The Airline Crisis
25th IFATCA ASP Regional Meeting

Shixin CHENG
Manager, Safety, Operations & Infrastructure
IATA North Asia Region

To represent, lead and serve the airline industry
Outlook for the airline industry

2008Q3 Update

www.iata.org/economics
Financial crisis risks recession

S&P 500 (right scale)

3m US treasuries yield (left scale)
Risk of recession now spreading

Confidence in Europe and the US
Airline share prices down sharply

Airlines Shareprices Indices
Source: Bloomberg

Airline share prices down sharply
Fuel costs forecast to reach 40% of operating costs in 2009
Traffic volumes going into decline

International passenger and freight tonne-kilometers
Source: IATA

-4% 0% 2% 4% 6% 8% 10% 12%
% change over year

Jul/05 Oct/05 Jan/06 Apr/06 Jul/06 Oct/06 Jan/07 Apr/07 Jul/07 Oct/07 Jan/08 Apr/08 Jul/08

Passenger RPKs
Air freight FTKs

Hong Kong, 7 November 2008
Leading indicators worsening

JPMorgan Output PMI Index and Air Freight Demand
Source: Bloomberg, IATA

PMI Value (50 = No-Change)

% Growth, International FTKs

IFATCA ASP Regional Meeting
Hong Kong, 7 November 2008
Excess capacity limited by increasing number of aircraft parked
Decrease in capacity expected in coming months

The oil price break even point for airlines is at US$ 110 / barrel despite a decreasing trend in non fuel costs reaching its limits. This could impact the whole air transport industry profitability system.
Losses expected to continue into 2009

Operating margin, % (LHS)

Net losses, $bn (RHS)

% sales

US$ billion
27 airlines went bust in the first 6 months of this year.

The worst is yet to come.
2008 Istanbul Declaration:

- Eliminate rules that prevent restructuring.
- Refrain from punitive taxes.
- States should invest in infrastructure.
- Monopolistic business partners need to improve efficiency.
4 Pillar Strategy

1. Technology
   - Engines
   - Aircraft
   - Alternative fuels

2. Operations
   - Fuel Book
   - Green Teams
   - Regulatory

3. Infrastructure
   - ATM
   - Airports

4. Economic Measures
   - ETS
   - Carbon Offset
   - Minimize taxes and charges
ACHIEVEMENTS OPERATIONS & INFRASTRUCTURE
(in million tonnes CO2)

<table>
<thead>
<tr>
<th></th>
<th>Identified'08/09</th>
<th>Implemented'08</th>
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</thead>
<tbody>
<tr>
<td>TOTAL</td>
<td>8.23</td>
<td>9.68</td>
</tr>
<tr>
<td>CRISIS ACTION</td>
<td>2.95</td>
<td>3.74</td>
</tr>
<tr>
<td>PLAN</td>
<td></td>
<td></td>
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<tr>
<td>IEMS</td>
<td>4.49</td>
<td>6.73</td>
</tr>
</tbody>
</table>

Note: 1. Implemented: INFRA - Routes/TMA improvements published, OPS - According to airlines reports
2. Identified: INFRA - Potential savings for upcoming route/TMA improvement, OPS - Green Team Assessment

25th IFATCA ASP Regional Meeting

Hong Kong, 7 November 2008
Fuel Campaign Results since 2004*

OPERATIONS & INFRASTRUCTURE FUEL CAMPAIGN
2004-2008 (in Million CO2 tonnes)

* ALL RESULTS ON ANNUAL BASIS
Time for some new initiatives with…
NAV CANADA / IATA Fuel Industry Meeting
August 27th, 2008
Meeting Report

Introduction:
An IATA delegation met with NAV CANADA on August 27th in Ottawa to discuss the opportunities within Canadian Airspace to enhance operations and reduce fuel consumption. The main goal was to evaluate the low flying plan and assess on a quick implementation.

The IATA Delegation consisted of representatives from Air Canada, Air Transat, American Airlines, Emirates, Delta, Northwest, United Airlines, Westjet and IATA. A detailed attendance list of all participants is found in Attachment A.

IATA made a presentation on the current state of the industry and the actions the association is taking to mitigate the fuel crisis. A copy of the presentation is on the IATA NAV CANADA website.

