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Fly now, grieve later



**How to reduce
the impact of air
travel on climate
change**

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Brendon Sewill

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In 2003, on behalf of a number of environmental groups, he persuaded the government to re-run their computer forecasts on the assumption that by 2030 air travel would be paying the same rate of tax as car travel. The dramatic results of this exercise were set out in his previous booklet, 'The Hidden Cost of Flying' (AEF. 2003), in which he also calculated the value of the tax concessions for aviation at £9 billion a year, a figure that has gained wide acceptance.

Here he summarises the concerns about the impact of air travel on climate change, and explores the political and practical problems in making airlines pay sensible rates of tax.

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Climate Change Anxiety

Air travel excluded

There is no need to spell out the evidence for climate change - the rising global temperature, the melting glaciers and receding polar ice caps, the warmer winters and the heatwave summers, the dying coral reefs, the increasing number of serious hurricanes and floods - there is unanimous agreement among scientists that the world is heating up at a dangerous rate, and that air travel adds to the damage.

Scientists also unanimously agree that climate change, if unchecked, is likely to bring terrible devastation: severe floods and hurricanes, drought and advancing deserts, diseases spreading, sea levels rising, and mass migration of population. Recent research shows that it is likely to cause the extermination of more than a million species of animals and plants.¹ These disasters will not happen in some far distant age, they will occur within the lifetime of young people alive today. Yet few of those who travel by air give a thought to the possibility that it is they who may be partly responsible.

There is agreement among scientists across the world that the main cause of climate change is the increasing level of greenhouse gases, mainly carbon dioxide (CO₂), in the atmosphere.² The overwhelming majority

of scientists believe that disaster can be averted if we drastically reduce emissions of CO₂. The few scientists who still persist in denying this are mainly funded by the oil and coal industries. They are supported by Mike O'Leary, chief executive of Ryanair, who is said to have expressed the robust view that climate change is "bollocks". Most senior members of the aviation industry, however, do not refute the need to cut emissions, but seek to persuade governments that air travel should be given special treatment.

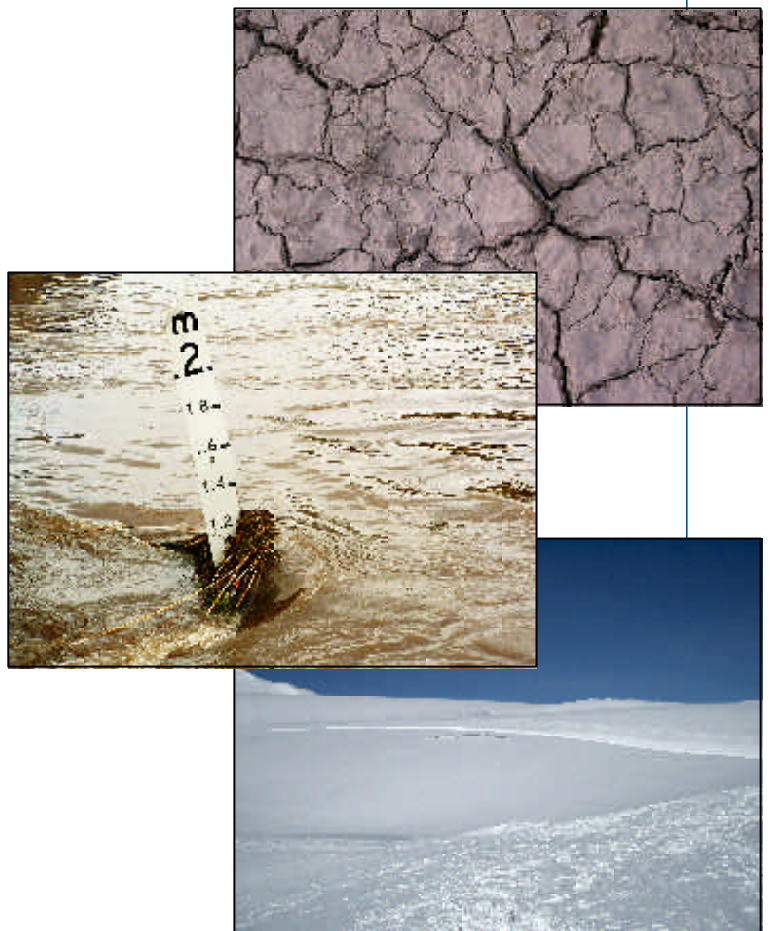
Indeed international aviation was excluded from the Kyoto protocol signed in 1997. Under this treaty, which has now come into effect in over 140 countries, the developed nations agreed that by 2012 they would reduce emissions of greenhouse gases to 5.2% below 1990 levels. The United States originally said they would sign but then opted out. Demonstrations have been held in Europe to express anger at the American decision, but few protests have been made against the exclusion of air travel.

Professor Sir David King, the UK Government's chief scientist, has warned that climate change is a more serious threat than terrorism.³ Tony Blair, supported by similar statements from other Party leaders, has called climate change "a challenge so far-reaching in its impact and

irreversible in its destructive power, that it alters radically human existence".⁴ The Government has set an ambitious target of a 20% cut in CO₂ emissions by 2010. Again air travel is excluded.

