in view of the standard of care in the operation of oxygen storage and dispensing equipment required by the rules adopted in this amendment, the FAA believes that the use of this equipment should be confined to aircraft operated by the holders of Part 121 or Part 135 certificates. In view of this, and since Part 123 certificate holders do not have approved maintenance programs, the rule as adopted amends Part 123 to specifically except new § 121.574 from those provisions of Part 121 which apply to the holder of a Part 123 operating certificate.

Several commentators inquired whether the proposed rule would apply to oxygen equipment dispensing gaseous oxygen that is stored in a liquid form or is generated at the time of use from the reaction of certain solid chemicals. The intent of the proposed regulations was to provide for the carriage by a passenger for a medical purpose of any form of oxygen storage and dispensing equipment, including both liquid units and chemical oxygen generators. New § 103.1(c)(6) makes it clear that Part 103 does not apply to any dangerous article used for the generation of oxygen when it is carried for medical use by a passenger in accordance with new § 121.574 or new § 135.114.

The FAA believes that the same problem of possible internal contamination exists with respect to liquid oxygen containers as it does with pressurized units, since the former are also subject to possible contamination during refilling. Accordingly, the rule as adopted requires that any liquid oxygen storage unit carried in the cabin of a passenger-carrying aircraft must have been maintained in accordance with an FAA approved maintenance program by a Part 121 or Part 135 certificate holder since its purchase new or since its last purging.

Containers used to store the chemicals used in chemical oxygen generators are not refillable and are not subject to the same internal contamination possibilities as liquid or pressurized units. However, when using any oxygen dispensing equipment, including a chemical oxygen generator, there is a danger of a flash fire if a flammable contaminant is present on any exterior surface. Moreover, damage to dispensing equipment due to mishandling during storage or servicing could result in malfunction of the equipment which could cause injury to a passenger or flight attendant. In view of this, the regulation, as adopted, requires that any equipment for the storage, generation, or dispensing of oxygen used by passengers must be furnished by the certificate holder and maintained in accordance with its FAA-approved maintenance program.

Notice 73-19 contained the proposed requirement that oxygen equipment used by passengers be either of an approved type or conform to the manufacturing, packaging, marking, labeling, and maintenance requirements of Parts 171, 172, and 173 of Title 49, except as necessary for the normal operation of the unit. Several commentators questioned the meaning of the word "approved." In accordance with the definition of "approved" in § 1.1 of Part 1 of the Federal Aviation Regulation, the word, as it is used in the notice and this amendment, means approval by the Administrator or the person to whom he delegates his authority for that approval.

With respect to the proposed alternative requirement that the equipment conform to the requirements of 49 CFR Parts 171, 172, and 173, the rule, as adopted, has been clarified by replacing the phrase "except as necessary for the normal operation of the unit" with a specific exception from the requirement of § 173.24(a)(1). That section requires that each package used for shipping hazardous materials be so designed and constructed that under conditions normally incident to transportation there will be no significant release of the hazardous materials to the environment. The FAA recognizes that a small amount of oxygen

(As published in the Federal Register 39 F.R. 42674 on December 6, 1974.)

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may be released into the environment during the time that a passenger is using a gaseous oxygen unit and that liquid oxygen systems continuously vent a small amount of oxygen. While the FAA does not consider the release of these amounts as either significant or a safety hazard, the exception has been provided to make it clear that this release is permissible.

The smoking prohibitions in §§ 121.574 (b) and 135.114(b), as adopted, provide that no person may smoke, and no certificate holder may allow any person to smoke, within 10 feet of oxygen storage and dispensing equipment carried in accordance with paragraphs (a) of those sections. The ATA suggested that the proposed smoking prohibition could be more easily administered if the phrase "within 10 feet" were changed to "in the row of seats in front, behind or across the aisle from" the row of seats in which the person using oxygen is seated. The FAA believes that the distance within which smoking is not permitted should be specific and not related to seat size and aisle width. However, for ease of administration, a certificate holder may choose to prohibit smoking within a specific seating area that it has determined will ensure, based on the specific seating configuration of the aircraft, that the 10-foot minimum separation is maintained.

The Air Line Pilots Association expressed the opinion that smoking should not be allowed anywhere in the cabin of the aircraft if oxygen dispensing equipment is in use. The FAA does not agree that smoking should be prohibited entirely in the passenger compartment, since it believes that, beyond 10 feet from the oxygen dispensing equipment, escaping oxygen is sufficiently dissipated into the surrounding air so as not to create any fire hazard.

