A series of four full scale fire tests were conducted to measure the effect of manual fire fighting efforts on post-flashover room fires. One objective of these tests was to generate data for evaluation of computer models of the fire suppression process.

The tests were conducted in a room and corridor configuration consisting of a 2.44 m cube burn room connected to a 12.8 m long, 2.44 m wide, and 2.44 m high corridor. Hose nozzles with different water spray flow rates and medium drop sizes were used in each of the four nominally identical wood crib fires. Gas temperatures, wall surface temperatures and concentrations of oxygen, carbon dioxide, and carbon monoxide were measured in the burn room. Specializied aspirated and shielded thermocouples were used to minimize the effects of the water sprays on gas temperature measurements.

This study showed that a water spray flowrate of 36.5 l/min with volume median drop size of 930 microns was just able to control the post-flashover fire, the flowrate of 16.3 l/min with median volume drop size of 800 microns did not control the fire, while the 79 l/min flowrate with volume median drop size of 1040 microns definitely extinguished the fire.