

**SUSTAINABLE AVIATION: THE NEXT STEPS -  
Aviation's Role in a Long-term Sustainable Environment**  
Royal Aeronautical Society, London, 8/9 April 2003

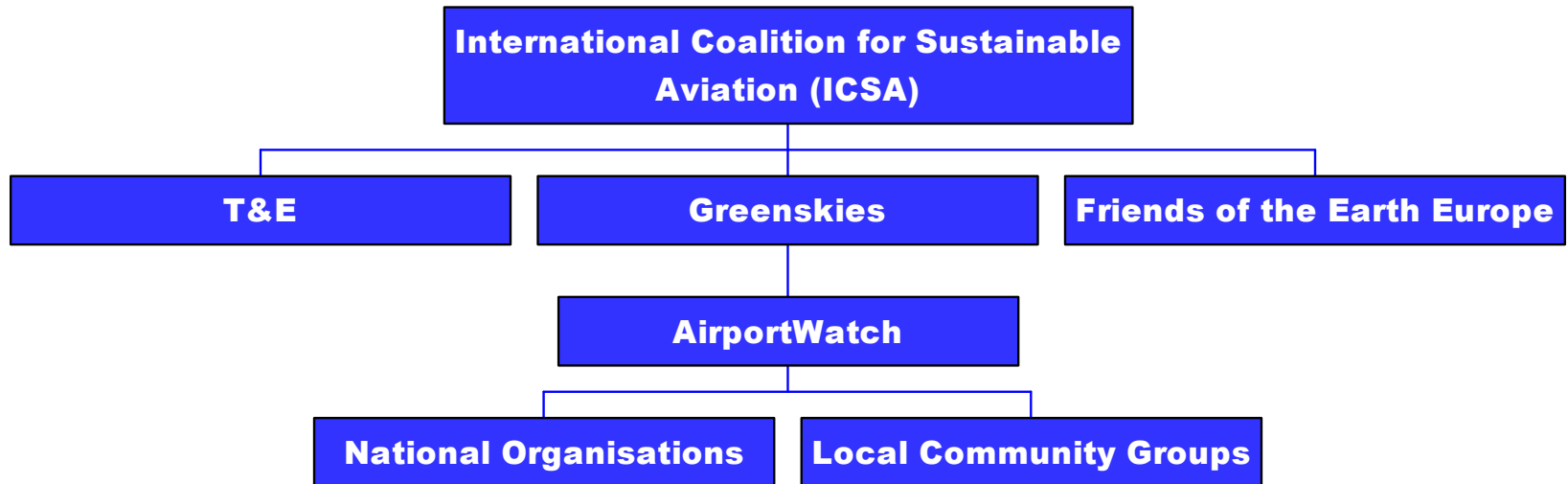
# **Sustainable Aviation:** *The Environmental Agenda & Community Expectations*



**Tim Johnson**

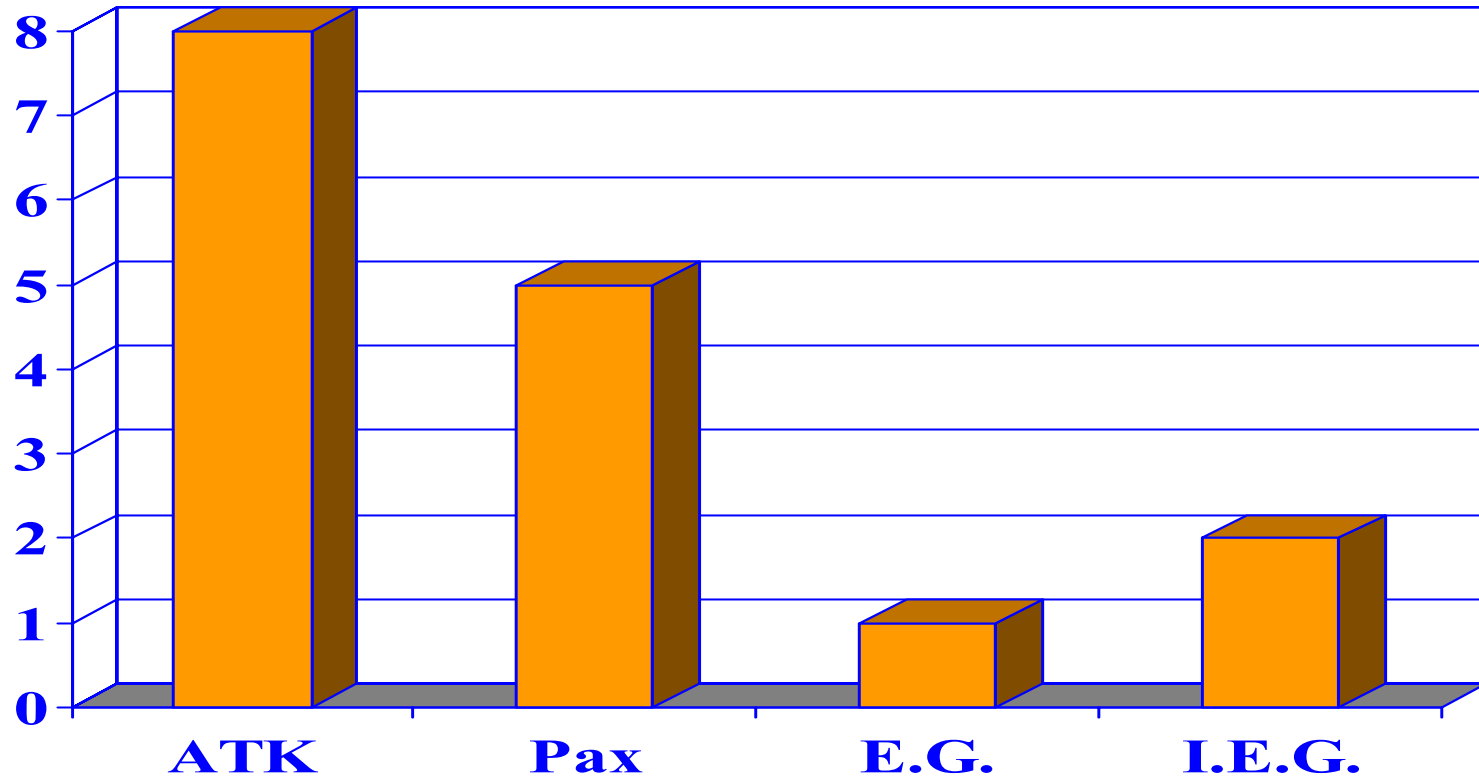
Director, Aviation Environment Federation

