

DEPARTMENT OF TRANSPORTATION**Federal Aviation Administration****14 CFR Part 121**

[Docket No. 27219; Amendment No. 121-261]

RIN 2120-AD74

Protective Breathing Equipment

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final rule.

SUMMARY: This final rule amends the regulations governing portable protective breathing equipment (PBE) required for crewmembers' use in combating in-flight fires. It is intended to codify exemptions currently in place, clarify ambiguities in the existing regulations, and allow air carriers added flexibility with compliance while maintaining or increasing safety.

EFFECTIVE DATE: September 25, 1996.

FOR FURTHER INFORMATION CONTACT:

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SUPPLEMENTARY INFORMATION:

Background

The PBE requirements that specifically apply to part 121 certificate holders are found in § 121.337 of the regulations. The current form of this regulation was established by Amendment No. 121-193 (52 FR 20950; June 3, 1987) and Amendment No. 121-212 (55 FR 5548; February 15, 1990).

The PBE required by § 121.337 fall into two categories. The first category consists of PBE for use by flight crewmembers (i.e., pilots, flight engineers, and flight navigators) at their assigned duty stations on the flight deck. See § 121.337(b)(8).

These units may be either fixed or portable; they must be easily accessible for immediate use by the flight crewmembers at their duty stations. This type of PBE must be approved. Technical Standards Orders (TSO) C-99 and TSO C-116 provide standards that may be used to produce approved PBEs, as applicable.

The second category of required PBE, the subject of this final rule, consists of portable PBE units that are intended for use by all crewmembers (i.e., not just pilots, flight engineers, and flight navigators, but flight attendants also) when they investigate and combat fires throughout the aircraft.

See § 121.337(b)(9). This type of PBE must be portable and must be approved. TSO C-116 provide standards that may be used to produce such PBEs.

This final rule deals with both cargo-only operations and passenger-carrying operations. In regard to cargo-only operations, the regulation will not require a PBE unit in Class A, B, or E compartments.

As for passenger-carrying operations, the FAA has determined that it is not necessary to locate a portable PBE in Class A, B, or E cargo compartments. The rule will require one PBE for every hand fire extinguisher required under § 121.309.

Cargo-Only Compartments

Section 121.337(b)(9)(i) requires that one PBE unit with a portable breathing gas supply be easily accessible and conveniently located for immediate use in each Class A, B, and E cargo compartment that is accessible to crewmembers in the compartment during flight. Class E cargo compartments are defined by § 25.857 as compartments on airplanes used only for the carriage of cargo, and can only be found in cargo-only or combination cargo-passenger (Combi) aircraft. Class A and B cargo compartments may be found in cargo-only, Combi, and passenger-carrying aircraft.

Currently, § 121.337(b)(9)(i) calls for a separate PBE unit for each Class A, B, and E cargo compartment; thus, if there is a total of seven such compartments, then seven portable PBE units are required under the current provision. This provision has not been implemented, however. On behalf of six member airlines operating cargo-only aircraft, the Air Transport Association (ATA) petitioned the FAA on August 14, 1989, for a permanent exemption from § 121.337(b)(9)(i). In its petition, ATA argued that the current requirement to install a portable PBE unit for each Class E cargo compartment should be eliminated.

In support of its petition, ATA argued that Class E cargo compartments are generally inaccessible in flight and that established crewmember procedures are to land the aircraft as soon as possible and to combat a fire in the compartment only as a last resort. According to ATA, the portable PBE unit on the flight deck, as required by § 121.337(b)(9)(iii), would suffice in the unlikely event that a crewmember would have to combat an in-flight fire.

The FAA concluded that the PBE requirements for cargo-only airplanes deserved further consideration through the rulemaking process. The agency therefore extended the compliance date

for certificate holders operating cargo-only airplanes to install portable PBE units for use in Class A, B, or E cargo compartments from January 31, 1990, to February 18, 1992,¹ and invited interested persons to submit comments on this subject to Docket No. 24792. See Amendment No. 121-212 (55 FR 5548; February 15, 1990), which became effective on February 15, 1990.

