

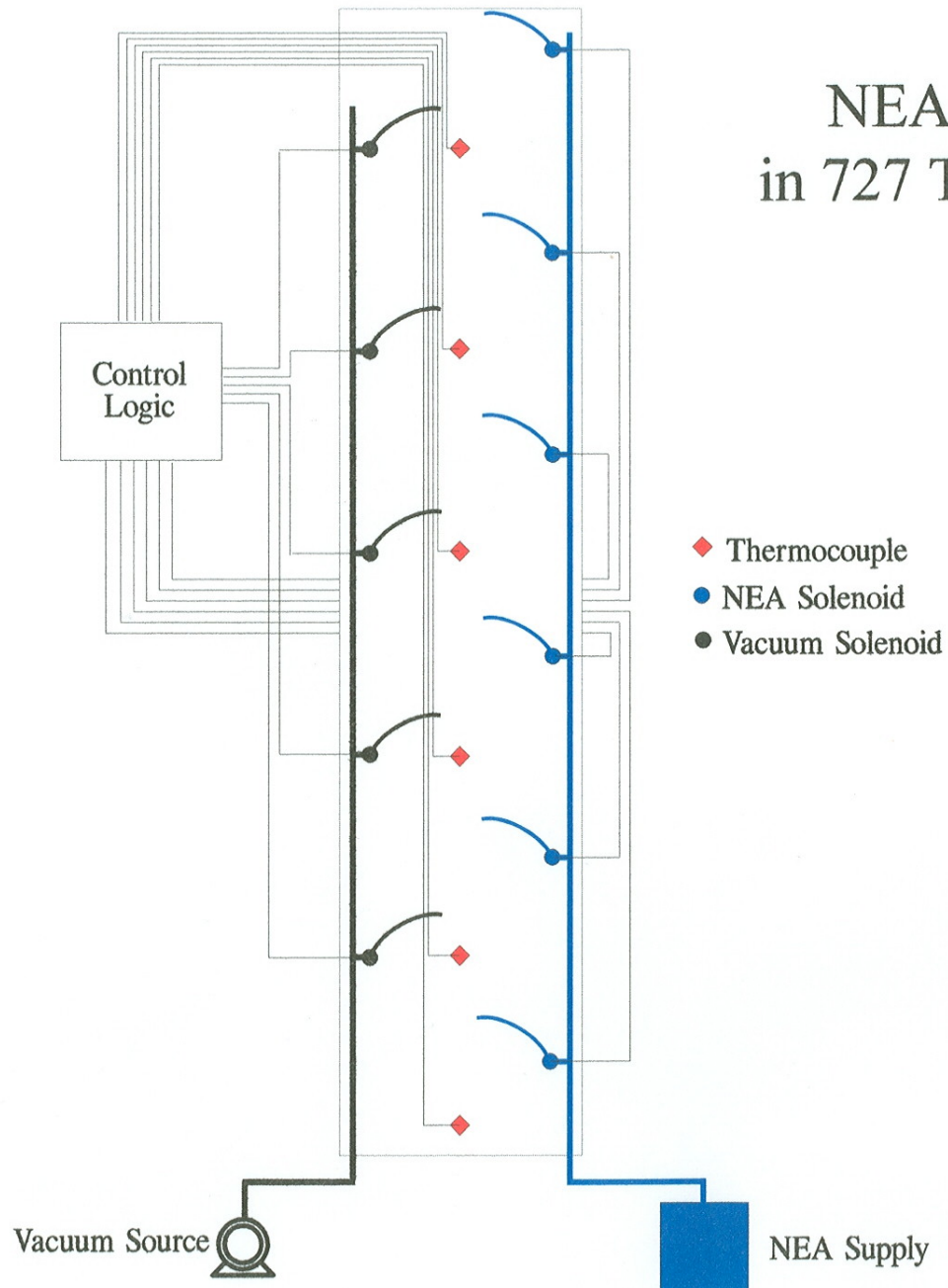
International Aircraft Systems Fire Protection Working Group
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Hidden Fire Testing



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NEA System in 727 Test Article



