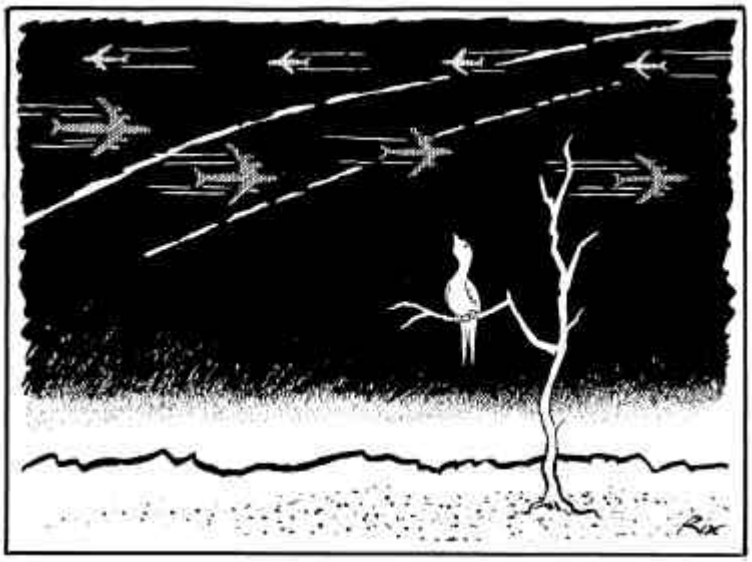
The Hidden Cost of Flying



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Important decisions *about the future of aviation are due to be announced around the end of 2003 in a White Paper covering the next thirty years. The Department for Transport (DfT) published consultation papers in July 2002 setting out proposals for expansion at many airports, with options for new runways at Heathrow, Stansted, Birmingham, East Midlands, and in Scotland; and possible new airports at Cliffe, at Church Lawford between Coventry and Rugby, and perhaps at Bristol. Following judicial review of the decision to exclude Gatwick, a further consultation is being undertaken.*

The airlines are lobbying hard for expansion while, not surprisingly, the plans are creating substantial opposition. The environmental case against expansion is well known: the growing impact of aviation on climate change, noise and pollution around airports, destruction of landscape, wildlife and heritage. This booklet, however, is designed to subject the economic case for aviation growth to critical examination.

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No one would deny that aviation is an important industry. The airlines tell us so. The Government tells us so. The Department for Transport (DfT) introduce the consultation on their proposals for airport expansion by telling us that "Aviation is a great British success story, and one of the major strengths of the UK economy. ... Our airlines and airports are also a major UK success. ... The British people are well served by our airlines and airports."[1]

Powerful stuff but it needs to be kept in proportion. According to the Office of National Statistics, in terms of its contribution to the Gross Domestic Product, aviation is the 29th most important industry in the UK. At 28 in the league, slightly more important, is sewage and sanitary ware.[2]

Two great industries, each vital to the functioning of our national life. Yet with different characteristics. Aviation is new, exciting and romantic; sewage has been around a long time. Aviation means holidays and fun; sewage is taken for granted. Aviation is a dirty industry, top of the world league for increasing pollution; sewage has cleaned up the rivers and the beaches. Another big difference is in the amount spent on public relations, advertising and lobbying. Because so many people are paid large sums to proclaim the achievements of aviation, it is necessary to take a cool look at the situation, to examine the facts behind the hype.

Aviation is certainly very successful. In the 100 years since the Wright brothers' first flight at Kittyhawk it has achieved amazing technical progress. Air travel has helped to widen the horizons of mankind. Yet in the last century other products can claim similar advances: the motor car; the telephone; television; the computer; and medicine and surgery.

Aviation is an important industry and employs a lot of people. There would be a serious loss if it were to be closed down. To imply, however, that because aviation is important therefore it should be encouraged to grow without question, is more doubtful logic. The sewage industry is important but that is not taken as self-evident proof that it must treble in size.

Aviation pays remarkably little tax. There is no tax on aviation fuel. There is no VAT on anything to do with air travel. Travellers to destinations outside the EU buy goods duty free. Landing fees and airport charges at the busiest airports are held down well below market levels. And there is no tax on the noise or pollution caused by aircraft. The air passenger duty is small by comparison with these tax breaks.

These issues are discussed in detail later in this booklet. For the present it merely needs to be noted that this favourable tax treatment helps to account for the apparent success of the industry; and artificially inflates the forecasts of future growth.

The forecasts

The Air Traffic Forecasts for the United Kingdom 2000[3] show passenger numbers at UK airports rising inexorably from 160 million in 1998 to 400 million in 2020. This is projected forward in the consultation documents to 500 million in 2030. The increase is equivalent to five new airports the size of Heathrow today.

The forecasts are based on predictions of growth in the national income, both in the UK and abroad. In the past the forecasts have proved accurate, even under-estimates, but that is no proof that they will prove accurate in future. They show a rising exponential curve. Growth is assumed to proceed at around 4% throughout the period (slightly less in later years). 'Exponential' means that 4% of a large figure at the end of the period is a lot more than 4% now.

Practical economists are taught to distrust exponential curves, and to apply a test as to whether any forecast is realistic. The test is to check on what is happening at the end of the period, and see if it looks silly. In this case, the forecasts show that by 2030 demand will be growing at a rate of a new Gatwick every 18 months, or a new Heathrow every three years. Looks silly.

In assessing the economic benefits of the proposed new runways, DfT include the whole period to 2060.[4] Quite right, because runways last a long time, and provide benefits for many years. The statisticians have reduced the forecast annual growth rate in the period 2051-2060 to the (amazingly precise) figure of 3.79%.[5] But at this rate demand for air travel in the UK in 2060 will be over 1.5 billion passengers a year, and to cope with them we will need 24 new Heathrows, mostly in the South East. And demand will be growing at a rate of one new Heathrow, with two new runways, every year. Looks even sillier.

Common-sense tells us that these forecasts, based on past trends, must be wrong. The years since 1945 have seen an exceptional period of almost uninterrupted expansion, but economic progress is not always onwards and upwards. Trends and fashions change. War or terrorism may increase the cost of fuel. Eventually fuel runs out. People might actually get bored with flying. Ryanair failed to give away 230,000 free flights out of 1.1 million free seats offered last year, and blamed it on "passenger inertia".[6] So if the forecasts are wrong, it is all your fault for choosing not to fly.

An alternative forecast

Economic history demonstrates 'the Sewill rule': that a new form of mass transport emerges about every fifty years.

1750.	Canals.
1800.	Turnpike roads and the stagecoach.
1850.	Railways.
1900.	The motor car.
1950.	Civil aviation.

In each case the dates roughly mark the time when a combination of technical progress and cost reduction brought the new method of transport into general use, although the relevant inventions had been made many years previously.

So perhaps we can forecast a new form of transport coming into general use any time now? Not a totally reliable forecast, you may think, because it is based solely on past trends. That is the point.

Every student of economics learns in one of their first lessons that demand depends on price. If the price of a product goes up, people buy less; if the price goes down demand goes up. The air traffic forecasts, when published in 2000, were based on the assumption that the price of air travel would fall at a rate of 1% a year between 1998 and 2020. DfT now suggest that the low-cost airlines, competitive pressure and other factors may lead to prices actually falling by 2% a year over the period to 2030.[7] So they feel confident in sticking to their original forecasts.

