

## DEPARTMENT OF TRANSPORTATION

## Federal Aviation Administration

## 14 CFR Part 121

[Docket No. 24792; Amdt. 121-212]

## Protective Breathing Equipment

**AGENCY:** Federal Aviation Administration (FAA), DOT.

**ACTION:** Final rule and request for comments.

**SUMMARY:** This amendment revises the regulations applicable to protective breathing equipment (PBE) with three changes. (1) It extends the compliance date for installing PBE for the use of flight crewmembers while on flight deck duty. This amendment is necessary because of a misunderstanding of the final rule due to a lack of FAA guidance material. By establishing this compliance date, certificate holders will not be penalized for this misunderstanding and for the current unavailability of sufficient numbers of PBE units and components.

(2) The FAA also amends the PBE regulations to codify, for convenient public reference, a finding by the Administrator that nonpressurized airplanes must be equipped with PBE when operated in air carrier service and to establish dates by which certificate holders who operate nonpressurized airplanes must comply with the PBE requirements. Operators of nonpressurized airplanes that must be retrofitted with a PBE fixed breathing gas supply for flight crewmembers on flight deck duty are being allowed an extended compliance period.

(3) Finally, this amendment postpones the date by which certificate holders who operate all-cargo airplanes would have to install portable PBE units for use in combatting in-flight fires in Class A, B, or E cargo compartments. Certificate holders who operate all-cargo airplanes have raised questions concerning the requirement. To allow time for the FAA to reconsider and clarify the requirements for this group of operators, the effective date for installation of PBE units for use in these cargo compartments is being postponed.

**EFFECTIVE DATE:** February 15, 1990. Comments must be received by April 16, 1990.

**ADDRESSES:** Comments on this amendment may be mailed in duplicate or delivered to: Federal Aviation Administration, Office of Chief Counsel, Attention: Rules Docket (AGC-204), Docket No. 24792, 800 Independence Avenue, Washington, DC 20591.

**FOR FURTHER INFORMATION CONTACT:**

Gary E. Davis, Project Development Branch, AFS-240, Air Transportation Division, Office of Flight Standards, Federal Aviation Administration, 800 Independence Avenue SW., Washington, DC 20591, Telephone (202) 267-8096.

**SUPPLEMENTARY INFORMATION:** The requirements for PBE are prescribed in § 121.337 of the Federal Aviation Regulations (FAR). There are two categories of PBE required. The first category is equipment for use by flight crewmembers in the cockpit. This unit may have either a fixed or portable breathing gas supply and must be conveniently located on the flight deck for easy access by each required flight crewmember at his or her assigned duty station. The other category of PBE is a portable unit which is required to provide any crewmember protection while investigating, accessing, and combatting an in-flight fire. The current standards for both categories of PBE are set forth in Amendment No. 121-193, which was issued May 26, 1987, and effective July 6, 1987. PBE units for flight crewmembers on flight deck duty must meet the standards of Technical Standard Order (TSO) C99 or equivalent standards; portable PBE units for use by crewmembers in combatting a fire must meet the standards of TSO C116 or equivalent standards.

**PBE Units for Use by Flight Crewmembers on Flight Deck Duty**

The FAA states in the preamble to Amendment No. 121-193 that TSO-C99 was first issued in June 1983. Prior to the issuance of TSO-C99, there were no specific standards for approval of PBE beyond those contained in the operation and certification rules. After issuing TSO-C99, the FAA tested a number of oxygen mask-smoke goggle combinations currently in use in airplanes required to be equipped in accordance with § 121.337 of the FAR. These tests showed that many of these PBE units permitted contaminant concentration levels that exceeded the performance levels prescribed in TSO-C99. The FAA determined that certificate holders using these units were required to replace those units with acceptable equipment that met TSO-C99 approval guidelines.