The Air Line Pilots Association (ALPA), Airborne Express, and Mid-Pacific Air Corporation responded to the request for public comment set forth in Amendment No. 121-212. ALPA took the position that PBE should be conveniently located adjacent to each cargo compartment. Airborne Express and the Mid-Pacific Air Corporation stated that the portable PBE unit already required on the flight deck by § 121.337(b)(9)(iii) was adequate for investigating and combating fires in Class E cargo compartments.

Subsequently, the FAA published a notice of proposed rulemaking (NPRM), Notice No. 93-2 (58 FR 16584), in which the agency proposed to eliminate the multiple units required by § 121.337(b)(9)(i) and proposed instead to require that for cargo-only operations one portable PBE unit be located in a position approved by the FAA as appropriate to each airplane and the specific type of operation being conducted. The intent was for the PBE to be easily accessible and conveniently located for use in the cargo area. The FAA stated that it believed that safety requires that an additional PBE unit be available as a backup unit in the cargo area.

However, based on comments received, the FAA published a supplemental proposal on April 11, 1994, stating that it would broaden its consideration of the number of portable PBE units required in the cargo area of cargo-only aircraft. In a supplemental notice of proposed rulemaking, Notice No. 94-7 (59 FR 17166), the FAA stated that it would consider whether the portable PBE unit, that is currently required for the flight deck under § 121.337(b)(9)(iii), is sufficient for use both on the flight deck and in the cargo area, without having another one required under § 121.337(b)(9)(i). Comments to both the NPRM and SNPRM are discussed in the DISCUSSION OF COMMENTS section of this final rule.

¹ Exemption No. 5407, issued to Air Transport Association on February 18, 1992, further extended the date of compliance for cargo only carriers until February 18, 1993. Exemption No. 5407A extended the date of compliance until February 18, 1994; Exemption No. 5407B extended the date of compliance until February 18, 1996.

Passenger Compartments

This final rule also addresses several issues concerning PBE requirements for passenger compartments. The first issue involves the number of portable PBE units that are required in passenger compartments of transport category airplanes. In its current form, § 121.337(b)(9)(iv) requires a portable PBE unit to be located "in each passenger compartment, one located within 3 feet of each hand fire extinguisher required by § 121.309 of this part * * *." Section 121.309(c) specifies the number and location of fire extinguishers in passenger compartments, which increase with the seating capacity of the airplane. At least one air carrier has interpreted § 121.337(b)(9)(iv) to mean that one portable PBE would satisfy the requirement for 2 required hand fire extinguishers as long as both of those fire extinguishers are within 3 feet of the PBE. The FAA never intended such a result, as evidenced in the preamble to the original final rule.

In response to several comments to the original notice regarding the number of PBE units required, the FAA stated that one PBE device at each hand fire extinguisher location required by § 121.309 will provide an adequate level of coverage and will avoid any confusion in locating the equipment since it will be near a hand fire extinguisher. This final rule revises the section to make it clear that there must be a PBE unit for each fire extinguisher.

The FAA finds that safety requires that each hand fire extinguisher be paired with a separate PBE unit. The FAA does not agree that safety would be served by allowing more than one fire extinguisher per PBE unit. In the event that more than one crewmember is required to combat a fire in the area of the two or more fire extinguishers the second crewmember would have to spend additional time seeking a second PBE unit. The FAA has determined that the potential safety hazard created by allowing this practice to continue far outweighs any reduction in cost. Therefore, this final rule makes it clear that one PBE is required for each fire extinguisher. The final rule clearly states that one portable PBE unit is required for each required hand fire extinguisher. However, if a carrier chooses to provide an additional fire extinguisher in excess of the number of fire extinguishers required by § 121.309, the carrier is not required to provide an additional PBE unit to be paired with it.

