

# **Hidden Area Fire Program**

or

## **Fires in Inaccessible Areas**

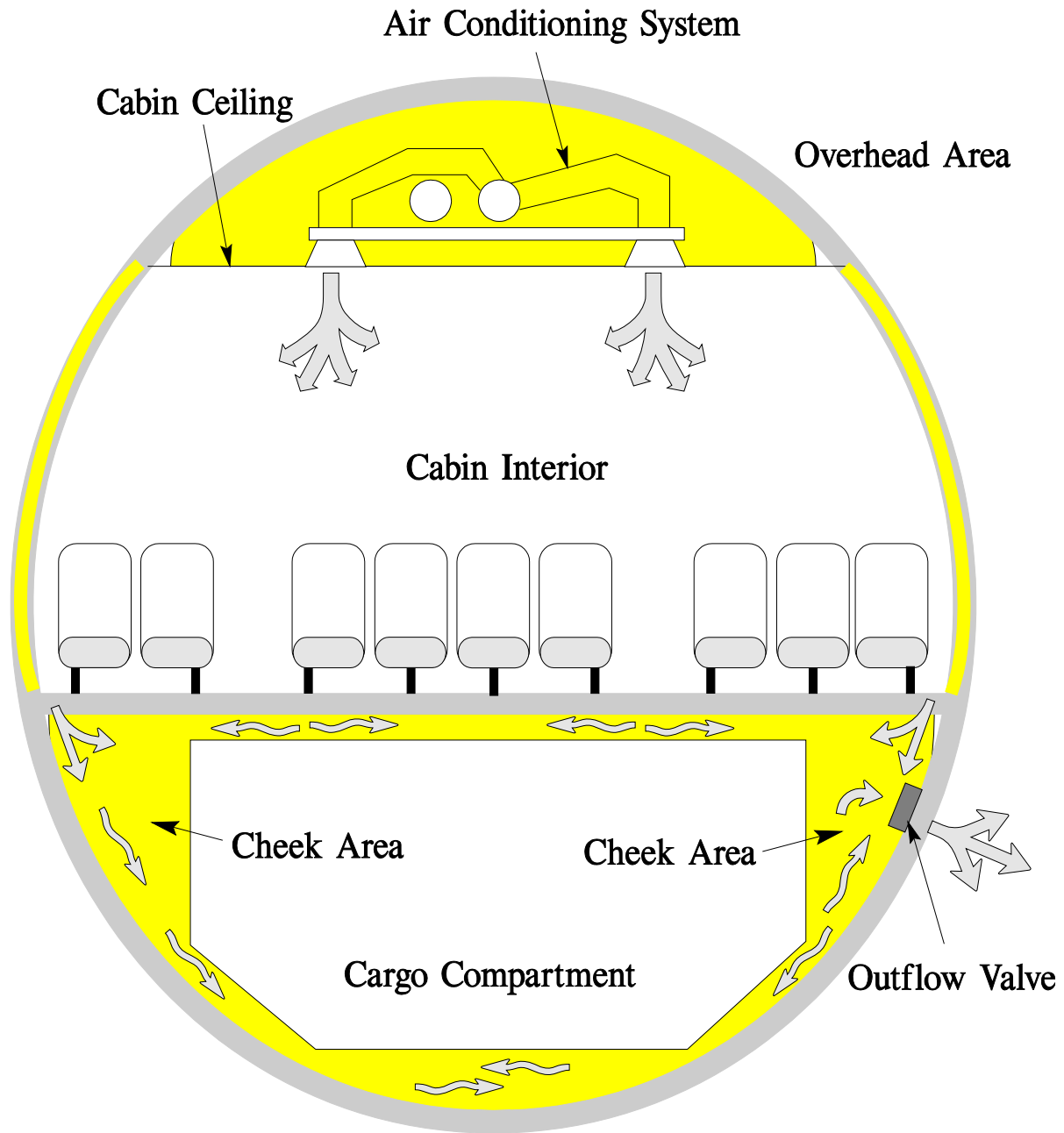
# Review of Existing Programs

## Fire Tests for Materials in Inaccessible Areas:



**Objective:** Develop new test requirements for materials in inaccessible areas in order to bring the level of flammability of all materials to that proposed for thermal acoustical insulation.