The FAA stated in the preamble to Amendment No. 121-193 that the FAR "now require all certificate holders to furnish approved PBE for their flight crewmembers' use." That statement, however, was misleading in that it suggested to some that only newly-installed equipment must be approved. However, it was intended to mean that

all PBE units, including those units already in use, that did not meet the approval guidelines of TSO-C99 were not "approved", and would have to be replaced. Moreover, a deferred compliance date for this equipment upgrade was not provided; therefore, the compliance date was the effective date of the amendment, July 6, 1987. Although the amendment modified the standards for "approved" PBE units, the FAA did not provide guidance or notification to certificate holders that PBE units for use by flight crewmembers while on flight deck duty must be modified or updated by the effective date of Amendment No. 121-193. Therefore, many certificate holders have not installed acceptable PBE units for the use of flight crews on flight deck duty.

The FAA believed that certificate holders had replaced the older flight deck PBE units with equipment meeting the approval requirements of TSO-C99, or their equivalent, as of the effective date of Amendment No. 121-193, July 6, 1987. Recently, however, the FAA was advised that many certificate holders have not installed acceptable PBE units for the use of flight crewmembers on flight deck duty. By letter of July 27, 1989, the Air Transport Association petitioned the FAA on behalf of the air carriers operating under part 121 of the FAR for an exemption from what those carriers state they now recognize as a requirement for upgrading PBE units currently installed on the flight deck of their airplanes for use by flight crewmembers at their assigned stations. The justification provided by the petitioner regarding the need for the exemption was based on the unavailability of parts and components needed to upgrade the PBE units in question to meet the TSO-C99 approval requirements.

The ATA recognizes that the original compliance date is past, but states that, unless a new compliance date is established, several air carriers will have to conduct special out-of-cycle installation of PBE. Such programs would require air carriers to remove a large number of aircraft from public service. The ATA also posits that other air carriers will not achieve immediate compliance under any circumstances, since existing equipment must be replaced or modified, and manufacturers cannot supply such large numbers of replacement parts and equipment on such short notice. In order to provide enough time for the manufacture and distribution of adequate numbers of replacement parts and modified PBE units for flight crewmembers on flight deck duty, the ATA has requested that

the FAA establish a final compliance date of July 31, 1990 for the upgrade or retrofit of such PBE units.

The FAA finds that, due to a misunderstanding of the rule and the lack of available PBE units and replacement parts, the compliance period requested by ATA is justified and in the public interest. Therefore, the FAA is amending § 121.337(f), redesignated as § 121.337(d), to provide a compliance date of July 31, 1990, for the installation of PBE for the use of flight crewmembers at their assigned duty stations.

The compliance date for portable PBE units for combatting inflight fires in passenger compartments as established by Amendment No. 121-204, issued May 17, 1989, is not changed. That compliance date is January 31, 1990.

#### **PBE Units for Nonpressurized Cabin Airplanes**

Amendment No. 121-193, effective July 6, 1987, provided that the PBE requirements for pressurized cabin airplanes would also apply to certificate holders operating nonpressurized cabin airplanes subject to the provisions of § 121.337(c) if "the Administrator finds that it is possible to obtain a dangerous concentration of smoke or carbon dioxide or other harmful gases in the flight deck area." On February 6, 1989, the Administrator made that finding. This decision is contained in a February 6, 1989, memorandum from the Manager, Air Transportation Division to all FAA Regional Flight Standards Division Managers, the subject of which is "Protective Breathing Equipment Requirements for Unpressurized part 121 Aircraft". The contents of the memorandum are as follows:

This memorandum provides the agency's position regarding the requirement for Protective Breathing Equipment (PBE) on unpressurized part 121 aircraft.

Recent inquiries have requested information on whether the Shorts SD3-60, a nonpressurized part 25 aircraft operated under part 121, must meet the PBE requirements specified in FAR 121.377 (a) and (b).

Whether an aircraft is pressurized or not, it is possible to experience fire, smoke, or other harmful gases in the aircraft. There have been numerous service difficulty reports concerning smoke on the flight deck for a variety of aircraft and a variety of reasons. It would be superfluous to elaborate on the myriad possibilities that could produce fire, smoke or gases in an aircraft.

The materials used for construction of the Shorts SD3-60 flight deck and passenger cabin interiors are not unlike materials used by other part 121 aircraft. This similar material can produce heavy smoke and toxic gases in the event of a fire. The possibility of a fire, therefore, presents a vulnerability to

toxic fumes which could incapacitate a flight crew member.

