[4910-13]

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 25

[Docket No.: FAA-2014-0001; Notice No. 14-06]

RIN 2120–AK29

Harmonization of Airworthiness Standards—Fire Extinguishers and Class B and F Cargo Compartments

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Notice of proposed rulemaking (NPRM).

SUMMARY: The FAA proposes to amend certain airworthiness regulations for transport category airplanes by upgrading fire safety standards for one type of cargo compartment; establishing fire safety standards for a new type of cargo compartment; and updating related standards for fire extinguishers. The proposed rules are based on recommendations from the Aviation Rulemaking Advisory Committee (ARAC) and the National Transportation Safety Board (NTSB), and they address designs for which airworthiness directives have been issued by both the FAA and the French civil aviation authority, Direction Générale de l'Aviation Civile (DGAC).

Adopting these proposals would eliminate regulatory differences between the airworthiness standards of the U.S. and the European Aviation Safety Agency (EASA), without affecting current industry design practices. These proposed changes would ensure an acceptable level of safety for these types of cargo compartments by standardizing certain requirements, concepts, and procedures.

DATES: Send comments on or before [insert date 90 days after publication in the Federal Register].

ADDRESSES: Send comments identified by docket number FAA-2014-0001 using any of the following methods:

- Federal eRulemaking Portal: Go to http://www.regulations.gov and follow the online instructions for sending your comments electronically.
- Mail: Send comments to Docket Operations, M-30; U.S. Department of Transportation (DOT), 1200 New Jersey Avenue, SE., Room W12-140, West Building Ground Floor, Washington, DC 20590-0001.
- Hand Delivery or Courier: Take comments to Docket Operations in Room W12-140 of the West Building Ground Floor at 1200 New Jersey Avenue, SE., Washington, DC, between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.
- Fax: Fax comments to Docket Operations at 202-493-2251.

Privacy: The FAA will post all comments it receives, without change, to http://www.regulations.gov, including any personal information the commenter provides. Using the search function of the docket web site, anyone can find and read the electronic form of all comments received into any FAA docket, including the name of the individual sending the comment (or signing the comment for an association, business, labor union, etc.). DOT's complete Privacy Act Statement can be found in the Federal Register published on April 11, 2000 (65 FR 19477-19478), as well as at http://DocketsInfo.dot.gov.

Docket: Background documents or comments received may be read at http://www.regulations.gov at any time. Follow the online instructions for accessing the docket or go to the Docket Operations in Room W12-140 of the West Building Ground Floor at 1200 New Jersey Avenue, SE., Washington, DC, between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

FOR FURTHER INFORMATION CONTACT: For technical questions concerning this action, contact Stephen M. Happenny, Propulsion/Mechanical Systems Branch, ANM-112, Transport Airplane Directorate, Aircraft Certification Service, Federal Aviation Administration, 1601 Lind Ave. SW., Renton, WA 98055-4056; telephone (425) 227-2147; facsimile (425) 227-1232; e-mail: Stephen.Happenny@faa.gov.

For legal questions concerning this action, contact Sean Howe, Office of Regional Counsel, ANM-7, Federal Aviation Administration, 1601 Lind Avenue SW., Renton, WA 98057-3356; telephone (425) 227-2591; facsimile (425) 227-1007; e-mail: sean.howe@faa.gov.

SUPPLEMENTARY INFORMATION:

Authority for this Rulemaking

The FAA's authority to issue rules on aviation safety is found in Title 49 of the United States Code. Subtitle I, Section 106 describes the authority of the FAA Administrator. Subtitle VII, Aviation Programs, describes in more detail the scope of the agency's authority.

This rulemaking is promulgated under the authority described in Subtitle VII, Part A, Subpart III, Section 44701, "General requirements." Under that section, the FAA is charged with prescribing regulations in the interest of safety for the design and

performance of aircraft; regulations and minimum standards in the interest of safety for inspecting, servicing, and overhauling aircraft; and regulations for other practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it prescribes new safety standards for the design and operation of transport category airplanes.

I. Overview of Proposed Rule

The purpose of the proposed rulemaking is to harmonize certain Title 14, Code of Federal Regulations (14 CFR) part 25 requirements for fire extinguishers and cargo compartments with the corresponding requirements in Book 1 of EASA Certification Specifications and Acceptable Means of Compliance for Large Airplanes (CS-25).

Applicants for FAA type certification already use the proposed changes through equivalent level of safety findings and special conditions. Harmonizing these requirements with EASA would benefit manufacturers and modifiers by providing them a single set of requirements with which they must show compliance, thereby reducing the cost and complexity of certification and codifying a consistent level of safety.

The proposed rulemaking would limit the size of an existing class of cargo compartments, define a new class of accessible cargo compartments without size limitation, update associated fire extinguisher requirements, update cargo liner and floor panel requirements and their material testing criteria, and propose associated advisory information for compliance. The proposed changes would apply to new airplane designs only, not to existing airplanes. Applicability to derivative airplanes or changed products would be determined according to 14 CFR 21.101.

1. A new paragraph, (f), would be added to § 25.857 to establish requirements for certification of accessible cargo compartments without size limitation under a new classification, Class F, that must meet safety standards similar to those of Class C cargo compartments or equivalent.