A detailed presentation was provided by NAV CANADA on the issue that IATA had identified in the NAV CANADA’s Industry Fuel & Efficiency Reference Document. Due to the scale of the presentation it has been placed on the NAV CANADA website.

It should be noted NAV CANADA has done considerable work to improve efficiency and reliability through enhanced AIC initiatives, better coordination among stakeholders, establishment of working groups to implement short/medium term operational solutions and improve communications with the airlines.

Discussion:
The following section contains the key points discussed during the meeting primarily focusing on what NAV CANADA has been doing to enhance their air traffic management.

ADS-B:
- Use ADS-B out to provide the benefits of surveillance in non-radar high level airspace
  - Current procedural separation standard - 20 miles lateral, 30 miles longitudinal
  - ADS-B out regulation standard - existing approval for 5 miles
  - VHF DME/installed with ADS-B
- Hudson Bay to be ready in November 2006
  - 60 to 70% of aircraft are equipped
  - Annual Savings: 18M litres of fuel & 47M tonnes CO2
  - 60 to 70% of airline aircraft are equiped
  - To implement basic ADS-B in NAV UU, then require ADS-B PL100/PL100 inclusive in 2009
  - NAV CANADA will provide airline specific data for ICAO compliance to assist in readiness. Saving 21000 tonnes CO2
- ICAO/ Controller CSN/OPS
  - Working with IATA and other NAT partners
4 August 2008

Mr. Roberto Kühn Demeliere
President of the Council
International Civil Aviation Organization
399, University Street
Montréal, QC, H3C 5K7
Canada

Thank you for providing the opportunity for a meeting with our Senior Vice President, Safety, Operations and Infrastructure, Günter Nathmer, in order to discuss the severe crisis currently being experienced by the airline industry, resulting from the extraordinary high cost of fuel.

ICAO’s unquestionable leadership position can help in conveying to states the urgent measures that the current situation requires.

Following up on your request during the meeting, you will find attached a list of ATM priority actions that we believe could be implemented with ICAO’s assistance. These measures are the most urgent and those which we believe will provide greatest efficiencies.

Please do not hesitate to contact Günter Nathmer or Mike Comber for any further information you may require.

Sincerely,

[Signature]

AA

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Fax: +1 514 844 2507
info@iata.org

Hong Kong, 7 November 2008
Montreal, July 30, 2008

Hank Krakowski
Chief Operating Officer
Federal Aviation Administration
Air Traffic Organization
800 Independence Avenue, SW
Washington, DC 20591

Dear [Name],

I would like to thank you for organizing the Fuel Forum meeting on the 17 July and for extending an invitation for IATA’s participation.

As mentioned in the meeting, please find the attachment with the summary of IATA’s recommendations for urgent actions by the FAA to support the industry.

IATA has developed a comprehensive Crisis Action Plan to support the airlines. In Europe we are working with EuroControl. Attached is the draft agreement between IATA and EuroControl for improvements that could be implemented in six to twelve months in Europe.

Additionally, find a document which outlines the Collaborative Decision Making (CDM) activities at Munich Airport which showed significant improvements. I would be happy to bring my expert who could elaborate on how the CDM process was implemented in several places in Europe.

Again, thank you for organizing the meeting. I hope that these inputs the FAA can put together an action plan that will support the industry. IATA will be ready to support your initiatives. Please don’t hesitate to contact me at any time.

I am also including the link for IATA’s Flight Bag, http://www.iata.org/public/doc/120456/204566/104299/122370, where you can find updated information on our crisis campaign.

Best regards,

[Signature]

Göran Waltolin
Senior Vice President
Safety, Operations & Infrastructure

cc: Robert A. Kuergel, Acting Administrator, FAA
Dorothy Keim, FAA
Doug Lunn, IATA
Peter Cortis, IATA

Attachments
Flight Efficiency Plan

5 action points to reduce fuel burn & emissions:
1. Airspace design.
2. Route shortening, flight plan quality improvements.
3. TMAs, CDAs.
5. Awareness raising on ATM fuel performance management.
28 July 2008

David C. Behrens
Director
Infrastructure Strategy
International Air Transport Association
806, Place Victoria, P.O. Box 113
Montreal, Quebec, Canada, H4Z 1M1

Dear David,

Thank you for your message. As mentioned, IFATCA is willing to work together with IATA on this initiative and we would like to propose a two-tier approach to this work.