The Shorts aircraft pose another condition in that all the fuel tanks are located in the ceiling of the fuselage above the passenger compartment. There have been past instances when fuel has seeped into the overhead bins causing toxic gases in the passenger compartment. Although an Airworthiness Directive was issued addressing the problem, it does not preclude the possibility that other fuel leaks could occur.

The analysis of the hazard by the Long Beach Aircraft Evaluation Group has, therefore, prompted a decision to require the Shorts SD3-60 to comply with the PBE rule.

In addition, after a careful evaluation of past experience it has been concluded that the lives that may be saved justify the installation of Protective Breathing Equipment on all unpressurized aircraft operated under part 121.

As a result of a survey, the FAA has determined that all nonpressurized airplanes except the SD3-60 have a built-in source of oxygen that allows the installation of PBE equipment for flight crewmembers on flight deck duty. The SD3-60 was type certified through a bilateral agreement with the United Kingdom without a source of oxygen for use by the flight crew. After the determination by the Administrator that PBE units must be installed on all nonpressurized airplanes to be operated under part 121 of the FAR, the Regional Aircraft Association met with FAR officials and requested reconsideration of the Administrator's finding that PBE units be installed in the cockpit for flight crewmembers in the SD3-60 airplane. RAA notes that the SD3-60 airplane was type-certificated without built-in oxygen equipment and has been operated in the United States during the past 6 years without encountering any known problems with toxic gas concentrations in the cockpit. Installing PBE for use by the flight crew would require operators of the SD3-60 to retrofit these airplanes with oxygen systems.

The FAA has reconsidered its position and has determined that both categories of PBE units must be installed in the SD3-60 airplane. However, in order to give certificate holders operating the SD3-60 airplane ample time for the extensive oxygen system retrofit that appears to be needed and to obtain and install PBE units, the FAA here establishes a final compliance date of February 18, 1992 for the installation of PBE for use by the flight crew while on flight deck duty. As stated earlier, the compliance date for installation of portable PBE for combatting in-flight fires remains January 31, 1990.

To codify the Administrator's finding, and thereby provide a convenient source of reference for it, current

§ 121.337 (c) and (d) are removed and paragraph (b) is revised to specify that the equipment, breathing gas, and communications requirements of this paragraph apply to nonpressurized airplanes as well. However, in order to give certificate holders who operate the Shorts SD3-60 airplane time to install a breathing gas system in the airplane, paragraph (f) is changed to permit a delayed compliance date for PBE units for the use of the flight crew while on flight deck duty. The revision will appear as new paragraph (d).

Current paragraph (d) requires that all operators of nonpressurized airplanes that have a built-in carbon dioxide fire extinguisher system in a fuselage compartment shall provide PBE for the flight crew except where (1) not more than 5 pounds of carbon dioxide would be discharged into any compartment in accordance with established fire control procedures, or (2) the carbon dioxide concentration at each flight crewmember station is found to be less than 3 percent by volume. Thus, there always has been a category of nonpressurized airplanes required to have PBE installed, notwithstanding the exemption of nonpressurized airplanes in paragraph (c). Although current paragraph (d) excludes some nonpressurized airplanes with carbon dioxide fire extinguisher systems from the PBE requirements; i.e., (1) and (2) listed above, the FAA believes that no such fire extinguisher systems are in use today on board airplanes that operate under part 121. However, since the Administrator extended the finding that PBE is required in all nonpressurized airplanes, even if such an airplane is in use it is required to have PBE units. Therefore, due to the obsolescence of the above two exceptions to current paragraph (d) and the Administrator's finding that requires all operators of nonpressurized airplanes to install PBE, current paragraph (d) is removed from this section as a conforming change.