That does not look unreasonable since a sizeable fall in prices has already occurred in the past two or three years as a result of the advent of the low-cost airlines. It is, however, not certain that these airlines will be able to keep their prices down: airport charges and fuel prices may rise, and their staff may demand higher pay. When the EU proposed compensation for delayed or cancelled flights, the airlines said that "cheap air fares will disappear".[8]

The guess about future prices makes a big difference. If instead of falling by 1% a year, the price of air travel were to remain level, the equivalent of several new runways would no longer be required.

The Sustainable Development Commission has criticised the consultation papers as being "based on a classic predict and provide model".[9] Predict and provide got a bad name because, with roads, it was proved that when new roads were built, traffic tended to increase to fill them. The quicker the journey, the further people tended to drive. So also with housing. The more houses built, the more demand expanded. In each case it took massive public protest against the wanton destruction of countryside before the government statisticians were prepared to revise their forecasts.

Exactly the same is true of aviation. Unlimited provision of ever cheaper air travel encourages people to take more short breaks instead of longer holidays; more people fly off for weekends for

weddings or funerals or family parties; more decide to take jobs abroad and commute home at weekends; more decide to buy second homes abroad.

One way of looking at this, much favoured by the airlines, is that it is hugely beneficial and widens opportunities and horizons. That might be so if it was not subsidised by tax concessions and had no environmental cost.

A powerful lobby

Aviation possibly spends more on advertising, public relations and lobbying than any other UK industry.

That is the nature of the industry. Airlines, because they have always been subject to regulation by national governments around the world, have honed lobbying to a fine art. They are in league with the package holiday industry and the travel correspondents of the press to present a glorified concept of foreign holidays as unlimited sun, sex and joy. And because they invest in large and expensive aircraft which need to be filled, there is always scope for advertising seats at cut prices.

The aviation correspondents of the national press, as with other specialist correspondents, depend on the airlines for their news stories and thus some may be reluctant to offend their source of information. They are well rewarded. For example, it was reported that British Airways spent an estimated £500,000 on corporate and media entertaining for the World Cup. The editor of every national newspaper was offered a free flight to Tokyo, two nights in a top international hotel, plus a string of lavish drinks receptions, parties and meals. In all the package was worth £10,000 per person. To their credit not all accepted.[10]

The airlines have been skilful in sidling up to the prime minister of the day. Lord King, Chairman of BA, was Margaret Thatcher's favourite businessman. Colin Marshall, also Chairman of BA, filled the same role for Tony Blair, but BA Chief Executive Bob Ayling came unstuck when he volunteered to mastermind the Millennium Dome. MPs are regularly wined, dined and flown around the world by the airlines. British Airways, Virgin, BAA, the CBI and some trade unions have set up a special organisation "Freedom to Fly" to lobby for runways. Its director, reported to be paid over £100,000 a year, is Joe Irvin, former adviser to John Prescott.

It is perfectly fair for any industry to put its view to government. What would not be acceptable would be the secret use of inside contacts to influence Ministerial decisions, or the use of big business money to sway the views of MPs and journalists. Whether or not as a result of Irvin's influence, DfT ministers have had far more meetings with the airlines than with environmental groups. If the Ministers were in local government, and were deciding on a planning application in which they had become so close to the applicants, they would have to declare an interest, leave the room and take no part in the decision.

When young people demonstrate against globalisation, one of their complaints is that multinational corporations have too much power. In particular they point to the threat by big firms to move their business abroad if strict environmental standards are imposed. That of course is one of the favourite ploys used by the airlines - if new runways are not built in Britain they will be forced to move to continental airports.

Aviation lobbying has been very successful. In what was described as 'a wonderful piece of special pleading" the U.S. airline lobby in the aftermath of the 1988 Pan Am 103 bombing succeeded in weakening measures to toughen airport security.[11] New proposals for tighter security put forward by the then Vice President Gore were defeated by the airlines shortly before the hijackings of September 11 2001. Another example is the lobbying which succeeded in getting aviation excluded from the Kyoto accord. This was based on the tactic of emphasising all the practical difficulties with no attempt to put forward solutions. Similarly the continued exemption of aviation from most forms of taxation owes not a little to constant lobbying in the rarefied gatherings of the International Civil Aviation Organisation.

A skilful move by UK airlines was to offer to pay 90% of the cost of a study for DfT into the economic benefits of aviation. The study by Oxford Economic Forecasting Ltd (OEF)[12] read like a publicity blurb for the industry, and even had a foreword by the Chairman of the Airport Operators Association and the chairman of the British Air Transport Association. It revealed one key fact about aviation economics - that consultants know on which side their bread is buttered.

The situation has been summed up by Chris Mullin MP: "During my 18 undistinguished months as aviation Minister, I learned two lessons about the aviation industry. First, its demands are insatiable; secondly, successive Governments have always given way to them."[13]

Doubtful arguments

Reliance on research sponsored by the airlines has produced some dodgy arguments. The following examples are all taken from the consultation documents published in July 2002.

"Aviation is itself a high productivity industry..." Simple economic fallacy: an airline pilot appears to have high productivity because he is operating an expensive piece of equipment. But when the cost of the capital is deducted, productivity is no higher than in any other industry.

".... and it adds to the productivity of the wider UK economy." Improved transport is said to lead to economies of scale, increased specialisation, and stiffer competitive pressures on companies. That is exactly what many of the anti-globalisation protesters are worried about: that each country is forced to become more specialised, with no diversity of employment, and open to the risks of global shifts in demand. The decline in British horticulture as a result of cheap air freight is a good example. There are now over 6,000 call centres in the UK: no doubt there is higher productivity in call centres than in picking fruit.

Business travel promotes productivity. But according to John Humphrys "Those businessmen would be better off staying at home and using a telephone or e-mail or video conferencing. We could probably double our productivity if we put to better use all the time spent by all those middle-ranking executives in airport lounges and business-class seats."[14]

Even without going that far, it is difficult to see how productivity would be increased by tripling, as forecast, the amount of business travel.

"Inward tourism is worth about £13 billion to the UK each year..." That is given in the introduction to the South East consultation documents as a reason for airport expansion. Tucked away on a later page, however, is the admission that: "At present the number of UK tourists travelling abroad is almost double the number of foreign tourists visiting the UK. ... expenditure in the UK is less than expenditure by UK residents travelling abroad." It is then argued, rather desperately, that building new runways will bring in more foreigners than send out UK tourists. But even that argument is belied by the figures. The forecast shows that if, for example, three new runways were to be built at Stansted, 18 million more foreign tourists would fly in; but 19.6 million more British tourists would fly out.[15]

"The increase in foreign direct investment...". The theory is that more airport capacity would enable more foreign businessmen to fly in and invest in the UK. Difficult then to explain why the Japanese have invested in North East England which has no direct air service to Japan. In fact only 1 in 10 top executives cite air access as the reason for the choice of their location. KPMG asked 801 top executives of foreign-owned firms in Britain what factors influenced their decision to locate here: the main factor was quality of life.

