



U.S. Department
of Transportation

**Federal Aviation
Administration**

Memorandum

Subject: INFORMATION: Use of the Aircraft Materials Fire Test Handbook

Date: September 12, 2000

From: Manager, Transport Standards Staff
Transport Airplane Directorate,
Aircraft Certification Service, ANM-100

Reply to
Attn. of: 00-115-16

To: SEE DISTRIBUTION LIST

The purpose of this memorandum is to provide information to all Aircraft Certification Offices on appropriate use of the recently published Aircraft Materials Fire Test Handbook.

In September 1990, the FAA published Report # DOT/FAA/CT-99/15 titled Aircraft Materials Fire Test Handbook. The handbook was developed under contract to the FAA, by Boeing Commercial Airplane Company with the assistance of McDonnell Douglas Aircraft Company. The handbook consisted of chapters outlining in detail the various material flammability tests utilized by Boeing and/or McDonnell Douglas to show compliance with the FAA material flammability regulations specified in Federal Aviation Regulations (FAR) §§ 25.853, 25.855, 25.857, 25.858, and 25.869. At the time of its publication, all of the test methods presented in the handbook represented an acceptable, but not necessarily the only, method to show compliance. In addition, the handbook contained other chapters containing general information on flammability testing of aircraft material such as where in the regulations to find requirements, international contacts, and a listing of various fire test labs.

The test methods described in chapters 1 through 10 and 15 (see attachment) of the Aircraft Materials Fire Test Handbook, DOT/FAA/AR-00/12 dated April 2000, are the most up to date test methods to be used to show compliance with, or demonstrate an equivalent level of safety to, the applicable regulations.

Although the test methods in the handbook cannot, and do not, supersede any method specified by and described in the regulations, they represent an acceptable means of compliance with the relevant regulation and, in some cases, a preferred option over the specified method. Section 25.853 includes provision for "other approved equivalent methods," when referring to the test procedures described in Appendix F. The test methods described in Chapters 1 through 10 and 15 have been determined by the Transport Standards Staff (in consultation with the Fire Safety Section of the William J. Hughes Technical Center) to provide an equivalent level of safety with respect to the test methods specified in Appendix F. In addition, they are more repeatable and reproducible and are easier to conduct.

The test methods described in the handbook are intended to be adopted in total, if they are used. That is, use of a portion of a test method from the Handbook, and another portion of the test method from Appendix F, is not automatically acceptable. If sections from more than one version of a test method are proposed to show compliance, approval must be received from the appropriate FAA Aircraft Certification Office. In addition, those requests should be coordinated with the Transport Standards Staff.

All Aircraft Certification Offices are therefore encouraged to allow the use of these improved test methods in current certification projects. The supporting certification documentation should note that

the Handbook was used in accordance with the provisions in § 25.853, which permit an “equivalent” test method, in lieu of that specified in Appendix F.

We anticipate publishing this guidance as a more formal Policy Notice in the Federal Register, within the next few months. Any questions may be directed to Jeff Gardlin at (425)227-2136 or Jayson Claar at (425)227-2194.

--original signed by
John W. McGraw

Attachment

Attachment to 00-115-16

Chapter 1 – The 60 second and 12 second Vertical Bunsen Burner Test specified in §§ 25.853 and 25.858 and Appendix F of Part 25.

Chapter 2 – The 30 second 45 degree Bunsen Burner Test specified in § 25.857 and Appendix F of Part 25

Chapter 3 – The 15-second horizontal Bunsen Burner Test specified in § 25.853 and Appendix F of Part 25

Chapter 4 – The 30 second 60 degree Bunsen Burner Wire Test specified in § 25.869 and Appendix F of Part 25

Chapter 5 – The Rate of Heat Release Test specified in § 25.853 and Appendix F of Part 25

Chapter 6 – The Smoke Test for Cabin Materials specified in § 25.853 and Appendix F of Part 25

Chapter 7 – The Oil Burner Test for Cargo Liners specified in § 25.855 and Appendix F of Part 25

Chapter 9 – The Radiant Heat Test for Evacuation Slides, Ramps, and Rafts specified in TSO-C69A

Chapter 10 – The Fire Containment Test of Waste Stowage Compartments to demonstrate compliance with § 25.853(e)

Chapter 15 – The Oil Burner Test for Repaired Cargo Compartment Liners to demonstrate continued compliance with § 25.855.