



Assistance for Action

Aviation and Climate Change Seminar

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ICAO Headquarters, Montréal, Canada



ICAO Carbon Emissions Calculator

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Objectives

- User-friendly, unbiased, tool to compute carbon emissions from air travel
- Best publicly available data
- Fully documented



Development Team

- **Methodology Development Team**
 - Aviation Carbon Estimation (ACE) and later Aviation Carbon Calculator Support (ACCS) group formed within CAEP
- **Membership**
 - ICAO Secretariat
 - International Coalition for Sustainable Aviation - ICSA*
 - Agência Nacional de Aviação Civil (BR)
 - Department of Infrastructure, Transport, Regional Development and Local Government (AU)
 - Department for Transport / Manchester Metropolitan University (UK)
 - International Air Transport Association - IATA
 - International Coordinating Council of Aerospace Industries Associations - ICCAIA
 - Luftfartsstyrelsens (SE)
 - National Air Navigation Services Company (EG)
 - Transport Canada (CA)

*ACCS Group lead



Methodology

➤ Assumptions

- Only passengers are modelled (currently)
- Weighted average of all aircraft types serving city-pair, based on market share
- All economy seating configuration assumed
- Passenger + bags (economy) = 100 kg
- Passengers flying in “premium” class assessed 2x CO₂ of economy passengers
- Load factors applied based on 17 route-groups
- Aircraft fly no-wind, great circle distance profile, plus a “correction factor” to account for airspace system inefficiencies and weather
- Individual aircraft types mapped to types where performance data are available



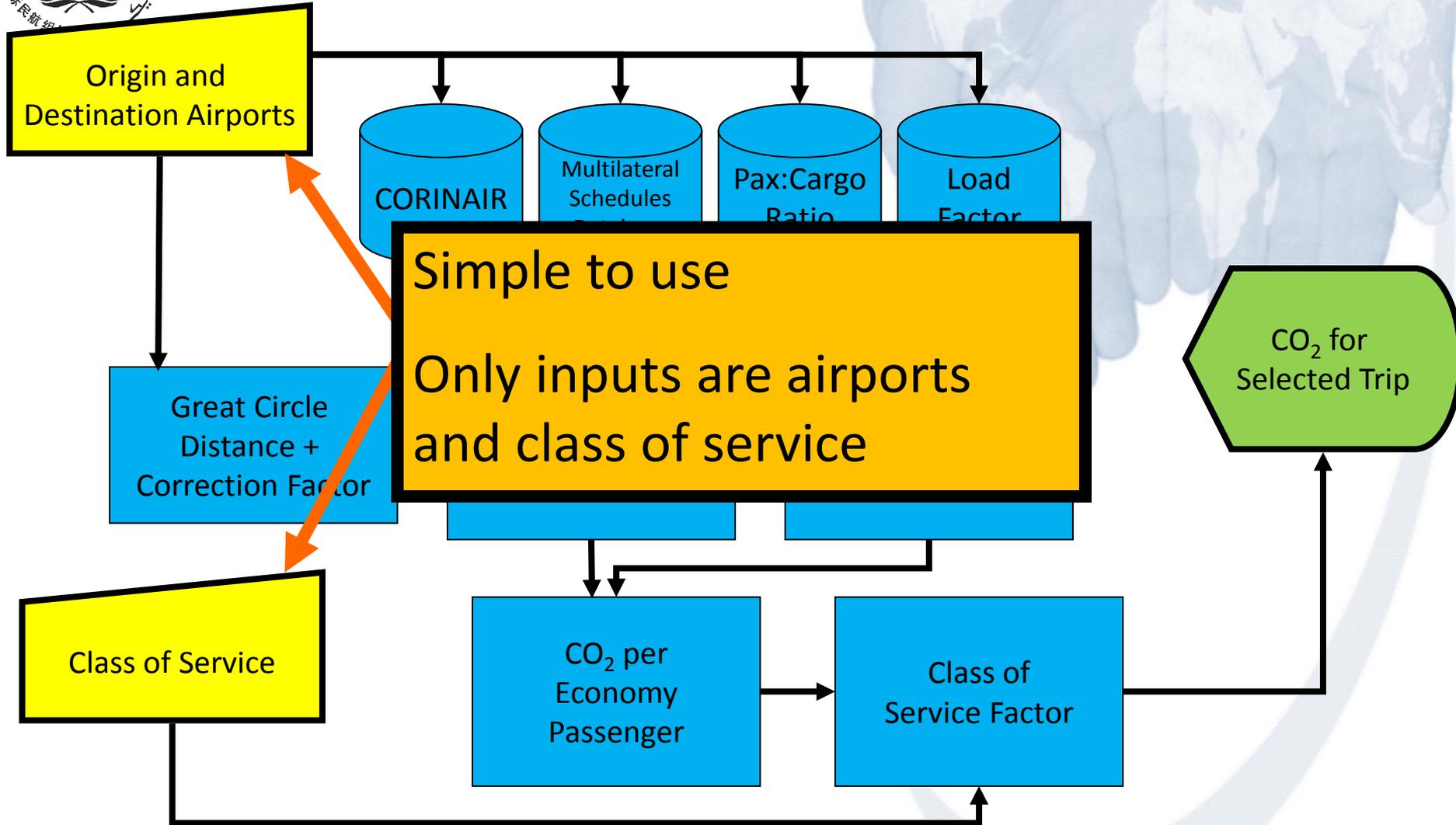
Methodology (cont.)

