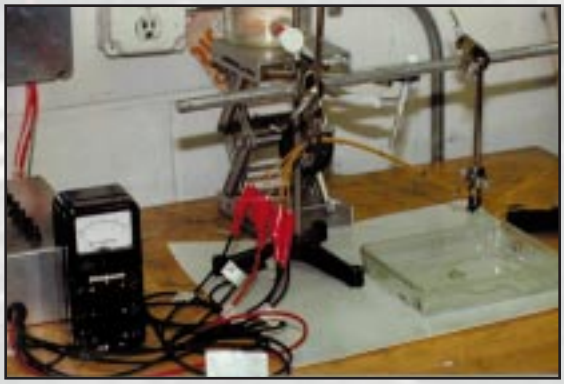
Materials Fire Test Facility Building 203

The Materials Fire Test Facility, Building 203, located in the Safety Research and Development area of the FAA William J. Hughes Technical Center, is dedicated to small-scale fire testing of aircraft materials.

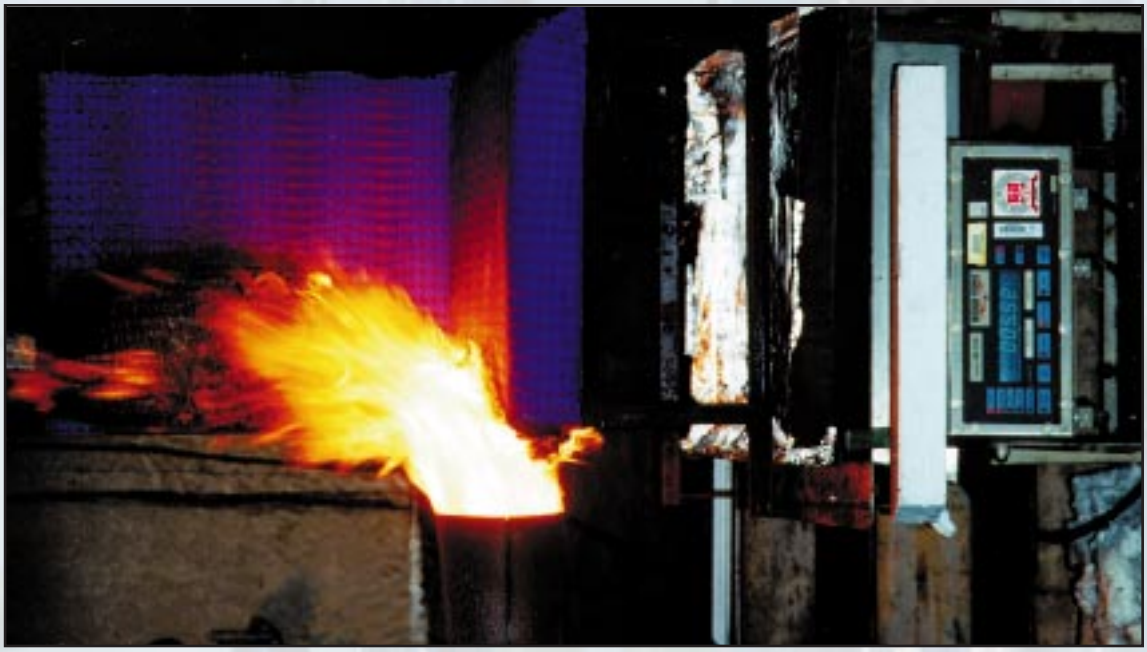
All of the test equipment required to conduct the regulatory tests for aircraft interior materials specified in Code of Federal Regulations 25.853 are available in the Materials Fire Test Facility. This includes the Ohio State University (OSU) rate of heat release apparatus; the National Bureau of Standards (NBS) smoke chamber; oil burners for the seat cushion and cargo liner tests; and Bunsen burners for the vertical, horizontal, and the 45- and 60-degree flammability tests. The facility provides technical support to the Transport Airplane Directorate, Aircraft Certification offices, Designated Engineering Representatives, testing laboratories, and aircraft materials manufacturers.

The facility is also the site for the development of new small-scale flammability tests such as the wet and dry arc propagation tests for aircraft wiring, as shown on the right. While other test methods are used in some laboratories, a number of the NASA labs have adopted the dry arc propagation test developed in the Materials Fire Test Facility with a few minor modifications. A more realistic smoke test for aircraft wiring using the NBS smoke chamber was also developed in this facility. This test duplicates the behavior of overheated wires and smoking insulation in an in-flight hidden-fire scenario.

As a result of a fire in an aircraft stowage bin and a recommendation from the National Transportation Safety Board, a new flammability test for aircraft blankets was developed in the Materials Fire Test Facility. The new test procedure was released as a Flight Standards Information Bulletin in 1996.



Round-robin testing by interested parties in the United States and Europe is monitored and the test data are collected and evaluated by FAA personnel at the Materials Fire Test Facility. This has led to improved flammability tests for aircraft materials. One example is the “cotton swab” test method for thermal/acoustical insulation film coverings. This test method will be incorporated into the Aircraft Materials Fire Test Handbook which is scheduled for release in early 1998. The FAA is also working with industry and regulatory personnel on an international scale to



encourage use of the cotton swab test method for selection of thermal/acoustical insulation film coverings.

The Materials Fire Test Facility personnel also participate in aircraft accident investigations by testing and evaluating materials removed from the aircraft. Other projects, such as burnthrough, electrical wiring, and seat component programs are also supported in this facility.

To find out more about the Materials Fire Test Facility, contact:

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