Some commentators warned against smoking even when the equipment is not in operation, especially in the case of liquid oxygen systems which continuously vent oxygen even when not in use. The provision as adopted clearly prohibits smoking within the specified distance whether or not the equipment is being operated.

The ATA asserted that it would be an untenable burden on an operator to determine the amount of oxygen required to meet the medical needs of a passenger during a flight. In this connection, several commentators suggested that the proposed required physician's statement should specify the necessary flow rate and the duration of the need. In addition, some cautioned that the passenger's physician may think that pressurized aircraft are maintained at sea level pressure altitude, and would not ordinarily think to warn a patient on oxygen therapy of the need to increase flow during flight.

Upon further consideration, the FAA believes that, except in the case of "air ambulances", the passenger should provide the certificate holder with an accurate means of determining what quantity of oxygen could be needed during flight, so that the probability of an inflight medical emergency resulting from the exhaustion of the passenger's oxygen supply would be remote. Therefore, the regulation as adopted requires that the physician's statement of need specify the maximum quantity of oxygen needed each hour and the maximum flow rate needed for the pressure altitude corresponding to the pressure in the cabin of the airplane under normal operating conditions. Under the regulation as adopted, when such a physician's statement is required, the total quantity of oxygen carried must be equal to the maximum quantity of oxygen needed each hour, as specified in the physician's statement, multiplied by the number of hours used to compute the amount of required fuel. This will ensure that the amount of oxygen carried will be sufficient to meet the passenger's needs throughout the flight, including any possible delay.

One commentator, the coductor of an "air ambulance" service, contended that the proposed requirement that the passenger furnish a statement of need signed by a licensed physician could create extreme hardship for operators of air ambulance flights and their patient-passengers. It stated that, although oxygen therapy may not be required as a normal part of a patient's course of treatment and upon departure of the air ambulance flight the patient may be in a stable cardiopulmonary condition, the contingency of a cardiopulmonary emergency arising in flight must be anticipated, and also the need for oxygen must be anticipated when picking up a patient in remote areas. The FAA concurs in this comment, and, as adopted in this amendment, the requirement for a physician's statement does not apply to the carriage of oxygen in an airplane operated by the holder of a Part 121 or Part 135 certificate in which no passenger is carried other than a person who may have a medical need for oxygen during the flight, one relative or other interested person for each such passenger, and a medical attendant. Moreover, the carriage of a specific quantity of oxygen is not required, the amount being left to the judgment of the "air ambulance" operator.

A number of commentators suggested that 147 cubic inches water capacity is not a practical limit on the size of the oxygen cylinders to be carried, since limiting the size of oxygen cylinders as proposed could require the carriage of an unreasonable number of cylinders on flights of long duration. In light of the fact that under the regulation as adopted the oxygen storage and dispensing equipment will be furnished by the holder of a Part 121 or Part 135 certificate, the FAA believes that it is not necessary to limit the size of the equipment in order to ensure that the operator will be prepared to safely stow and secure it. Preparations can be made in advance of the passenger's boarding of the aircraft. Accordingly, the rule as adopted contains no limit on the size of oxygen cylinders that may be carried.

One commentator, a manufacturer and supplier of oxygen equipment, cautioned that the disconnecting or connecting of a dispensing device from a high pressure oxygen cylinder could result in a flash fire or explosion if the dispensing device or cylinder were to become contaminated in the process. After consideration of this problem, the FAA has concluded that the connecting or disconnecting of cylinders for the storage of gaseous oxygen should not be allowed while passengers are on board the airplane, and the rule as adopted prohibits this. Accordingly, whenever a certificate holder provides more than one gaseous oxygen cylinder for a flight, each cylinder will have to have its own dispensing device, or the cylinders will have to be interconnected in such a manner that no connecting or disconnecting will be necessary in flight.

Another commentator objected to the proposed requirement that each oxygen cylinder have an "oxygen cylinder gauge pressure" that does not exceed the rated cylinder pressure, because it seemed to him to suggest that a cylinder without its own pressure gauge might have to be checked with some type of test gauge which could cause a fire if contaminated. The intent of the proposed provision was not to require that the pressure of a cylinder not equipped with a pressure gauge be checked before being carried aboard the airplane when reliable information as to its actual pressure already exists. Accordingly, the provision as adopted has been clarified to require only that the pressure in any oxygen cylinder not exceed the rated cylinder pressure for that cylinder.

