

The Future of Aviation

The Government's consultation document on air transport policy

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Main Questions

A. Should the Government choose policies that respond to the demands of consumers and allow current growth patterns to continue, while mitigating the negative effects as far as possible? Or are the costs of this approach too high and should we therefore choose policies to limit these negative effects?

Air traffic is forecast to almost double in the next 15 years. DETR air traffic forecast figures show total passenger numbers at UK airports rising from 160 million in 1998 to 400 million in around 20 years time. If we were to try to apply a predict and provide model to that level of demand, that increase of 240 million passengers would require the equivalent of 4 new airports the size of Heathrow or 8 new airports the size of Gatwick. By 2020 the forecasts indicate that demand will be rising by about 15 million a year, equivalent to a new Gatwick every 2 years.

Clearly the political as well as the environmental consequences of such expansion would be totally unacceptable. These projections only serve to show the nonsense of assuming the possibility of continuous exponential growth. The old “predict and provide” model is simply not going to work, and has to be abandoned.

Most significantly, climate scientists have concluded that improvements in aircraft and engine technology and in air traffic management will not offset the projected growth in aircraft emissions. That means that, in order to reduce the growth in aircraft greenhouse gas emissions, we will have to slow the growth of air travel.

The European Commission's Communication on *Air Transport and the Environment* (COM(1999)640-C5-0086/2000) comes to a similar conclusion:

“The air transport industry is growing faster than we are currently producing and introducing technological and operational advances which reduce the environmental impact at source. The overall environmental impact is bound to increase since the gap between the rate of growth and the rate of environmental improvement appears to widen in important fields such as emissions of greenhouse gases. This trend is unsustainable and must be reversed because of its impact on climate and the quality of life and health of European citizens.

Further, fuel availability is certain to decline considerably over the next 30 years, with petroleum production set to peak around 2005. Unless the air transport sector can appropriate a rapidly

increasing proportion of declining world oil production, its growth cannot proceed as the industry expects. At the very least, the real cost of fuel will increase dramatically.

B. How should the Government ensure that aviation meets the external environmental costs for which it is responsible?

The first thing the Government must do is to stop artificially subsidising the growth of the aviation sector.

The fact that airlines pay no duty or VAT on aviation fuel raises fundamental questions from the point of view of equal treatment across sectors, of general transport policy, and of the goal to internalise the external costs of air transport. This situation isn't fair, since it distorts competition among transport modes. Neither is it efficient, since it "over-stimulates" aviation. Addressing this anomaly would both create a level playing field, and be fully in line with the aim of liberalising the European air transport market.

Let us assume that the tax subsidies were removed from aviation. The Air Traffic Forecasts document from the UK's Department for Environment, Transport and the Regions gives sensitivity tests for a variety of options.

The DETR estimates that introducing an aviation fuel tax at 100% would reduce demand by 10%. Hence it can be deduced that taxing aviation fuel at 25p a litre, half the rate applied to motor fuel, ie at around 140%, might reduce demand by about 14%. This would reduce the mid-point forecast for the number of passengers passing through UK airports in 2020 from 400 million to 344 million.

VAT on air travel (including fuel and aircraft purchases) would put air fares up by 17.5%. One of the DETR sensitivity tests indicates that this would reduce demand by about 22%. Imposing both a fuel tax and VAT would reduce forecast demand to around 268 million.

Trebling airport charges at Heathrow and Gatwick would raise average UK airport charges by about 100%. The sensitivity tests indicate that this could be expected to reduce demand by a further 11%. Abolition of the remaining duty free might knock off a further 1%, reducing the total demand in 2020 to 236 million.

It is again roughly assumed that the air passenger duty is roughly equivalent to the level of tax that should be imposed for environmental reasons.

In round terms, then, it would seem reasonable to conclude that the total effect of introducing a fair tax regime, and realistic landing fees, would be to bring about a situation where demand for air travel rises from 160 million passengers using UK airports in 1998 to about 236 million in 2020.

