



Image selected from the ICAO drawing contest. Children and dependants of ICAO employees were invited to submit drawings on the theme of Aviation in a Green Environment.

ICAO COLLOQUIUM — PROGRAMME

Wednesday, 12 May 2010

Registration times :

MONDAY, 10 May 1500 – 1700, **TUESDAY**, 11 May 0800 – 1000 and 1400 – 1700,

WEDNESDAY, 12 May 0800 – 1000

09:00 – 09:30

WELCOME AND INTRODUCTIONS

- ▶ **Lionel Alain Dupuis**, Permanent Representative of Canada on the Council of ICAO and Dean of Council Members
- ▶ **Keynote speaker: Achim Steiner**, Executive Director – United Nations Environment Programme (UNEP)
- ▶ **Folasade Odutola**, Director, Air Transport Bureau – ICAO
- ▶ **Jane Hupe**, Chief, Environment of Environment Branch – ICAO
- ▶ **Moderator: Christopher Surgenor**, Editor – GreenAir Online

09:30 – 11:00

OPENING SESSION – SETTING THE SCENE

A VISION FOR SUSTAINABLE AVIATION FROM YOUR COCKPIT

A panel will present possible global approaches to address aviation greenhouse gas emissions

“If you had the power to make international aviation environmentally sustainable, what would be your action plan to address it?”

- ▶ **Scott Stone**, Acting General Manager Aviation Environment Policy – Australian Representative
- ▶ **Ma Xiangshan**, Senior Climate Change Officer, Dep. of Planning and Development – Civil Aviation Administration of China (CAAC)
- ▶ **Raymundo Santos Rocha Magno**, Representative of Brazil on the Council of ICAO

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Wednesday, 12 May 2010 (continued)

09:30 – 11:00

OPENING SESSION — SETTING THE SCENE (continued)

- ▶ **Philip Good**, International Carbon Market, Aviation and Maritime Unit, European and International Carbon Markets Directorate, DG Climate Action – Europe Representative
- ▶ **Aysha Al Hamili** – Representative of the United Arab Emirates on the Council of ICAO
- ▶ **Carl Burleson**, Director, Office of Environment and Energy – Federal Aviation Authority (FAA), United States
- ▶ **Paul Steele**, Director Environment, International Air Transport Association (IATA) – Air Transport Action Group (ATAG)
- ▶ **Tim Johnson**, Director AEF, CAEP observer for International Coalition for Sustainable Aviation (ICSA)

11:00 – 11:30

COFFEE BREAK
Sponsored by:



11:30 – 12:30

SESSION ONE — EVALUATING IMPACTS

A. Estimates of aviation's current and future contribution to global greenhouse gas emissions

Speakers:

- ▶ **David S. Lee**, Director, Centre for Air Transport and the Environment (CATE) – Manchester Metropolitan University
Presentation: Aviation GHG emissions
- ▶ **Ulrich Schumann**, Director, Deutsches Zentrum für Luft und Raumfahrt – DLR Institut für Physik der Atmosphäre
Presentation: Contrail cirrus issues

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ICAO COLLOQUIUM ON AVIATION AND CLIMATE CHANGE

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Wednesday, 12 May 2010 (continued)

11:30 – 12:30

SESSION ONE — EVALUATING IMPACTS (continued)

Speakers

- ▶ **Ian Waitz**, Professor of Aeronautics and Astronautics, Director of PARTNER – Massachusetts Institute of Technology (MIT)
Presentation: Non CO₂ Impacts
- ▶ **Robert Sausen**, Co-ordinator of EU Integrated Project QUANTIFY, Deutsches Zentrum für Luft und Raumfahrt – DLR Institut für Physik der Atmosphäre
Presentation: Results of the QUANTIFY project

QUESTIONS AND ANSWERS

12:30 – 14:00

LUNCH BREAK

Sponsored by:



14:00 – 15:30

SESSION TWO — AVIATION EMISSIONS QUANTIFICATION AND MRV

- A. Trends
- B. Databases, data collection processes and GHG inventories
- C. How to measure, report and verify (MRV) aviation emissions

Speakers:

- ▶ **Gregg Fleming**, ICAO CAEP Modelling and Databases Task Force (MODTF) rapporteur
Presentation: ICAO Goals assessment
- ▶ **Tim Johnson**, ICAO CAEP Aviation Carbon Calculator Support Group (ACCS) rapporteur
Presentation: ICAO Carbon Emissions Calculator

ICAO COLLOQUIUM — PROGRAMME

Wednesday, 12 May 2010 (continued)

14:00 – 15:30

SESSION TWO — AVIATION EMISSIONS QUANTIFICATION AND MRV (continued)

- A. Trends
- B. Databases, data collection processes and GHG inventories
- C. How to measure, report and verify (MRV) aviation emissions

Speakers:

- ▶ **Stelios Pesmajoglou**, Director of Professional Programs – Greenhouse Gas Management Institute
Presentation on MRV
- ▶ **Philip Good**, International Carbon Market, Aviation and Maritime Unit, European and International Carbon Markets Directorate, DG Climate Action – European Commission
Presentation: Principles and practices for collecting data for the aviation EU ETS
- ▶ **Steve Burt**, Eq2
Presentation: Granular Resource Economics
- ▶ **Xavier Oh**, Environment Manager – Airports Council International (ACI)
Presentation: Airport GHG inventories

QUESTIONS AND ANSWERS

15:30 – 16:00

COFFEE BREAK

ICAO COLLOQUIUM ON AVIATION AND CLIMATE CHANGE

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Wednesday, 12 May 2010 (continued)

16:00 – 17:30

SESSION THREE — PUSHING THE TECHNOLOGY ENVELOPE

A. Technological improvements to reduce aircraft greenhouse gas emissions from the aviation sector

Speakers:

- ▶ **Philippe Fonta**, Head of Environmental Policy Center of Competence Powerplant, Airbus – International Coordinating Council of Aerospace Industries Associations (ICCAIA)
Presentation: Aircraft manufacturers perspective
- ▶ **Steve Csonka**, Technical Director Advanced Programmes, Environmental Strategy – ICCAIA
Presentation: Engine manufacturers perspective – Technological improvement

B. Research and development, future initiatives

Speakers:

- ▶ **Ebad Jahangir**, Environment Officer – ICAO Secretariat
Presentation: ICAO Technology Goals for Aviation Environmental Protection
- ▶ **Curtis A. Holsclaw** – ICAO CAEP Working Group on Emissions, Technical Issues Rapporteur
Presentation: The CO₂ standard
- ▶ **Larry Leavitt**, Chief Engineer for Aerosciences – National Aeronautics and Space Administration (NASA) Representative
Presentation: Future improvement, future vehicles

QUESTIONS AND ANSWERS

17:30 – 19:30

WELCOMING RECEPTION
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BOMBARDIER

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Thursday, 13 May 2010

07:30 – 09:00

BREAKFAST
Sponsored by:



09:00 – 11:00

SESSION FOUR — FLYING THROUGH THE OPERATIONS OPPORTUNITIES

A. GHG-saving opportunities from improved operational measures

B. ATM improvements and best practices

Speakers:

- ▶ **Vince Galotti**, Deputy Director, Air Navigation Bureau – ICAO Secretariat
Presentation: ATM improvement – Global Plan
- ▶ **Alan Melrose**, ICAO CAEP Independent Experts Rapporteur
Presentation: The results of the Independent Expert Review on Operational Goals
- ▶ **John-Paul Clarke**, Sc.D. Associate Professor, Daniel Guggenheim School of Aerospace Engineering and H. Milton Stewart School of Industrial and Systems Engineering, Director, Air Transportation Laboratory, Georgia Tech.
Presentation: How to create en route (cruise) trajectories that have minimal impact on the environment?
- ▶ **Alain Siebert**, Chief Economics and Environment – SESAR Joint Undertaking
Presentation: SESAR
Celia Alves Rodrigues, Environmental Officer – SESAR Joint Undertaking
Presentation: AIRE
- ▶ **Maria Dipasquantonio**, ATO, International NextGen Projects Lead – FAA, United States
Presentation: NextGen and Aspire
- ▶ **Shannon Scott**, Senior Policy Adviser, Aviation Environment – Civil Aviation Authority, New Zealand
Presentation: New Zealand's efforts to reduce aviation emissions through operational measures

