Class E Cargo Compartment Fire Suppression

Federal Aviation Administration

Presented to: International Aircraft Systems Fire Protection Working Group. Atlantic City, NJ

By: Dave Blake. FAA Technical Center. Atlantic City, NJ. Email: Dave.Blake@faa.gov

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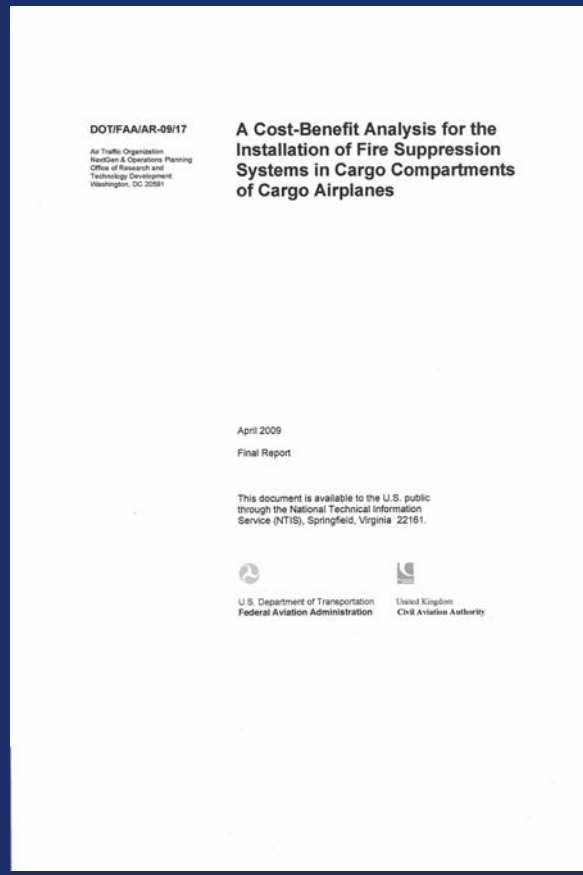
NTSB Recommendation to the FAA

"Require that fire suppression systems be installed in the cargo compartments of all cargo airplanes operating under 14 *Code of Federal Regulations* Part 121. (A-07-99)"

Cost/Benefit study has been conducted on the installation of a total flood Halon 1301 fire suppression system on freighter aircraft. The study was jointly sponsored by the FAA and CAA. One of the conclusions from that study was:

"It is concluded that Halon fire suppression systems, or alternatives that are likely to be developed for below floor cargo compartments, are unlikely to be cost beneficial for the main deck cargo compartments of cargo aircraft of any weight category."

Report Link: http://www.fire.tc.faa.gov/pdf/09-17.pdf



DOT/FAA/AR-09/17

Air Traffic Organization
NextGen & Operations Planning
Office of Research and
Technology Development
Washington, DC 20591

A Cost-Benefit Analysis for the Installation of Fire Suppression Systems in Cargo Compartments of Cargo Airplanes

April 2009

Final Report

This document is available to the U.S. public through the National Technical Information Service (NTIS), Springfield, Virginia 22161.

U.S. Department of Transportation
Federal Aviation Administration

United Kingdom
Civil Aviation Authority

Another conclusion from the study was:

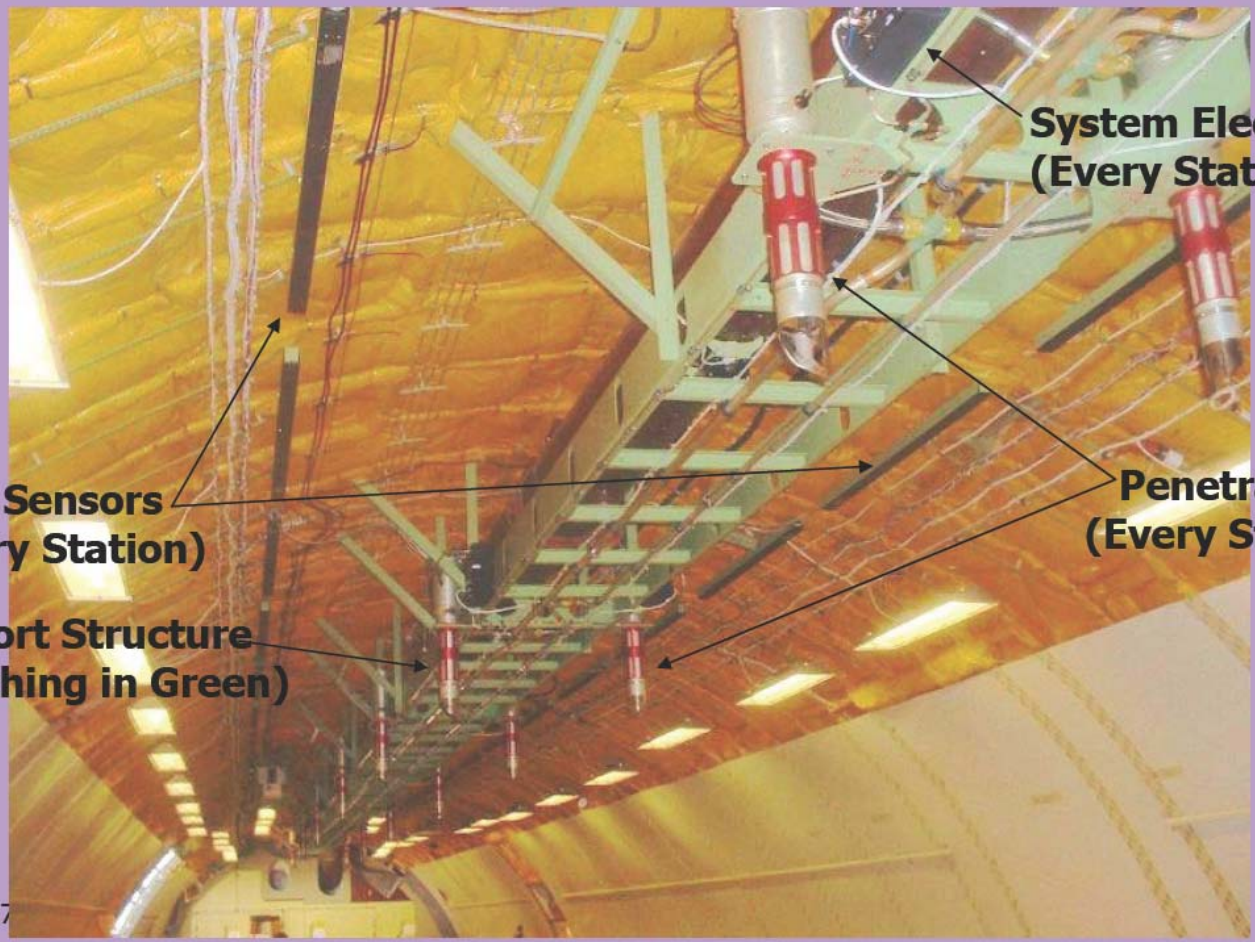
“Fire suppression systems of the kind currently being considered for the cargo compartments of combi aircraft, may prove to be cost beneficial, particularly on larger cargo aircraft.”

