

ENVIRONMENT

Could aviation follow the cigarette industry as public enemy number one? This was the startling question posed to delegates at the Aviation and Environment Summit 2006 by Alexander ter Kuile of CANSO, which represents the interests of air navigation service providers worldwide. Jackie Thompson reports



Alexander ter Kuile.

PUBLIC ENEMY NUMBER ONE?

As the aerospace industry comes together at Farnborough, Alexander ter Kuile will find he is not alone in his concerns about the growing negative image of aviation. "It feels like we are sitting on a panel of accused trying to defend ourselves," complains Christian Scherer, Airbus executive vice-president of future programmes.

At the inaugural Aviation and Environment Summit

in 2005 organised by the Airports Council International (ACI), Air Transport Aviation Group (ATAG), Civil Air Navigation Services Organisation (CANSO), IATA and the International Coordinating Council of Aerospace Industries Associations (ICCAIA), the air transport industry adopted an action plan through which it committed to "develop and introduce the best available technologies and practices that would improve the industry's environmental performance".

"We must be constantly aware of how society perceives us," warns ter Kuile. "Aviation has become a public symbol of globalism and industrialisation. It has a high visual impact."

It is within this visibility that the problem lies. No matter how many statistics are spouted in defence of air transport compared with other modes of transport or comparable industries, it is perceived – with its contrails and night time airport curfews – as the dirty man of the global economy.

This is despite the fact that, as John Begin, deputy director of IATA's air trans-

port bureau, puts it, "the growth of aviation on a global basis is fundamental to the developing world's development".

ATAG says aviation transports some two billion passengers annually, and 40% of interregional exports of goods by value. Its global economic impact is estimated at \$2.9 trillion, equivalent to 8% of the world's gross domestic product (GDP).

Embarrassing

ICAO president Assad Kotaite said in his opening remarks at this year's summit: "While aviation is a catalyst for social and economic development around the world, it is a source of pollution. While aviation's total emissions are modest compared with other sectors they are not expected to decrease in the coming years."

Air transport is estimated to contribute 2% to global greenhouse gas emissions. Every kilo (2.2lb) of jet fuel causes 3kg of CO₂ to be released into the atmosphere.

With an industry that is currently growing at a rate of 5% a year, the rate of

growth is a fundamental problem.

Tim Johnson, director of the UK-based Aviation Environment Federation, says: "The technological solution measured over time is significant, but it does not offset this growth rate."

Different parts of the world place varying emphasis on the three main contributors to pollution: noise, air quality and global emissions. Carl Bureson, FAA director, office of environment and energy, says noise is the number one issue in the USA, whereas global emissions are the main focus for the European Union.

Because of this European emphasis on reducing emissions, European Commission (EC) proposals to include aviation in its emissions trading scheme are expected to be published this summer.

IATA director general Giovanni Bisignani says that such trading is preferable to additional taxes and charges, but warns that it could still impose "substantial costs" on airlines. He says targets and benefits must treat all airlines

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Way of AN-70 further development to be discussed during the meeting of Presidents of Ukraine and Russian Federation. Victor Yuschenko, President of Ukraine, said that "Ukrainian party is sure AN-70 is one of the best projects developed during 20 last years. Its characteristics give us the basis to say AN-70 will play a leading role among such type aircraft for at least 15-20 years".

The unsurpassed characteristics of AN-70 could be explained by great experience of Antonov ASTC and its partners in creation of cargo aircraft. AN-70 became a worthy member in world-known family of Antonov transports. AN-124 Ruslan, this family's visit card, is still the aircraft with the biggest cargo capacity as compared to all serially produced freighters in the world. Recently AN-124 was recognized ones more by Europe. Let's remind that 15 European countries and Canada chose Ruslan as a transport capable to deliver necessary cargoes to any place of the planet within the maximum short terms. EU and NATO use Ruslans within the SALIS (Strategic Airlift Interim Solution) program. Its operation is based on the Contract signed by NAMSA (NATO Maintenance and Support Agency) representing NATO interests and Ruslan SALIS GmbH, representing interests of ANTONOV ASTC (Ukraine) and Volga-Dnepr group of companies (Russia), which are equal partners in the program.

