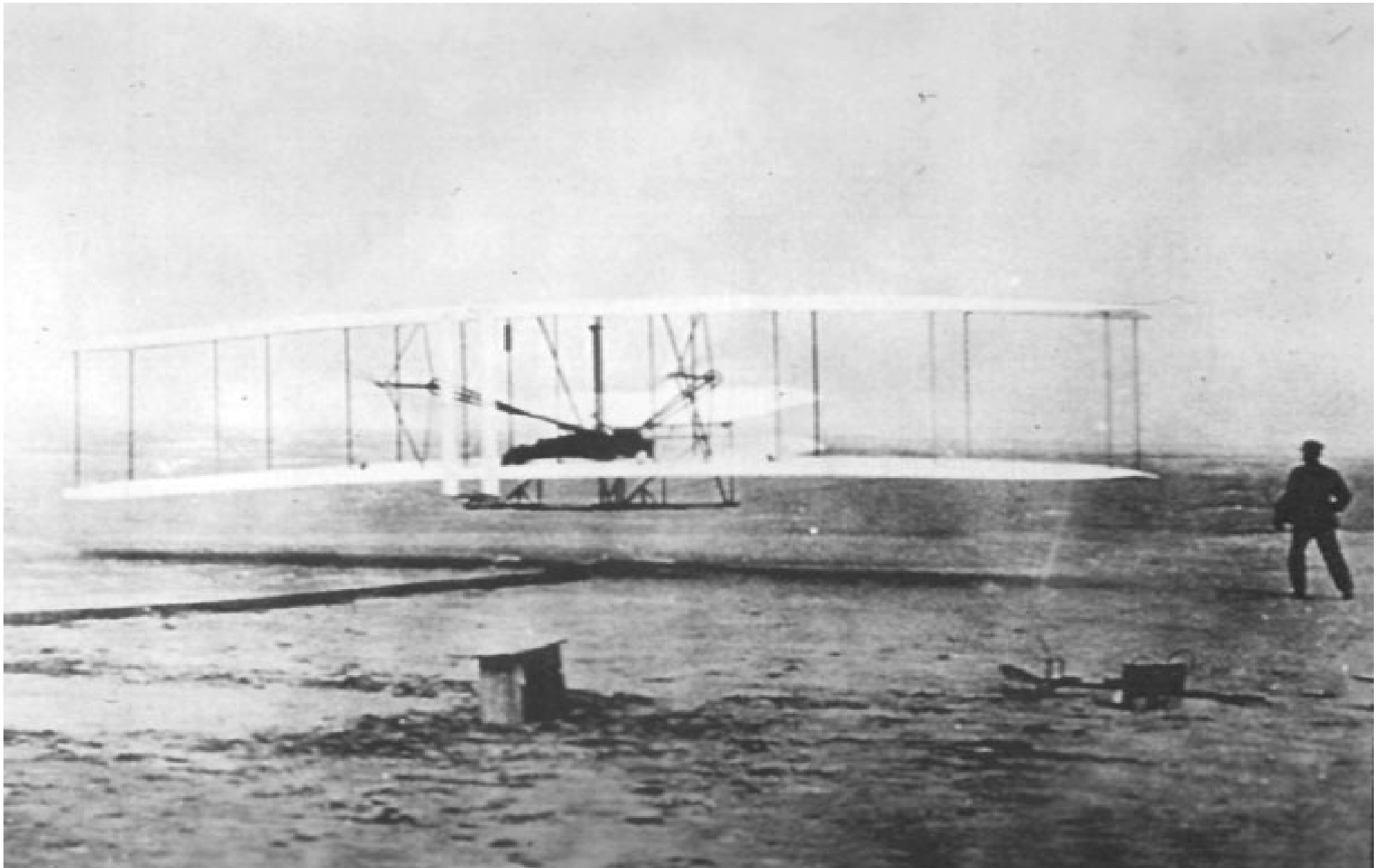


# **Future Design Challenges for Passenger Safety in the Evacuation of Very Large Transport Aircraft**

**Helen Muir  
Cranfield University**

