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**Submission on Issues Paper – Forum 5  
Transport, Planning and the Built Environment**

The following comments relate to the issues of air travel and air freight raised in your issues paper (Forum 5) on transport.

***1. Challenging the “growth forever” model for aviation and tourism, and the need for demand management***

An essential issue in relation to air travel and air freight is to address the “growth forever” worldview which underpins the aviation and tourism industries. In contrast, a variety of ecological scenarios for aviation futures recognise that there are ecological and social limits to growth. Demand management is a critical factor in limiting carbon dioxide emissions from air transport. Currently, air travel is promoted and rewarded as part of a broad consumption ethic, as in “fly buy” points and continuous encouragement to travel linked to credit cards, advertising, and artificially low fares.

In Britain, the Royal Commission on Environmental Pollution (2002b) has played a strong role in challenging the *status quo* position of the UK Government and the aviation industry with respect to the continuing expansion of aviation and airports. In a special report entitled *The Environmental Effects of Civil Aircraft in Flight*, it expresses deep concern about the global impacts of the rapid growth in air travel.

The following extract from a news release associated with the publication of the report is unequivocal in its emphasis (Royal Commission on Environmental Pollution, 2002a):

Emissions from aircraft are likely to be a major contributor to global warming if the present increase in air traffic continues unabated. The government shows little sign of having recognised that action to reduce the impacts of air transport is just as important as action in other sectors contributing to climate change. The problems are challenging but it is imperative that environmental priorities are not simply sidelined as being too difficult. If no limiting action is taken, the growth in air transport will proceed in fundamental contradiction to the government’s stated goal of sustainable development.

In an earlier report on *Transport and the Environment*, the commission devoted a chapter to air transport and graphs the consequences for carbon dioxide emissions under a number of scenarios (Royal Commission on Environmental Pollution, 1994). The rising curves for aviation’s carbon dioxide emissions through to the year 2040 from 1990 become progressively less steep in the following order: business as usual, improvements in load

factors, improvements in technology, all improvements excepts reduction in demand, reduction in demand through lower growth, and all measures in combination. Reflecting a “strong” sustainability approach, the commission states:

The conclusion reached is that management of demand will be the most critical factor in the long term in limiting carbon dioxide emissions from air transport: it is suggested that this might be achieved through a progressive reduction in business travel and air freight, and slower growth of tourist travel.

Since that report was published, the commission suggests that “the case for action to limit climate change has become even more compelling” and “that some form of demand management must be implemented in order to avoid long-term damage to the environment” (Royal Commission on Environmental Pollution, 2002a).

More recent work by the Tyndall Centre for Climate Change (Bows & Anderson, 2007) has quantified the aviation industry’s carbon dioxide emissions in relation to the UK’s total carbon budget. Once again, it highlights a fundamental contradiction between the UK Government’s Energy White Paper targets for carbon dioxide emissions and the same government’s desire to facilitate airport expansion.

For the stabilisation level of 450 ppmv now commonly associated with reducing the risk of “dangerous climate change”, the UK Government’s projections for the aviation industry were found to account for between 50% and 112% of the UK’s 2050 carbon budget. These estimates did not take into account the enhanced radiative forcing from aviation from emissions other than carbon dioxide, contrails and cirrus clouds. These are linked to a two to four times further warming impact than that from carbon dioxide alone (Penner, Lister, Griggs, Dokken, & McFarland, 1999), meaning that the Tyndall Centre’s results are underestimates.

The same policy clash and contradiction between aviation and airport expansion on the one hand, and the need to markedly reduce greenhouse gas emissions on the other, has similarly been quantified for Australian aviation by the Australia Institute. One study addresses aviation nationally (Macintosh & Downie, 2007), and another specifically addresses Canberra Airport’s vision for growth vis-à-vis the ACT Government’s Climate Change Strategy (Dobbin, 2008; Macintosh & Downie, 2008). The latter provides a useful case study of the growth issue. In essence, the studies underline, both nationally and locally in the ACT, the disproportionate allocation of growing emissions from the aviation sector, which has very significant consequences for other carbon dioxide-emitting sectors of the economy.