"a lot of our exports are high value, low weight goods which are transported by air". A poor argument for the expansion of air freight: the Royal Commission on Environmental Pollution has calculated that carbon dioxide emissions for freight carried on rail are a factor of 20 - 100 times lower than for long haul air freight, with marine freight a factor of two or more lower again.[16]

Disadvantages ignored

The disadvantages of cheap air travel are not mentioned by the lobbyists. Most obvious is the decline of the British seaside resorts. You only have to look at the rundown state of many seaside towns to see the damage done by cheap holidays in the sun. Yes, of course the world moves on, and no one would dream of compelling people to spend a wet week in Skegness when they could be getting a tan in Torremolinos. But should British hotels, guest houses and b & b's be unfairly undercut by subsidised air travel?

Air travel spreads disease. Diseases have, of course, always spread, but more slowly. For example, in the 14th century the Black Death originated in China, arrived in Europe via Marseilles two years later, and took a further six months to reach London. These days disease can take a cheap flight from the other side of the world, travel in comfort and arrive in under 12 hours. As has been

pointed out by an eminent doctor: "the millions who travel by air and share the same viral-laden atmosphere in the aircraft are confronted by bacteria and viruses which have hitherto been strangers to their immune system."[17]

There is another downside to mass tourism: the damage to the environment and cultures of the recipient countries. The Galapagos islands and many other rare habitats are under growing threat. The damage to the Thai islands made famous by the film The Beach was, for example, recently detailed in the Times.[18] Hatred of western values, leading in extreme cases to terrorism, is fuelled by brash tourist behaviour. It has been said that "mass tourism is hawking a superficial exoticism and has generated a form of sub-culture that humiliates both the tourist and his host community." I do not quote some extreme eco-warrior, I quote the Pope.[19]

An argument often used by the airline lobbyists is that if South East airports are not expanded, London may lose its position as a 'world class city'. But London's position depends more on its quality of life, on its financial expertise (and position in a time zone), and on the English language, than on its airports.

It is true that if continental airports grow faster, jobs in aviation will increase faster there. But the converse is also true. Aviation is seen as one of the driving forces for economic expansion in the UK. Aviation employs over 180,000 people and Government estimates show that 260,000 extra jobs could be created by the proposals for expanding airport capacity. But the lobbyists also tell us that aviation indirectly supports three times that many jobs. So it looks as if around a million extra jobs could be created many of them in the South East.

Either even more people will have to move from the north to the south east, or there will be large scale in-migration from other EU countries. Britain is the only major EU country which is not putting restrictions on immigration from the new EU member nations in Eastern Europe. The alarm bells are already ringing. The Government Actuary's Department forecasts that UK population will increase from an estimated 59.8 million in 2000 to reach nearly 65 million by 2025. Around two thirds is attributable to the assumed level of net inward migration. Two million extra homes will be required if immigration continues at its present record level according to the Government's Population and Housing Research Group.[20] The level of in-migration is already equivalent to importing a new city the size of Cambridge every six months, according to Migrationwatch UK.[21] Good-bye green fields!

Not, of course, all due to the forecast growth in aviation, but those who lobby for unrestricted growth do need to explain where the extra labour is going to come from, and where all the extra workers are to be housed.

Tax free aviation

Air travellers, unlike those who travel by car, make little contribution to the cost of providing public services. Nor do they pay any compensation for the environmental damage they cause. The hidden cost of flying is seen in under-funded hospitals and schools and other public services, and in a deteriorating world environment.

Higher taxes on aviation would NOT on average make people worse off. The revenue would be used either to reduce other forms of tax, or to make possible higher expenditure on public services.

There are two separate issues.

a. Should aviation pay tax to cover its external costs? The Government has firmly stated that it should,[22] but has done nothing about it. The principle of making the polluter pay is well established. The purpose is to ensure that the price of any product fully reflects the cost of production, including any hidden costs. Also to provide funds either to rectify the environmental damage, or to compensate those affected.

b. Should aviation contribute to public finances? It is generally accepted that economic welfare is maximised if all industries pay the same rate of tax. A level playing field ensures fair competition. Airlines do, of course, pay normal corporation tax, and pay income tax and national insurance contributions on behalf of their employees. That is the basis of the figure, sometimes produced by the airline lobbyists, that aviation already contributes £2.5 billion to the Exchequer. The big questions, however, relate to fuel tax and VAT.

Economic theory would suggest that antisocial industries, such as aviation, should pay the same rates of tax as other industries, and should then, *in addition*, pay extra tax to cover their hidden costs.

No tax on aviation fuel

There is no duty and no VAT on aviation fuel. Petrol for cars (unleaded low sulphur) is subject to duty at 45.82p a litre. VAT at 17.5% is charged on the price after payment of duty, and amounts to about another 11p.

The result is that motorists pay around 75p a litre while airlines pay around 18p. (Airlines negotiate private contracts for their fuel, and the price varies from month to month depending on the state of the world market. In 2002, a comparatively normal year, it did not exceed 18p.)

Petrol tax was originally introduced to pay for the cost of road building and maintenance. This is now, however, covered by the revenue from vehicle licences. In a similar sort of way airlines pay the full cost of airport facilities and air traffic control through airport charges.

There are two good reasons for putting tax on aviation fuel.

1. The first is that those who choose to fly should make a fair contribution to the cost of running the health, education and police services. Ever since Winston Churchill 'raided the road fund' in 1926, Chancellors of the Exchequer have seen the revenue from petrol duty as a valuable way to finance general public services. The tax has the fiscal advantage of being easy to collect and of not being harmful in its economic effects. There is an equally good case for raising revenue from aviation. Since it is the rich who fly most, and since nearly 80% of flights are for leisure,[23] tax on air travel would be fair and progressive.

2. The second good reason for taxing aviation fuel is that it would help to ensure that aviation covered its external costs. In recent years the justification for petrol tax, and in particular for the 'escalator' annual increases, has been that the tax is actually beneficial as it goes some way to ensure that the cost of using a car reflects the costs of congestion, pollution and noise which are imposed on the community. Exactly the same applies to aviation. As the consultation paper issued in December 2000 stated " The Government believes that the tax exemption on aviation fuel is an anomaly. Introducing such a tax would help to place environmental costs on the polluter..."[24] The Royal Commission on Environmental Pollution has stated that in terms of climate change, "travelling by air is broadly equivalent to one or two people travelling [the same distance] in a passenger car."[25]

Two good reasons for taxing aviation fuel. Both are just as strong as in the case of motor fuel. It therefore follows that there is justification for imposing duty on aviation fuel at a rate at least as high as that for petrol, i.e. 45.8p a litre.

The Treasury has stated that duty at this rate would raise £5.7 billion a year.[26]

It would, however, be double counting to suggest that aviation fuel should be taxed at the same rate as motor fuel and that aviation should pay a tax on its external costs.[27]

The counter argument deployed by the airline lobbyists is that trains and ships do not pay fuel tax so why should aircraft? Trains and ships, however, cause less pollution. Trains have no taxable capacity (the rail companies could not afford to pay, and would merely require a higher subsidy). It is true that taxing aviation fuel might cause some 'unfair competition' on UK domestic routes which might cause some people to divert from air to rail, but that is exactly what has been recommended by the Royal Commission on Environmental Pollution. Even in terms of economics, it would be a much less serious distortion than the artificial expansion of air travel caused by its tax free status.

