

misleading fire progress information provided to the captain. Considering the few lavatory components that would be affected and the time that the fire had been burning prior to the emergency landing, it is unlikely that the outcome of the accident would have been more favorable if the lavatory of that airplane had met the new heat release standards.

Subsequent to the accident, the FAA adopted Amendments 25-58 and 121-183 (49 FR 43182, October 26, 1984), and 25-59 and 121-184 (49 FR 43188, October 26, 1984), that require, respectively, low-level lighting to enable occupants to locate emergency exits in smoke-filled cabins and new flammability standards for seat cushions. Unlike the heat release standards of Amendment 25-61, the new flammability standards for seat cushions are designed to slow the progression of a fire through the cabin. The standards of Amendment 25-61 are, on the other hand, designed to reduce the overall release of heat into the cabin during a post-crash fire situation and provide more time for egress before flashover makes further escape impossible. Amendment 121-185 (50 FR 12726, March 29, 1985) was also adopted to require each lavatory to be equipped with a smoke detection system, or equivalent, and a fire extinguisher that discharges automatically upon the occurrence of a fire in the trash receptacle. In addition, the amendment requires the passenger cabins of certain airplanes to be equipped with additional hand fire extinguishers, some of which must contain the improved agent Halon 1211.

The commenter also notes that all compartments with essential systems adjacent to their surfaces should be required to meet the heat release standards of § 25.853(a-1) in order to protect the essential conductors of those systems from the high heat releases of burning interior materials.

The commenter appears to be confusing the standards for heat release with other standards for flame resistance. As noted above, the heat release standards are designed to reduce the overall release of heat into an area and thereby delay the time until flashover occurs. It is assumed, on the other hand, that the insulation of electrical wiring and cables could be enveloped by flame. They must, therefore, be tested by actual application of flame to the insulation surface.

The same commenter recommends that, if an isolated compartment does not have to meet the heat release standards, the doors separating the compartment from the main cabin should be able to contain the heat and

smoke in the isolated compartment for at least five minutes. (Such doors would be 'fire-resistant' as defined in Part 1 of the FAR.)

The commenter's recommendation is apparently based on the assumption that there will be an uncontrollable fire originating from an isolated compartment. In view of the fire protection measures that have been adopted for lavatories since the above noted accident, there is no evident need for fire-resistant lavatory doors. Furthermore, service history does not support a need for such doors to other isolated compartments. The exception proposed as § 25.853(a-2) is, therefore, adopted as § 25.853(e).

One commenter recommends that § 25.853(a-1)(1) be amended to read, "other than lighting lenses, illuminated signs and windows," since illuminated signs are discussed in the preamble to Notice 90-12 as examples of excluded items. While it is true that the illuminated portions of passenger information signs are not required to meet the heat release standards of that section, it is not necessary to refer to them specifically in § 25.853(a-1)(1) because they are "lighting lenses." Proposed § 25.853(a-1)(1) is adopted as § 25.853(d)(1).

The same commenter and one other recommend that § 25.853(a-2) be clarified by adding "lavatories" to the list of compartments whose interiors are excluded. Unlike the illuminated signs discussed above, it may not be as clear that lavatories are considered isolated compartments and, as such, are already excluded. Proposed § 25.853(a-2) is, therefore, changed to read, "* * * such as pilot compartments, galleys, lavatories, crew rest quarters, cabinets and stowage compartments, * * *," and adopted as § 25.853(e).

One commenter suggests that § 25.853(a-2) should stipulate "20 or more passengers." Since the only purpose of this paragraph, adopted as paragraph (e), is to make an exception to paragraph (a-1), adopted as paragraph (d), which is already so limited, there is no need to repeat this limitation of applicability.

Because the flammability standards of § 25.853(d), formerly § 25.853(a-1), are applicable only to airplanes with 20 or more passengers, some persons have mistakenly assumed that the seat cushion standards of § 25.853(c) are also applicable only to airplanes with 20 or more passengers. To preclude any confusion in this regard, the phrase, "regardless of the passenger capacity of the airplane," has been added to § 25.853 (a) and (c).

Another commenter suggests that Part IV of Appendix F should be amended to permit the use of the optional 14-hole upper pilot burner that has been found satisfactory. Actually, the use of this optional burner has already been accepted by the FAA under the equivalent safety provisions of § 21.21(b)(1). The FAA notes that test data obtained during testing with the three-hole burner are sometimes invalidated because the pilot burner would not remain lighted for the entire 5-minute duration of the test. With the optional 14-hole burner, there is a greater probability of reigniting any flamelets that might extinguish during a test. Because the 14-hole burner may be preferable in some instances, Part IV is amended to describe the optional use of that burner, as suggested by the commenter. Testing with this optional burner is already permitted under the equivalent safety provisions of § 21.21(b)(1); therefore, this is a minor nonsubstantive change that places no additional burden on any person.

Paragraph (b)(8) states that the pilot burners must remain lighted for the entire duration of the test. In regard to the difficulties experienced in keeping the three-hole upper pilot burner lighted for the entire duration of the test, the FAA proposed to add the statement, "Intermittent pilot flame extinguishment for more than 3 seconds would invalidate the test results." The same commenter notes that further clarification is required. According to the commenter, it is normal for some of the upper pilot-burner flamelets to be extinguished for periods that can exceed three seconds when samples containing flame retardants are tested. The commenter notes that the results of such tests have been considered acceptable provided some of the flamelets have remained lighted.

The FAA concurs that it is not necessary for each flamelet of the three-hole upper pilot burner to remain lighted for the entire 5-minute duration of the test; however, test results may be invalidated if two flamelets are unlighted for more than 3 seconds. In order to preclude, such intermittent flamelet extinguishment, the FAA has permitted applicants to install an igniter. Intermittent flame extinguishment has not posed a problem with the optional 14-hole upper pilot burner since it was developed to preclude flame extinguishment. Paragraph (b)(8) is, therefore, changed to read, "Since intermittent pilot flame extinguishment for more than 3 seconds would invalidate the test results, a spark igniter may be installed to ensure that the burners remain lighted." Paragraph