2. Section 25.851(a)(3), "Hand fire extinguishers," would be revised to extend the existing fire extinguisher requirements for Class A, B, or E cargo or baggage compartments to be applicable to new Class F accessible cargo or baggage compartments defined in the new § 25.857(f). The amended requirements would specify that at least one readily accessible hand fire extinguisher be available to crewmembers in-flight for use in each Class A, B, E, or F compartment.

3. Section 25.851(b)(2), "Built-in fire extinguishers," would be revised by adding a sentence to the existing regulation to clarify that the capacity of a built-in fire extinguishing/fire suppression system in a Class C and, if installed, a Class F cargo compartment must be adequate to respond to a fire that could occur in any part of the cargo compartment where cargo or baggage may be placed. The FAA is taking this step to harmonize our regulation to the EASA regulation and practice because FAA testing has shown that current methods of compliance are inadequate. Advisory material will provide guidance on acceptable means of compliance with this proposal.

4. Sections 25.855(b), (c), and (h), "Cargo or baggage compartments," would be revised to require that new Class F cargo compartments have a liner that meets flame penetration standards currently required for Class C cargo compartments unless other means are provided to contain a fire and protect critical systems and structure. In addition, § 25.855(h)(3) would be revised to add a required demonstration of compliance

of the dissipation of the extinguishing agent in Class F cargo compartments with designs that incorporate a built-in fire extinguisher(s) for controlling a fire.

5. Section 25.857(b)(1), "Cargo compartment classification," would be revised to indirectly limit the size of a Class B cargo compartment by requiring a defined firefighting access point.

6. Part I of appendix F to part 25, "Test Criteria and Procedures for Showing Compliance with § 25.853 or § 25.855," paragraphs (a)(1)(ii) and (a)(2)(iii) would be revised to add a reference to Class F cargo compartment floor panels. Other changes to appendix F to part 25 are being considered as part of a separate rulemaking that may result in a different, but technically equivalent, change.

II. Background

A. Statement of the Problem

Part 25 prescribes airworthiness standards for type certification of transport category airplanes for products certified in the United States. EASA CS-25 Book 1 prescribes the corresponding airworthiness standards for products certified in Europe. While part 25 and CS-25 are similar, they differ in several respects. To improve certification efficiency, the FAA tasked ARAC to review existing cargo compartments and fire extinguisher regulations and to recommend changes that would eliminate differences between U.S. and European airworthiness standards, while maintaining or improving the level of safety in the current regulations.

ARAC established the Cargo Standards Harmonization Working Group (CSHWG), assigning it the task of developing new or revised requirements for Class B cargo compartments of transport category airplanes. ARAC also established the

Mechanical Systems Harmonization Working Group (MSHWG), assigning it the task of developing new or revised requirements for a built-in fire extinguishing system for existing or new cargo compartment classifications. Each working group was to document its work as a draft NPRM with supporting material or collateral documents, such as advisory circulars. The scope of these taskings included developing similar proposed regulations to amend Joint Aviation Requirements (JAR)-25, the precursor to CS-25, as necessary to achieve harmonization between the FAA and the Joint Aviation Authorities (JAA), the predecessor of EASA. EASA incorporated the ARAC working groups' recommendations into the CS-25 requirements via Amendments 4 and 8, on December 27, 2007, and December 18, 2009, respectively. The FAA agrees with ARAC's recommendations to harmonize U.S. airworthiness standards for cargo compartments and associated fire extinguishers with corresponding EASA regulations and proposes to amend part 25 accordingly. The proposals are not expected to be controversial and should reduce certification costs to industry without adversely affecting safety. The complete analyses for the proposed changes made in response to ARAC recommendations can be found in the ARAC recommendation reports, located in the docket for this rulemaking.

B. History

On November 27, 1987, a fire occurred in the Class B cargo compartment of a Boeing Model 747-244B airplane operated by South African Airways. The airplane was on a scheduled flight between Taipei, Taiwan, to Johannesburg, South Africa. It was carrying both passengers and cargo on the main deck, a configuration known as a "combi" and classified as a Class B cargo compartment. The airplane crashed in the

Indian Ocean about 140 miles northeast of Mauritius. All people aboard the airplane perished.

The South African Board of Inquiry reported that (1) there was clear indication that a fire broke out in a right hand front pallet (one of six) in the main deck cargo hold, and (2) the fire could not be controlled and consequently led to the crash. The South African Board unanimously agreed with the following findings and conclusions of the FAA Review Team:

1. Existing rules, policies, and procedures being applied to the certification of Class B cargo or baggage compartments for smoke and fire protection, the required quantity of fire extinguishing agent, and the number of portable fire extinguishers are inadequate.

2. The use of pallets to carry cargo in Class B compartments is no longer acceptable.

3. While entry into the cargo compartment is available, not all cargo is accessible.

4. The reliance on crew members to fight a cargo fire must be discontinued.

In response to the South African Airways accident, the FAA issued Airworthiness Directive (AD) 89-18-12 (54 FR 34762, August 21, 1989), which required a number of changes in the standards for Class B cargo compartments located on the main deck of certain large airplanes. The affected airplane models included Boeing Model 707, 727, 737, 747, and 757 series airplanes, and McDonnell Douglas DC-8, DC-9, and DC-10 series airplanes. That AD was superseded twice. The first supersedure, AD 91-10-02 (56 FR 20529, May 6, 1991) was issued after operators and manufacturers reported design and logistics problems in complying with AD 89-18-12. The second AD