Just to complicate the picture, buses get a rebate on their fuel, and in effect pay duty at 12.8p a litre. Private aircraft on flights within the UK pay duty at 27.34p a litre. If you are rich enough to fly your private aircraft abroad, however, you get fuel tax free. There seems no good reason why fuel for all aircraft, private or commercial, should not be taxed at the same rate as fuel for cars.

Fortunately for the airlines, the practical difficulties of introducing a tax on aviation fuel are great. It would need to be done on an international basis, or at the very least for the whole EU, because otherwise aircraft might merely refuel in countries where fuel is not taxed. Moreover, any tax on aviation fuel is ruled out by the Chicago Convention.

Signed in December 1944 during the Second World War, when mass aviation was still a dream for the future, the Convention set up the International Civil Aviation Organisation (ICAO). Article 15 of the Convention rules out any "fees, dues or other charges" imposed solely in regard to the right of entry or exit of aircraft, and this has been held to rule out any tax on aviation fuel. The Convention can be amended by a two-thirds vote of the contracting parties but at present it is thought that the United States, and a majority of the developing nations, would not favour tax on aviation fuel.

The 1998 Transport White Paper stated that the Government "will continue to pursue in ICAO the potential for environmental levies and press for the removal of the exemption from tax on aviation fuel..." There is, however, absolutely no evidence that the UK Government has pursued its stated policy with any strength of purpose. Have British Embassies, for example, been instructed to discuss with developing countries the impact of aviation on climate change?

Some European States, led by Belgium, were about to force a debate on aviation fuel tax at the meeting of ICAO in September 2001. The airline lobbyists were out in force, and were in luck - the debate took place only a few days after the September 11 terrorist attacks and all attention turned to how to prevent the airlines going bust. So the matter got postponed. Yet as Environment Minister, Michael Meacher, has said: "We cannot go on negotiating endlessly [about tax on aviation fuel] and getting nowhere"[28]

The EU Commission has also expressed frustration and is exploring the possibility of Europe going it alone. The EU White Paper 'European transport policy for 2010' stated: "In air transport... several options are being examined, such as taxes on ticket prices, charges based on the distance covered, and charges for take-off and landing."[29] One possibility is an emissions charge related to the distance flown and the amount of pollution caused. A recent study for the Commission found that this would be similar in effect to a tax on aviation fuel, could not be avoided by filling up elsewhere, and - if solely related to pollution in EU airspace - would not fall foul of international agreements.[30]

No VAT on air travel

Value added tax at 17.5% is applied to all goods and services, except those thought to be essential, such as food or medicines. It is not charged on exports. The purchase of cars, their servicing, and petrol are all subject to VAT. But there is no VAT on any aspect of air travel, not on airline tickets, nor on purchase of aircraft, nor on their servicing, nor on their fuel, nor on air traffic control, nor on baggage handling, nor on aircraft meals. Everything to do with air travel, after passport control, is zero rated.

Imposing VAT on airline tickets would have the effect of bringing all aspects of aviation into the VAT net. It would seem practical to do so, either for the UK alone or, preferably, for the whole EU. Tax might be charged on the cost of all flights within the EU, and on all flights departing from the EU, but not on arrivals. Although airline tickets can be bought anywhere in the world, it would be comparatively simple to check at the departure gate that the correct tax had been paid.

The airline lobbyists don't miss a trick: they argue that trains and buses are not subject to VAT, and so it would be unfair to tax air travel. In fact in many other EU countries travel by train or bus is subject to VAT. The reason for the zero rating of public transport in the UK is historical. When VAT was introduced in 1972 the ownership of cars was confined mainly to the higher income groups: most industrial workers still travelled to work by train or bus. Travel to work was considered 'essential' and therefore all public transport was excluded from VAT.

That no longer justifies the exemption of air travel from VAT. There is nothing "essential" about most air travel. Passengers in planes sit in rows like those in buses, but apart from this, unless you are very old Labour, there is nothing special about public transport, especially when it is provided by ultra-capitalist airline entrepreneurs. Aircraft create more pollution and more noise than trains or buses. There seems no valid reason why air tickets should not be subject to VAT.

That is not politically inconceivable. Virtually all EU countries except the UK already charge VAT on internal domestic flights.[31] In October 2002 the new German Government, a coalition between the Social Democrat and Green parties, announced a programme which included the policy that flights from Germany to other EU nations should no longer be exempt from VAT.[32]

The British Government are coy about saying how much extra revenue would be raised. When asked Parliamentary Questions, they merely reply that the Chancellor has given an undertaking not to extend VAT. That appears to imply that Gordon Brown will remain as Chancellor until 2030, which is perhaps another somewhat unreliable forecast.

Another reason given for refusing to calculate the potential revenue is that VAT only applies within the EU. If so, the alternative would be to apply a sales tax at 17.5% on all flights leaving UK airports.

Fortunately it is possible to do the calculation, admittedly on a rough and ready basis, oneself. The calculation is given overleaf, but can be skipped by non-mathematical readers. It shows that the revenue from imposing VAT on all flights from UK airports would be around £4 billion a year.

Duty free - a subsidy for air travel

In the days when the only way to cross the Channel was by sailing packet, travellers often took a bottle of wine to drink on the voyage but, if the sea was rough, did not always drink it all. The Customs officers, as a concession, allowed them to bring in, free of duty, one part-full bottle. This remained the basis of the concession until the 1960's when it was extended to one bottle of wine

whether full or opened. Duty free at airports is now also applied, not only to drink and tobacco but also to VAT on the grounds that the goods are being exported. Customs have given up attempting to apply VAT on goods which air travellers subsequently re-import to the UK.

The EU sensibly abolished duty free on flights and boat trips within Europe. There was a huge lobbying campaign by the airlines. The Chief Executive of BAA warned that 30,000 jobs would be lost and the price of holidays would rise by up to 20%.[33] All these predictions proved false. It was a classic case study of why MPs and Ministers should be sceptical of the aviation lobby.

Duty free on flights outside Europe remains, costs the Exchequer about £0.4 billion a year,[34] and is a complete scam. It encourages drunkenness and air rage, runs counter to efforts to discourage smoking, takes business away from High Street shops, turns airports into shopping malls, reduces the revenue available for public services, and acts as a subsidy to air travel. There seems no reason why the Government should not abolish it immediately on all flights out of the UK.

Air passenger duty - a very small tax

When the air passenger duty (APD) was first introduced, in 1993, the Chancellor, Kenneth Clark, justified it because "air travel is under-taxed compared to other sectors of the economy. It benefits not only from a zero rate of VAT; in addition, the fuel used in international air travel, and nearly all domestic flights, is entirely free of tax."[35] How right he was!

Nevertheless APD, which brings in £0.9 billion a year, is small in comparison with the fuel tax and VAT exemptions. If these exemptions cannot be removed for some years, there seems no reason why the Government should not increase APD immediately. Conversely, if eventually aviation fuel is taxed and VAT imposed, there will be no need to retain APD.