FedEx has developed a system that is currently being installed on the main deck of some of their wide body freighters.

Link to Presentation:
http://www.fire.tc.faa.gov/2007Conference/files/Aircraft_Cargo_Compartment/ThursAM/PoppFedExFPS/PoppFedExFPSPres.pdf

FedEx Fire Suppression System

FedEx FAA Certified FSS Installed on MD-10



* Slide from 2007 Conference FedEx presentation

Lexan/Aluminum AAY Container

Other Suppression Options to be Tested:

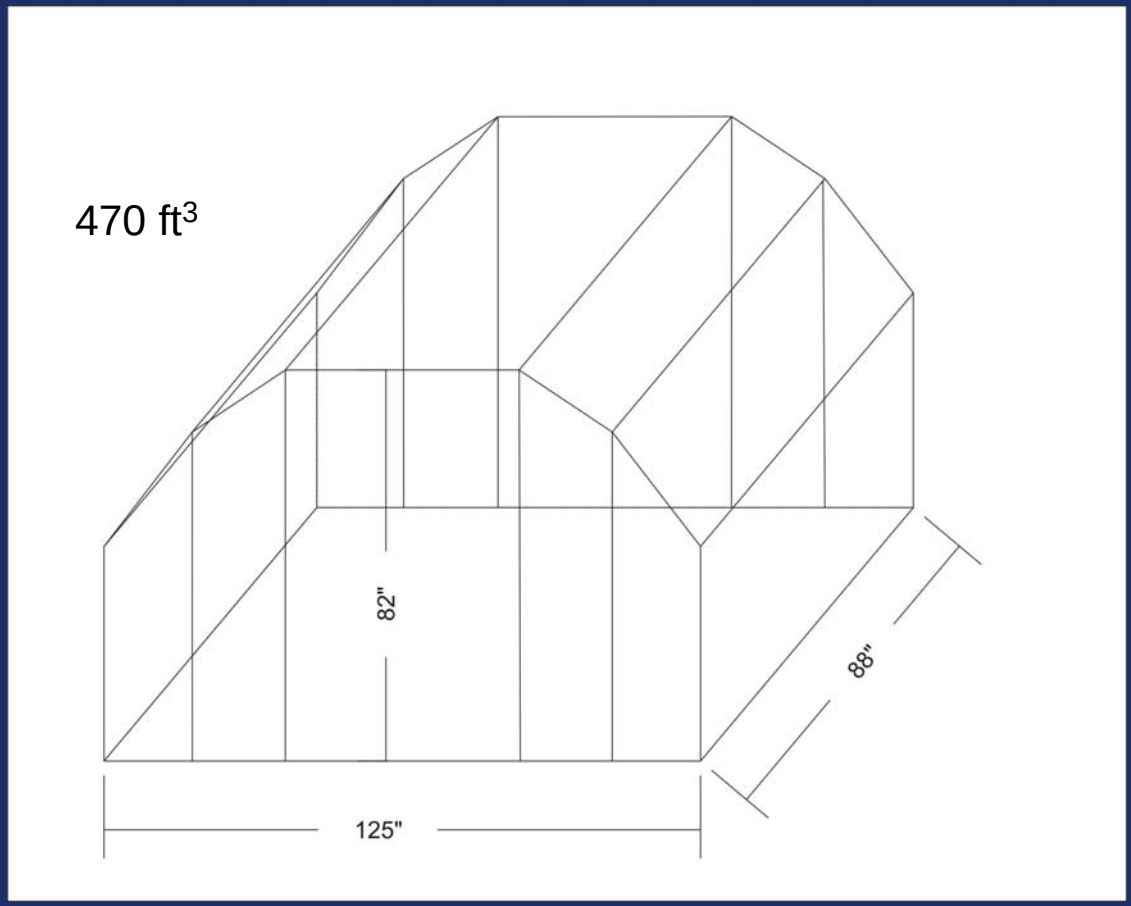
- **Passive Systems.**

Pressurized agents stored in containers that will rupture or mechanically release agent when exposed to heat. Stored in every ULD.

- **Injection Systems.**

Water mist, liquid and gaseous agents, nitrogen, other foam formulations. Penetrating nozzles or umbilical connections.

- **Fire resistant containers.**



Steel test container frame will be skinned with material of interest (Lexan, aluminum, steel, composite, etc.)

- Looking for input from industry
- Task group formation possible in the future