# The Environmental NGO Structure ....



# Sustainable growth?

Annual % growth/improvement in ...



# **ACARE – Advisory Council for Aerospace Research in Europe**

- Reduce CO<sub>2</sub> by 50% per passenger kilometer by 2020
- Reduce perceived noise to one half of current average levels by 2020 - a 10 dB reduction per operation goal, ensuring that such benefit at source lead to limit noise nuisance to 65 LDEN at airport boundaries, provided the appropriate management practices were in place.
- Reduce NO<sub>x</sub> emissions by 80% by 2020
- Minimise the industries impact on the global environment by 2020

## Position on emissions trading ...

Introduction of charges in the short-term but may support a credible emissions trading scheme by 2012 if proven to be more environmentally effective. Key areas will be:

- A stringent cap
- At least partial auctioning of permits to fully internalise costs
- Policy context based on radiative forcing potential not just CO<sub>2</sub> emissions
- Wide coverage

# Local environmental concerns ...

- Aircraft noise
- Local air quality
- Third party safety
- Water issues
- Biodiversity
- Heritage/conservation issues
- Cross-cutting issues such as health and urbanisation pressures

# Aircraft noise ... the situation today

- Perception that aircraft noise has not improved, due, in part, to the significant increase in number of noise events
- Night noise remains a particular problem
- Wider recognition of impact on noise on health and the performance of children
- Perception that local concerns are being ignored, especially by regulators

# Consequences ...

- Greater opposition to airport development proposals
- Tendency to seek legal remedies

**.... Uncertain outcome for all**

# **Aircraft noise – key action areas**

- Need for effective measures to tackle aircraft noise
- Improvement in reporting of noise climate
- Need to create long-term certainty

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Policy in 1990's created current community expectation:

- Chapter 2 phase-out
- Range of options for Chapter 4 stringency and a partial Chapter 3 phase-out being discussed by ICAO
- Recognition of need to take further action – ICAO analysis showed a 42% increase in the number of people affected by aircraft noise in Europe between 2002 and 2020

Widespread disappointment at outcome:

- Weak Chapter 4 standard
- No ICAO decision on phase-out

# UK airport noise scenarios ...

<b>57 Leq</b>	<b>2000 (1999)</b>	<b>2015</b>	<b>2030</b>
Heathrow	307,000	333,000	332,000
Gatwick	9,000	>13,000	>23,000
Stansted	6,000	8,000	>28,000
Manchester	43,400	48,700	64,300
Birmingham	33,700		>178,000
East Midlands	2,500		>19,200

ICAO's balanced approach to  
noise management ...

... a step forward?

# **Aircraft noise ... the balanced approach**

4 elements:

- Reduction at source
- Land-use planning
- Operational procedures
- Operational restrictions

Apply on an airport-by-airport basis

Airport-by-airport approach may inhibit effective action

For example, concerns over EU Directive 2002/30/EC on rules and procedures for introducing noise-related operating restrictions at Community airports

# Aircraft noise – key action areas

- Need for effective measures to tackle aircraft noise
- Improvement in reporting of noise climate
- Need to create long-term certainty

## Perception that Leq does not relate to actual experience of noise:

- Complaints from areas outside the 57 Leq contour
- Not sensitive to changes in number of noise events
- Average “operational” day not typical

Government has commissioned new study

# A better way?

## The Sydney example

Noise maps (produced in addition to contour maps) showing (at any given point):

- Aircraft altitude
- Average daily number of movements on a flight path (and range between quietest and busiest days)
- Number of days when there are no flights
- Any “quiet” periods e.g. night curfew
- Number of events over a given threshold e.g 70 dBA
- Information can show seasonal, daily or hourly distributions



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# Noise capacity approach

## Advantages:

- Defines worst-case scenario
- Creates long-term certainty
- Incentive to operate and purchase quietest aircraft
- More flexible than operational restrictions

# Noise capacity approach

## Guidelines for setting noise cap

- short-term: no increase in the number of people exposed to aircraft noise;
- long-term: work towards World Health Organisation guidelines, namely:

Daytime noise: noone should be exposed to levels in excess of 55 Leq (outdoor); Night-time noise: an interior bedroom level of 35 Leq.

# Closing remarks ...

## Cross-cutting themes:

- Needs to establish environmental targets and policy at all levels
- Need for better environmental reporting
- Need for closer links between industry and community groups