Discussion of Comments (NPRM)

Eight comments were received on the NPRM. In addition, ATA submitted comments from both cargo-only and passenger carrying operators. Comments were received from the National Transportation Safety Board (NTSB), ATA, ALPA, the Regional Airline Association (RAA), and two air carriers. Two other comments did not relate to the NPRM. Most commenters express basic support for the NPRM, particularly its clarification that passenger-carrying operations must provide one portable PBE unit for each required fire extinguisher. NTSB agrees with the NPRM and states that the proposed amendments will clarify existing regulations and will also allow air carriers some flexibility with compliance without compromising safety. RAA supports the proposal, saying that it "serves its objectives to provide needed clarification, and to relieve the requirement for certain unnecessary equipment." Boeing states that a requirement to check the PBE unit enclosure to ensure it has not been tampered with should be retained.

In regard to passenger-carrying operations, ALPA comments that portable PBE should remain in the cargo compartments of passenger-carrying operations for reasons of safety. ALPA states that it is a common occurrence to investigate for strange odors in large aircraft. It notes that valuable time could be lost if the crewmember has to retrieve the PBE from another location.

Boeing comments that it favors the installation of one PBE for each fire extinguisher for both cargo and passenger-carrying aircraft.

ATA states that it supports the proposed amendments with the exception to those applicable to cargo-only aircraft.

Finally, two commenters state that the NPRM should retain some measure which requires crewmembers to check PBE readiness.

In regard to cargo-only operations, ALPA comments that locating portable PBE in the cargo compartment enables crewmembers to more rapidly respond to possible fire threats in these areas. Under the proposed rule change, ALPA states that "valuable time would be lost by the crew returning to the cockpit to get the PBE in the rare occurrence when a fire is discovered." ALPA believes that PBE should be conveniently available to each cargo compartment, although it also states that in some cases a PBE unit could be shared between two compartments. ALPA considers the cargo units prudent backup to the cockpit PBE when its air supply is

expended. Finally, ALPA finds that cargo carried in cargo-only is more reactive and hazardous, and that in some instances, the crew would have no choice but to fight the fire.

ATA comments that the FAA's safety justification for requiring an additional portable PBE unit in the cargo area of cargo-only airplanes contradicts the agency's rationale for granting cargo-only operators an exemption to install a sole portable PBE unit on the flight deck. According to ATA, the installation of an additional portable PBE unit in the Class E cargo compartment does not improve safety. As support, ATA states that its review of Service Difficulty Report data from 1979 to 1992 did not uncover any reports of fire or smoke in Class E cargo compartments.

Furthermore, ATA notes that each aircraft already contains sedentary PBE that protects the crewmember, plus one portable PBE unit in the event that a crewmember has to leave a duty station for a brief time to investigate a potential fire in the cargo area. According to ATA, most cargo areas are inaccessible in flight, and flight procedures do not call for crewmembers fighting fires. Finally, ATA estimates that, if the requirement for an additional portable PBE unit is imposed, the air carrier industry would incur \$550,000 in unnecessary equipment costs. Attached to the ATA comment were comments from Airborne Express, DHL, Evergreen, and UPS supporting the ATA position.

Boeing Commercial Airplane Group commented that one PBE located with the fire extinguisher on the flight deck is not adequate and suggested that a second PBE be stored near the entrance to the cargo compartment to increase availability. Boeing, however, provided no data to support this statement.

FAA Response

In response to comments on cargo-only operations, the FAA determined that the question of whether to require one portable PBE unit to be located in a position that is easily accessible and conveniently located for use in the cargo area of the airplane, in addition to the one unit on the flight deck, deserved further comment. Therefore, on April 11, 1994, the FAA published a supplemental notice, proposing that the one additional PBE unit designated for the cargo area be eliminated. Discussion of comments received on that proposal follows.

The FAA does not agree with ALPA's comment that removing portable PBE from the cargo compartments of passenger-carrying airplanes would compromise safety. The regulations already require one PBE unit for each

hand fire extinguisher, a requirement that is being clarified in this amendment.

Discussion of Comments (SNPRM)

Five comments were received on the SNPRM.