supersedure was in response to comments received following issuance of the first AD supersedure and the publication of new test data provided by the FAA William J. Hughes Technical Center (57 FR 36918, August 17, 1992). The current AD, AD 93-07-15[1] (58 FR 21243, April 20, 1993), requires operational and procedural changes, additional equipment, and enhanced fire detection and suppression systems on applicable large main-deck combi airplanes. The enhanced fire detection and suppression system standards require modification of the Class B cargo compartment to either comply with the requirements for a Class C cargo compartment, as defined in §§ 25.855 (Amendment 25-60), 25.857(c), and 25.858 (Amendment 25-54), or to incorporate other specified safeguards. A similar airworthiness directive was issued by the French airworthiness authority, DGAC, AD 92-113(B)R1. These ADs provided options to the operators of the affected airplanes for achieving an adequate level of safety. These are encompassed in the proposed regulations and associated guidance material.

C. National Transportation Safety Board (NTSB) Recommendations

NTSB investigated the South African 747-244B accident and on May 16, 1988, issued the following Safety Recommendations:

1. A-88-61. Until fire detection and suppression methods for Class B cargo compartment fires are evaluated and revised, as necessary, the NTSB recommended that the FAA require all cargo carried in Class B cargo compartments of U.S.-registered transport category airplanes be carried in fire resistant containers.

[1] AD 93-07-15 BOEING and MCDONNEL DOUGLAS: Amendment 39-8547. Docket No. 92-NM-67-AD.

The FAA responded to this recommendation with the current AD 93-07-15. These proposed revisions to the related regulations and to part I of appendix F to part 25 for fire testing requirements also address this recommendation.

2. A-88-62. The NTSB recommended that the FAA conduct research to establish the fire detection and suppression methods needed to protect transport category airplanes from catastrophic fires in Class B compartments.

To address this recommendation, both the FAA and the JAA conducted research to determine whether Class B cargo compartments might be unsafe. Both authorities concluded that entering the compartment to combat a fire is ineffective for cargo compartments larger than 200 cubic feet in volume. They agreed on the need to conduct tests with actual fires to try to more closely establish the maximum safe Class B cargo compartment size. In coordination with the CSHWG, the Fire Safety Branch of the FAA Technical Center conducted a number of ground tests using an airplane hull with a cargo compartment located in the rear of the passenger cabin. The simulated compartment had smoke detection, ventilation rates, and air balance approximately the same as would be encountered in a flight, and an entry door similar to those in the compartments of smaller transport category airplanes.

Based on that testing, the FAA Technical Center made several observations. During actual fire testing conducted in a simulated Class B cargo compartment with a volume of 175 cubic feet, flight attendants equipped with protective breathing equipment and a hand fire extinguisher, but without protective clothing, were unwilling to enter the cargo compartment when a fire was present. This result led the CSHWG to conclude that

reliance on a flight attendant to physically enter the cargo compartment to extinguish a fire was unrealistic, and that a standard based on such an expectation was undesirable.

During other tests, trained fire fighters, dressed in full firefighting gear, found it unnecessary to enter the compartment to extinguish the fire. They were able to extinguish the fire from the doorway.

Based on these findings, the CSHWG recognized that a fire could be effectively combated by direct access, but without entry, to some of these compartments. The CSHWG decided it would not be appropriate to specify a maximum allowable volume for a cargo compartment. Instead, the CSHWG proposal stipulated that, when standing at an access point, the person fighting the fire must be able to reach any part of the compartment with the contents of a hand fire extinguisher. Under the CSHWG proposal, access would be a function of how the compartment was configured rather than volume. In determining access, the CSHWG proposal stipulated that it would not be appropriate to pull baggage or cargo on to the floor of the passenger compartment to gain access to the seat of the fire; such action may introduce a safety hazard to the occupants.

3. A-88-63. The NTSB recommended that the FAA establish fire resistant requirements for the ceiling and sidewall liners in Class B cargo compartments of transport category airplanes that equal or exceed the requirements for Class C as set forth in 14 CFR part 25, appendix F, part III.

The current AD and the proposed revisions to cargo compartment classifications address this recommendation.

III. Discussion of the Proposal

A. Revise “Fire extinguishers” (§ 25.851).

1. “Hand fire extinguishers” (§ 25.851(a)).

Introduction of a new Class F cargo or baggage compartment via § 25.857(f) necessitates an amendment of § 25.851(a)(3) to require at least one readily accessible hand fire extinguisher for use in each new Class F cargo or baggage compartment that is accessible to crewmembers in flight. This is the same requirement currently for Class A, B, or E cargo or baggage compartments.

2. “Built-in fire extinguishers” (§ 25.851(b)).

Section 25.851(b)(2) requires that the capacity of a built-in fire extinguishing system be adequate for any fire likely to occur in the compartment where used, and section 25.21 requires that an applicant prove compliance with the requirements of part 25. The FAA proposes to clarify when a system is “adequate,” and also proposes new guidance governing an acceptable means of demonstrating compliance. EASA implements its requirement CS 25.851(b) to ensure that the system is adequate to control any fire likely to occur anywhere within the compartment. We propose to add a sentence to § 25.851(b) to harmonize with EASA’s application of the rule. This new sentence would clarify that an adequate capacity would provide sufficient quantity of agent to combat a fire anywhere baggage or cargo is placed within the cargo compartment and be available for the time required to land and evacuate the airplane.