Antonov Airlines, air transport subdivision of ANTONOV ASTC, confidently meets its engagements on the contract. Within the period from start of the operations (March 23, 2006) till the end of June, the airlines' AN-124-100 airplanes carried out more than 40 flights on orders of MoD of Germany, Iceland, Norway, Poland, France and other European countries. The routes were to Afghanistan, Kongo, USA and UAE. All the flights were performed in accordance with the schedule agreed with the customers. None of the flights was defeated.

equally, and trading should only apply to carbon dioxide emissions.

The European scheme has suffered an embarrassing setback, however, as figures released by the EC in May revealed that most member states had given their industries far too many pollution-permitting carbon credits. Under the current scheme no adjustment to the existing allocation of permits is allowed, said the EC.

"Too often governments are part of the problem rather than part of the solution," says Bisignani. "Taxes are not the solution; they kill the social and economic benefits that aviation brings, particularly in developing countries. We need an approach that does not destroy the airlines' ability to invest."

Eurocontrol director general Victor Aguado agrees that emissions trading is one way of controlling the effect of aviation on the environment, "but it doesn't solve the problem". He insists network efficiency is another vital method.

It is clear there are many different opinions within the industry on the severity



IATA's Giovanni Bisignani stresses the importance of seeking alternative fuel sources.

of the problem of global pollution and the part played by air transport in global pollution, as well as on the best way forward. What is increasingly clear is that the industry needs to be seen to be singing from the same hymn sheet.

Rather than finding an engineering solution to what are actually social and political problems, the industry needs to engage with the outside world. Kevin O'Toole, head of

strategy with the Flight Group, who moderated the summit, suggests that IATA should galvanise an industry response through ATAG using the next ICAO Air Transport Conference in September 2007 as a deadline. "There is a need to engage with the general public. Their opinion is what matters, not the view of non-governmental organisations," he insists.

ICAO's Kotaite says: "We need common aviation

targets rather than a range of sometimes diverging targets proposed by various bodies and organisations.

"Aviation as a sector must demonstrate consistency in establishing its emissions levels objectives and the various options for attaining them. We must be increasingly proactive in representing the aviation sector before the world community."

The airline industry, which welcomed more than two billion customers onto its aircraft last year, needs to ask them what they feel aviation's role should be in controlling its environmental impact. It may be that travellers are not ready to pay a premium to offset the carbon emissions from air travel or to journey by train rather than car occasionally, in which case perhaps the aviation industry cannot be expected to save the world on its own.

There are two tracks to reducing air transport's environmental effect, apart from cutting the number of flights – operational and technological.

IATA's Giovanni Bisignani stresses the importance of seeking

alternative fuel sources. He adds that jet fuel has remained unchanged over 40 years and that kerosene is still the most efficient fuel type for aircraft. Alternative fuel sources must be able to satisfy long-term availability and cost requirements before they can become a reality. The use of synthetic fuel is the "most promising" option for the short- to medium-term, he notes, but current aircraft engines can only accept up to 50% synthetic fuel.

Incentives

Mike Farmery, global fuel technical and quality manager at Shell Aviation, says the long lifetime and high capital costs of aircraft mean there is little incentive to develop alternative fuels. He sees kerosene as the preferred fuel for the next 30 years.

Both Airbus and Boeing are currently investigating the use of fuel cells to power aircraft auxiliary power units (APUs). Philippe Jarry, Airbus senior vice-president of product policy, says it plans to test the use of fuel cells on board an A320 in flight during summer 2007 in

conjunction with engine manufacturer General Electric.