➤ Data Sources

- Aircraft types and frequency of flights: Multilateral Schedules Database (OAG as the starting point)
- Aircraft fuel consumption: CORINAIR
- Passenger load factor: ICAO collected data
- Passenger to Cargo ratio: ICAO collected data
- Aircraft seat configuration: ICAO collected data



Methodology (concl.)





UNEMG Decision

- *The UN Environment Management Group adopted the ICAO Carbon Emissions Calculator as the official tool for all UN bodies to quantify their air travel CO₂ footprint - April 2009*
- As of 2008 inventory, all UN air travel GHG inventories are being prepared using the ICAO Calculator



User Base

- Public (individual carbon footprints, corporate responsibility, etc.)
- States (verification of inventories / auditing)
- GDS
- UN (Climate Neutral UN)



Web Interface

- Transparent
- Easy-to-use
- Publicly available
- Delivers consistent estimates of CO₂ – suitable for use with offset programs

www.icao.int

Address http://www.icao.int/

International Civil Aviation Organization

Home English -

Carbon Emissions Calculator

ICA0 Public > Home > Carbon Emissions Calculator

Click here to read the ICAO Methodology FAQ
Help us to improve the calculator

ICA0 has developed a methodology to calculate the carbon dioxide emissions from air travel for use in offset programmes.

Link to Methodology

industry data to account for various factors such as aircraft types, route specific data, passenger load factors and cargo carried.

For additional information, please see the accompanying methodology to the ICAO Carbon Emissions Calculator.

You can find your carbon footprint by entering your city of origin and destination

From: To:

My ticket is: Economy Class Premium Class (Economy Premium, Business, or First)

Number of passengers: One-Way Round Trip

Done Trusted sites 100%



Also on iPhone/iPad



App Store » Travel » Kojoe Yirenkyi



Download

This app is designed for both iPhone and iPad

Category: Travel
Released: Jun 05, 2012
Version: 1.0
Size: 8.4 MB
Language: English
Seller: Kojoe Yirenkyi
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Rated 4+

Requirements: Compatible with iPhone, iPod touch and iPad. Requires iOS 4.0 or later.

Carbon Emissions Calculator

Description

The ICAO Carbon Emissions Calculator allows passengers to estimate the emissions attributed to their air travel. It is simple to use – just select your origin and destination airports, specify the class of travel and number of the passengers. View the carbon footprint and the distance traveled of the specified trip.

... More

Carbon Emissions Calculator Support »

Screenshots

Carbon Emissions Calculator

Itinerary

- Dallas-Fort Worth International, Tx., United States (DFW)
- Amsterdam/Schiphol, Netherlands (AMS)
- Accra/Kotoka International, Ghana (ACC)
- Cairo/Intl, Egypt (CAI)

Class: Economy Premium
Trip: One-Way Round Trip
Passengers: 1

Calculate

- Summary -

Passenger	1
Class	Economy
Trip	One-Way
CO2	1360.87 (kg)
Distance	17,362 (Km)

Detail

DFW AMS

DFW to AMS: Amsterdam/Schip...
Distance: 7890 (Km) CO2: 1081.46 (kg)



Other Interfaces Available

- ICAO offers specialized interfaces to the calculator for:
 - UN Agencies
 - State Agencies
 - Large external users

Types of Interfaces

- Excel-based (passengers)
 - Passenger travel data can be paste into spreadsheet
 - “Smart” interface helps to resolve common errors
- Excel-based (operations)
 - State activity data can be paste into spreadsheet
 - Supports development of large inventories at aircraft operation level



Types of Interfaces (concl.)

- Integration with GDS
 - Allows GDS to distribute ICAO carbon emissions calculator results directly to their subscribers (i.e. travel agencies)
 - Data maintained by ICAO
- Integration with ERP
 - Allows organizations to build calculator into travel reservation/approval systems
 - Facilitates inventory preparation



Closing Thoughts

- ICAO Carbon Emissions Calculator calculates air travel CO₂ emissions in a way that is:
 - Transparent
 - Built entirely on publicly available information
 - Internationally reviewed and approved
 - Used UN-wide
- Broad range of interfaces available for States, the UN System, and the Public



THANK YOU

For more information on our activities, please visit ICAO's website

<http://www.icao.int/env>

ICAO ENVIRONMENTAL REPORT 2010



AVIATION and
CLIMATE CHANGE