The key point of this proposed new sentence is that, because of the inability to know in advance the contents of cargo and baggage placed within a cargo compartment, it must be assumed that each piece of baggage or cargo is a potential fuel source and a potential ignition point. This clarification is predicated on the basis that all baggage and cargo placed on board the airplane is done in accordance with the FAA- and

EASA-approved manufacturer and operator airplane weights and balance manuals. In addition, placement of all baggage and cargo must be in accordance with all appropriate national civil aviation authority requirements and the manufacturer's loading instructions and limitations.

One effect of this proposed revision would be that the means of compliance that allow averaging of the individual extinguishing agent concentration sensors would typically no longer be compliant. The current averaging technique allows different applicants to use different test standards for determining the success of extinguishing agents, as opposed to CS certification methods, which are consistent for all applicants.

Current EASA policy does not accept averaging methods but requires that each individual sensor display the required concentration. The corroborating factors that harmonized the EASA/FAA position included consideration of available test data. In addition, testing at the FAA Technical Center and other data from standardized fire extinguishing evaluation tests indicates that the use of averaging techniques may not show whether adequate concentration levels of fire extinguishing agent exist throughout the compartment to effectively suppress a cargo fire. If a cargo fire occurred, and was subsequently suppressed by Halon 1301, the core of the fire could remain hot for a period of time. If the local concentration of Halon 1301 in the vicinity of the fire core dropped below 3 percent by volume and sufficient oxygen was available, re-ignition could occur. FAA testing and other industry testing have shown that when the Halon 1301 concentration level drops below 3 percent by volume and the cargo fire re-ignites, the convective stirring caused by the heat of the fire may be insufficient to raise the local concentration of Halon 1301 in the vicinity of the fire.

The proposed guidance would suggest means by which gaseous extinguishing agent concentrations could be measured and how the discrete measured data could be interpreted. Also, the proposed guidance would describe a means of compliance that would demonstrate that a "suppressed environment" is maintained in the cargo compartment through landing to enable passengers and crew to evacuate the airplane.

The guidance would contain recommendations regarding markings and placards in the cargo compartment as a means of ensuring that baggage loading personnel do not load baggage and cargo above the safe limit certified by testing.

Section 25.851 provides requirements for built-in fire extinguishing systems regardless of the extinguishing agent or delivery system used. Therefore, it is not limited to halon gaseous agents or any specific agent delivery system provided that such a system is effective in extinguishing/suppressing fire threats in the cargo compartment. Currently industry and the FAA Technical Center are investigating alternative halon replacement agents and other types of delivery systems and extinguishing/suppression systems.

The advisory material would establish guidance for evaluating brief excursions in the concentration readings and if the data from a single measuring point could be time-averaged. Additional laboratory testing is recommended only if critical issues requiring advisory clarification cannot be resolved by other means.

B. Revise "Cargo or baggage compartments" (§ 25.855), "Cargo compartment classification" (25.857), and "Test Criteria and Procedures for Showing Compliance with § 25.853 or § 25.855" (part I of appendix F to part 25).

1. Proposed amendment to Class B cargo compartments.

We propose to revise the existing airworthiness requirements for the Class B cargo compartment in § 25.857(b)(1) to indirectly limit the depth, width, and size of Class B cargo compartments by requiring a defined firefighting access point.

Currently, Class B cargo compartments incorporate a separate, approved smoke or fire detection system to give a fire warning at the pilot or flight engineer station. Class B cargo compartments must have sufficient access in flight to enable a crewmember to effectively reach any part of the compartment with the contents of a hand fire extinguisher. These compartments must be designed so that no hazardous quantity of smoke, flames, or extinguishing agent may enter any compartment occupied by the crew or passengers. To protect adjacent structures, Class B cargo compartments must also have a liner meeting the flame penetration standards of § 25.855 and part I of appendix F to part 25. Section 25.858, which was added in Amendment 25-54 (45 FR 66173, September 11, 1980), requires that fire detection systems of Class B cargo compartments provide a visual indication to the flightcrew within one minute after the start of a fire. In addition, the system must be capable of detecting the fire at a temperature significantly below that at which the structural integrity of the airplane is safely decreased.

These standards were initially developed when cargo compartments were relatively small and airplanes were powered by reciprocating engines. With the advent of larger turbine-powered airplanes, cargo compartment sizes, operating altitudes, and route lengths increased. In addition, combination passenger/cargo configurations, or "combis," were introduced that were designed to carry both passengers and cargo on the main deck. These passenger and cargo compartments are separated by a barrier intended to prevent smoke and gasses from entering occupied areas. In some combis, the barrier is movable

to change the available cargo and passenger capacity as needed for specific operational requirements.

There are currently no limitations on the size or the volume of current Class B cargo compartments. For domestic jet transport airplanes, these compartments can range from approximately 200 cubic feet for business jets to 17,000 cubic feet for large transport airplanes.

Based on tests conducted at the FAA Technical Center (57 FR 36918, August 17, 1992), the proposed requirements would effectively limit the size of new design Class B cargo compartments by requiring that a crewmember, standing at any one access point and without stepping into the compartment, be able to extinguish a fire using a hand fire extinguisher. Class B cargo compartments, under the proposed amendment to § 25.857(b)(1), would be smaller than most current compartments because the current rule allows a compartment so large as to require a crewmember to enter the compartment in order to reach and extinguish the fire. The FAA proposes applicable guidance material in the AC associated with this rule.