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PROGRAMME

Thursday, 13 May 2010 (continued)

09:00 – 11:00

SESSION FOUR — FLYING THROUGH THE OPERATIONS OPPORTUNITIES (continued)

- A. GHG-saving opportunities from improved operational measures
- B. ATM improvements and best practices

Speakers:

- ▶ **Jeff MacDonald**, Director, Operations Planning and Programs – NAV CANADA, Canada
Presentation: First progress report on Collaborative Initiatives for Emissions Reductions
- ▶ **Tim Rees**, Environment Programmes Manager – Civil Air Navigation Services Organisation (CANSO)
Presentation: ATM improvements
- ▶ **Paul McCarthy**, Representative of IFALPA to ICAO – International Federation of Air Line Pilots' Associations (IFALPA)
Presentation: The Pilots's Perspective

QUESTIONS AND ANSWERS

11:00 – 11:30

COFFEE BREAK
Sponsored by:



11:30 – 12:30

SESSION FIVE — MARKET-BASED MEASURES

- A. The carbon market

Speakers:

- ▶ **Andrew Howard**, Manager (OIC), Strategy and Policy Development, Sustainable Development Mechanisms Programme – United Nations Framework Convention on Climate Change (UNFCCC) Secretariat
Presentation: The carbon market – status and structure

Revised
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Thursday, 13 May 2010 (continued)

11:30 – 12:30

SESSION FIVE — MARKET-BASED MEASURES (continued)

A. The carbon market

Speakers:

- ▶ **Holly Krambeck**, Carbon Finance Unit – The World Bank
Presentation: The carbon market

B. Carbon offset programmes

Speakers:

- ▶ **Lisa M. Hodes**, Gold Standard, General Counsel and Director, U.S. Markets – The Gold Standard Foundation
Presentation: The carbon market
- ▶ **Jon Godson**, Assistant Director, Aviation Environment - Best Practices – IATA
Presentation: Airlines carbon offset programme
- ▶ **OMEGA**
Presentation: Carbon offset schemes for aviation

QUESTIONS AND ANSWERS

12:30 – 14:00

LUNCH BREAK
Sponsored by:



14:00 – 16:00

C. Emissions trading schemes (ETS)

Speakers:

- ▶ **Katie Sullivan**, Canadian Director on the Markets Mechanisms to Address Climate Change – International Emissions Trading Association (IETA)
Presentation: ETS
- ▶ **Philip Good**, International Carbon Market, Aviation and Maritime Unit, European and International Carbon Markets, Directorate DG Climate Action – European Commission
Presentation: EU ETS

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Thursday, 13 May 2010 (continued)

14:00 – 16:00

SESSION FIVE — MARKET-BASED MEASURES (continued)

C. ETS (continued)

Speakers:

- ▶ **Carl Burleson** – FAA, United States
Presentation: U.S. Perspectives
- ▶ **Shannon Scott** – Civil Aviation Authority, New Zealand
Presentation: New Zealand's ETS

D. Taxes and levies

Speakers:

- ▶ **Tim Johnson** – ICSA
Presentation: Taxes

E. Other approaches

Speakers:

- ▶ **IMO representative**
Presentation: Market-based measures under review by IMO
- ▶ **Scott Stone**, Aviation Environment Policy, Aviation Operations Branch – Australia
Presentation: Australia's carbon footprinting work using the ICAO Carbon Calculator
- ▶ **Andy Kershaw**, Manager, Environmental Policy – Aviation Global Deal Group and
Mark Watson, Head of Environmental Affairs – Cathay Pacific Airways
Presentation: A sectoral approach to addressing international aviation emissions

QUESTIONS AND ANSWERS

16:00 – 16:30

COFFEE BREAK
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Thursday, 13 May 2010 (continued)

16:30 – 17:30

SESSION SIX — ADAPTATION

Speakers:

- ▶ **Ulrich Schumann**, WMO Rapporteur on Aviation and the Environment on behalf of Dr Herbert PUEMPEL Chief, Aeronautical Meteorology Division – World Meteorological Organization (WMO)
- ▶ **Xavier Oh**, Environment Manager – ACI
Presentation: Airport perspective
- ▶ **Alan Melrose** – EUROCONTROL
Presentation: The first results of the EUROCONTROL study
- ▶ **Chris Lyle**, Representative of United Nations World Tourism Organization (UNWTO) to ICAO
Presentation: Adaption and inter-agency co-ordination

QUESTIONS AND ANSWERS

17:30 – 19:30

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ICAO COLLOQUIUM ON AVIATION AND CLIMATE CHANGE

PROGRAMME Friday, 14 May 2010

09:00 – 11:00

SESSION SEVEN — ALTERNATIVE FUELS

A. Overview

B. ICAO global framework for aviation alternative fuels

Speakers

- ▶ **Jane Hupe**, Chief, Environment of Environment Branch – ICAO Secretariat
Presentation: ICAO global framework for aviation alternative fuels
- ▶ **Paul Steele**, Director, Aviation Environment – IATA
Presentation: Possible alternative fuels for aviation
- ▶ **Chris Schroeder**, Head of CSR, Environment and Fuel Optimization – Qatar Airways
Presentation: GTL jet fuel
- ▶ **Yuri Herreras Yambanis** – Bioenergy & Agroenergetic Crops S.L. (BIOECA)
Presentation: The raw material production alternative
- ▶ **Guilherme Freire**, Director of Environment, Embraer – ICCAIA
Presentation: Flight tests and ICCAIA perspective
- ▶ **Nancy Young**, Vice President, Environmental Affairs – Air Transport Association (ATA)
Presentation: Key steps for airlines in purchasing and deploying alternative fuels
- ▶ **Charles Schlumberger**, Principal Air Transport Specialist, Energy, Transport and Water Department – The World Bank
Presentation: The World Bank activities in alternative fuels

11:00 – 11:30

COFFEE BREAK

ICAO COLLOQUIUM — PROGRAMME

Friday, 14 May 2010 (continued)

11:30 – 12:30

SESSION SEVEN — ALTERNATIVE FUELS (continued)

C. Life cycle GHG assessment from alternative jet fuels

Speakers:

- ▶ **Lourdes Maurice**, Chief Scientific and Technical Advisor, Environment Office, Environment and energy (AEE-3) – FAA, United States
Presentation: Life cycle analysis and CAAFI's work
- ▶ **Luisa Marelli** – European Union
Presentation: Life-cycle analysis

D. Long-term alternative fuels

Speaker:

- ▶ **Keiichi Okai**, Associate Senior Researcher, Jet Engine Technology Research Center, Aerospace Research and Development Directorate – Japan Aerospace Exploration Agency (JAXA)

QUESTIONS AND ANSWERS

12:30 – 14:00

LUNCH BREAK

14:00 – 14:45

SESSION EIGHT — FINANCING

A. Discussion on financing, capacity building and technology transfer in the aviation sector

Speakers:

- ▶ **Ari Huhtala**, Team leader, Climate Change Program – The World Bank
Presentation: World Bank activities

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PROGRAMME

Friday, 14 May 2010 (continued)

14:00 – 14:45

SESSION EIGHT — FINANCING (continued)

A. Discussion on financing, capacity building and technology transfer in the aviation sector

Speakers:

- ▶ **Araldo Vieira de Carvalho**, Sr. Energy Specialist with the Energy Division – Inter-American Development Bank (IDB)
Presentation: IDB activities focussing on biofuels

QUESTIONS AND ANSWERS

14:45 – 15:30

SESSION NINE — THE WAY FORWARD: PROGRAMME OF ACTION ON INTERNATIONAL AVIATION AND CLIMATE CHANGE

A. ICAO's response to global challenges: Programme of Action on International Aviation and Climate Change

B. States' actions: How governments can help to address GHG emissions from the aviation sector

Speakers:

- Jane Hupe**, Chief, Environment of Environment Branch – ICAO
Roberto Kobeh González, President of the ICAO Council

OPEN DISCUSSIONS

15:30 – 16:00

SESSION TEN — CLOSING SESSION : PUTTING IT TOGETHER

A. Colloquium conclusions and closing statement

Roberto Kobeh González, President of the ICAO Council