The hidden costs

"The policies we will bring forward for civil aviation, ... will reflect our strategy for sustainable development. This means aviation should meet the external costs, including the environmental costs, which it imposes." So said John Prescott in his 1998 Transport White Paper.[36]

If this quote is read carefully it must mean that the new White Paper due to be published in 2003 will include substantial and immediate tax increases on aviation. Keep your seat belts fastened.

The European Environment Agency[37] has calculated the total external costs of all flights taking off from European airports in 1995 as 48 euro per 1000 passenger km. So we can work out the following tariff.

These figures represent the hidden costs of air travel; the costs imposed on the world by each return flight. They are a measure of the damage that each passenger does to the planet in terms of climate change, noise, and pollution. They show the amount of tax that should be charged in order to implement the Government's stated policy.

The figures above could be said to be on the high side because EEA, albeit based on their own scientific advice, use a higher figure for the cost of climate change than that used by DfT and DEFRA. On the other hand they do not include any contribution by air travellers towards the public services.

All parts of the world will suffer

At the Earth Summit in Johannesburg in September 2002 the Prime Minister said: *"We know that if climate change is not stopped, all parts of the world will suffer. Some will even be destroyed, and we know the solution - sustainable development. ... it means the world - the whole world - facing up to the challenge of climate change. ... Kyoto is right and it should be ratified by all of us, but Kyoto only slows the present rate of damage, to reverse it we need to reduce dramatically the level of pollution, and let us at least start to set that direction. ... there are painful decisions, vested interests* [you know who], *legitimate anxieties. But the facts remain, the consequences of inaction on these issues are not unknown, they are calculable. Poverty and environmental degradation, if unchecked, spell catastrophe for our world."*

The impact of aviation on climate change was spelt out by the Royal Commission on Environmental Pollution in a special report published in November 2002.[38] Aviation, because its forecast rapid rate of growth exceeds the rate of technological improvement, is the industry with the fastest growing contribution to global warming. Aircraft emissions at high altitudes are particularly damaging: this basket of pollutants, which includes NOx and water vapour, has about three times the radiative forcing effect on climate change than would be expected from aircraft CO_2 emissions alone.

At Kyoto in 1997 the nations of the world agreed to reduce greenhouse gas emissions by 5.2% by 2008/12. Aviation (except domestic flights) was excluded on the grounds that agreement had not been reached on how to allocate emissions over international waters. The UK Government has set a target of a 12.5% cut. Scientists have suggested that a 60% cut is necessary to stabilise CO_2 levels, and that was after taking into account improvements in aircraft fuel efficiency.[39]

International agreement may be reached at some point in the future to impose a global CO_2 tax on aircraft fuel, and this possibility is recognised by DfT. They suggest that the appropriate rate may be 100%.[40] That figure is based on their estimate of the damage costs of CO_2 and, as noted, is lower than that used by the European Environment Agency. A tax at 100% sounds high but it would be only about 18p a litre, compared to the duty on motor fuel at 45.8p.

Duty at 100% would, according to the government statisticians, reduce demand for air travel by about 10%. They then, however, produce an ingenious argument to prove it would have no effect

at all. In 2000 the forecasts assumed a 1% a year fall in the price of air travel but, as a result of the unexpected arrival of the low cost airlines, this should be revised to 2% a year. The effect of the bigger price cut "would comfortably exceed the reduction in demand due to a CO_2 tax."[41] This is convenient: it comfortably obviates any need to revise the forecasts.

The effect, however, is to accept that CO_2 emissions will continue to grow at the rate originally forecast. For aviation, we remain firmly on course for "catastrophe for our world." Not very comfortable.

Although, as mentioned earlier, the cumulative economic benefit of new runways is added up over a period of 60 years, the effects of climate change are only cumulated over a period of 30 years. This curious lapse is more serious than it sounds since the damage costs of CO_2 are forecast to rise year by year.[42]

Other hidden costs

Concern is growing about the effects of air pollution around major airports. At Heathrow, or at Gatwick, a new runway would mean thousands of people affected by NO_2 in excess of EU limits. The same level of pollution would affect the far greater numbers who work at the airport. If nothing is done, the UK is likely to find itself in breach of mandatory EU rules, and liable to EU fines. That may well be sufficient to rule out a new runway at Heathrow or at Gatwick, but it does not absolve the airlines from paying the cost of the pollution caused by the use of existing runways. DfT dismiss this as negligible, because few people are admitted to hospital, but that is obviously an inadequate measure of the value of clean air.

Another hidden cost is the nuisance caused by aircraft noise. DfT calculate the cost of compensating local residents at around 36-40p per passenger at Heathrow, but below 5p at other airports.[43] That appears to be an underestimate. Calculations by AEF show that the cost may be at least twice as high.[44]

When airports are expanded, hidden costs include the destruction of landscape, wildlife, homes and communities, and heritage buildings. The consultation documents dismiss these as "best handled at each airport individually."[45] That might be true if the planning system were able to prevent such destruction. But it is not so: the forthcoming White Paper will lay down where runways are to be built, and will not be open to challenge at a local level.

All these hidden costs should in theory be included in air fares. The Chancellor, in a footnote to his pre-budget statement in autumn 2002, has announced that the Treasury will be holding talks with stakeholders on possible ways of doing so.

This concept of paying external costs causes some philosophical problems for environmentalists. If they were all to be included in the price of air fares, should air travel be permitted to expand without limit? The answer is no: some things should not be destroyed at any price. Motorists, even

if they pay the necessary insurance premiums, are not allowed to kill pedestrians at will. In the same way rare flora or fauna, or heritage buildings, should not be destroyed except in the most exceptional circumstances. Where such damage is sanctioned, although it is not possible to put a price on such priceless things, some large notional cost should be charged.

Even though all these costs cannot be calculated precisely, what can be said with confidence is that air fares do not anywhere near reflect the full hidden costs of aviation. Air travel is artificially cheap, and the forecasts are artificially high.

DfT suggested, back in December 2000, that if the hidden costs of aviation were taken into account, the demand for air travel would drop by 3- 5% - equivalent to a tax of about £1 billion.[46] The airline lobbyists were overjoyed to be able to claim that they already paid their full external costs through APD, but the Royal Commission on Environmental Pollution kicked that into touch, saying that the estimate "fails to recognise the magnitude of the threat posed by climate change.... [and] significantly misrepresents the importance of aviation's growing contribution to climate change."

DfT have now raised their estimate of the hidden costs to 10%,[47] equivalent to slapping on extra tax of £2.3 billion a year. The Royal Commission, at their November 2002 press conference, upped the stakes, suggesting that air fares need to rise by at least £70 return to reduce the amount of global warming caused by flights.[48] That would be equivalent to around £6.3 billion a year.

Figures produced by the European Environment Agency suggest that the total external costs of UK aviation are around £6 billion a year.[49]

So if the hidden costs lie somewhere between £2.3 billion and £6.3 billion, and if *in addition* there is a good case for requiring air travellers to contribute to the public services, the suggestion made earlier in this booklet that aviation fuel should be taxed at a rate equivalent to £5.7 billion would seem fully justified.

