

Federal Aviation Administration

FAR Final Rule

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DEPARTMENT OF TRANSPORTATION
Federal Aviation Administration
14 CFR Part 25
[Docket No. 7522; Amendment No. 25-17]

Crashworthiness and Passenger Evacuation Standards; Transport Category Airplanes

AGENCY: Federal Aviation Administration, DOT
AGENCY: Final Rule
14 CFR Parts 25 and 121
Amendment Nos. 25-17, 121-41

SUMMARY: The purpose of these amendments to Parts 25 and 121 of the Federal Aviation Regulations is to clarify certain of the provisions contained in the recently adopted crashworthiness and passenger evacuation standards for transport category airplanes (Amdts. 25-15 and 121-30) published in the Federal Register on September 30, 1967 (32 F.R. 13255),
EFFECTIVE DATE: This rule becomes effective June 20, 1968.

SUPPLEMENTARY INFORMATION:

These amendments implement the determinations set forth by the FAA in its disposition of the petitions for rule making filed by the Aerospace Industries Association of America, Inc. (AIA) and the Air Transportation Association of America (ATA) and as expressed in the various industry meetings held subsequent to the adoption of Amendments 25-15 and 121-30.

Section 25.803(c), concerning emergency evacuation demonstrations, states, in pertinent part, that evacuees using the stands or ramps allowed under that section are considered to be on the ground when they are on the stand or ramp; Provided, That the acceptance rate of the stand or ramp is no greater than the acceptance rate of the means available on the airplane for descent from the wing during an actual crash situation. The AIA has indicated that the term "acceptance rate" is confusing and suggests that the rule could be clarified by referring to "passage width" instead. The FAA agrees that equating the width of the passage to the stand or ramp with the passage width of the means available on the airplane for descent from the wing in an actual crash situation would accomplish the purpose of the regulation. Section 25.803(c) is amended accordingly.

Section 25.813(c) provides, in pertinent part, that for airplanes having a maximum seating capacity of 20 or more, the projected opening of the exit provided must not be obstructed by a seatback in any position at the outboard seat locations. Subsequent to the adoption of this regulation, it has come to the attention of the FAA that in certain instances a space may be provided between the "outboard seat" and the exit. In this connection, the question has arisen as to whether this arrangement would make it unnecessary for the "outboard seat" to meet the seat back-obstruction provisions of Sec. 25.813(c). The

FAA has given careful consideration to this matter and is of the opinion that if the lateral distance between the "outboard seat" and the exit is not less than the width of the narrowest passenger seat installed in the airplane, this would provide the necessary access to the exit in accordance with Sec. 25.813(c). The outboard seat in such a situation need not meet the seatback obstruction requirements of that section.

Section 25.853(a) states that materials used for specified applications in crew and passenger compartments must be self-extinguishing after flame removal, when tested in accordance with prescribed methods. Materials other than those specified in paragraph (a) are required to be at least flame resistant when tested in accordance with prescribed methods under paragraph (b). This section does not specify in detail the materials which are required to be tested under paragraph (a) and those materials required to be tested under paragraph (b). In response to a request by the industry for clarification of the regulations in this regard, Sec. 25.853 is being amended to make it clear that thermoplastic window frames, clip-in trim strips, light reflectors, speaker cones, decompression grills, window transparencies, light cover transparencies not in panel form, and edge lighted instrument panels made from MIL-P-5425c finish sheet A or L-P-380a, Type II, Class 3 methacrylate molding plastic, need only be flame resistant when tested in accordance with the methods prescribed in paragraph (b). On the other hand, the FAA has now determined that since wire insulation, conduit, plastic material in "black boxes", rub strips, pulleys, and small nonmetallic materials located behind interior walls or above interior ceilings are blanketed or surrounded by thermal insulation which meets the self-extinguishing requirements specified in paragraph (a), such materials need not be tested under Sec. 25.853. This does not include ducting material, which must meet the test criteria specified in paragraph (b).

Section 25.1359 requires, among other things, that main power cables (including generator cables) in the fuselage be isolated from flammable fluid lines and shrouded by means of electrically insulated flexible conduit, or equivalent, which is in addition to the normal cable insulation. In response to requests by the industry for clarification of this requirement, Sec. 25.1359 is being amended to specify that it is concerned with main power cables in the fuselage only and that there is no need in the interest of safety to both isolate and shroud the main power cables.

Section 25.2 requires that applicants for type certificates and certain applicants for supplemental and amended type certificates must comply with specified airworthiness regulations in effect on October 24, 1967, regardless of the date of application or the regulations incorporated by reference in the type certificate. However, some of the airworthiness standards specified in Sec. 25.2 are being amended by this rule-making action to either clarify or relax the requirement. Therefore, the effective date of these amended regulations has been incorporated into Sec. 25.2, to make it clear that the persons covered under that section may show compliance with the specified regulations as amended by this rulemaking action.