**Mitigating Human Error Conference, RAeS, London,  
October 2003**

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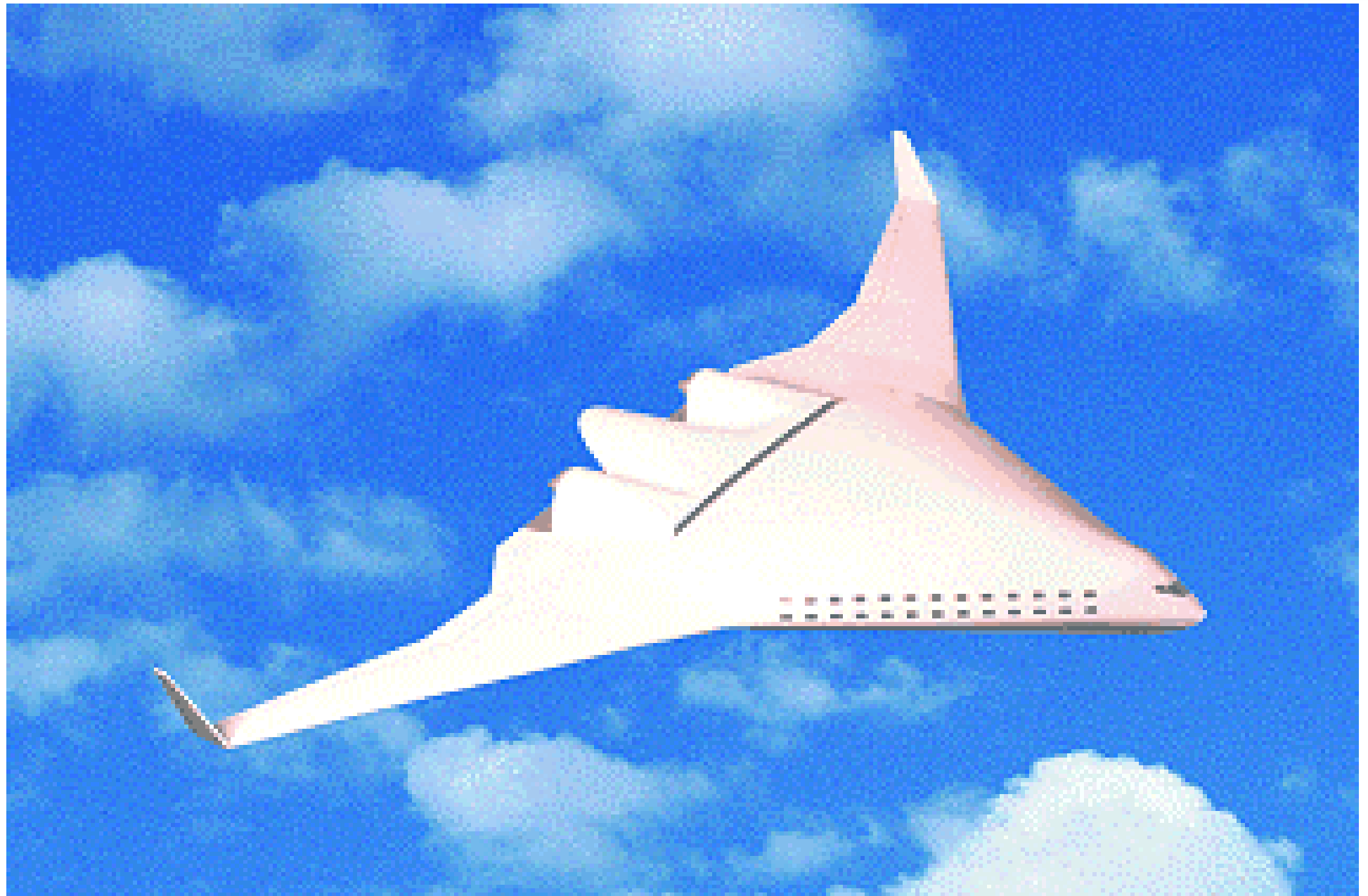




