

**DEPARTMENT OF CIVIL AVIATION
MALAYSIA
AIRWORTHINESS NOTICE**

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Date: 1 July 1991

IMPROVED FLAMMABILITY TEST STANDARDS FOR CABIN INTERIOR MATERIALS

1. Applicability

This Airworthiness Notice is applicable to all Malaysian registered aeroplanes over 5700 kg MTWA, certificated in the Transport Category(Passenger) to carry 20 or more passengers and of a type for which a Type Certificate was issued (in any ICAO contracting states) on or after 1 January 1958.

2. Introduction

- 2.1 Analysis of aircraft accidents in which cabin fire has been a major factor has indicated that currently approved cabin interior materials should meet more severe flammability test standards to reduce the risk of an uncontrolled in-flight cabin fire and extend the survival time in a ground fire emergency.
- 2.2 Cabin interior material flammability, smoke and toxic emissions are some of the critical factors which affect cabin occupant survivability. Over the past twenty years there has been extensive research carried out, particularly in the USA, in an attempt to quantify the hazards and to define meaningful test methods and airworthiness standards.
- 2.3 Recent FAA research work, involving full scale fire tests, has established a significant correlation between flammability characteristics and both smoke and toxic emissions. As a result they have placed great emphasis on the introduction of fire-hardened materials into aircraft (i.e. materials with higher ignition temperatures, reduced heat release rates and lower content of thermally unstable components). The DCA supports this approach and has already issued the more severe flammability test standards for aircraft seat (Airworthiness Notice No. 39).
- 2.4 The FAA has amended FAR Parts 25 and 121 (Amendments 25-61 and 121-189 respectively) to require a new flammability test standard for cabin sidewalls, ceilings, stowages, partitions, galleys, etc. As a result of an extended comment period, FAA has further revised and now amends FAR Parts 25 and 121 at Amendments 25-66 and 121-198 respectively. Similar amendments have now been incorporated in JAR-25 at Change 13. This new test standard sets a limit for heat release rate and smoke emission from cabin materials when exposed to a source of radiant heat.
- 2.5 The DCA are in full agreement with the new FAA flammability and smoke emission test standards and intends, by this Notice, to require the same standards be adopted for those aeroplanes defined in paragraph 1 of this Notice.
- 2.6 Under the provision of this Notice aircraft already in service may continue without incorporating materials which comply with the new flammability test standards until such a time as the cabin interior is substantially renewed. In due course the DCA may consider it necessary to propose dates by which all aircraft shall be in compliance.

3. Compliance

- 3.1 With effect from 20 August, 1988, but prior to 20 August, 1990, all aeroplanes defined in paragraph 1 of this Notice, which are either newly manufactured or are the subject of a substantially complete cabin interior renewal, shall comply with the requirements of paragraph 4.1 of this Notice.
- 3.2 With effect from 20 August, 1990, all aeroplanes defined in paragraph 1 of this Notice, which are either newly manufactured or are the subject of a substantially complete cabin interior renewal, shall comply with the requirements of paragraph 4.2 of this Notice.
 - 3.2.1 The DCA may be prepared to grant a dispensation for specific components of the cabin interior which do not meet the applicable flammability and smoke emission requirements, provided that special circumstances exist which makes compliance impractical. Such dispensations will be limited to aircraft which are newly manufactured or the subject of a substantially complete cabin interior renewal before 20 August 1991.
 - 3.2.2 A request for such a dispensation must include full details of the steps being taken to achieve compliance, acceptable reasons for such non-compliance and a thorough and accurate analysis of each component.

4. Requirements

- 4.1 Cabin interior ceiling and wall panels (other than lighting lenses), partitions, and the outer surfaces of galleys, large

cabinets and stowage compartments (other than underseat stowage compartments and compartments for stowing small items such as magazines and maps), shall satisfy the test standards of Part IV of Appendix F of FAR 25/JAR 25, except that the total heat release over the first two minutes of sample exposure shall not exceed 100 kilowatt-minutes per square meter, and the peak heat release rate shall not exceed 100 kilowatts per square metre.

- 4.2 Cabin interior ceiling and wall panels (other than lighting lenses), partitions, and the outer surfaces of galleys, large cabinets and stowage compartments (other than underseat stowage compartments and compartments for stowing small items such as magazines and maps), shall satisfy the test standards of Part IV and V of Appendix F of FAR 25/JAR 25.

5. Additional Information

- 5.1 For the purpose of this Notice, the term "substantially complete cabin interior renewal", has been used to cover the renewal of all sidewall panels, ceiling panels and/or overhead stowages, whether this is done at one refurbishment or progressively over a period of time as part of a planned cabin interior renewal programme.
- 5.2 The requirements of this Notice are not applicable to individual cabin interior components which are refurbished or have to be replaced due to unserviceability e.g., individual sidewall or ceiling panels or overhead stowage doors. However, where these components are newly manufactured the DCA strongly recommends that they should meet the appropriate requirements of this Notice.
- 5.3 The requirements of this Notice are not normally applicable to the internal structures of galleys and overhead stowages, floor panels and floor coverings, transparent or translucent components such as lenses used in interior lights, illuminated signs and window anti-scratch panels, and other small cabin items such as door and window mouldings, curtains, window shades, seat trays, arm rests and parts of the passenger service units. However, these requirements would be applicable to large surface panels of passenger service units.
- 5.4 If there is any uncertainty as to the applicability of this Notice the DCA should be consulted for clarification.

6. Cancellation

This Notice cancels Airworthiness Notice No. 59, Issue 1, dated 1 September 1988, which should be destroyed.

DIRECTOR GENERAL
DEPARTMENT OF CIVIL AVIATION
MALAYSIA