Two commentators sugested that the proposed requirement that the equipment be capable of providing a minimum mass flow of oxygen to the user of four liters per minute might conflict with the six liter per minute requirement contained in the Proposed Statement of Policy issued by the Food and Drug Administration (FDA) of the Department of Health, Education, and Welfare on February 29, 1972 (published in the FEDERAL REGISTER on March 16, 1972; 37 FR 5501). The FAA does not agree, and the requirement has been adopted as proposed.

The six liter per minute requirement in the FDA proposal would apply only to emergency oxygen administration units, which are sold over-the-counter without prescription. No minimum flow requirement was proposed for oxygen dispensing equipment for other medical oxygen deficiency applications, which are sold by prescription. However, under new §§ 121.574 and 135.114, all equipment provided would have to be capable of

providing a minimum mass flow of four liters per minute. If the oxygen equipment provided the passenger is an emergency oxygen administration unit within the meaning of FDA regulations, then the proposed FDA flow capability requirement of six liters per minute, if adopted, would also have to be complied with.

As stated in Notice 73-19, the purpose of the four liter per minute capability requirement is to enable the passenger to supply himself with the amount of oxygen needed in the event of an emergency cabin decompression, without having to switch to the aircraft oxygen system. Contrary to the belief of some commentators, this requirement does not prevent the passenger's physician from prescribing a flow of oxygen less than or more than four liters per minute, but merely applies to the capability of the equipment.

The ATA suggested that the proposed requirement that the pilot in command be advised when the oxygen equipment is in use be changed to require only notice of "its intended use during the flight", so that, in the case of a passenger who needs oxygen only intermittently, the pilot would not have to be distracted by repeatedly being advised the equipment is being used. The FAA agrees with this comment, and, accordingly, the requirement as adopted has been changed to conform to this suggestion.

In view of the fact that there is an immediate need for the use of oxygen equipment, other than supplemental or first-aid oxygen, in the passenger compartments of aircraft operated by the holders of Part 121 and Part 135 operating certificates, I find that good cause exists for making these amendments effective on less than 30 days notice.

(Secs. 313(a), 601(a), and 902(h) of the Federal Aviation Act of 1958; (49 U.S.C. 1354(a), 1421(a), and 1472(h)). Sec. 6(c) of the Department of Transportation Act; (49 U.S.C. 1655(c)))

In consideration of the foregoing, and for the reasons stated in Notice No. 73-19, Parts 103, 121, 123, and 135 of the Federal Aviation Regulations are amended, effective December 9, 1974, as follows:

PART 103—TRANSPORTATION OF DANGEROUS ARTICLES AND MAGNETIZED MATERIALS

1. By amending paragraph (c) of § 103.1 by deleting the period at the end of subparagraph (5) and substituting therefor the phrase "; and" and by adding a new subparagraph (6) to read as follows:

§ 103.1 Applicability.

* * * * *

(c) This part does not apply to—

* * * * *

(6) Oxygen, or any dangerous article used for the generation of oxygen, carried for medical use by a passenger in accordance with § 121.574 or § 135.114 of this chapter.

PART 121—CERTIFICATION AND OPERATIONS: DOMESTIC, FLAG, AND SUPPLEMENTAL AIR CARRIERS AND COMMERCIAL OPERATORS OF LARGE AIRCRAFTS

2. By adding a new § 121.574 to Part 121 to read as follows:

§ 121.574 Oxygen for medical use by passengers.

(a) A certificate holder may allow a passenger to carry and operate equipment for the storage, generation, or dispensing of oxygen when the following conditions are met:

(1) The equipment is—

(i) Furnished by the certificate holder;

(ii) Of an approved type or is in conformity with the manufacturing, packaging, marking, labeling, and maintenance requirements of 49 CFR Parts 171, 172, and 173, except § 173.24(a)(1);

(iii) Maintained by the certificate holder in accordance with an approved maintenance program;

(iv) Free of flammable contaminants on all exterior surfaces;

(v) Capable of providing a minimum mass flow of oxygen to the user of four liters per minute;

(vi) Constructed so that all valves, fittings, and gauges are protected from damage; and

(vii) Appropriately secured.

(2) When the oxygen is stored in the form of a liquid, the equipment has been under the certificate holder's approved maintenance program since its purchase new or since the storage container was last purged.

(3) When the oxygen is stored in the form of a compressed gas as defined in 49 CFR § 173.300(a)—

(i) The equipment has been under the certificate holder's approved maintenance program since its purchase new or since the last hydrostatic test of the storage cylinder; and

(ii) The pressure in any oxygen cylinder does not exceed the rated cylinder pressure.