The requirements in § 25.857(b)(2) and (b)(3) will remain unchanged and will continue to require exclusion of hazardous quantities of smoke, flames, or extinguishing agent from any compartment occupied by the crew or passengers, as well as provision of a separate, approved smoke detector or fire detector system to give warning at the pilot or flight engineer station.

2. New Class F cargo compartments.

(a) We propose to add a new paragraph, § 25.857(f), to establish a new cargo compartment category, Class F. The new Class F accessible cargo compartments would

not be size-limited. There would, however, need to be a means to control or extinguish a fire without requiring a crewmember to enter the compartment to conduct manual firefighting. Other fire safety features proposed for Class F cargo compartments would include: (1) a fire detection system that meets § 25.858, and (2) a means to exclude cargo compartment smoke and fumes from entering occupied spaces. As discussed in paragraph 2(b) of this section, a liner may be necessary, which would be required to meet part III of appendix F to part 25 or an equivalent standard.

The proposed Class F accessible cargo compartments would accommodate the carriage of more baggage and cargo in a combi configuration (passengers and cargo on the main deck) and in larger volumes than allowed by the proposed amendment to Class B compartments. In reviewing the existing Class B cargo compartments in transport category airplanes, the CSHWG noted that several combi configurations do not satisfy the concerns about fighting a fire without personnel entering the cargo compartment. However, such combi configurations are necessary to sustain those geographic areas with no means of supply other than air cargo, such as small isolated towns and villages in Alaska and Northern Canada. In considering this issue, ARAC recommended that the FAA propose a new Class F cargo compartment that would allow for flexibility in new airplane designs while ensuring adequate fire control.

Unlike the requirements for Class C cargo Compartments, the proposed Class F would not necessarily be required to have either a built-in fire extinguishing system or a means to control ventilation and drafts within the compartment. Instead, the proposed § 25.857(f)(2) would require that these compartments use either a crewmember to access the compartment with a hand fire extinguisher without entering the compartment or other

means of controlling the fire (e.g., a built-in fire extinguisher/suppression system, fire containment covers, or other means that would be discussed in the proposed draft AC 25.857-X). The proposed § 25.857(f)(1) and (f)(3) are identical to the existing § 25.857(c)(1) and (c)(3) applicable to Class C cargo compartments, respectively, and are intended to require the provision of a separate approved smoke detector or fire detector system to give warning at the pilot or flight engineer station as well as exclusion of hazardous quantities of smoke, flames, or extinguishing agent from any compartment occupied by the crew or passengers. In addition, for Class F cargo compartment designs that incorporate a built-in fire extinguisher(s) for controlling fire, §§ 25.851(b) and 25.855(h)(3) would be modified.

(b) The introduction of Class F accessible cargo compartments necessitates revising §25.855(b) and (c), which currently require a liner or other means of fire protection for Class B through E cargo compartments. We propose to revise § 25.855(b) and (c) to require that new Class F cargo compartments have a liner meeting flame penetration standards currently required for Class C cargo compartments. Class F cargo compartments would not have to have such liners if other means were provided to contain a fire and protect critical systems and structure. The proposed revision would result in retaining the same level of safety regarding fire protection.

Section 25.855(b) would require Class F accessible compartments to have a liner, unless other means provide the necessary fire containment. The CSHWG considered two potential methods for relieving Class F compartments from the liner requirements. These would be included in the proposed AC associated with this proposed rule. One method is to use existing approved (e.g., Class C cargo compartment) containers carried inside the

proposed new Class F cargo compartment. The containers themselves suppress fire. This design would provide a means of compliance similar to that offered in one of the options in the combi AD[2]. To ensure use of appropriate containers, the requirement for use of the Class C cargo compartment containers would have to be identified as part of any loading restrictions in the airplane flight manual (AFM).

A second method, already used in accordance with the combi AD, uses a system to distribute the contents of a hand fire extinguisher throughout the compartment. An external nozzle in the compartment wall or liner connects with the hand fire extinguisher. Internal plumbing carries the extinguishing agent throughout the compartment. This allows the certification of airplanes with compartments with less expensive hardware and does not require a flight crewmember to enter the compartment. The AFM would have to limit operations to a route structure that ensured the airplane could land before the available fire extinguishing capability was exhausted.

(c) The introduction of Class F accessible cargo compartments necessitates revising paragraph (a)(1)(ii) of part I of appendix F to part 25. That paragraph currently requires self-extinguishing floor panels or other approved equivalent means of fire protection to contain a fire and protect critical systems and structure. We propose to revise paragraph (a)(1)(ii) and (a)(2)(iii) to require the floor panels in new Class F cargo compartments meet the flame penetration standards currently required for Class B, C, or E cargo compartments. The proposed revision would result in Class F cargo compartments meeting the same level of safety.

[2] A copy of AD 93-07-15 is included in the docket.

IV. Regulatory Notices and Analyses

A. Regulatory Evaluation

Changes to Federal regulations must undergo several economic analyses. First, Executive Order 12866 and Executive Order 13563 directs that each Federal agency shall propose or adopt a regulation only upon a reasoned determination that the benefits of the intended regulation justify its costs. Second, the Regulatory Flexibility Act of 1980 (Public Law 96-354) requires agencies to analyze the economic impact of regulatory changes on small entities. Third, the Trade Agreements Act (Public Law 96-39) prohibits agencies from setting standards that create unnecessary obstacles to the foreign commerce of the United States. In developing U.S. standards, the Trade Act requires agencies to consider international standards and, where appropriate, that they be the basis of U.S. standards. Fourth, the Unfunded Mandates Reform Act of 1995 (Public Law 104-4) requires agencies to prepare a written assessment of the costs, benefits, and other effects of proposed or final rules that include a Federal mandate likely to result in the expenditure by State, local, or tribal governments, in the aggregate, or by the private sector, of $100 million or more annually (adjusted for inflation with base year of 1995). This portion of the preamble summarizes the FAA's analysis of the economic impacts of this proposed rule.

