

*An Examination of the Effectiveness of Handheld Extinguishers Against Hidden Fires in the Cabin Overhead Areas of Standard and Widebody Transport Aircraft*

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Twenty handheld extinguisher tests were performed in the overhead space of both narrow and wide body aircraft. The tests simulated a typical hidden fire in the inaccessible area above the cabin ceiling using a number of small, controllable candle lanterns. The purpose of the tests was to determine the performance of FAA-required handheld Halon 1211 extinguishers against a fire in this area when using a ceiling-mounted port to discharge the agent through. The port design was modified as testing progressed, in an effort to maximize agent performance. Testing indicated that individual handheld extinguishers were incapable of providing adequate protection against fires in large overhead area volumes typical of wide body aircraft, regardless of the port design. However, the use of ceiling-mounted discharge ports in combination with handheld extinguishers was quite effective against fires in the more-confined overhead area typical of a narrow body aircraft.