

**Curbing Airline Emissions,
guidance from the new book
"Sustainable Development, International
Aviation, and Treaty Implementation"**



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P. Paul Fitzgerald

Treaty Implementation for Sustainable Development Series

In 1944 the Chicago Convention set out the foundations of public international law regulating international air transport, but until 2016 no international agreement existed to limit its environmental impact. *Sustainable Development, International Aviation, and Treaty Implementation* explains why the CORSIA scheme adopted by the International Civil Aviation Organization in 2016, should be implemented in 2020, even though the adequacy of this scheme is still open to doubt and criticism. This book seeks to examine the many dimensions of the effort to contain greenhouse gas emissions from aircraft in a manner consonant with the principles of sustainable development, and examines the development of international law and policy in an area that has remained largely outside the general framework of international environmental law. International civil aviation is a significant polluter of the atmosphere, and in this volume, a group of air law and sustainable development law specialists considers how the international community can respond.

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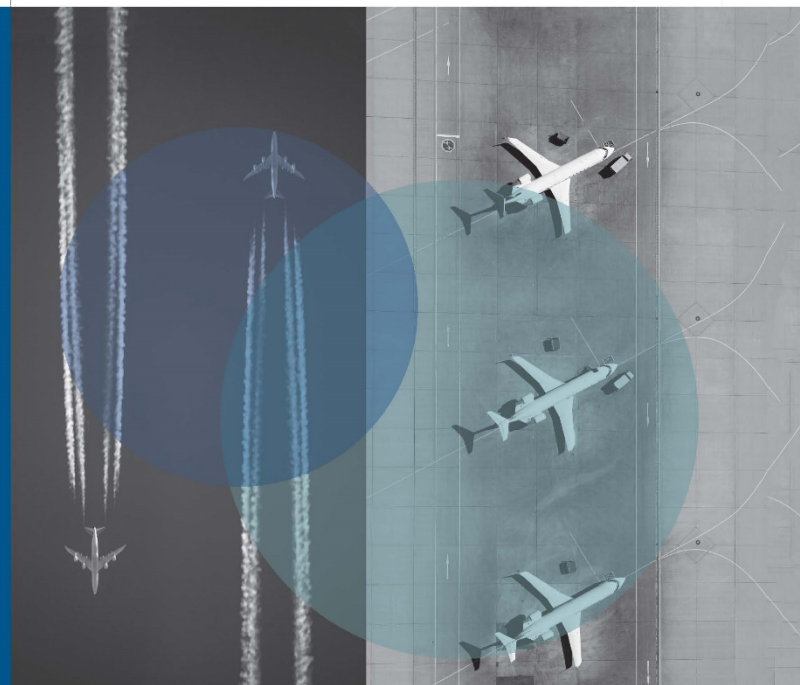
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**Sustainable Development, International Aviation,
and Treaty Implementation**

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Sustainable Development, International Aviation, and Treaty Implementation

Edited by

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Book Intro 1

Aviation is regulated at an international level.

This book is the first comprehensive look at the ways to reduce GHG emissions from Aviation at the International Level.



Book Intro 2

International civil aviation is a significant polluter of the atmosphere.

In this volume, a group of air law and sustainable development law specialists considers how the international community can respond.



Airline Success?

Canada's airlines have achieved “a 6.6% reduction in emissions intensity since 2003 and a 25.6% reduction when compared to the 1990 Kyoto base year. Many companies have made physical changes and modifications to their aircraft, and have implemented many operational changes in order to reduce the amount of fuel consumed.

Source: “Voluntary Agreement on the Reduction of Greenhouse Gas Emissions 2006 Annual Report,” Air Transport Association of Canada, 2008, page 11.

Less Fuel = Fewer GHGs 1



Replace a modern fuel efficient long-haul jet, with an even more modern fuel efficient long-haul jet.

The A340-500 burns around 2.23 gal / mi and the 777-200LR burns around 1.79 gal / mi when they are at similar payloads.

777-200s replaced A-340s in 2008.

Less Fuel = Fewer GHGs 2



Air Canada stripped this aircraft, C-GDSP of more than 300 pounds of paint in November 2005 in an effort to save fuel. The results were not very good so the plane was re-painted in June 2006.

Ultra Long-Haul Routes = Cut



The aircraft carries at take-off, all the fuel it will use during the flight's duration. The plane becomes a “flying fuel tanker”.