Department of Transportation Order DOT 2100.5 prescribes policies and procedures for simplification, analysis, and review of regulations. If the expected cost impact is so minimal that a proposed or final rule does not warrant a full evaluation, this order permits a statement to that effect and the basis for it to be included in the preamble if a full regulatory evaluation of the cost and benefits is not prepared. Such a

determination has been made for this proposed rule. The reasoning for this determination follows:

The FAA tasked the Aviation Rulemaking Advisory Committee (ARAC) through the Cargo Standards Harmonization Working Group (CSHWG) and the Mechanical Systems Harmonization Working Group (MSHWG) to review existing cargo compartments and fire extinguisher regulations and to recommend changes that would eliminate differences between the U.S. and the European airworthiness standards, while maintaining or improving the level of safety in the current regulations.

The FAA agrees with the ARAC recommendations to harmonize airworthiness standards for cargo compartments and associated fire extinguishers with the corresponding EASA regulations and proposes to amend part 25 accordingly. The proposed changes would eliminate differences between the U.S. and European airworthiness standards. These efforts are referred to as harmonization.

This proposal is for changes in the standards in part 25 for new airplane designs only. The proposed changes will not apply to existing airplanes. This proposed rule would revise §§ 25.851, "Fire extinguishers;" 25.855, "Cargo or baggage compartments;" 25.857, "Cargo compartment classification;" and appendix F, part I, "Test Criteria and Procedures for Showing Compliance with § 25.853, or § 25.855."

The FAA estimates that there are higher safety standards and no costs associated with this proposal. A review of current manufacturers of transport category airplanes certificated under part 25 has revealed that all such future airplanes are expected to be certificated under part 25 of both U.S. and EASA (CS-25) airworthiness regulations. Since future certificated transport category airplanes are expected to meet the existing

EASA CS-25 Book 1 requirements, and this rule adopts the same EASA requirements, manufacturers would incur no additional cost resulting from this proposal. This proposal may even reduce cost. Without harmonization the manufacturers would meet two sets of standards (EASA and FAA). Meeting two sets of certification requirements raises the cost of developing a new transport category airplane, often with no increase in safety. EASA regulations and associated compliance in the areas affected by the changes in this NPRM are more stringent than FAA regulations and compliance. These safety requirements are increased with no costs, or perhaps at lower costs.

The FAA concludes that the proposed changes would eliminate regulatory differences between the airworthiness standards of the FAA and EASA without affecting current industry design practices resulting in potential cost savings and maintaining current levels of safety. The FAA requests comments with supporting documentation in regard to the conclusions contained in this section.

The FAA has, therefore, determined that this proposed rule is not an economically "significant regulatory action" as defined in section 3(f) of Executive Order 12866.

B. Regulatory Flexibility Determination

The Regulatory Flexibility Act of 1980 (Public Law 96-354) (RFA) establishes "as a principle of regulatory issuance that agencies shall endeavor, consistent with the objectives of the rule and of applicable statutes, to fit regulatory and informational requirements to the scale of the businesses, organizations, and governmental jurisdictions subject to regulation. To achieve this principle, agencies are required to solicit and consider flexible regulatory proposals and to explain the rationale for their actions to assure that such proposals are given serious consideration." The RFA covers a wide range

of small entities, including small businesses, not-for-profit organizations, and small governmental jurisdictions.

Agencies must perform a review to determine whether a rule will have a significant economic impact on a substantial number of small entities. If the agency determines that it will, the agency must prepare a regulatory flexibility analysis as described in the RFA.

However, if an agency determines that a rule is not expected to have a significant economic impact on a substantial number of small entities, § 605(b) of the RFA provides that the head of the agency may so certify, and a regulatory flexibility analysis is not required. The certification must include a statement providing the factual basis for this determination, and the reasoning should be clear.

As noted above, the proposed changes to part 25 are cost-relieving because this proposed rule creates a single certification standard and removes the burden of having to meet two sets of certification requirements. The FAA believes that this proposed rule would not have a significant economic impact on a substantial number of small entities.

The net effect of the proposed rule is minimum regulatory cost relief. Airplane manufacturers already meet or expect to meet this standard. The FAA uses the size standards from the Small Business Administration for Aircraft Manufacturing that specify companies having less than 1,500 employees are small entities. Given that this proposed rule is cost-relieving and there are no small entity manufacturers of part 25 airplanes with less than 1,500 employees, this proposed rule will not have a significant economic impact on a substantial number of small entities. The FAA requests comments regarding this determination. If an agency determines that a rulemaking will not result in

a significant impact on a substantial number of small entities, the head of the agency may so certify under § 605(b) of the RFA. Therefore, as provided in § 605(b), the head of the FAA certifies that this rulemaking will not result in a significant economic impact on a substantial number of small entities. Please provide detailed economic analysis to support any cost differences.