£9 billion tax subsidy

We can now add up the extra tax revenue that would accrue to the Exchequer if aviation paid its full external costs, and if it paid a fair share of the cost of public services. This could be called the fair tax package.

The fair tax package

	£ billion per year
Fuel tax	**5.7**
VAT	**4.0**
Duty free	**0.4**
Deduct APD	**- 0.9**
Net tax subsidy	**9.2**

£9.2 billion a year is a measure of the present value of the tax subsidy for the aviation industry. No wonder fares are low.

The figures do not include any separate tax on external costs - that is included in the fuel tax. The calculations assume that demand remains unchanged (see below).

No new runways

In addition to their many other attributes, the Department for Transport has a great sense of humour. So when they devised a new computer model to predict the future of aviation they christened it SPASM.

A huge amount of information is stored in the model: where people live (in 455 UK Districts), how much they wish to fly now and in future years, the level of air fares, how much they value their time, and their cost of travel to various airports. Feed in a new runway at airport A, press the button and some time later the computer will print out an analysis of how many people will use airport A, and how this will affect airports B, C and D.

It is much more complicated than that because it also takes into account many other factors including the differences between business, leisure and low cost travel, when new routes become profitable, and when airlines may decide to use larger aircraft etc. The present rates of tax are assumed to continue unchanged.

It is the SPASM model which has produced most of the statistics presented in the consultation papers. Ministers, like most other people, will believe that anything produced on a computer must be true. But computer models are only as good as the assumptions on which they are based.

A group of environmental organisations - CPRE, the Aviation Environment Federation and Friends of the Earth - therefore asked DfT to run the SPASM model again, using different assumptions. The main new assumption was that aviation fuel was taxed at the same rate as motor vehicle fuel, and that VAT was imposed on all flights departing from UK airports.

To be precise, because computers like precise instructions, fuel tax was assumed to increase at five yearly intervals to reach the same level as motor fuel duty in 2025: 50% in 2005, 100% in 2010, 150% in 2015, 200% in 2020 and 230% (45.82p per litre) in 2025. VAT was also assumed to rise in steps: 5% in 2010, 10% in 2020 and the full 17.5% in 2025. Air Passenger Duty was assumed to be removed in 2020. The computer was also instructed to assume that demand was spread around the London airports, and not all concentrated on Heathrow.

The button was pressed and SPASM produced the results in February 2003. This is what they showed.

With the fair tax package, the number of passengers using UK airports would rise from 180 million in 2000 to around 315 million in 2030. This can be compared to the main official forecast of 500 million.

Heathrow would remain full, handling 85 million passengers a year. Gatwick would be busier than at present, handling 41 million on its existing runway. But Stansted would not be full, and would only be handling 26 million. Luton would have 10.6 million. Traffic at regional airports would be higher than at present, but substantially reduced compared to the official forecasts. Birmingham would have 30 million. Manchester at 51 million would at last have succeeded in its aim of overtaking Gatwick.

The computer model shows that there would be no need for any new runways. Not now. Not in 2015. Not in 2030. Not in the South East. Not anywhere in the UK.

Technical calculations

The experts who mind SPASM point out that these results depend on the assumption about price elasticity (how much less people spend on flying when the price goes up). The model assumes an elasticity of -1, but more on that anon. Demand, the experts also point out (somewhat implausibly), would be higher if the airlines paid some of the extra taxes out of their profits. It also makes a difference what rate is used to discount future years, but the conclusion that there would be no need for new runways is true whether one uses the discount rate previously used in the DfT forecasts, or the lower rate now recommended by the Treasury.

No allowance has been made, the SPASM minders say, for supply side effects. If you put a tax on aviation fuel, the aircraft manufacturers will design more fuel-efficient planes. That, of course, would be good for the environment but it would mean that air fares would be lower and the level of demand higher. A study by the consultants CE Delft has suggested that efficiency improvements might reduce the impact of fuel tax changes by 50%.[50] On the other hand the Royal Commission on Environmental Pollution are more sceptical, pointing out that old aircraft remain in service for many years, and that the technology of the gas turbine aircraft engine is relatively mature.[51] If we compromise on a figure of say 30 %, that would imply that demand would be 7% higher than 315 million.[52] Read on.

There would be no supply side effects for VAT: it would be difficult to design a VAT-efficient plane.

The SPASM model only relates to the UK. When the environmental groups suggested that VAT at 17.5% should only be imposed on departures and not on arrivals, the computer assumed that this meant half rate on return fares. Fair enough. But if all other countries were to impose VAT or a sales tax at the same rate, then the cost of return fares would rise by the full VAT rate. Air fares would be 8.75 % higher, and demand 8.75% lower, than the model predicted.

So it would seem reasonable to guess that the lower demand due to other countries imposing VAT may roughly cancel out the higher demand due to fuel efficiency improvements. We can stick with the new forecast of 315 million passengers a year in 2030.

A good future for aviation

315 million is still a 60 % increase above the present level. It would represent an absolute growth rate of 2% a year. With a happy serendipity it just about coincides with what most experts consider the maximum rate of future improvement in aviation technology, and thus might be accommodated without too much damage to the environment.

With a prospect of a 60% increase in the number of air passengers, the airline lobbyists are going to have a hard job. They can hardly say that the result of imposing fair taxation would be to stop people flying, or to kill off the aviation industry.

But they are not paid high salaries for nothing. Their standard line is that any tax on air travel would damage one of Britain's most successful industries. Rubbish. What is suggested here is that the tax changes need to be made either by the whole EU, or on a global basis as a result of international agreement. In which case there would be no harm to the competitive position of UK airlines. Indeed they could share in the continuing 2% annual growth.

No increase in air fares

As part of the SPASM re-run, DfT calculated that the effect of the proposed tax increases would be to increase fares for flights out of the UK by about 34% over the period from 2000 to 2030.

During that time, however, according to the DfT forecasts, the price of air travel will fall by 1% a year.[53] Allowing for compound interest that exactly matches the 34%.

So even after all the proposed tax increases, air fares for trips abroad would finish up no higher than in 2000. Of course air fares have fallen in the past three years, and the tax package would mean that over the next thirty years this fall might be reversed. That does not seem too high a price to pay for helping to save the world from the impact of climate change

Air fares for domestic flights might be a bit higher because VAT would be paid both ways. Similarly if other countries imposed VAT, the level of air fares might rise more than assumed. But, as discussed above, that is likely to be cancelled out by the reductions in fares due to improved fuel efficiency.

The result - no need for new runways, and no rise in air fares - can be expressed in another way. The huge official forecasts of future demand are predicated on the assumption of a steady fall in air fares. If this fall were to be cancelled out by a gradual increase in taxation so that fares remain roughly at the same level as in 2000, demand would increase at a more reasonable rate. No one would be significantly worse off.

Some people just don't believe that demand would actually be choked off by higher prices - whatever you do, they say, people will still go on flying. On domestic and near European flights air passengers might switch to rail, but there is no alternative for long distances - you can't bicycle across the Atlantic. So they don't believe the assumption that a 1% rise in prices would mean a 1% fall in demand (a price elasticity of - 1). May be. With even happier serendipity, however, it can be pointed out that if the tax increases match the forecast fall in prices, so there is no change in the level of air fares, there is no need to make any assumption at all about price elasticity.