# Fire in Hidden Area Above Cabin Ceiling (Overhead)



**AAL N3507A**  
**DC9-82 11/30/00**



# Fire in Hidden Area Above Cabin Ceiling (Overhead)

AAL#6 N3507A  
DC-9-82 11/30/00





## Fire in Bulkhead, Spread to Area Above Cabin Ceiling (Overhead)



# Fire in Cheek Area, Spread to Area Above Cargo Compartment





# Fire in Cheek Area, Spread to Area Above Cargo Compartment





## Fire in Hidden Area Below Cabin Floor (Cheek)



# HIDDEN FIRE SAFETY



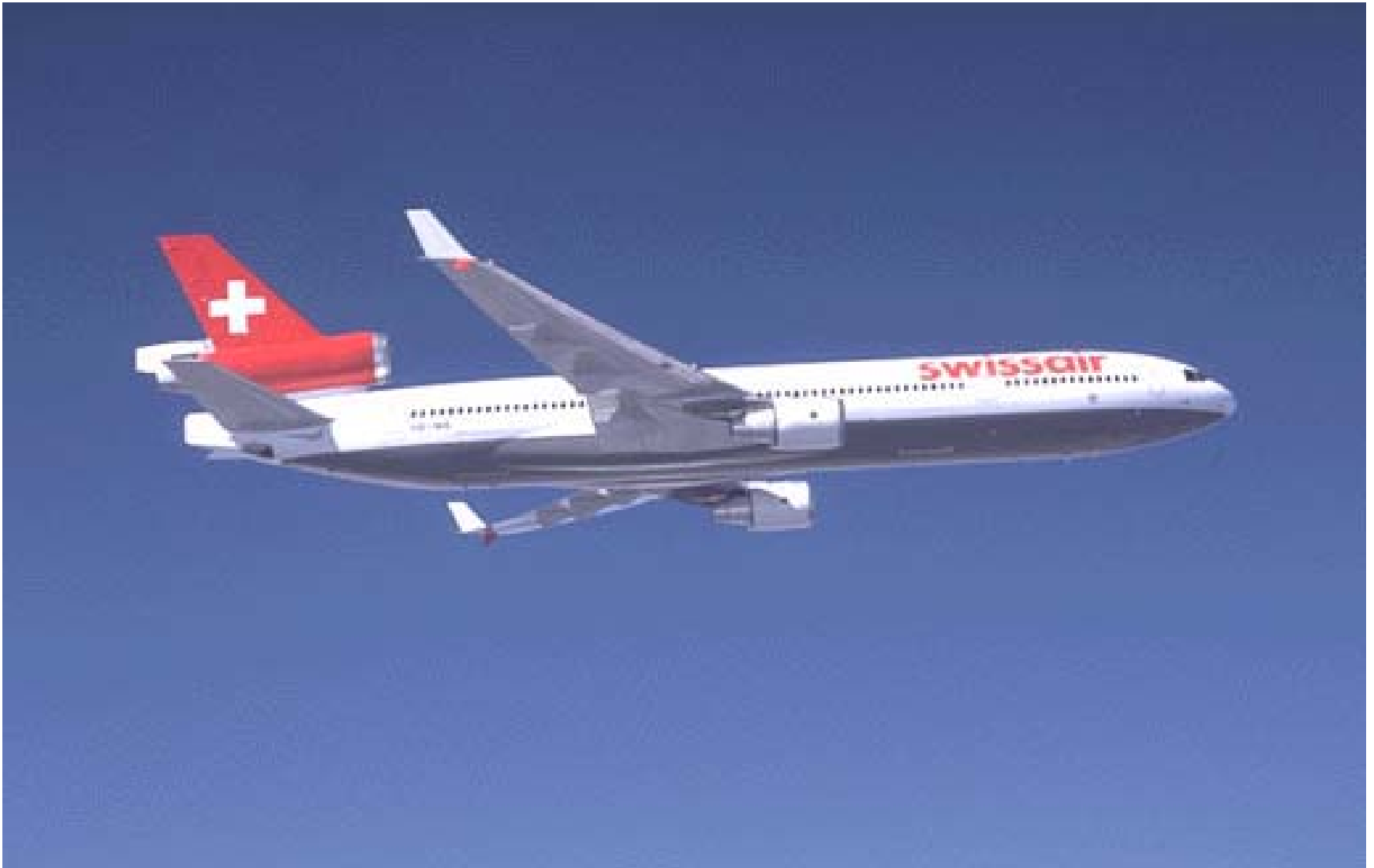
Air Tran DC-9, 8/8/00



American MD-80, 11/29/00



## Fire in Hidden Area Above Cabin Ceiling (Overhead)



# Types of Materials

- Wiring Insulation
- Ducting
- Air Conditioning Components
- Electrical Components
- Foams
- Panels