That would be a more reasonable rate of growth, instead of the wild rampant growth implied by the forecasts. The level of passenger throughput would be within the capacity of existing airports, **albeit with substantial environmental damage from the growth in emissions**, but without the need to build new airports or runways.

In the European Parliament's Resolution (A5-0187/2000), based on the Report I drew up as the Parliament's Rapporteur on the subject, the Parliament called for an international tax on kerosene. However, we are well aware of the political difficulties of achieving such a tax, since it would require either unanimity at ICAO, or the re-negotiation of thousands of bilateral air service agreements.

An alternative way of internalizing costs would be through an emissions charge on aircraft emissions. While of course international agreement would increase the effectiveness of such a policy, the Commission has suggested that, if it proves impossible to get action agreed internationally on such a charge, it could instead be introduced on a European wide basis alone – a charge on all flights arriving at, or departing from, an EU airport.

Not only would such a charge be easier to introduce than a fuel tax, it also has the advantage over fuel tax in that it would directly tax emissions and not just fuel consumption.

Emissions Trading

Some airline operators are arguing for an emissions trading system to reduce greenhouse gas emissions from aircraft. This would enable airlines to buy and sell greenhouse gas permits. Each permit would allow an agreed level of a greenhouse gas such as CO₂ to be emitted. The attraction for airlines is that those who have chosen to invest in more efficient aircraft will be rewarded under such a scheme, not least because they will be able to profit from selling their excess CO₂ allowance. The other major attraction is that there will be no real constraint on air travel expansion if airlines are able to buy emissions permits from other industry sectors.

The Association of European Airlines have proposed a voluntary system of emissions trading. However, since such a scheme cannot be enforced it is no substitute for an aviation fuel tax or an emissions charge.

In summary, our concerns are the following:

- The trading system will not be agreed for years
- No body to enforce the system
- Aircraft emissions could continue to grow if airlines are allowed to trade with other industry sectors
- The system could only feasibly look at carbon emissions trading – it is too complicated to involve other Greenhouse Gases at the same time – yet this could lead to perverse effects, since reductions in CO₂ are likely to lead to increases in NO_x. (Engine manufacturers have made

significant reductions in CO₂ emissions by increasing combustion temperatures, but a consequence of this is that NO_x emissions often increase).

- The aviation industry is unlikely to agree to a reduction in emissions permits over time.
- It is also worth pointing out, that from the aviation industry's point of view, the effects of such a system would not necessarily be significantly different from imposing an environmental charge. In both cases, environmental improvements would in essence be brought about by rendering more expensive emissions from air operations.

While there may be scope for emissions trading, it is not a panacea. It must not be seen by industry as a way to buy the right to continue to increase emissions indefinitely – once the easier ways of reducing CO₂ have been exploited, there will be difficulties ahead for all sectors, and the sooner the airline industry starts to adapt to that, the more successful it will be.

Clearly an aviation charge or tax is not the only instrument we need – far from it – but it's an important tool in our armoury. But we will need other measures. One of these would be optimisation of Air Traffic Control – IPCC Report shows overall fuel saving of between 6-12% with implementation of improved ATC system in the next 20 years.

Another would be the auctioning of slots, which would encourage higher load factors and larger aircraft. It would also enable the number of slots per hour to be optimized in order to reduce delays – which in turn would have economic benefits for passengers and airlines, and would have the environmental benefit of reducing the pollution caused by aircraft queuing to take off or circling in the sky waiting to land.

It is not just the Greens who are taking this position. Significantly, the Royal Commission on Environmental Pollution in its 18th Report on Transport and the environment said very clearly:

“...an unquestioning attitude toward future growth in air travel, and an acceptance that the projected demand for additional facilities must be met, are incompatible with the aims of sustainable development.”

“...the demand for air transport might not be growing at the present rate if airlines and their customers had to face the costs of the damage they are causing to the environment.”

C. If aviation covers its environmental costs, should capacity then be provided to meet demand?

As the answers to questions A and B have demonstrated, in order to reach anything like sustainability, **demand must be reduced**. This is the bottom line. It is clear that, as the Commission has recognised

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the rate of environmental improvement appears to widen in important fields such as emissions of greenhouse gases. This trend is unsustainable and must be reversed because of its impact on climate and the quality of life and health of European citizens.