The study on Canberra Airport (Macintosh & Downie, 2008) uses a conservative uplift factor of 1.7, as most estimates of aviation’s contribution to climate change understate its importance by failing to take account of non-CO<sub>2</sub> emissions. However, the emission projections are deliberately conservative, being confined to passenger-related emissions. Freight, general aviation and military emissions are all excluded. The ACT Government’s Climate Change Strategy aims by 2050 to reduce the Territory’s emissions by 60% on 2000 levels. The main findings from the study suggest that aviation would amount to 9% of the ACT’s emissions in 2025, and by 2050, they would constitute 216% of the ACT’s target. That is, the airport’s projected growth plans (which include a significant

international component) provide a stark contrast with the ACT Government's climate change targets.

## ***2. Challenging existing air freight models***

Long-term forecasts by Airbus and Boeing predict around a 6% annual growth rate for air-freight tonnage over the next 20 years (Boeing, 2006). The role of “belly hold” freight is being increasingly challenged by integrated carriers, with key players including DHL, FedEx, TNT Express, and UPS. Integrated carriers are forecast to grow on average by 13% per annum and to take market share of 31% of the total air freight market by 2019 (Gillingwater, Humphreys, & Watson, 2003).

In contrast with the projected growth rate, there is a critique that asks whether the transport of goods by air is sustainable. If a price is put on carbon, as looks increasingly likely, air freight will then have to include externalities that are currently ignored.

The Royal Commission on Environmental Pollution (2002b, p. 37) concludes that air freight is so much more environmentally damaging than other transport modes that it must be reserved for very high value, and usually perishable goods. Carbon dioxide emissions and fuel use per tonne-kilometre for rail freight are a factor of 20-100 lower than for air.

## ***3. Redesigning policy and practice for aviation and tourism***

Dunlop (2008) recently comments: “An ideological preoccupation with a market economy based on short-run profit maximisation is rapidly leading toward an uninhabitable planet. As inconvenient as it may be politically, conventional economic growth and rampant consumerism cannot continue. Markets are important, but they operate within rules. Henceforth, the rules much change to ensure long-run sustainability”.

With respect to aviation, Akerman (2005) considers four possible futures linked to air travel in 2050. The various options depend on factors such as:

- Predominant focus in society—whether this be GDP-growth or activities relying less on consumption and a focus on leisure
- Pace in society—fast or slow
- Role of IT—with varying effects from generating more transport to substituting for transport
- Spatial focus—global or local/regional.

Air travel growth has historically been highly correlated with GDP-growth, and in fact has grown even faster. Promoting greater mobility through, for example, lower fares and encouraging low-cost airlines are basic tenets of this approach.

However, a policy position that has a city airport as a necessary node in the global economy can be contrasted with other positions that question the benefits of further aviation growth, or that even question our want of mobility. The need to reduce the need for air transport—in effect a questioning of the “predict and provide” approach to aviation planning—is in accord with the sustainable transport literature, which increasingly emphasises that the rapidly growing demand for mobility cannot be met in a sustainable way.

In Akerman's choice of aviation futures, one such scenario has a low consumption and leisure focus, is slow-paced, has much lower total travel passenger-kilometres (and consequently much lower greenhouse emissions), and a local/regional spatial focus. Yet another option can still have these characteristics, but more of a global spatial focus through the use of IT to substitute for much air travel. Investment in more diversified local economic development of regions is therefore one way of reducing the growing demands of air traffic.

Where mobility needs must be met, modal change, especially to high-speed rail, is regarded as a sensible option for short-range traffic, for both economic and environmental reasons (Royal Commission on Environmental Pollution, 2002b, p. 33). In Australia, however, rather than highly expensive VFT, the case for much more cost-effective tilt trains linking Melbourne-Canberra-Sydney has been usefully made (Laird, Michell, & Adorni-Braccesi, 2002). Tilt trains can travel at speeds of up to 200 km/h. Such a project would involve straightening out the existing track and also allow the use of faster and heavier freight trains. Carrying passengers and freight this way is much more environmentally friendly than greenhouse emissions profligate air travel and air freight.

Eleven options for redesigning policy and practice for aviation (May, 2006) are outlined in the following paper forwarded electronically with this submission:

May, M. (2006). Aviation meets ecology--redesigning policy and practice for air transport and tourism. *Transport Engineering in Australia, 10*, 117-128.

Although broad policy change to counter the growth model of the aviation industry and its clash with climate change policy objectives is essential, efforts targeting individual travel behaviour can also assist. The guidelines on *Flying Green: How to Protect the Climate and Travel Responsibly* from the Tufts Climate Initiative are forwarded electronically with this submission. A related website—the Low Fly Zone—is located at <http://www.lowflyzone.org/>

Regards

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