#### **PBE Units for Combatting In-flight Fires: All-Cargo Airplanes**

Section 121.337(b) provides, in pertinent part, that one PBE unit with a portable breathing gas supply meeting the requirements of this section must be easily accessible and conveniently located for immediate use by crewmembers in combatting fires in each Class A, B, and E cargo compartment (as defined in § 25.857) that is accessible to crewmembers during flight. Representatives of several of the all-cargo air carriers have pointed out to the FAA that it is impracticable to locate a PBE unit in a Class E cargo

compartment when the flight crewmembers of these carriers are either specifically trained not to enter the cargo compartment in a fire or access is practically impossible. These carriers also point out that in the extremely rare situation when a crewmember would have to enter a burning cargo area, the crewmember, for reasons of safety, should don the PBE equipment before, rather than after, entering the cargo compartment. Thus, to have the PBE unit closed in the Class E cargo compartment of an all-cargo airplane rather than available to a crewmember before that crewmember enters the cargo compartment could pose a safety hazard.

As an alternative to the current requirements of the rule, these air carriers propose to have PBE units that meet the approval standards of TSO-C99, or equivalent standards, installed for each flight crewmember and additional seat in the flight deck area, and to also install one portable PBE unit that meets the approval standards of TSO-C116, or their equivalent, available in the cockpit for the unlikely situation in which a crewmember might have to combat an in-flight fire. This would differ from the requirements of § 121.337(b)(9)(i) in that additional PBE units, i.e., one for use in each cargo compartment, would not be installed.

The FAA believes that there is no safety hazard presented by the current PBE requirements for all-cargo airplanes. Section 121.337(b)(9) requires that PBE units be easily accessible and conveniently located "for use in" each cargo compartment; this does not limit the location of each PBE unit to only the area of the compartment. However, the FAA also finds that the arguments presented by these carriers may have merit in terms of the redundancy of having multiple portable PBE units available. The FAA believes that the particular situation of the all-cargo certificate holders deserves further consideration through the rulemaking process, i.e., by notice and public procedure, to determine appropriate PBE requirements for all-cargo airplanes. Because the final compliance date for furnishing these portable PBE units was revised in Amendment 121-204 to January 31, 1990, compliance with those PBE requirements by that date would mean that these all-cargo certificate holders would have to purchase and install PBE units which the FAA may later determine are not needed. Therefore, the FAA finds that it is in the public interest to postpone the compliance date for these certificate holders for 2 years. Thus, the

compliance date for those certificate holders who operate all-cargo airplanes that are subject to the portable PBE requirements of § 121.337 (b)(9)(i) is postponed until February 18, 1992. The FAA has determined that postponing the compliance date for this group of operators will not have a detrimental effect on safety because, in accordance with § 121.337(b)(8) and (b)(9)(iii), each flight crewmember on flight deck duty must have a PBE unit and one portable PBE unit must be located on the flight deck for use by flight crewmembers for combatting an in-flight fire.

Interested persons are invited to submit such comments as they may desire regarding this amendment and PBE units for cargo compartments. Communications should identify the docket number and be submitted in duplicate to the address above. All communications received on or before the close of the comment period will be considered by the Administrator, and this amendment may be changed in light of the comments received. All comments will be available, both before and after the closing date for comments, in the Rules Docket for examination by interested parties.

Based on the previous discussion, the FAA finds that a compliance date for the installation of PBE units in pressurized and nonpressurized cabin airplanes for flight crewmembers while on flight deck duty should be established as July 31, 1990. However, operators of nonpressurized airplanes that must be retrofitted to provide a PBE breathing gas supply for flight crewmembers on flight deck duty will have an extended compliance date of February 18, 1992. In addition, the final compliance period for installing portable PBE as required by § 121.337(b)(9)(i) for use in combatting inflight fires for certificate holders operating all-cargo airplanes is extended until February 18, 1992.

#### **Good Cause Justification for Immediate Adoption**

This amendment is being adopted without notice and public comment procedure because delay could have a significant impact on passenger and cargo service. In the first case, the compliance problem is a result of a misunderstanding of the rule due to a lack of FAA guidance to the industry and the omission of an explicit compliance date for installing and upgrading PBE units for flight crewmembers on flight deck duty. Even though the PBE requirements are now understood, sufficient time is not available to manufacture the quantity of PBE units needed by certificate holders

to correct industry-wide noncompliance. Noncompliance, even for a short period of time, would require air carriers to remove all noncomplying airplanes from service until the final rule could be issued. To avoid widespread disruption of passenger and cargo services, the FAA finds that notice and public comment under these circumstances are impracticable.