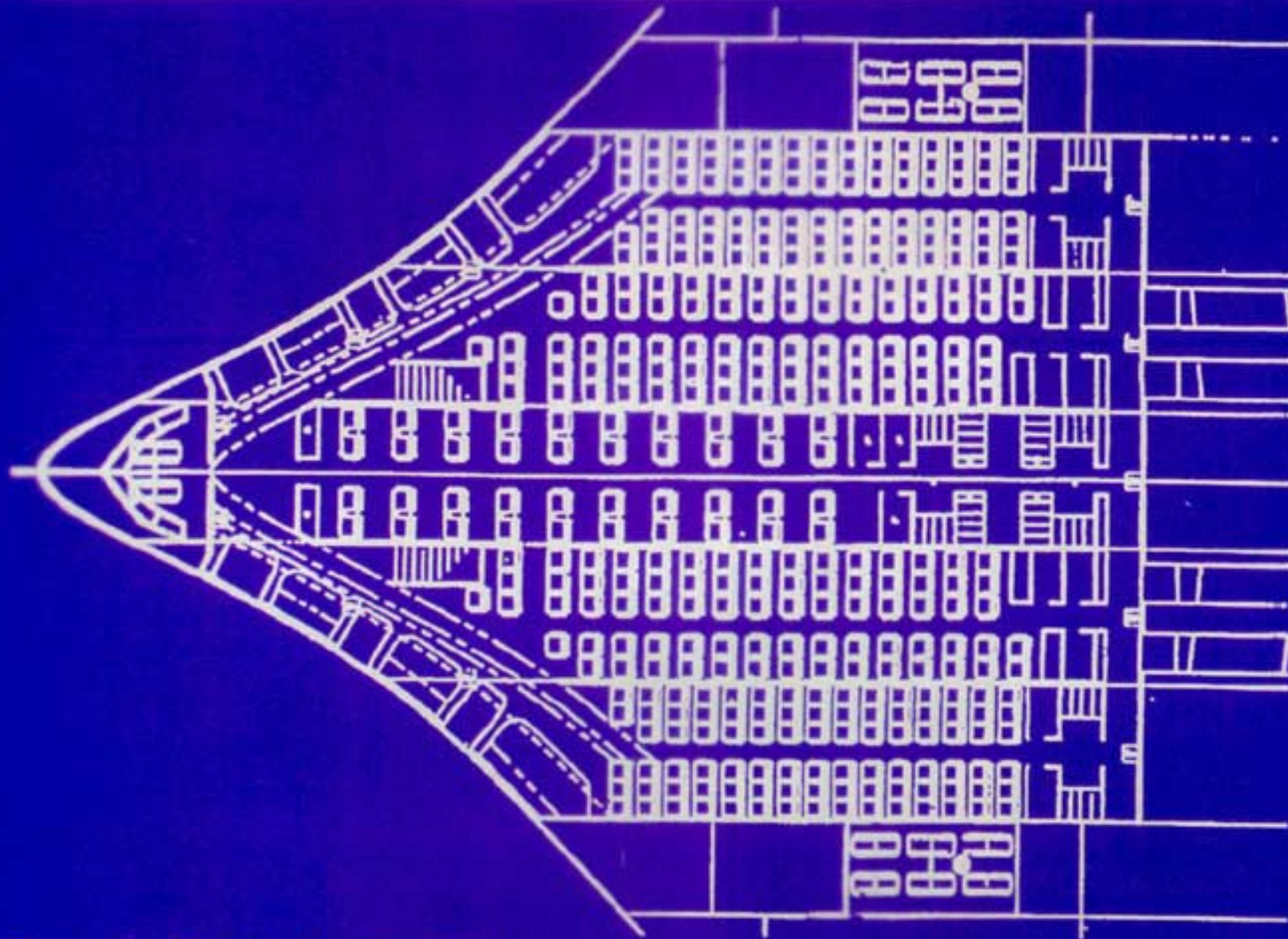




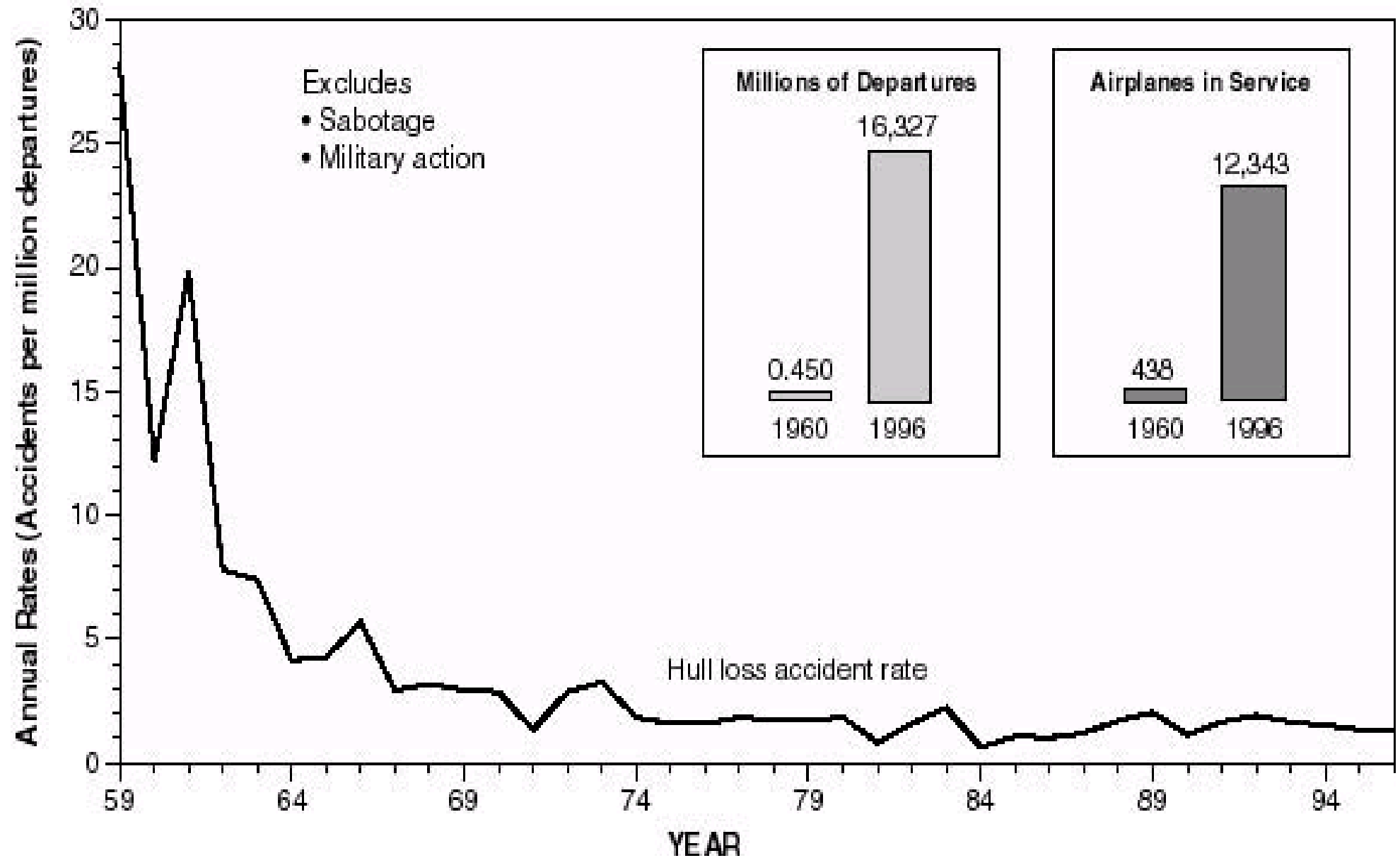








*Upper deck interior arrangement.*



# Factors Influencing Passenger Survival

- **Airframe Configuration**
  - **Cabin Crew**
  - **Passenger Behaviour**
-

# Airframe Configuration

- **Exit Size, Location and Access**



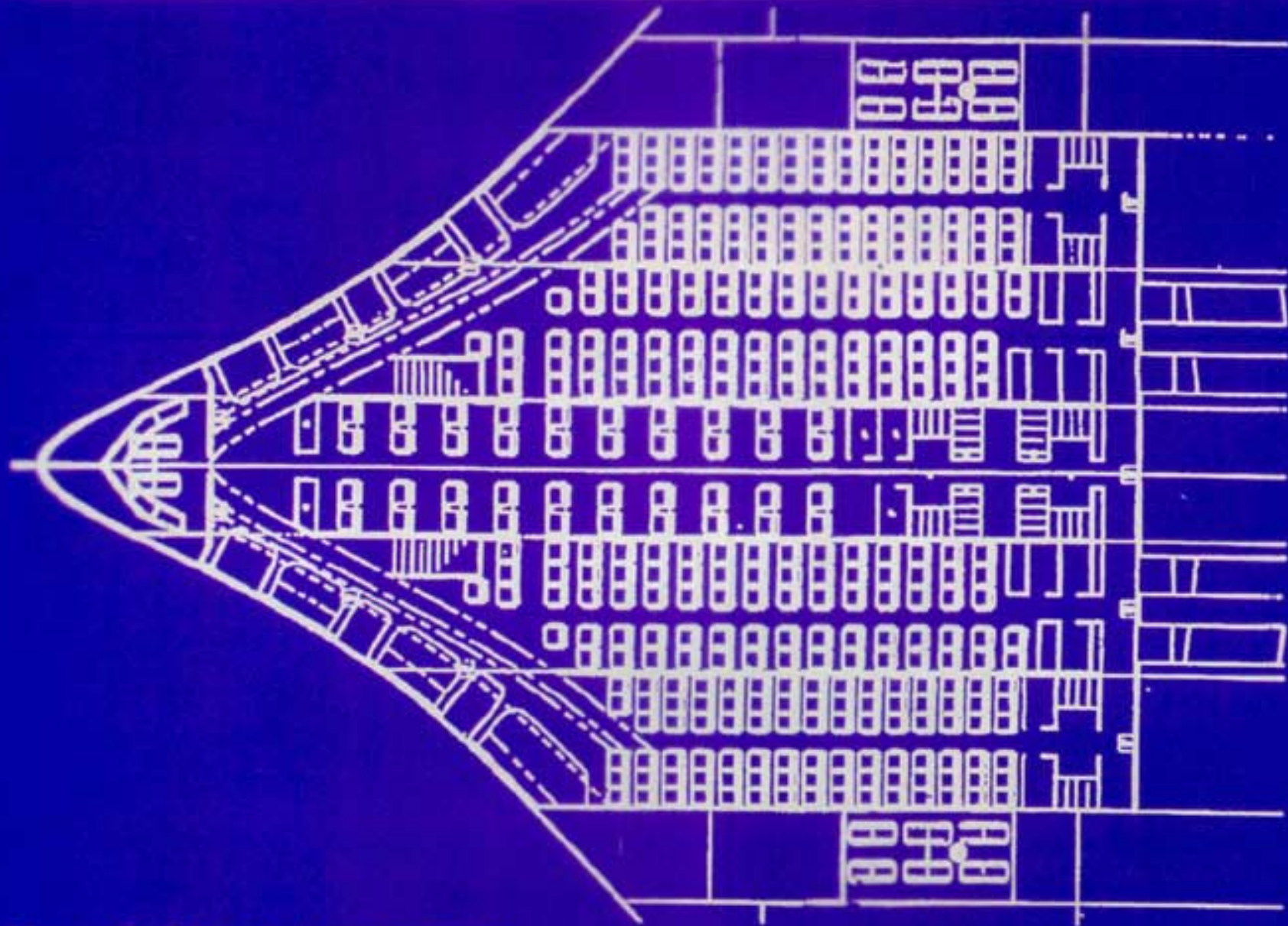




# Airframe Configuration

- **Exit Size, Location and Access**
  - **Aisle Size and Location**
-





*Upper deck interior arrangement.*

# Airframe Configuration

- **Exit Size, Location and Access**
  - **Aisle Size and Location**
  - **Cabin Seating**
-





# Airframe Configuration

- **Exit size, Location and Access**
  - **Aisle Size and Location**
  - **Cabin Seating**
  - **Sill Heights**
-



# Airframe Configuration

- **Exit size, Location and Access**
  - **Aisle Size and Location**
  - **Cabin Seating**
  - **Sill Heights**
  - **Slides and Post Egress**
-









# Airframe Configuration

- **Exit size, Location and Access**
  - **Aisle Size and Location**
  - **Cabin Seating**
  - **Sill Heights**
  - **Slides and Post Egress**
  - **Emergency Lighting**
-



# Airframe Configuration

- **Exit size, Location and Access**
  - **Aisle Size and Location**
  - **Cabin Seating**
  - **Sill Heights**
  - **Slides and Post Egress**
  - **Emergency Lighting**
  - **Access to upper deck**
-







# Airframe Configuration

- **Exit size, Location and Access**
  - **Aisle Size and Location**
  - **Cabin Seating**
  - **Sill Heights**
  - **Slides and Post Egress**
  - **Emergency Lighting**
  - **Access to upper deck**
  - **Novel Interiors**
-