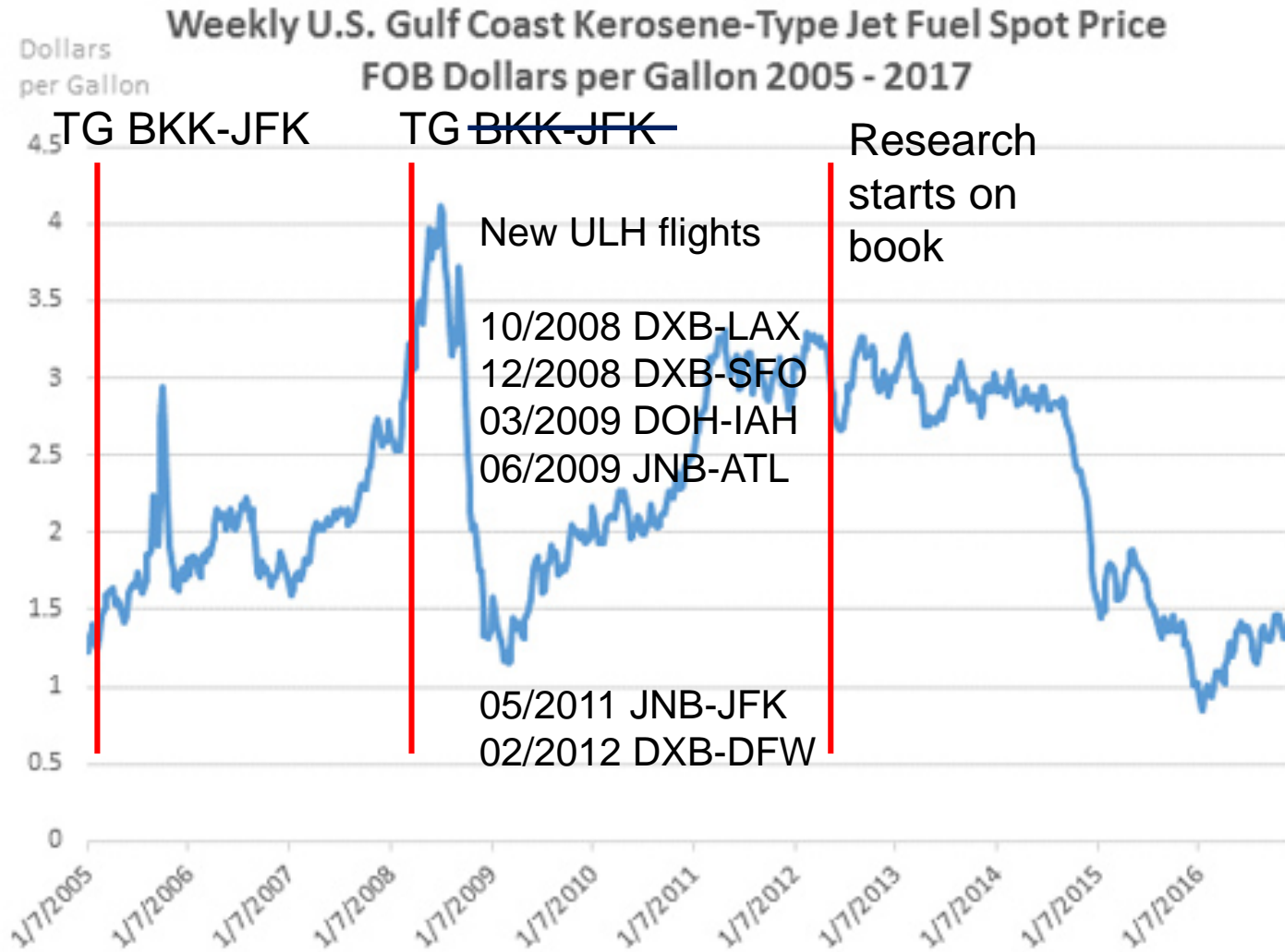
In 2005 Thai Airways bought 5 Airbus A-340-500s (fuel was \$0.42/gallon) and used them to launch service to NY on May 1, 2005

BKK-JFK, 13,965 km (7,540 nmi)

17 hours = 187,000 litres of fuel

Cancelled July 1, 2008. Planes offered for sale.

Cost of Jet Fuel 2005-2017



The Need for Regulation

- 1996, ICAO started working on Market Based Emissions.
- 1998, ICAO32 – Emission-related levies ready in 2001.
- 2001, ICAO 33 - guidelines for emissions trading by 2004.
- 2004, ICAO 35 – studies on market-based measures by 2007.
- 2007, ICAO 36 - continue to study policy options by 2010.
- 2010, ICAO 37 - undertake work to develop a framework by 2013.
- 2013, ICAO 38 – Finalize the work on the technical aspects by 2016.

The Context of the Book

Three realizations:

- 1) The airline industry's focus on reducing GHG emissions was more tied to fuel prices than to a commitment to reducing carbon emissions.
- 2) ICAO had been studying the issue for two decades and no progress was in sight.
- 3) Commercial airline activity was growing at a remarkable pace.