In the second case, codification of the Administrator's finding requires an amendment that will delete obsolete references to nonpressurized airplanes in the rule. Therefore, this is a clarifying amendment and notice and public comment are unnecessary.

In the last case, Part 121 all-cargo operators have raised questions concerning the requirement for airplanes used in all-cargo operations to have multiple portable PBE units on board. The FAA may determine that the requirement for multiple portable PBE units on-board all-cargo airplanes is unnecessary. Therefore, the amendment will temporarily relieve these operators from purchasing and installing multiple PBE units until the FAA determines whether to delete the requirement; thus, notice and public comment are unnecessary and contrary to the public interest.

Accordingly, for the reasons discussed above, I find that notice and public comment procedures are impracticable and contrary to the public interest. In addition, since this amendment relieves a restriction, I find it may be made effective in less than 30 days.

#### **Trade Impact Statement**

The FAA finds that this amendment will have no impact on international trade.

#### **Economic Assessment**

Because the amendment does not impose any cost to operators, the impact of the delay in compliance is expected to be minimal. Accordingly, a full Regulatory Evaluation is not warranted.

#### **Federalism Implications**

The regulation adopted herein will not have substantial direct effects on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government. Therefore, in accordance with Executive Order 12612, it is determined that this amendment would not have federalism implications requiring the preparation of a Federalism Assessment.

**Conclusion**

This amendment will not have an economic effect on the public. The delayed and newly established compliance dates will allow air carriers to keep non-complying airplanes operating so that passenger and cargo service will not be disrupted. Therefore, for the reasons discussed above, the FAA has determined that this amendment involves a regulation which is not major under Executive Order 12291 but is significant under the Department of Transportation Regulatory Policies and Procedures (44 FR 11034; February 26, 1979). Since no small entities would be affected by the rule, it is certified that under the criteria of the Regulatory Flexibility Act the rule will not have a significant economic impact, positive or negative, on a substantial number of small entities. Because of the absence of any costs attendant with the amendment, the FAA has determined that the expected impact of the amendment is so minimal that it does not warrant a full regulatory evaluation.

**List of Subjects in 14 CFR Part 121**

Air safety, Air transportation, Aviation safety, Drug abuse, Narcotics, Safety, Transportation.

**Adoption of the Amendment**

Accordingly, part 121 of the Federal Aviation Regulations (14 CFR part 121) is amended as follows:

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

1. The authority citation for part 121 continues to read as follows:

**Authority:** 49 U.S.C. 1354(a), 1355, 1421, 1422, and 1427; 49 U.S.C. 106(g) (revised, Pub. L. 97-449, January 12, 1983).

2. Section 121.337 is amended by revising the heading of paragraph (b); by removing paragraphs (c) and (d); by redesignating paragraphs (e) and (f) as paragraphs (c) and (d); and by revising newly redesignated paragraph (d) to read as follows:

**§ 121.337 Protective breathing equipment.**

\* \* \* \* \*

(b) *Pressurized and nonpressurized cabin airplanes.*

\* \* \* \* \*

(d) *Compliance dates.* (1) Notwithstanding the provisions of paragraphs (a) and (b) of this section, the final compliance date for furnishing PBE for use in combatting in-flight fires aboard pressurized and nonpressurized airplanes is January 31, 1990, except that for all-cargo airplanes subject to the requirements of paragraph (b)(9)(i) of this section the compliance date is February 18, 1992.

(2) Notwithstanding the provisions of paragraphs (a) and (b) of this section, the compliance date for furnishing PBE for use by flight crewmembers while on flight deck duty on pressurized and nonpressurized airplanes is July 31, 1990, except that for nonpressurized cabin airplanes that must be retrofitted with a fixed breathing gas supply for PBE, the compliance date is February 18, 1992.

Issued in Washington, DC, on February 9, 1990.

**James B. Busey,**

*Administrator.*

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