ALPHA opposes the proposal set forth in the SNPRM, saying that the additional PBE unit in the cargo area is needed as a back-up for the one unit on the flight deck. ALPA is also critical of the 15-minute standard for the portable PBE unit, saying that flights often must operate much longer than this to make an emergency landing at the nearest airport. The Association cites five reports where the crew smelled smoke and decided to divert to the nearest airport; time to do so ranged from 10 minutes to 1 hour and 2 minutes. ALPA finds that reducing the number of portable PBE units to one is unacceptable, since that would limit the crew to only a 15-minute supply of oxygen.

ATA strongly supports the SNPRM. It notes that for most of the time since § 121.337 was established, cargo-only operators have been flying their aircraft with an exemption that permits the flight deck PBE to satisfy the requirement for PBE in the cargo compartment. ATA states that for 7 years, cargo-only operators have not experienced any incident which would justify requiring a second unit for the Class E compartment. ATA also incorporates its previous arguments in its letter dated May 27, 1993.

Airborne Express comments that it supports the SNPRM and notes that its 1993 and 1994 Service Difficulty Reports show no incidents of smoke or fire in Class E compartments.

Likewise, Douglas Aircraft Company comments that the second PBE unit is unnecessary.

Boeing Commercial Airplane Group comments that it has reevaluated its comment on the NPRM and now concludes that there was no data to support that recommendation. Therefore, Boeing now finds that the one PBE unit required for the flight deck is sufficient and that a second unit is unwarranted and unnecessary.

FAA Response

In the event of a fire in a Class E compartment, standardized checklist procedures are established to address the particular situation for each affected compartment. Procedures include landing the aircraft as soon as practical. Attempting to combat a fire in the Class E cargo compartment is a last resort measure, and may be of limited effectiveness. It may be unwise, for

instance, depending on the particular situation, to send one crewmember of a 2-person cockpit into a large cargo compartment that may contain unknown hazards. Further, Class E cargo compartments are often inaccessible in flight due to containerized cargo that poses a barrier to getting into the areas that may be on fire. Class A and B compartments are small and accessible to the flight deck. Therefore, the flight deck PBE is adequate for fighting fires in those compartments. The accident and incident data is consistent with this conclusion. Because of exemptions to ATA, discussed above, cargo-only carriers have never been required to install this second portable PBE unit since the adoption of the rule in 1987. Thus, for more than 6 years these operators have conducted cargo-only operations with one additional portable PBE unit located on the flight deck, but without portable PBE units in the cargo areas. The FAA has no accident or incident data regarding fires on cargo-only airplanes in which a second portable PBE unit could have made a difference.

Therefore, the FAA has determined that the one portable PBE unit currently required under § 121.337(b)(a)(iii) for the flight deck is sufficient for the unlikely possibility that a crewmember would need to fight an in-flight fire anywhere on the airplane, including the cargo area. In addition, on passenger-carrying aircraft the PBEs in the passenger compartment provides additional equipment to use should the need arise.

In response to ALPA's concerns about the 15-minute supply of oxygen, this was not an issue raised in the NPRM or SNPRM. The supply of oxygen was dealt with in Amendment 121-193 (52 FR 20950, June 3, 1987).

Means to Determine Quantity of Breathing Gas

The NPRM proposed to remove § 121.337(b)(7)(iii). That section requires a means to determine, during flight, the quantity of breathing gas. This paragraph was considered unnecessary because the newer designs do not have a quantity gauge, rather they have such things as vacuum seals or tamper-evident seals that allow the user to determine whether the gas supply is fully charged and ready to use.

In the NPRM, the FAA also proposed to remove from the preflight inspection in § 121.337(c)(2) the requirement to check whether the breathing gas supply is "fully charged."

After further consideration, the FAA has determined that it is not appropriate

to remove § 121.337(b)(7)(iii), but that modifications are in order. In addition, the FAA has determined that no amendment to § 121.337(c)(2) is needed. Section 121.337(c) requires a preflight inspection of each PBE, including whether it is serviceable and fully charged. To make this meaningful the unit should have some means to identify whether the item appears to be ready to use or there appears to have been tampering or a discharge of gas, such as vacuum seals or tamper-evident seals that are used on the newer PBEs. The crew can check whether the seal is broken, for instance.