# Review of Existing Programs

## Fire Tests for Materials in Inaccessible Areas:



**Objective:** Develop new test requirements for materials in inaccessible areas in order to bring the level of flammability of all materials to that proposed for thermal acoustical insulation.



- Conduct full scale tests to identify and quantify the problem..



# Mock-up Test Simulating Cabin Overhead Area





## Full-Scale Mock-up Test Simulating Cabin Overhead Area



# Full-Scale Mock-up Test Simulating Cabin Overhead Area





# Review of Existing Programs

## Fire Tests for Materials in Inaccessible Areas:



**Objective:** Develop new test requirements for materials in inaccessible areas in order to bring the level of flammability of all materials to that proposed for thermal acoustical insulation.



- Conduct full scale tests to identify and quantify the problem.
- **Develop lab scale tests that correlate with full scale data for use in certification. (Materials to be considered include, wire and cable insulation, ducting, shielding and foams.)**







Radiant Panel Test

# Review of Existing Programs

## Fire Tests for Materials in Inaccessible Areas:



**Objective:** Develop new test requirements for materials in inaccessible areas in order to bring the level of flammability of all materials to that proposed for thermal acoustical insulation.



- Conduct full scale tests to identify and quantify the problem.
- Develop lab scale tests that correlate with full scale data for use in certification. (Materials to be considered include, wire and cable insulation, ducting, shielding and foams.)
- **Refine test methods through International Aircraft Materials Fire Test Working Group.**

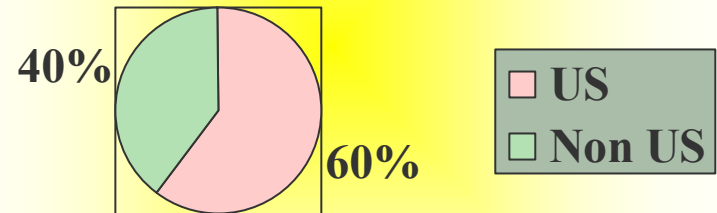




# International Aircraft Materials Fire Test Working Group

- Organized,  
Coordinated and  
Chaired by the Fire  
Safety Section,  
FAA

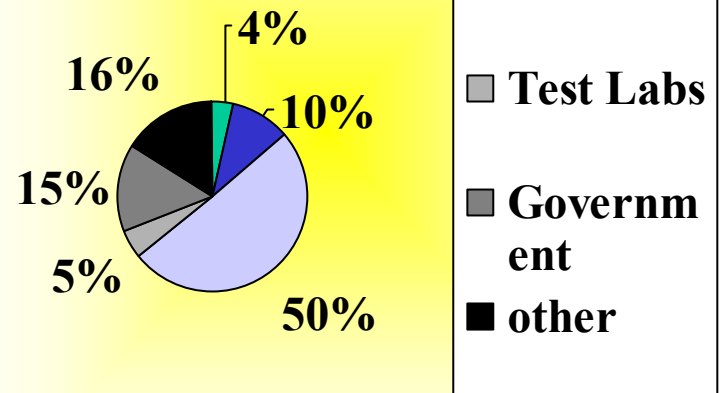
US vs Non US members



# International Aircraft Materials Fire Test Working Group

- 422 Members,  
representing over  
230 different  
organizations

Representation by  
Organization Type





# Review of Existing Programs

## Detection & Extinguishing in Inaccessible Areas:



**Objective:** Determine the feasibility of fire detection and/or extinguishment in various hidden areas of an aircraft and, if feasible, develop certification criteria.

- Obtain design and operational information about hidden areas.
- Conduct full scale tests
- Evaluate present requirements
- Develop Certification criteria as needed