# Cabin Crew Factors

- **Number of Cabin Crew**



# Cabin Crew Factors

- **Number of Cabin Crew**
  - **Assist Space**
-





# Cabin Crew Factors

- **Cabin Crew Factors**
  - **Assist Space**
  - **Direct View**
-







# Cabin Crew Factors

- **Number of Cabin Crew**
  - **Assist Space**
  - **Direct View**
  - **Injuries to cabin crew**
-



# Passenger Factors

- **Provision of safety information**

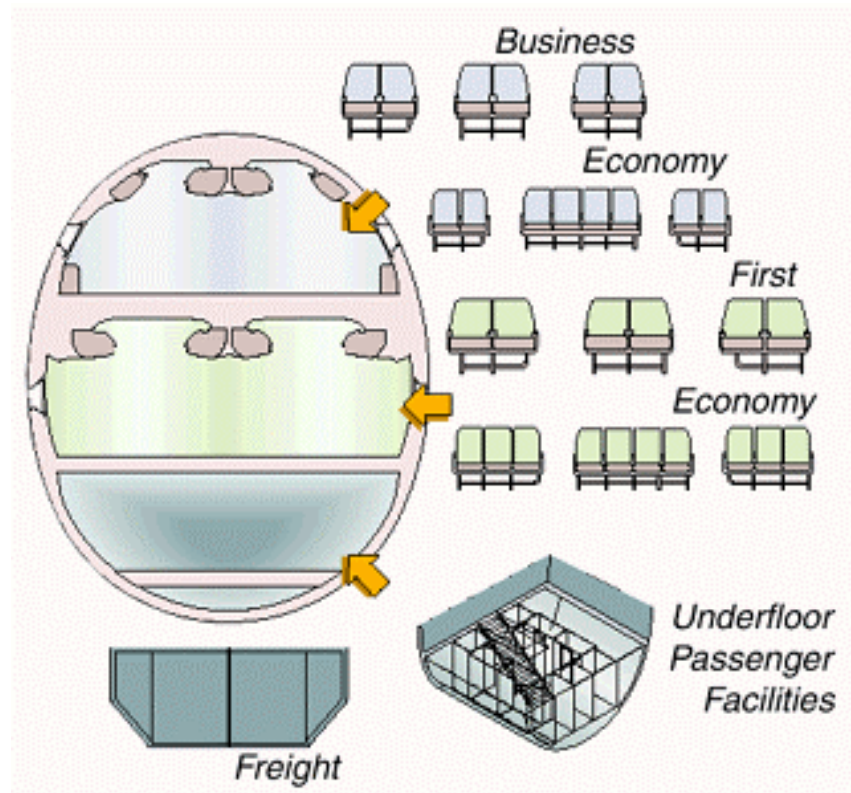
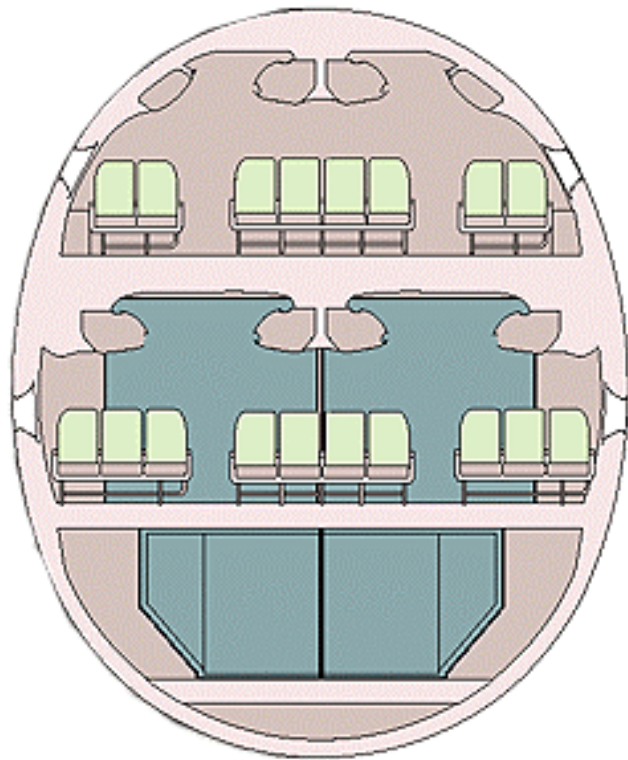


