

Cabin Safety Research

6th Triennial International
Aircraft Fire and Cabin
Safety Research Conference
Atlantic City, NJ



Professor Helen Muir OBE PhD

MA

CPsychol

FRAeS



1946 - 2010

Cabin Safety I

Tuesday, October 26, 2010

Morning

CHAIR: CYNTHIA CORBETT (FAA CAMI)

| TIME SLOT | TITLE | PRESENTER |
|------------------|--|------------------------------------|
| 8:00-8:30 | Introduction to Cabin Safety Sessions | Cynthia Corbett - FAA |
| 8:30-9:30 | Passenger Safety Awareness: US Airways Flight 1549 | Cynthia Corbett - FAA |
| 9:30-10:00 | <i>BREAK SPONSOR: C&D ZODIAC</i> | |
| 10:00-10:30 | Protective Brace/Safety Positions for Passengers and Cabin and Cockpit Crew in Emergency Landing Positions or Aborted Take-Off | Martin Sperber- TUV Reinland Group |
| 10:30-11:00 | Grouped Passenger Behaviors During Emergency Evacuation | Hae Chang Gea - Rutgers University |
| 11:00-11:30 | Passenger Exit Selection Decisions in Aircraft Evacuation Situations with Implications for Passenger Safety Briefings | Ed Galea – University of Greenwich |

Cabin Safety II

Tuesday, October 26, 2010

Afternoon

CHAIR: DR. G.A. MAC McLEAN (FAA CAMI)

| TIME SLOT | TITLE | PRESENTER |
|------------------|--|--------------------------------------|
| 1:30-2:00 | Passenger Understanding of Hand Baggage Retrieval During Evacuation | Rebecca Grant – Cranfield University |
| 2:00-2:30 | Comprehension of Hand Baggage Retrieval Information on the Safety Card | Rebecca Grant – Cranfield University |
| 2:30-3:00 | Aircraft Emergency Evacuation Study with Injured Passengers | Hae Chang Gea - Rutgers University |
| 3:00-3:30 | <i>BREAK SPONSOR: KYDEX LLC</i> | |
| 3:30-4:00 | Fire and Evacuation Analysis of Blended Wing Body Aircraft Configurations I | Ed Galea – University of Greenwich |
| 4:00-4:30 | Fire and Evacuation Analysis of Blended Wing Body Aircraft Configurations II | Ed Galea – University of Greenwich |
| 4:30-5:00 | Computer Simulations on Interior Access Vehicles for Emergency Evacuation | Hae Chang Gea - Rutgers University |

Cabin Safety III

Wednesday, October 27, 2010

Morning

CHAIR: DR. G.A. MAC McLEAN (FAA CAMI)

| TIME SLOT | TITLE | PRESENTER |
|------------------|--|--|
| 8:00-8:30 | This Session will begin at 8:30 this morning. | |
| 8:30-9:00 | Post-Crash Cabin Fire and Evacuation as a Function of Cabin Ventilation I | Ed Galea, University of Greenwich |
| 9:00-9:30 | Post-Crash Cabin Fire and Evacuation as a Function of Cabin Ventilation II | Ed Galea, University of Greenwich |
| 9:30-10:00 | <i>BREAK: AVIATION SAFETY FACILITATORS</i> | |
| 10:00-10:30 | Performance of Inflatable Escape Slides at High Altitude | Tom Anderson, Goodrich Corporation |
| 10:30-11:00 | Training Needs Analysis: Cabin Crew Fire Training I | Ray Cherry – RGW Cherry and Associates |
| 11:00-11:30 | Training Needs Analysis: Cabin Crew Fire Training II | Ray Cherry – RGW Cherry and Associates |

Cabin Safety IV

Wednesday, October 27, 2010

Afternoon

CHAIR: CYNTHIA CORBETT (FAA CAMI)

| TIME SLOT | TITLE | PRESENTER |
|------------------|---|--|
| 1:30-2:00 | Training Needs Analysis III | Cynthia Corbett – FAA CAMI |
| 2:00-2:30 | 1) Flight Attendant Fatigue: CAMI Follow-On Studies as Directed by Congress; and 2) National Duty, Rest, and Fatigue Study | Tom Nesthus, CAMI |
| 2:30-3:00 | 1) Flight Attendant Fatigue: Analysis of Incident Reports; and 2) Comparative Study of International Flight Attendant Fatigue Regulations and Collective Bargaining Agreements | Tom Nesthus, CAMI |
| 3:00-3:30 | <i>BREAK: MAGNESIUM ELEKTRON</i> | |
| 3:30-4:00 | Flight Attendant Fatigue Countermeasures Training and Benefits | Tom Nesthus, CAMI |
| 4:00-4:30 | A Physiological Modeling Analysis of Rapid Decompression | David Self, FAA CAMI |
| 4:30-5:00 | Activities Developed by Passengers in an Aircraft Cabin: Contributions for Cabin Safety and Recommendations for Cabin Project | Marina Gregghi, Universidade Federal de Sao Carlos |