A few paragraphs back it was stated that the revenue to be expected from imposing a fair tax package would be £9.2 billion - assuming no change in demand. It is now clear that there would be no reduction in demand. Indeed the predicted 60% increase in air travel would mean that by 2030 the annual revenue (at today's price level) could be expected to be over £14 billion.

In the past year there have been Shock! Horror! headlines in the tabloids. Alastair Darling and other Ministers have stated that if new runways are not built air fares will have to rise by around £100. That figure was based on calculations by the SPASM model of the increases in return fares that would be necessary to rein back demand in 2030 to the capacity of existing airports.[54]

The extra £100 would in many cases be no more than the hidden costs of each return flight. So it would actually be in line with Government policy. No shock!

Moreover, the £100 rise would be cancelled out by the forecast fall in prices. Take for example a flight from Heathrow priced at £300 return: by 2030 the DfT forecast is that the price will have fallen to £200. Adding on an extra £100 would leave the cost no higher than now. No horror!

What if taxes can't be increased?

It will never happen, say the worldly wise civil servants - political suicide, never get agreement in ICAO, EU governments won't agree, look at the strength of the airline lobby. Yet even if we were to accept that it may not be politically practicable to impose taxes on air travel, does it make sense to build runways to meet an artificial demand which would not exist if aviation paid a fair rate of tax?

The correct answer in economic theory is that public welfare will be maximised if no new runways are built, if the price of using existing runways is allowed to rise, and if the surplus 'rent' is creamed off by the Government for the public benefit. That is the case for airport slot auctions.

Heathrow and Gatwick are among the most congested airports in the world. Yet they have some of the lowest landing fees and airport charges in the world. BAA has argued that "these low levels actually encourage demand growth and compound the problems of insufficient capacity."[55]

One method of rectifying the situation would be to impose a levy on landing fees at congested airports. Like every other sensible idea, that would be ruled out by the Chicago Convention. A more promising solution would be to auction slots. (A slot is the right to take-off or land at a particular time. Under present rules, if an airline has a slot it has the 'grandfather right' to keep it forever.)

John Prescott has announced that it is Government policy to auction slots. In November 2000 he informed the EU that Member States should be allowed to auction newly created slots; that airlines should be allowed to trade existing slots; that the duration of grandfather rights should be reviewed; and that slots should be viewed as a "community good".[56] A report prepared by consultants for the Treasury in January 2001 showed that slot auctions were practicable, and how they could be arranged.[57]

Slot auctions would have substantial advantages. They would:

- bring in vast sums to help finance public services
- encourage the use of larger aircraft
- ensure higher load factors (fewer empty seats)
- increase competition and efficiency
- improve access, according to the CAA, from regional airports to Heathrow[58]
- reduce congestion and delays

- make the railways more viable
- remove any urgency in the need for new runways
- politically be much easier to implement than tax increases

Environmental groups at regional airports have expressed some concern that slot auctions at London airports would merely push more flights in their direction. Certainly slot auctions would provide an economic incentive to greater use of regional airports, but in fact Heathrow, Gatwick and Stansted would still be operating at maximum capacity and handling considerably more flights than at present.

How much money would regular slot auctions bring in? CAA calculations suggest a figure of £3-5 billion for Heathrow alone.[59] Sir Richard Branson has stated "We estimate that if slots at Heathrow and Gatwick were auctioned to the highest bidder, the Treasury could raise over £10 billion. No doubt the Chancellor is licking his lips."[60]

So, without being so optimistic as Branson, we can guess that at present slot auctions would bring in at least £5 billion a year. If, over the next 30 years no new runways were built, the value of slots would rise. The SPASM computer model shows that by 2030 slot auctions would be bringing in a further £6.7 billion.[61] Total revenue over £11 billion a year.

So there is a choice. Either impose a fair rate of taxation and bring in an extra £14 billion a year by 2030. Or auction slots and bring in around £11 billion. Either way it would be good news for the health service. Good news for education. Good news for everyone who cares about the public services. And good news for the environment.

Unfortunately, in an absent-minded fit of Euro-enthusiasm in 1993, the British Government agreed that the rules for slot allocation would be decided by the EU. So we cannot allocate slots to the highest bidder without the approval of a majority of EU nations; and, not surprisingly, most other countries are not keen to pay more to land at UK airports. For the past two years, since John Prescott's statement, the UK Government has been negotiating to be allowed to auction slots, but with no real sense of urgency or importance. Although the EU Commission recently commissioned a study on the subject, auctions are not on the agenda for the revised EU slot allocation regulation.

This unsatisfactory situation seems to be due to a curious lack of interest from Number 10 and from the Treasury. Far from licking his metaphorical lips, the Chancellor and his minions seem to have swallowed without mastication the aviation lobbyists' line that to tax air travel would not be socially inclusive, and that to tax holidays would amount to political suicide.

Socially inclusive?

Aviation at present is not socially inclusive. Anything but. The rich fly more than the poor. The top three social classes fly four times as often as the three lower classes.[62] According to a survey by the Office for National Statistics most of those who fly come from the prosperous South East, far fewer from less prosperous areas.[63] Most of those who fly are the able bodied without children. Families, the frail, the disabled and the old, fly much less.

Putting tax on air travel would be socially inclusive. The higher income groups would pay most, and the less well off would benefit when the proceeds were spent on improved public services. Moreover, as the Royal Commission has pointed out, taking action to prevent climate change would hit the richer nations but help the poorer nations.

The airline lobby say that "pricing people out of flying would hit low income passengers, such as families going on holiday, hardest."[64] Emotive, but misleading. As has been shown, the proposed tax increases are likely to be cancelled out by the forecast fall in air fares. So no-one would be priced out.

An alternative spin from the lobbyists is that tax on aviation would prevent the poor enjoying in future the pleasure of foreign holidays which at present they cannot afford. Yes, if air fares go on getting cheaper more people will be able to fly. But there is no evidence that the proportions will be any different: the rich may still fly four times as often as the poor, more will buy second homes abroad, and take more weekend breaks.

The present situation is unfair. Many less well-off families go on holiday in Britain in their cars, paying fuel duty and VAT on their petrol, paying VAT on their meal at the motorway cafe, and paying VAT on their bills at caravan sites and boarding houses. The children don't get into the theme park without paying VAT. The pub is not duty free. Why should holidays in Blackpool or Margate be taxed but not air trips to Bangkok or Marbella?

Political suicide?

The knee-jerk reaction of any politician, including the present DfT ministers, is that to impose substantial new taxes on aviation would be political suicide - look at the fuel tax protests of autumn 2000.

But would a gradual increase in taxation over a period of thirty years be unpopular? The survey by the Office of National Statistics found that in 2001 four out of five people would accept a 5% increase in the price of flights to cover environmental costs. And that was before they had read this booklet!

It would be possible to make a start now with some small changes which can be implemented by the UK Government acting alone. These include the abolition of duty free, increases in air

passenger duty, VAT on domestic flights, duty on fuel for domestic flights, and taxes specifically related to local noise and pollution. None of these require international agreement, none are contrary to treaty obligations, and none would seem to amount to political suicide. No doubt the airline lobbyists would make a huge hullabaloo, but that is what they are paid to do.