The reality of climate change reinforces this case. Aviation is one of the fastest growing sources of greenhouse gases, and we know GHG emissions cause climate change. According to the Intergovernmental Panel on Climate Change's *Special Report on Aviation and the Global Atmosphere*, aviation currently accounts for just over 3.5% of total emissions today, but, according to the highest scenario considered in the IPCC Report, by 2050, emissions from aircraft could contribute up to 15% to the overall global warming produced by human activities.

Moreover, this scenario does not take into account the potential results of the implementation of the Kyoto Protocol. If the Kyoto targets are achieved, then aviation's responsibility for climate change would be proportionately that much greater.

Some argue that other transport modes are also polluting. Of course they are, but in terms of contribution to Global Warming, it has to be said that aviation is in a class of its own. A good many studies show that air travel produces far more CO₂ emissions per passenger than rail. A Dutch study published in 1997 (*Energy and emissions profiles of aircraft and other modes of transport over European Distances, Centre for Energy Conservation and Environment Technology, Delft, The Netherlands*) compared the greenhouse gas emissions from air transport vs. a number of other transport modes.

Over short distances (ie less than 500km) air travel produces around three times more CO₂ per passenger than rail. Yet nearly 70% of all flights within European airspace are less than 1000km long. With over 7.5 million flights within European airspace in 1998, there is clearly plenty of scope to move short haul flights to rail.

Moreover, it is important to remember that NO_x emissions, at high altitudes, are a more effective greenhouse gas than CO₂, while below the flight corridors where air traffic is concentrated, contrails could have a greater greenhouse effect than any other greenhouse gas emission. The recent IPCC Report highlighted the fact that the overall contribution to greenhouse warming by aircraft is between two and four times larger than by aircraft CO₂ emissions alone, and that therefore any strategy to reduce aircraft emissions will need to consider other gases and not just CO₂.

Finally, it is important to see this debate in the context of the scale of changes we need to make. Intergovernmental Panel on Climate Change is calling for 60% cuts by 2050. The world's governments are talking about cutting by 8% in industrialised countries by 2012 – and even that is proving difficult to agree, as we saw at the Hague - and meanwhile aviation, on a business as usual scenario, is likely to increase its emissions by a factor of 5 by 2020. Clearly something has to be done. Inaction is not an option. And while the general public may not like more expensive flights, they're going to like the very real consequences of climate change even less – including more

extreme weather events, spread of infectious diseases, disappearing countries and the increasing plight of environmental refugees.

The aviation sector is excluded from Kyoto obligations. If aviation continues to take a “business as usual” approach, the gains made by other sectors in reducing emissions will be offset by as much as 50% by the growth in aviation emissions.

Achieving such ambitious goals requires integration of environmental concerns into all sectoral policies. Moreover, the entry into force of the EU’s Amsterdam Treaty provides a policy obligation to do so.

D. Should the UK try to maintain its position as a major hub for international connecting traffic, or focus on enabling travel to, from and within the UK?

Over the next 30 years, it is physically impossible for Heathrow to expand sufficiently to remain the main European hub. Paris, Amsterdam and Frankfurt all have more runways and more space to expand. Gatwick is also incapable of serving as a hub. It is surrounded by far too many centres of population, and is only one fifth of the area of Charles de Gaulle.

In any case, international connecting traffic brings little benefit to the UK except for British airlines. But British airlines can operate out of any airport. The UK Government therefore cannot be justified in providing new airport capacity mainly to cater for international connecting passengers.

E. Within the existing capacity constraints, how can the interests of UK consumers be best advanced?

The interests of consumers would best be advanced if there were a level playing field between different modes of transport, where aviation paid the same level of taxes as other industries, and where environmental costs were fully internalised. Additional funds for the Treasury would benefit consumers by increasing resources to be invested elsewhere, eg on public services. An information campaign, aimed at highlighting the environmental issues connected with aviation would be very helpful. Greater potential for making modal shifts between air and high speed rail would also be useful.