(4) Each person using the equipment has a medical need to use it evidenced by a written statement signed by a licensed physician which specifies the maximum quantity of oxygen needed each hour and the maximum flow rate needed for the pressure altitude corresponding to the pressure in the cabin of the airplane under normal operating conditions. This subparagraph does not apply to the carriage of oxygen in an airplane in which the only passengers carried are persons who may have a medical need for oxygen during flight, no more than one relative or other interested person for each of those persons, and medical attendants.

(5) When a physician's statement is required by subparagraph (4) of this paragraph, the total quantity of oxygen carried is equal to the maximum quantity of oxygen needed each hour, as specified in the physician's statement, multiplied by the number of hours used to compute the amount of airplane fuel required by this part.

(6) The pilot in command is advised when the equipment is on board, and when it is intended to be used.

(7) The equipment is stowed, and each person using the equipment is seated, so as not to restrict access to or use of any required emergency, or regular exit or of the aisle in the passenger compartment.

(b) No person may, and no certificate holder may allow any person to, smoke within 10 feet of oxygen storage and dispensing equipment carried in accordance with paragraph (a) of this section.

(c) No certificate holder may allow any person to connect or disconnect oxygen dispensing equipment, to or from a gaseous oxygen cylinder while any passenger is aboard the airplane.

(d) The requirements of this section do not apply to the carriage of supplemental or first-aid oxygen and related equipment required by this chapter.

PART 123—CERTIFICATION AND OPERATIONS: AIR TRAVEL CLUBS USING LARGE AIRPLANES

3. By amending paragraph (k) of § 123.27 by deleting the phrase "and 121.548" and substituting therefor the phrase ", 121.548, and 121.574."

PART 135—AIR TAXI OPERATORS AND COMMERCIAL OPERATORS OF SMALL AIRCRAFT

4. By adding a new § 135.114 to Part 135 to read as follows:

§ 135.114 Oxygen for medical use by passengers.

(a) A certificate holder may allow a passenger to carry and operate equipment for the storage, generation, or dispensing of oxygen when the following conditions are met:

(1) The equipment is—

(i) Furnished by the certificate holder;

(ii) Of an approved type or is in conformity with the manufacturing, packaging, marking, labeling, and maintenance requirements of 49 CFR Parts 171, 172, and 173, except § 173.24(a)(1);

(iii) Maintained by the certificate holder in accordance with an approved maintenance program;

(iv) Free of flammable contaminants on all exterior surfaces;

(v) Capable of providing a minimum mass flow of oxygen to the user of four liters per minute;

(vi) Constructed so that all valves, fittings, and gauges are protected from damage; and

(vii) Appropriately secured.

(2) When the oxygen is stored in the form of a liquid, the equipment has been under the certificate holder's approved maintenance program since its purchase new or since the storage container was last purged.

(3) When the oxygen is stored in the form of a compressed gas as defined in 49 CFR § 173.300(a)—

(i) The equipment has been under the certificate holder's approved maintenance program since its purchase new or since the last hydrostatic test of the storage cylinder; and

(ii) The pressure in any oxygen cylinder does not exceed the rated cylinder pressure.

(4) Each person using the equipment has a medical need to use it evidenced by a written statement signed by a licensed physician which specifies the maximum quantity of oxygen needed each hour and the maximum flow rate needed for the pressure altitude corresponding to the pressure in the cabin of the airplane under normal operating conditions. This subparagraph does not apply to the carriage of oxygen in an airplane in which the only passengers carried are persons who may have a medical need for oxygen during flight, no more than one relative or other interested person for each of those persons, and medical attendants.

(5) When a physician's statement is required by subparagraph (4) of this paragraph, the total quantity of oxygen carried is equal to the maximum quantity of oxygen needed each hour, as specified in the physician's statement, multiplied by the number of hours used to compute the amount of airplane fuel required by this part.

(6) The pilot in command is advised when the equipment is on board, and when it is intended to be used.

(7) The equipment is stowed, and each person using the equipment is seated, so as not to restrict access to or use of any required emergency or regular exit, or of the aisle in the passenger compartment.

(b) No person may, and no certificate holder may allow any person to, smoke within 10 feet of oxygen storage and dispensing equipment carried in accordance with paragraph (a) of this section.

(c) No certificate holder may allow any person to connect or disconnect oxygen dispensing equipment, to or from a gaseous oxygen cylinder while any passenger is aboard the airplane.

(d) The requirements of this section do not apply to the carriage of supplemental or first-aid oxygen and related equipment required by this chapter.

Issued in Washington, D.C., on November 27, 1974.

ALEXANDER P. BUTTERFIELD,
Administrator.

[FR Doc.74-28479 Filed 12-5-74;8:45 am]