The Thesis of this Book

International civil aviation is the only activity whose emissions principally occur in the upper atmosphere; it continues to grow at a significant rate and is expected to do so for the indefinite future. Nor will it be possible to plead that deliberate action to reduce GHGs will be too costly or that only one part of the international community should assume the cost. Landmark decisions were taken at Paris and Montreal to reduce GHG emissions, and it is now up to States and the international civil aviation industry to find the means of achieving this goal.

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The Goal of the Book

The book's authors believe that the airline industry, like all other industries, must reduce its greenhouse gas emissions as part of meeting domestic and international emissions reduction targets.

The book was an attempt to provoke action from ICAO, and thus advanced drafts of various chapters were shared with ICAO officials and members of National delegations.

How the Book is Different

The book was a collaboration between

- Centre for International Sustainable Development Law
- McGill Institute of Air and Space Law
- academics at other universities
 - University of Toronto Institute for Aerospace Studies
 - Chinese University of Hong Kong

The Book's Authors

The books 17 contributors have a vary wide diversity of academic backgrounds and commercial experiences; including:

Aerospace Engineering, Academia, Navigation Systems, Airline Operations, Air Aviation Law, Brazilian Law, Civil Aviation, Environmental Law, European Law, Government, International Courts, International Law, International Organizations, International Trade Law, Litigation, Maritime Law and Space Law.

All authors have at least a Masters degree and roughly half hold earned doctorates.

The Book's Structure

The Book is divided into 4 parts:

1. Current Status of Global Aviation and Sustainable Development
2. Regional Aviation Issues
3. Dispute Settlement
4. Future Directions

Current Status

There are four chapters in dealing with Current Status of Global Aviation and Sustainable Development

1. Technology developments and renewable fuels for sustainable aviation
2. Global civil aviation emissions standards – from noise to greener fuels
3. Sustainable flight management and aviation
4. Environmental sustainability

Regional Issues

5. Sustainable development and emission trading – the EU perspective
6. Sustainable development, aviation and open skies: exporting environmental values through open skies: the case of the European Union
7. Aviation and sustainable development: some perspectives from the Asia-Pacific
8. Sustainable aviation and the transfer of environmentally sound technologies to Africa: paradoxes, barriers, and prospects
9. Sustainable tourism and the impact of climate change on the Caribbean

Dispute Settlement

There are only two dispute settlement chapters and both of these are highly technical, providing a road map under which states can be held accountable for not meeting international commitments.

10. Settlement of disputes at ICAO and sustainable development

11. International civil aviation and sustainable development: the application of WTO law

Future Directions

The are four chapters in the Future Directions providing guidance into practical ways to reduces GHG emissions.

- 12. Getting to global cooperation: ICAO and climate change
- 13. Seeking global environmental harmony in aviation
- 14. Inspirations from sustainable maritime development
- 15. Corporate social responsibility in the aviation industry

Target Audience

The advance release of certain chapters of the book helped inform the discussions surrounding ICAO's adoption of the Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA) at Assembly 39 in 2016.

Many of its chapters provide go-forward ideas for those tasked with implementing CORSIA goals at a national, regional or international level.

It is aimed at Airline executives, airline and environmental regulators, advisors to Ministers or Secretaries of the Environment and of Transport, members of Academe, ICAO, IATA and their advisors.

The Need for Action

ICAO adopted CORSIA in October 2016

Airline have launched the at least the following 10 ULH routes since then.

11/2018	EWR-SIN	15,344 KM	18:35
11/2018	ORD-AUK	13,170 KM	16:20
11/2018	LAX-SIN	14,113 KM	16:30
10/2018	JFK-MNL	13,712 KM	17:30
09/2018	IAD-HKG	13,121 KM	15:55
03/2018	PER-LHR	14,499 KM	17:20
01/2018	IAH-SYD	13,834 KM	17:30
12/2017	YYZ-MNL	13,230 KM	16:00
10/2017	YVR-MEL	13,183 KM	16:05
02/2017	AUK-DOH	14,533 KM	18:00

Low fuel prices and more fuel-efficient jets provoke more airline activity.

If airlines are not forced to reduce GHG emissions, rather than focusing on reducing EMISSIONS INTENSITY, they will never reduce their emissions.

Obtaining the Book

Sustainable Development, International Aviation, and Treaty Implementation is available in hard-cover and e-book format.

Attendees of this session and their friends may buy the book at a discount.

For more information, and to order, visit:

www.cambridge.org/9781107153110

and enter the code MESTRAL2018 at the checkout

Thank You!!!

Questions??



P. Paul Fitzgerald.