In the short term, we would appreciate to be involved, as in the past, in your “Save one minute of fuel” initiative.

We also would like to offer IATA a seat at this year’s IFATCA Regional Meetings to explain your initiative to our members. Please see below a schedule of Regional Meetings:

<table>
<thead>
<tr>
<th>IFATCA</th>
<th>Date</th>
<th>City, Country</th>
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<tbody>
<tr>
<td>IEUR</td>
<td>24-26 October 2008</td>
<td>Lisboa, Portugal</td>
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<tr>
<td>AMIA</td>
<td>29-31 October 2008</td>
<td>Montego Bay, Jamaica</td>
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<td>APFM</td>
<td>4-6 November 2008</td>
<td>Khartoum, Sudan</td>
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<tr>
<td>ASP</td>
<td>5-7 November 2008</td>
<td>Hong Kong</td>
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For the proposed educational material you are mentioning, we have discussed it internally and we would like to advocate a balanced approach, which needs to include airline, Governments and other industry partners. This is, in our view, important as the front-end operators have limited powers to influence the strategic and tactical elements of any initiative and the best impact can only be achieved if all stakeholders contribute to the environmental push with the clear aim of achieving it at the strategic level.
Focus on Low Hanging Fruit

- CDA’s & Pilot Discretion Descents
- Clean air-speed departures
- RNAV/RNP
- Dynamic sharing Civil/Military airspace
- RVSM
Fuel Savings on Arrivals

- 10% less fuel.
- 40% less noise.
- 50-200 kg per arrival.
- 150 - 600kg less CO$_2$. 

Continuous Descent Arrival (CDA)

Drive and Dive
Fuel Savings on Departures

- Clean Airspeed Departures.
- Unrestricted climb to cruising altitude.
- Lift 250kts restriction below 10,000ft.
- 200-1600kg fuel saved per departure!
  - 650 - 5000 kg less CO₂.
Fuel Savings with PBN

RNP Approach vs Traditional ILS

⇒ 5,414 RNP Approaches (B737-800)
⇒ 17,300 less track miles
⇒ 200 tonnes fuel saved
⇒ 650 tonnes CO2 saved
Civil/Military Sharing Airspace
### Short Term – Summary (as of 6 Oct 08)

<table>
<thead>
<tr>
<th>Section</th>
<th>Potential Savings tonnes Fuel</th>
<th>Potential Savings tonnes CO2</th>
<th>Potential Savings in US$</th>
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<tr>
<td></td>
<td>2008</td>
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<tr>
<td>INF – AFI</td>
<td>9,000</td>
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<td>INF – AMERICAS</td>
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<td>INF – ASPAC</td>
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<td>INF – MENA</td>
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<td>INF – NASIA</td>
<td>21,000</td>
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<tr>
<td>TOTAL</td>
<td>63,000</td>
<td>646,000</td>
<td>200,000</td>
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# Based on the IATA average fuel price 140.6 per barrel as at 31st July 2008
Welcome to the IATA Industry Crisis web site. Here you will find links to documents and information regarding the current state of aviation. Please be sure to visit the discussion board (see right side of page) and post your questions and comments.

Industry Documents

<table>
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<tr>
<th>Type</th>
<th>Name</th>
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<tbody>
<tr>
<td>Action Plan Editions</td>
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<tr>
<td>Action Plan Update – 31 July 08</td>
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<td>Action Plan – 12 July 08</td>
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<td>Infrastructure</td>
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<td>13 Aug 08 Final Minutes, IATA CASCO EUROCONTROL Meeting</td>
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<td>2008 NAV CANADA – IATA Meeting</td>
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<td>Letter to Tatiana Andina (Russian Interstate Aviation Committee)</td>
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<td>Standard Charges and User Fee Reduction Letter</td>
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<td>One Minute Savings Campaign Letter</td>
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<td>Letter to Kobe (IACO)</td>
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<td>CDA Procedures</td>
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<td>Clean Airspace Departures</td>
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<td>Generic IATA Working Paper</td>
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<td>Fuel Efficiency Plan – Final Draft</td>
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<td>FCAC Letter to IATA</td>
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www2.iata.org/sites/industrycrisis
IATA Crisis Action Plan

- Awareness – Raised.
- Action Plans – Many Developed.
- Fast Track Implementation – *How?*
Thank you!