Rival Boeing has also been researching fuel cell technology and hopes to fly a fuel cell-powered demonstrator aircraft later this year, says Timothy Petersen, Boeing Commercial Airplanes director of systems concepts. He adds that fuel cell applications, which use 75% less fuel and produce fewer carbon dioxide emissions, can be successfully used to power ram air turbines and APUs.

A number of operational moves have the potential to reduce noise and fuel consumption. These include the continuous descent approach, which is being tested and avoids the stepped approach currently in use. It has the potential to reduce noise contours by 30%, says Eurocontrol director general Victor Aguado.

Russell Davie, manager, line operations, at Cathay Pacific Airways, identifies inefficient air traffic control systems and procedures as the single largest cause of fuel wastage. He believes that 10-12% savings are possible, but that significant political commitment would be required.



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OPINION

Aviation must face the facts on carbon emissions trading or the industry may find its expansion blocked by governments and its costs rising.

PERSONAL VIEWPOINT

LEONIE DOBBIE



The EU stands ready to 'give wings' to the inclusion of aviation under the European Emissions Trading Scheme (ETS), its flagship instrument to meet its Kyoto (EU-15) 2012 target.

Emissions from aviation are growing faster than from any other sector, leaving the industry potentially in the political dock for undermining progress to achieve the Kyoto target. Unless contained, emissions from the aviation industry could ostensibly cancel out more than a quarter of the 8% reduction in greenhouse gases (GHG) that the EU is required in achieving between 1990 and 2012 under the Kyoto protocol. Amid mounting political pressure, the

International Civil Aviation Organisation (ICAO) is meeting early next year in an attempt to transform the fiction of aviation emissions trading to fact.

It is time for ICAO to send long-term political signals that aviation is fully carbon-conscious, and not just almost fully efficient in its use of energy. Once the industry's commitment to real progress is understood, governments world-wide may be more willing to address existing infrastructure and ATM inefficiencies, to help free up capacity, while containing emissions.

Until agreement on environmental capacities is reached, industry pleas for additional airport and ATC capacity are likely to fall on deaf ears.

The aviation sector must acknowledge the scientific facts and figures of its environmental impacts: aviation's share of GHG emissions is growing and could keep doing so.

ICAO cannot afford to become lost in arguments about trade-offs between mitigation of noise and emissions, or between mitigation of global and local emissions. If viable solutions are to be agreed, these must be more than discretionary (voluntary), technical, operational or supply (infrastructure) based.

Compliance

ICAO needs to lend its full weight to facilitating aviation's entry into open emissions trading schemes (ETS), whether global or

local in scope. It needs to give some practical form to the structural and legal basis for aviation's participation in an open ETS, including key elements such as caps, timing, reporting, monitoring, and compliance.

If this is not done, pressure will build again in the near term for aviation to meet its external costs by paying carbon charges and taxes. Currently, the global implementation of such charges has been put on hold, until at least 2007, by ICAO policy decisions.

Pending the development of a solution at global (ICAO) level, the EU is expected to introduce draft legislation toward the end of 2006. Already, the EU has mapped out a detailed policy framework,

though not one that has created sufficient security and confidence for the aviation industry, despite its involvement in the process. Critical decisions have to be taken on the design elements, including the cap to be applied, and the timing of aviation's incorporation in a European ETS.

In line with its approach to the development of new noise rules a few years ago, the EU could introduce its own draft emissions trading scheme, pending ICAO action. After ICAO has met, the EU could

then amend its template accordingly to meet any ETS rules that might have been agreed by ICAO.

The EU could be on the brink of making aviation emissions trading a reality across Europe. Industry has understood this message and, through ICAO, has a chance to shape events over the long term. Whatever the outcome, the aviation industry will inevitably have to pick up the bill.

■ Leonie Dobbie is sustainable aviation and airports associate at WSP Environmental.

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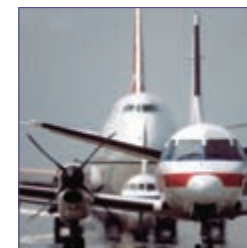
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