C. International Trade Impact Assessment

The Trade Agreements Act of 1979 (Public Law 96-39) prohibits Federal agencies from establishing any standards or engaging in related activities that create unnecessary obstacles to the foreign commerce of the United States. Legitimate domestic objectives, such as safety, are not considered unnecessary obstacles. The statute also requires consideration of international standards and, where appropriate, that they be the basis for U.S. standards. The FAA has assessed the potential effect of this proposed rule and has determined that the rule is in accord with the Trade Agreements Act as the proposed rule uses European standards as the basis for United States regulation.

D. Unfunded Mandates Assessment

Title II of the Unfunded Mandates Reform Act of 1995 (Public Law 104-4) requires each Federal agency to prepare a written statement assessing the effects of any Federal mandate in a proposed or final agency rule that may result in an expenditure of $100 million or more (in 1995 dollars) in any one year by State, local, and tribal governments, in the aggregate, or by the private sector; such a mandate is deemed to be a "significant regulatory action." The FAA currently uses an inflation-adjusted value of $151 million in lieu of $100 million. This proposed rule does not contain such a mandate; therefore, the requirements of Title II of the Act do not apply.

E. Paperwork Reduction Act

The Paperwork Reduction Act of 1995 (44 U.S.C. 3507(d)) requires that the FAA consider the impact of paperwork and other information collection burdens imposed on the public. The FAA has determined that there would be no new requirement for information collection associated with this proposed rule.

F. International Compatibility

In keeping with U.S. obligations under the Convention on International Civil Aviation, it is FAA policy to conform to International Civil Aviation Organization (ICAO) Standards and Recommended Practices to the maximum extent practicable. The FAA has reviewed the corresponding ICAO Standards and Recommended Practices and has identified no differences with these proposed regulations.

Executive Order (EO) 13609, Promoting International Regulatory Cooperation, [77 FR 26413, May 4, 2012] promotes international regulatory cooperation to meet shared challenges involving health, safety, labor, security, environmental, and other issues and reduce, eliminate, or prevent unnecessary differences in regulatory requirements. The FAA has analyzed this action under the policy and agency responsibilities of Executive Order 13609, Promoting International Regulatory Cooperation. The agency has determined that this action would eliminate differences between U.S. aviation standards and those of other civil aviation authorities by creating a single set of certification requirements for transport category airplanes that would be acceptable in both the United States and Europe.

G. Environmental Analysis

FAA Order 1050.1E identifies FAA actions that are categorically excluded from preparation of an environmental assessment or environmental impact statement under the National Environmental Policy Act in the absence of extraordinary circumstances. The FAA has determined this rulemaking action qualifies for the categorical exclusion identified in paragraph 312f of Order 1050.1E and involves no extraordinary circumstances.

V. Executive Order Determinations

A. Executive Order 13132, Federalism

The FAA has analyzed this proposed rule under the principles and criteria of Executive Order 13132, Federalism. The agency has determined that this action would not have a substantial direct effect on the States, or the relationship between the Federal Government and the States, or on the distribution of power and responsibilities among the various levels of government, and, therefore, would not have Federalism implications.

B. Executive Order 13211, Actions Concerning Regulations that Significantly Affect Energy Supply, Distribution, or Use

The FAA analyzed this proposed rule under Executive Order 13211, Actions Concerning Regulations that Significantly Affect Energy Supply, Distribution, or Use (May 18, 2001). The agency has determined that it would not be a "significant energy action" under the executive order and would not be likely to have a significant adverse effect on the supply, distribution, or use of energy.

VI. Additional Information

A. Comments Invited

The FAA invites interested persons to participate in this rulemaking by submitting written comments, data, or views. The agency also invites comments relating to the economic, environmental, energy, or federalism impacts that might result from adopting the proposals in this document. The most helpful comments reference a specific portion of the proposal, explain the reason for any recommended change, and include supporting data. To ensure the docket does not contain duplicate comments, commenters should send only one copy of written comments, or if comments are filed electronically, commenters should submit only one time.

The FAA will file in the docket all comments it receives, as well as a report summarizing each substantive public contact with FAA personnel concerning this proposed rulemaking. Before acting on this proposal, the FAA will consider all comments it receives on or before the closing date for comments. The FAA will consider comments filed after the comment period has closed if it is possible to do so without incurring expense or delay. The agency may change this proposal in light of the comments it receives.

Proprietary or Confidential Business Information: Commenters should not file proprietary or confidential business information in the docket. Such information must be sent or delivered directly to the person identified in the FOR FURTHER INFORMATION CONTACT section of this document, and marked as proprietary or confidential. If submitting information on a disk or CD-ROM, mark the outside of the disk or CD-ROM, and identify electronically within the disk or CD-ROM the specific information that is proprietary or confidential.

Under 14 CFR 11.35(b), if the FAA is aware of proprietary information filed with a comment, the agency does not place it in the docket. It is held in a separate file to which the public does not have access, and the FAA places a note in the docket that it has received it. If the FAA receives a request to examine or copy this information, it treats it as any other request under the Freedom of Information Act (5 U.S.C. 552). The FAA processes such a request under Department of Transportation procedures found in 49 CFR part 7.

B. Availability of Rulemaking Documents

An electronic copy of rulemaking documents may be obtained from the Internet by—

1. Searching the Federal eRulemaking Portal (http://www.regulations.gov);
2. Visiting the FAA's Regulations and Policies web page at http://www.faa.gov/regulations_policies or
3. Accessing the Government Printing Office's web page at http://www.gpoaccess.gov/fr/index.html.