Economic benefits nil

New runways, it is claimed, bring economic benefit to the nation, and must thus be in the national interest. That is why the CBI are supporting the airlines in their campaign for new runways. The net economic benefit to the nation of providing additional capacity in line with demand could, according to DfT, "be up to £15 billion in present value terms".[65] It sounds a lot of money, better than winning the lottery, too good for any politician to turn down.

The calculation of the benefits of airport expansion is done on the SPASM computer model. It is assumed that businessmen value their time at £42 an hour (rising to £80 in 2030) and that leisure passengers value their time at £7 an hour (rising to £13).[66] So if a new runway is built at an airport which is nearer to you, and saves you an hour's travel when you are off on holiday, the benefit to you is £7. Ask the SPASM model to add up all these benefits, total them over a period of sixty years, and deduct the construction costs of building new runways, and lo and behold that is the net economic benefit.

The calculation depends crucially on the assumed future price of air travel. Because of the shape of the demand curve, if the price of air travel rises (or falls less fast than assumed) the benefits rapidly disappear.

When the environmental groups asked DfT to re-run the SPASM model on the assumption of the fair tax package, they also asked that the computer should recalculate the economic benefits. The answers came churning out. There would be a small economic benefit in building a new runway at Heathrow, but only because it was shown that the airlines would pile into Heathrow, leaving other airports partly empty. Building a new runway at Heathrow, or at Gatwick, while there was still spare capacity at Stansted would obviously be politically unacceptable.

The computer was therefore instructed to assume that air traffic was spread around the London airports. It did not deign to produce any results for Gatwick, presumably because it is a law abiding machine and had been told by Alastair Darling that it would be highly undesirable to overturn the Gatwick legal agreement,[67] and that the Parliamentary and legal hassle in attempting to do so would cause it to blow a fuse.

It did, however, produce results for Stansted. The cost of building a new runway would be £2.15 billion. The economic benefit would be £1.12 billion. The net present value would be minus £1.03 billion. Changing the rate at which future benefits are discounted, in line with Treasury advice, produced a net present value of minus £0.40 billion.

Thus the economic benefit would be less than the cost of construction. If that would be true for any new runway at Stansted, it must be even more true for any new runway at Cliffe, or anywhere else in the UK.

If taxes were to be set at a fair level, the net economic benefit of building a new runway would be nil. Zero. Worse than that. It would be negative. Minus. As well as destroying countryside, heritage and communities, a new runway would actually make the nation poorer.

Which, of course, merely reflects the finding that the revised forecast level of demand means there is no need for any new runway.

Conclusion

Aviation should cover its hidden costs and pay a fair contribution towards providing public services. A fair level of tax would mean the same level of duty on aviation fuel as on petrol for cars, and VAT on all air travel.

These changes would need to be made, over the next thirty years, on a global, or an EU, basis. Concern about the impact of aviation on climate change is likely to grow. The case for change is strong. If Britain were to take a lead, it should not be impossible to achieve international, or at least European, agreement.

With fair tax, there would be no need to build any new runways, and no economic benefit in doing so. The fall in air fares forecast during the period 2000 - 2030 would cancel out the effect of higher taxes, so there would be little or no increase in the cost of air travel. No one would be worse off. Climate change damage would be greatly reduced. The aviation industry could continue to grow, but at a more sustainable rate of around 2% a year. Over £9 billion a year would be available for improving schools, hospitals or other public services.

All references to the DfT, unless otherwise stated, refer to the consultation documents on the Future Development of Air Transport in the UK. July 2002. For simplicity, references refer to the document for the South East (SE) but in most cases similar statements are repeated in the other regional documents

1 DfT - SE page 12

2 Office of National Statistics. www.statistics.gov.uk

3 DETR May 2000

4 Economic Appraisal. DfT. April 2002 page 15

5 Economic Appraisal. DfT. April 2002 page 17.

6 The Times. 5 November 2002

7 DfT - SE pages 34 - 36

8 Briefing Paper for MEPs. The Times 24 October 2002.

9 Response to the Future Development of Air Transport. 29 November 2002

10 Sunday Telegraph 19 May 2002

11 New York Times 10 October 2001

12 The Contribution of the Aviation Industry to the UK Economy. Oxford Economic Forecasting. November 1999.

13 Hansard 28 November 2002

14 Sunday Times 25 November 2001

15 DfT -SE Table 14.7

16 The Environmental Effects of Civil Aircraft in Flight. November 2002

17 The Times 11 January 2002

18 The Times 9 November 2002

19 Reported in the Daily Telegraph 21 June 2001

20 The Times April 2002

21 The Times 5 August 2002

22 Transport White Paper . Cm 3950. July 1998

23 Air Traffic Forecasts for the UK. DETR. May 2000

24 The Future of Aviation. DETR. December 2000

25 The Environmental Effects of Civil Aircraft in Flight. Page 30. November 2002.

26 PQ Hansard 21 October 2002

27 In 'Tax Free Aviation' (AEF December 2000) a different approach was used. This assumed that fuel tax should be imposed at half the rate on motor fuel in order to raise revenue, and then a separate tax should be imposed related to the external costs of aviation. The method used here is simpler.

28 Financial Times 28 May 2002

29 COM (2001) 370

30 Economic incentives to mitigate greenhouse gas emissions. CE.Delft. 2002

31 Information supplied by EU Vice President to Caroline Lucas MEP 4 December 2002

32 Environment News Service. 16 October 2002

33 Financial Times 11 September 1997. Guardian 12 September 1997

34 Based on BAA estimate of £15 per passenger.

35 Budget Statement 30 November 1993

36 CM 3950. DETR. July 1998

37 Environmental Signals 2001. www.eea.eu.int

38 The Environmental Effects of Civil Aircraft in Flight. 30 November 2002

39 Royal Commission on Environmental Pollution 22nd Report. Cm 4749. 2001

40 DfT - SE page 34

41 DfT - SE page 34

42 DfT - SE page 150

43 DfT - SE page 150, also Economic Appraisal page 35

44 Airport Watch briefing. www.airportwatch.org.uk/briefings/external costs

45 DfT - SE page 34

46 Valuing the External Costs of Aviation. DETR.
December 2000.

47 DfT - SE page 150

48 The Times. 30 November 2002

49 Based on EEA figure of 48 euro per 1000 passenger km, and DERA figure of 250 bn seat km used by UK airlines in 1999-00.

50 External Costs of Aviation. CE Delft February 2002

51 The Environmental Effects of Civil Aircraft in Flight. November 2002

52 The SPASM re-run was based on the assumption that the fuel tax would put up air fares by 23%.

53 DfT - SE page 34.

54 DfT - SE page 106

55 BAA. Response to consultation on Future of Aviation. April 2001

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59 CAA. Recommendations to the Competition Commission. February 2002. pages 17-18

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61 Letter to the Author. 30 September 2002

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63 Office of National Statistics. Omnibus Survey. February 2002

64 Flying responsibly into the future. Freedom to Fly. October 2002

65 DfT - SE page 17

66 SPASM Input Assumptions. DfT. July 2002

67 Hansard 28 November 2002