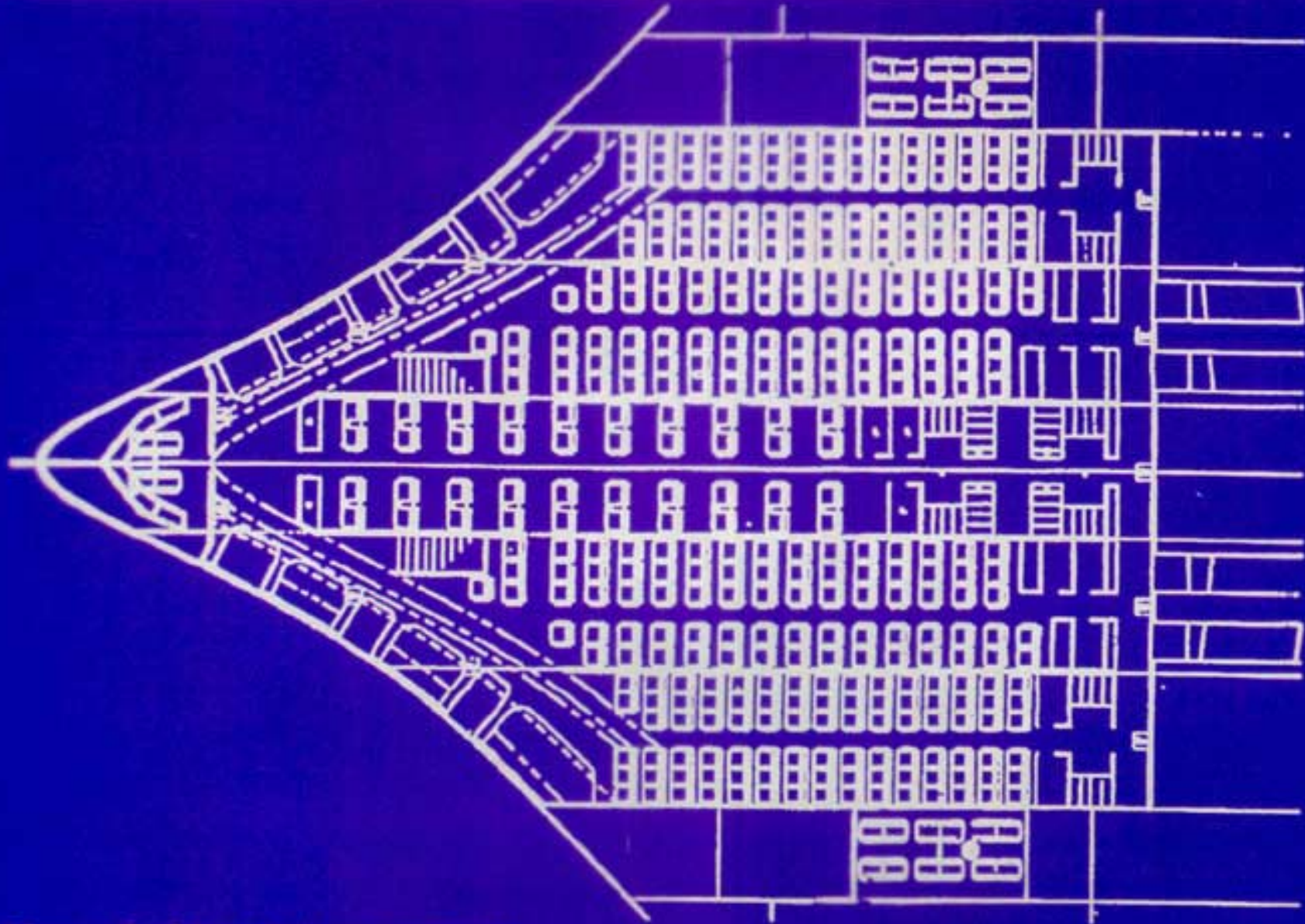




# Passenger Factors

- **Provision of Safety Information**
- **Situational Awareness for Passengers**





*Upper deck interior arrangement.*

# Passenger Factors

- **Provision of Safety Information**
  - **Situational Awareness for Passengers**
  - **In-flight medical emergencies**
-







# Future Issues

- **Precautionary Evacuations**
  - **Threat from Fire**
  - **Enhanced Directional Information**
  - **Emergency Command and Control Procedures**
  - **Disruptive Behaviour**
  - **Terrorism**
  
  - **Way Forward**
-