Copies may also be obtained by sending a request to the Federal Aviation Administration, Office of Rulemaking, ARM-1, 800 Independence Avenue SW., Washington, DC 20591, or by calling (202) 267-9680. Commenters must identify the docket or notice number of this rulemaking.

All documents the FAA considered in developing this proposed rule, including economic analyses and technical reports, may be accessed from the Internet through the Federal eRulemaking Portal referenced in item (1) above.

List of Subjects in 14 CFR Part 25

Aircraft, Aviation safety, Life-limited parts, Reporting and recordkeeping requirements.

The Proposed Amendment

In consideration of the foregoing, the Federal Aviation Administration proposes to amend chapter I of Title 14, Code of Federal Regulations as follows:

PART 25 – AIRWORTHINESS STANDARDS: TRANSPORT CATEGORY AIRPLANES

1. The authority citation for part 25 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701, 44702, 44704.

2. Amend § 25.851 by revising paragraphs (a)(3) and (b)(2) to read as follows:

§ 25.851 Fire extinguishers.

(a) * * *

(3) At least one readily accessible hand fire extinguisher must be available for use in each Class A or Class B cargo or baggage compartment and in each Class E or Class F cargo or baggage compartment that is accessible to crewmembers in flight.

* * * * *

(b) * * *

(2) The capacity of each required built-in fire extinguishing system must be adequate for any fire likely to occur in the compartment where used, considering the volume of the compartment and the ventilation rate. For purposes of this section, a system is adequate if there is sufficient quantity of agent to extinguish the fire or suppress

the fire anywhere baggage or cargo is placed within the cargo compartment for the duration required to land and evacuate the airplane.

3. Amend § 25.855 by revising paragraphs (b), (c), and (h)(3) to read as follows:

§ 25.855 Cargo or baggage compartments.

* * * * *

(b) Each of the following cargo or baggage compartments, as defined in § 25.857, must have a liner that is separate from, but may be attached to, the airplane structure:

(1) Any Class B through Class E cargo or baggage compartment, and

(2) Any Class F cargo or baggage compartment, unless other means of containing a fire and protecting critical systems and structure are provided.

(c) Ceiling and sidewall liner panels of Class C cargo or baggage compartments, and ceiling and sidewall liner panels in Class F cargo or baggage compartments, if installed to meet the requirements of paragraph (b)(2) of this section, must meet the test requirements of part III of appendix F of this part or other approved equivalent methods.

* * * * *

(h) * * *

(3) The dissipation of the extinguishing agent in all Class C compartments or, if applicable, in any Class F compartments.

* * * * *

4. Amend § 25.857 by revising paragraph (b)(1) and adding a new paragraph (f) to read as follows:

§ 25.857 Cargo compartment classification.

* * * * *

(b) * * *

(1) There is sufficient access in flight to enable a crewmember, standing at any one access point and without stepping into the compartment, to extinguish a fire occurring in any part of the compartment using a hand fire extinguisher.

* * * * *

(f) *Class F.* A Class F cargo or baggage compartment is located on the main deck, readily accessible in flight, and is one in which—

(1) There is a separate approved smoke detector or fire detector system to give warning at the pilot or flight engineer station;

(2) There are means to extinguish or control a fire without requiring a crewmember to enter the compartment; and

(3) There are means to exclude hazardous quantities of smoke, flames, or extinguishing agent from any compartment occupied by the crew or passengers.

5. Amend part I of appendix F to part 25 by revising paragraphs (a)(1)(ii) and (a)(2)(iii) to read as follows:

Appendix F to Part 25

Part I—Test Criteria and Procedures for Showing Compliance with § 25.853 or § 25.855.

(a) * * *

(1) * * *

(ii) Floor covering, textiles (including draperies and upholstery), seat cushions, padding, decorative and nondecorative coated fabrics, leather, trays and galley furnishings, electrical conduit, air ducting, joint and edge covering, liners of Class B and

E cargo or baggage compartments, floor panels of Class B, C, E, or F cargo or baggage compartments, cargo covers and transparencies, molded and thermoformed parts, air ducting joints, and trim strips (decorative and chafing), that are constructed of materials not covered in paragraph (a)(1)(iv) of part I of this appendix, must be self-extinguishing when tested vertically in accordance with the applicable portions of part I of this appendix or other approved equivalent means. The average burn length may not exceed 8 inches, and the average flame time after removal of the flame source may not exceed 15 seconds. Drippings from the test specimen may not continue to flame for more than an average of 5 seconds after falling.

* * * * *

(2) * * *

(iii) A cargo or baggage compartment defined in § 25.857 as Class B, C, E, or F must have floor panels constructed of materials which meet the requirements of paragraph (a)(1)(ii) of part I of this appendix and which are separated from the airplane structure (except for attachments). Such panels must be subjected to the 45 degree angle test. The flame may not penetrate (pass through) the material during application of the flame or subsequent to its removal. The average flame time after removal of the flame source may not exceed 15 seconds, and the average glow time may not exceed 10 seconds.

* * * * *

Issued under the authority provided by 49 U.S.C. 106(f), 44701(a), and 44703 in Washington, D. C., on June 26, 2014.

Frank P. Paskiewicz
Acting Director, Aircraft Certification Service

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