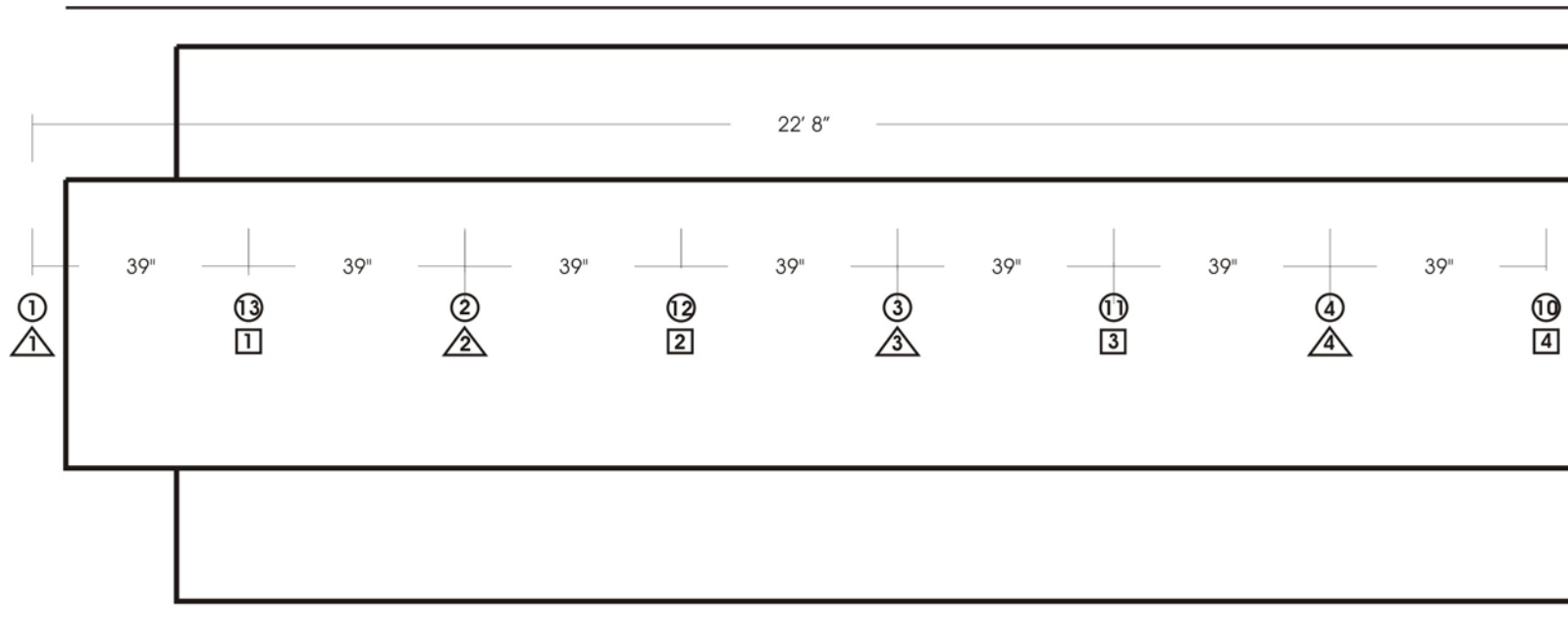


NEA (blue) and vacuum (red) lines attached to 727 fuselage



727 Interior cabin ceiling mockup

727 Instrumentation in area of cabin ceiling mockup



- ① → ⑦ Air Extraction
- ⑧ → ⑬ NEA Insertion
- △ Oxygen Probe
- Thermocouple

Higher capacity air compressor still not operational due to lack of FAA budget.



Previously limited to 10 ft³/min of NEA at ~2.7% O₂ with existing air compressor alone.



Two air reservoir tanks were added to the system with a total capacity of 48.4 ft³ (1.38 m³). NEA flow rate of ~18 ft³/min is now available for ~15 minutes.



Summary

Current nitrogen enriched air (NEA) system and available compressed air is insufficient to inert (below 12% O₂) the above ceiling area in a reasonable time.

Additional options will be explored such as:

- Increased supply of compressed air**
- Increased size of piping and valves in NEA delivery system.**
- Reduced above ceiling zone sizes.**
- Partitioning of above ceiling space**

Inflight Firefighting Training Video



AC 120-80

•Video will serve as visual guidance for illustrating the key points discussed in the AC for dealing with inflight fires.



Advisory Circular

Subject: IN-FLIGHT FIRES

Date: 1/8/04

AC No: 120-80

Initiated by: AFS-210

1. WHAT IS THE PURPOSE OF THIS ADVISORY CIRCULAR (AC)?

a. **General.** The National Transportation Safety Board (NTSB) conducted a review of commercial aviation accidents involving in-flight fires. The scope of the review was limited to transport category airplanes operated by U.S. and foreign air carriers during the period 1983 to 2000. That review prompted the NTSB to issue a number of safety recommendations to the FAA, including A-01-83 through A-01-87 (see Appendix 1). The NTSB recommended that an Advisory Circular (AC) be developed and issued by the FAA to address a number of issues linked to in-flight fires. The FAA agrees with the safety intent of those recommendations and has developed the guidance material that follows. Specifically, this AC:

- Discusses the dangers of in-flight fires, with particular emphasis on hidden fires that may not be visible or easily accessed by the crew. It discusses the importance of recognizing and quickly assessing the conditions that may be associated with hidden fires and the importance of taking immediate action to gain access to fires that are located behind interior panels.
- Provides guidance on how to deal with in-flight fires, emphasizing the importance of crewmembers taking immediate and aggressive action in response to signs of an in-flight fire while stressing the effectiveness of Halon extinguishing agents.
- Discusses the importance of appropriate crewmember training in dealing with hidden fires, the effective application of fire extinguishing agents behind interior panels, and the urgency of the crew's action in dealing with such fires.
- Complements guidance previously developed for crewmembers concerning the proper use of cabin fire extinguishers (AC 20-42C, Hand Fire Extinguishers for Use in Aircraft, and National Fire Protection Association (NFPA) 408, Standard for Aircraft Hand Portable Fire Extinguishers) and the most effective means of extinguishing fires that are readily accessible.
- Includes information from research conducted by the FAA's Technical Center. As additional information becomes available, it will be published in future revisions to this AC.

737

**Filming locations for
simulated fires and flight
attendant demonstrations**



747

Galley and lavatory mockup for filming actual fire scenes



Summary

- **Additional filming demonstrating cabin crew coordination will be done in the A380 cabin simulator at Cranfield University scheduled for mid May.**
- **Script is written and scene details are complete for filming at FAA Technical Center and Cranfield Univ..**
- **Final version of script has been reviewed and edited by a professional screenwriter.**
- **FAA Technical Center filming should start at the beginning of May.**