It has been brought to the attention of the FAA that there is a slight inconsistency in the language of Secs. 25.803 (d) and 121.291 (a) (2) in that the former requires a repeat of the emergency evacuation demonstration for increases of more than 5 percent in passenger seating capacity while the latter refers to 5 percent or more for redemonstration. Section 121.291 is relaxed slightly to achieve uniformity in these requirements.

Section 121.310 (a) was amended to provide for automatic slides at floor level emergency exits. The Air Transport Association has requested on behalf of its members that some form of deviation authority be provided due to the extensive structural modification required on some of these exits. The FAA agrees that the present design of certain emergency exits would dictate such modification and that full compliance would be unreasonably burdensome. Therefore, a limited deviation authority, subject to conditions which assure an adequate level of safety, is being included. This will permit evaluation of the merits of each case by FAA field personnel to assure the necessity for such deviation.

Section 121.310 (g) requires a 2-inch colored band outlining all passenger emergency exits for identification to outside rescue personnel. However, Sec. 25.811 (f) (1) applies this requirement only to emergency exits in the side of the fuselage since the colored band is not effective with respect to other exits such as tail cone and ventral exits. Therefore, in order to achieve consistency and to remove an unnecessary requirement, Sec. 121.310 (g) is being amended.

Section 121.310 (h) has been amended slightly to conform the language to the other equipment provisions of this section. The responsibility for compliance remains the same since Sec. 121.303 (d) (2) continues to impose the burden of meeting the equipment requirements.

Section 121.311 (d) applies to a "person" thereby placing the burden of compliance on the pilot as well as the certificate holder. However, as indicated by the other provisions in the section, the responsibility in this case is the responsibility of the certificate holder. The section is amended to make this clear.

Section 121.311 (d) requires all seat backs to be placed in an upright position for taxiing, takeoff, and landing. However, in the past the FAA has approved procedures whereby cargo and stretcher patients could be carried with seat backs in other than the upright position. The action of this paragraph was not intended to preclude this practice so long as access to the aisle and emergency exits was not blocked for any passenger. Therefore, the rule is clarified in this respect. In addition, it has been determined that this requirement does not significantly improve safety insofar as it applies to taxiing aircraft and as a consequence the word "taxiing" has been deleted.

Appendix D (a)(4) of Part 121 was amended to prevent the repeated use of participants in demonstrations. However, it was not intended to preclude the industry practice of using the same group of people for both the aborted takeoff and gear-up crash landing demonstrations in the same aircraft. The particular requirement has been amended to avoid this interpretation. In addition, an erroneous cross-reference in item (a) (16) is corrected.

These amendments are clarifying in nature and contain other relaxatory changes in the crashworthiness requirements that were granted to interested persons in the disposition of the petitions for rulemaking set forth in Regulatory Docket No. 7522. Therefore, I find that notice and public procedure hereon are unnecessary, and that good cause exists for making them effective on less than 30 days' notice.

(Sec. 313 (a), 601, 603, 604, Federal Aviation Act of 1958; 49 U.S.C. 1884 (a), 1421, 1423, 1424)

Adoption of the Amendments:

In consideration of the foregoing, Parts 25 and 121 of the Federal Aviation Regulations (14 CFR Parts 25, 121) are amended, effective June 20, 1968 as follows:

1. Section 25.2 is amended by changing the phrase "date of applicant" to read "date of application" in the introductory paragraph and by amending paragraph (a) to read as follows:

Sec. 25.2 Special retroactive requirements.

* * * * *

(a) After October 23, 1967, that the airplane concerned meets the requirements of Secs. 25.783 (g), 25.785 (c), 25.803 (b), (c), and (d), 25.807 (a), (c), and (d), 25.809 (f) and (h), 25.811 (a), (b), (d), (e), (f), and (g), 25.812 (a) (1), (b), (c), (d), (e), (h), (i), (j), and (k) (1) and (2), 25.813 (a), (b), and (c), 25.815, 25.817, 25.853 (a) and (b), 25.855 (a), 25.993 (f), and 25.1359 (c), in effect on October 24, 1967 or June 20, 1968; and

* * * * *

Sec. 25.803 [Amended]

2. The lead-in paragraph in Sec. 25.803 (c) is amended by striking out the words "acceptance rate" and inserting the words "passage width" in place thereof.

Sec. 25.813 [Amended]

3. Section 25.813 (c) is amended by adding a new sentence at the end thereof reading "However, if the lateral distance between an outboard seat and the exit is not less than the width of the narrowest passenger seat installed on the airplane, that seat need not meet the seat back obstruction provision of this paragraph".

4. The introductory paragraph and paragraphs (a) and (b) of Sec. 25.853 are amended to read as follows:

Sec. 25.853 Compartment interiors.