Accordingly, § 121.337(b)(7)(iii) is amended to require that the PBE unit have means to determine whether the gas supply is fully charged, but does not specify that a gauge or any other particular means is to be used. In addition, the proposed changes to § 121.337(c)(2) are withdrawn.

Synopsis of Changes

This final rule amends § 121.337 with three changes:

(1) It eliminates the current requirements § 121.337(b)(9)(iii) to install one portable PBE unit in each Class A, B, and E cargo compartment.

(2) It clarifies § 121.337(b)(9)(iv) to provide that on passenger-carrying airplanes, there must be one PBE for each hand fire extinguisher and that one portable PBE unit located between two fire extinguishers is not sufficient.

(3) The rule changes the requirement in § 121.337(b)(7)(iii) that portable PBE units indicate the quantity of the breathing gas available in each source of supply, to requiring that the gas supply is fully charged.

Economic Summary

The FAA finds that the set of proposals in this final rule are not "major" within the meaning of Executive Order 12866 or the DOT Regulatory Policies and Procedures. In regard to cargo-only operations, the final rule will no longer require a separate portable PBE for each Class A, B, and E cargo compartment; instead, it will require only one portable PBE for use in the cargo area of cargo-only airplanes (in addition to the portable PBE already required on the flight deck for use throughout the aircraft).

The final rule will eliminate the pending requirement that cargo-only aircraft must have a PBE unit for each of its cargo compartments. An adequate level of safety is met with the existing level of PBE units onboard. Without this final rule, the FAA would require about 620 cargo aircraft to add one or more portable PBE units to its onboard

equipment. The cost of each unit is approximately \$490. The final rule will prevent the imposition of more than \$304,000 in costs. Hence, the proposal relieves the industry of an unnecessary potential cost burden.

As for passenger-carrying operations, the final rule does two things. First, it clarifies the present rule so that air carriers understand that the requirement is not met by one portable PBE for every two hand fire extinguishers if those fire extinguishers are within 3 feet of the PBE. Thus, the amended rule will clearly indicate, in accordance with the FAA's original intent, that there must be one portable PBE unit for each required hand fire extinguisher in the passenger compartments. Since the total number of required portable PBE units will not change as a result of this clarification, it yields no costs or benefits to quantify nor any economic consequences to evaluate.

Second, without the final rule, the FAA would require a PBE unit within the cargo areas of passenger-carrying planes. Eliminating this requirement will not reduce passenger or crew safety. The PBE equipment in the passenger compartments and on the flight deck will be sufficient to meet all FAA safety requirements. As with the all cargo aircraft, this final rule will relieve the airline industry of an unnecessary potential cost.

The FAA has determined that the final rule will result in some small cost reduction because it will prevent the imposition of additional costs on the industry resulting from existing requirements for PBE, i.e., the purchase of additional PBE units to refurbish newly acquired aircraft. In addition, the FAA has determined that the final rule will have no adverse impact on existing airline safety. Because the final rule will have little or no effect on existing costs and airline safety, the FAA has not prepared a full regulatory evaluation for the docket.

Regulatory Flexibility Determination

The Regulatory Flexibility Act of 1980 (RFA) was enacted by Congress to ensure that small entities are not unnecessarily and disproportionately burdened by Government regulations. The RFA requires agencies to specifically review rules that may have a "significant economic impact on a substantial number of small entities."

This final rule will impact entities regulated by part 121. The FAA's criteria for "a substantial number" are a number which is not less than 11 and which is more than one third of the small entities subject to this rule. For all carriers, a small entity has been defined

as one which owns, but does not necessarily operate, nine or fewer aircraft. The FAA's criteria for "a significant impact" are as follows: At least \$4,600 per year for an unscheduled air carrier, \$67,000 per year for a scheduled carrier having airplanes with only 60 or fewer seats, and \$119,900 per year for a scheduled carrier having an airplane with 61 or more seats.