Cabin Safety V

Thursday, October 28, 2010

Morning

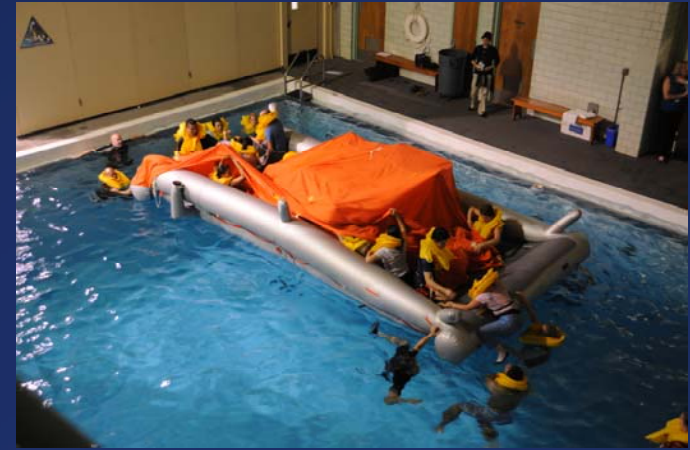
CHAIR: CYNTHIA CORBETT (FAA CAMI)

| TIME SLOT | TITLE | PRESENTER |
|------------------|--|---|
| 8:00-8:30 | Medical Aspects of Exposure to Oil Fumes in the Cabin and Flight Deck | Robert Harrison, Univ. of California-San Francisco |
| 8:30-9:00 | Pesticide Levels in Commercial Aircraft | Clifford Weisel |
| 9:00-9:30 | Exposure to Pyrolyzed Oil on Commercial Aircraft | Judith Murawski – Association of Flight Attendants |
| 9:30-10:00 | <i>BREAK SPONSOR: JAMCO PTE LIMITED</i> | |
| 10:00-10:30 | Pilots' Perspective on Fume Events | Captain Tom Kubik |
| 10:30-11:00 | Portable Air Quality Monitor and Wireless Sensor Network for Cabin Monitoring | Byron Jones - Kansas State University |
| 11:00-11:30 | Preliminary Evaluation of Commercial Indoor Air Quality Sensors for Application to Aircraft Cabin Air Measurements | R. Lance Haney |

Cabin Safety Workshops

✈ Sponsored by the FAA Civil Aerospace Medical Institute (CAMI), Aerospace Medical Research Division, Protection and Survival Research Lab, Cabin Safety Research Team

✈ http://www.faa.gov/data_research/research/med_humanfacs/aeromedical/cabinsafety/workshops/



SAE Technical Committee S-9 Cabin Safety Provisions

Chairperson: Cynthia Corbett, Federal Aviation Administration
Vice Chairperson: Tom Anderson, Goodrich Corp
Secretary: Christopher Dann, Transport Canada

The **SAE S-9 Cabin Safety Provisions** committee addresses all facets of aircraft cabin safety—design, maintenance, and in-service experience. It is responsible for transport category aircraft cabin interiors and furnishings' standards development that will foster efficient operation during normal use and simultaneously prevent or minimize injury or loss of life during an aircraft accident or emergency situations. The group is comprised of three subcommittees dedicated to creating, preparing, and maintaining all relevant specifications, standards, and requirements for cabin safety systems. These subcommittees include:

- S-9A Safety Equipment & Survival Systems**
- S-9B Cabin Interiors & Furnishings**
- S-9C Operational & Human Factors Issues**

Participants in the **SAE S-9** committee include OEMs, suppliers, cabin safety systems equipment companies, consulting firms, government and others across the aerospace and defense industries.

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|--|---|---|
| <p>Take-off, Landing & During Movement</p>  | <p>Water Evacuation</p>  | <p>Oxygen Supply</p>  |
| <p>Land & Water Evacuation Exits</p>  <p>EXIT OPERATION: ASSESS OUTSIDE CONDITIONS. IF OPENING EXIT INCREASES THE HAZARD TO PASSENGERS, DO NOT OPEN.</p>  | <p>Water Evacuation</p>  | <p>Bracing Positions</p>  <p>Slide Evacuation</p>  |

PANIC

Because we're all going to die!