Materials (including finishes, if applied) used in each compartment occupied by the crew or passengers (other than materials such as wire insulation, conduit, plastic material in "black boxes", rub stripes, pulleys, and small nonmetallic materials that are located behind interior walls or above interior ceilings) must meet the following test criteria, as applicable:

- (a) Except as provided in paragraph (b) of this section, interior wall panels, interior ceiling panels, draperies, structural flooring, baggage racks, partitions (including wind screens), thermal insulation, light cover transparencies in panel form, and coated fabric insulation covering must be self-extinguishing after flame removal when tested in accordance with the applicable portions of Appendix F of this part or the applicable portions of Methods 5902 and 5906, dated May 15, 1951, or Federal Specification CCC-T-191b (which is available from the General Services Administration, Business Service Center, Region 3, Seventh and D Streets SW., Washington, D.C. 20407), or other approved equivalent method. All materials used in these applications must be tested vertically. If the material is tested vertically as a fabricated unit, a section of that fabricated unit must also be tested horizontally. The average char length may not exceed 8 inches when the material is tested vertically, and may not exceed 4 inches when the material is tested horizontally. Layered materials may not be separated for the purpose of this test.
- (b) Thermoplastic window frames, clip-in trim strips, light reflectors, speaker cones, decompression grills, window transparencies, light cover transparencies not in panel form, ducting, edge-lighted instrument panels made from MIL-P-5425c finish sheet A or from L-P-380a, Type II, Class 3 methacrylate molding plastic, and any other interior materials not specified in paragraph (a) of this section must be at least flame resistant when tested horizontally under the applicable portions of Appendix F of this part, or the applicable portions of Method 5906, dated May 15, 1951 of the Federal Specification CCC-T-191b, or other approved equivalent method. Layered materials may not be separated for the purpose of this test.
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5. Section 25.1359(c) is amended to read as follows:

Sec. 25.1359 Electrical system fire and smoke protection.

* * * * *

(c) Main power cables (including generator cables) in the fuselage must be designed to allow a reasonable degree of deformation and stretching without failure and must -

- (1) Be isolated from flammable fluid lines; or
- (2) Be shrouded by means of electrically insulated flexible conduit, or equivalent, which is in addition to the normal cable insulation.

Sec. 121.291 [Amended]

6. Section 121.291 (a) (2) is amended by deleting the words "5 percent or more" and inserting the words "more than 5 percent" in place thereof.

7. Section 121.310 (a) (2) is amended to read as follows:

Sec. 121.310 Additional emergency equipment.

(a) * * *

(2) After September 30, 1969, it must meet the requirements of Sec. 25.809 (f) (1) of this chapter. An assisting means that deploys automatically must be armed during taxiing, takeoffs, and landings. However, if the Administrator finds that the design of the exit makes compliance impractical, he may grant a deviation from the requirement of automatic deployment if the assisting means automatically erects upon deployment and, with respect to required emergency exits, if an emergency evacuation demonstration is conducted in accordance with Sec. 121.291 (a).

This paragraph does not apply to the rear window emergency exit of DC-3 airplanes operated with less than 36 occupants including crewmembers and less than five exits authorized for passenger use.

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8. Section 121.310 (g) is amended by revising the lead paragraph and paragraph (h) is amended to read as follows:

Sec. 121.310 Additional emergency equipment.

* * * * *

(g) Exterior exit markings. Each passenger emergency exit and the means of opening that exit from the outside must be marked on the outside of the airplane. There must be a 2-inch colored band outlining each passenger emergency exit in the side of the fuselage. Each outside marking, including the band, must be readily distinguishable from the surrounding fuselage area by contrast in color. The markings must comply with the following:

* * * * *

(h) Exterior emergency lighting and escape route. After September 30, 1969, each passenger-carrying airplane must be equipped with exterior lighting that meets the requirements of Sec. 25.812(f) of this chapter and a slip resistant escape route that meets the requirements of Sec. 25.803 (e) of this chapter.

9. Section 121.311 (d) is amended to read as follows:

Sec. 121.311 Seat and safety belts.

* * * * *

(d) Except as provided in subparagraphs (1) and (2) of this paragraph, no certificate holder may take off or land an airplane unless each passenger seat back is in the upright position. Each passenger shall comply with instructions given by a crewmember in compliance with this paragraph.

(1) This paragraph does not apply to seat backs placed in other than the upright position in compliance with Sec. 121.310 (f) (3).

(2) This paragraph does not apply to seats on which cargo or stretcher cases are carried in accordance with procedures in the certificate holder's manual if the seat back does not obstruct any passenger's access to the aisle or to any emergency exit.

10. Appendix D (a) (14) of Part 121 is amended by deleting the words "or a gear-up crash landing demonstration".

11. Appendix D (a) (16) of Part 121 is amended by changing the cross-reference therein to read "(3)" in lieu of (4).

Issued in Washington, DC on June 14, 1968.

William F. McKee

Administrator.

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Notice of Proposed Rulemaking Actions:

Not Applicable.

Other Final Rule Actions:

Not Applicable.