LESSONS LEARNED:
USE OF MICROSCALE COMBUSTION CALORIMETRY IN THE DEVELOPMENT OF A NEW RADIANT HEAT PANEL TEST FOR AIRCRAFT DUCTING

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Because of the desire to improve in-flight fire safety, the Federal Aviation Administration is examining the adequacy of the fire test requirements for inaccessible area materials, including air conditioning ducts. The current test requirement for air conditioning ducts is the 12-second vertical Bunsen burner test. This test was re-evaluated to verify if it could be used again to screen materials and determine if they are capable of sustaining the updated level of safety. Fire test results showed that this currently used test was not a good discriminator and that a new test was needed; that new test was the radiant heat panel test. Throughout the development of the new radiant heat panel test, the Micro-scale Combustion Calorimeter (MSCC) was used to address some of the challenges encountered. The MSCC contributed significantly to the solution of the following challenges: thermo-mass balance, radiant heat panel temperature setting and determine aircraft ducting materials flammability characteristics (screening tool).