Using these criteria, the FAA has determined, and therefore certifies, that the final amendments to § 121.337 if promulgated, will not have a significant economic impact on a substantial number of small entities. None of the final amendments will have a significant affect on air carrier costs. Therefore, the FAA has determined that the final amendments to § 121.337, if promulgated, will not have a significant economic impact on a substantial number of small entities.

International Trade Impact Assessment

The rule will impose no additional cost burden on either domestic or international all-cargo carriers. Hence, the amendment will not cause any competitive trade advantage or disadvantage to either the U.S. or to any foreign country.

Federalism Implications

This rule will not have a substantial direct effect 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 the amendments will not have federalism implications requiring the preparation of a Federalism Assessment.

International Civil Aviation Organization and Joint Aviation Regulations

In keeping with U.S. obligations under the Convention on International Civil Aviation, it is FAA policy to comply with ICAO Standards and Recommended Practices (SARP) to the maximum extent practicable. This final rule will not present any differences with those standards.

In addition, these amendments are similar to those found in the JAR, though those regulations are less specific. JAR-OPS 1.780 addresses that PBE units must provide a 15-minute breathing supply for both flight crewmember and cabin crewmembers.

Paperwork Reduction Act

In accordance with the Paperwork Reduction Act of 1980 (Pub. L. 92-511),

there are no requirements for information collection associated with this rule.

Conclusion

For the reasons discussed in the preamble, and based on the findings in the Regulatory Flexibility Determination and the International Trade Impact Assessment, the FAA has determined that this regulation is not a significant regulatory action under Executive Order 12866 since it will not impose any additional costs. In addition, the FAA has determined that this action is not significant under Department of Transportation (DOT) Regulatory Policies and Procedures [44 FR 11034; February 26, 1979].

The rule will have no impact on trade opportunities for U.S. firms doing business overseas or for foreign firms doing business in the United States.

This regulation will have no additional economic impact on the public. In fact, in the case of cargo-only operators, the rule will relieve costs. The FAA has determined that the expected impact of the rule is so minimal that it does not warrant a full Regulatory Evaluation.

List of Subjects in 14 CFR Part 121

Air Carriers, Air Safety, Air Transportation, Airplanes, Aviation Safety, Safety, Transportation.

The Amendment

In consideration of the foregoing, the Federal Aviation Administration amends Title 14 of the Code of Federal Regulations Part 121 (14 CFR Part 121) as follows:

PART 121 CERTIFICATION AND OPERATIONS: DOMESTIC, FLAG, AND SUPPLEMENTAL OPERATIONS

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

Authority: 49 U.S.C. 106(g), 40113, 40119, 44101, 44701-44702, 44705, 44709-44711, 44713, 44716-44717, 44722, 44901, 44903-44904, 44912, 46105.

2. Section 121.337 is amended by removing paragraph (b)(9)(i); by redesignating paragraphs (b)(9)(ii), (b)(9)(iii), and (b)(9)(iv) as (b)(9)(i), (b)(9)(ii), and (b)(9)(iii); by revising paragraph (b)(7)(iii); by revising newly designated paragraph (b)(9)(iii); and by removing, in paragraph (d)(1), the words " , 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".

§ 121.337 Protective breathing equipment.

* * * * *

(b) * * *
(7) * * *

(iii) For breathing gas systems other than chemical oxygen generators, there must be a means to allow the crew to readily determine, during the equipment preflight described in paragraph (c) of this section, that the gas supply is fully charged.

* * * * *
(9) * * *

(iii) In each passenger compartment, one for each hand fire extinguisher required by § 121.309 of this part, to be located within 3 feet of each required hand fire extinguisher, except that the Administrator may authorize a deviation allowing locations of PBE more than 3 feet from required hand fire extinguisher locations if special circumstances exist that make compliance impractical and if the

proposed deviation provides an equivalent level of safety.

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Issued in Washington, DC on August 21, 1996.

David R. Hinson,

Administrator.

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