The Royal Commission on Environmental Pollution⁵ has calculated that by 2050 a 60% cut in CO₂ emissions will be necessary to prevent disaster, and this has been accepted as a target by the UK Government.⁶ Environment Ministers in the EU have recently recommended that the EU adopts a similar target. Some experts are calling for even larger cuts. Apart from domestic flights, these targets exclude the pollution caused by aircraft.

Fears have been expressed by an increasing number of scientists that the process of climate change may suddenly speed up.⁷ The melting of the Arctic ice cap and Greenland glaciers may cause the Gulf Stream to stop flowing, thus causing a new ice age to engulf northern Europe and the eastern United States (the Day after Tomorrow scenario). Or the Arctic tundra may melt, releasing an accelerating amount of CO₂. Warmer seas may support fewer plankton, thus reducing their capacity to absorb CO₂. So also the destruction of the rain forests, and more forest fires due to dryer conditions, could result in runaway climate change. These fears are given added weight by evidence that sudden changes in



Climate change has been linked to the increase in the rate of melting of glaciers and the frequency of extreme weather events.

Photos © Piers Warmers, Warwick Kay and Tiago Dias

climate have occurred in the past, linked to mass extinctions. The aviation industry maintains that since it cannot be proved for certain that these catastrophes will occur, they should be ignored.⁸

No chemical formulae here

The chemicals emitted by aircraft have two unfortunate effects: they contribute to global warming; and their complex names bemuse and confuse the non-scientific reader. In an attempt to make this booklet readable all chemical names and chemical formulae, apart from carbon dioxide (CO₂), have been omitted.

It is difficult to be certain whether these fears are justified, or whether nature has an inbuilt stability which will restore a balance. What should be obvious is that if there is a genuine risk, then we should redouble our efforts to avert it. That is 'the precautionary principle'. At the 1992 Rio Earth Summit 160 nations signed up to a declaration which included: "Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost effective measures to prevent environmental degradation".⁹ In the Amsterdam Treaty, May 1999, Europe repeated its determination to apply the precautionary principle in environmental matters.¹⁰ And it is not unknown in other areas of public policy, for example, going to war to prevent the use of weapons of mass destruction. Or in domestic matters, for example insuring one's house in case of fire. The aviation industry, however, is expert at finding reasons why it should not apply to flying. Their lobbyists have succeeded in persuading the International Civil Aviation Organisation (ICAO), and also the UK Treasury, that no action should be taken to limit the growth in air travel unless a cast iron case is proved.

At Kyoto each nation agreed to reduce their own emissions, but there was no agreement on who should be held responsible for the emissions caused by aircraft flying between one country and another. Naturally the airline lobbyists played up the difficulties. Should emissions be allocated to the country from which the aircraft take off, or the country in which they land, or divided half and half? (Unless aircraft only go one way, they all come to the same thing).

Should they be allocated according to the nationality of the people on board, or according to the country in which the aircraft is registered? Eight years after Kyoto, these simple issues have not yet been resolved.

The result is that air travel tends to be omitted from much of the discussion of action that should be taken to reduce CO₂ emissions. Since aircraft emissions don't belong to any nation, no nation takes responsibility for them. There is heated discussion of whether to build wind-farms or nuclear power stations, but less on whether to restrain the growth in air travel. Aircraft are excluded from the UK climate change levy. The public are encouraged to drive their cars less, to recycle their waste, and to insulate their homes. But seldom is it suggested that people should fly less.

Flying - the worst thing to do

On average each air passenger throughout the world is responsible for adding 300 kg of CO₂ to the earth's atmosphere.¹¹ 300 kg each time they get on a plane. And the same again on the return journey. It is worth thinking what that means in everyday terms. 300 kilograms - equivalent to buying 300 1kg bags of sugar at the supermarket, carrying them all on board. You might need some help as they would be equivalent to about four times the weight of an average passenger. Then throw them out at high altitude. Imagine 300 passengers on board, throwing out 90,000 bags of sugar. And the same again on the return flight. What a

mess up in the sky! Sounds ridiculous, but it is exactly what happens on an average flight, except that it is invisible CO₂, not sugar.

Air travel is much more harmful to the climate than other activities which create CO₂. Aircraft cause greater damage because, putting it in non-scientific language:

1. their exhaust gases are emitted at high altitude where they create a blanket of translucent smog which reflects heat back to earth;
2. the hot moist air from aircraft engines may, in certain conditions, form condensation trails, or contrails, which add to global warming;
3. the burning of kerosene in aircraft engines creates water vapour which helps to form cirrus clouds, again adding to global warming.

The Royal Commission on Environmental Pollution calculated that the impact of aviation on climate change, called the radiative forcing impact, is between 2.5 and 4 times as bad as measured by CO₂ emissions alone.¹² The UK Government has tended to use a factor of 2.7. These figures exclude the cirrus cloud effect.

More recent research undertaken for the European Commission, by a group of scientists under the uninspiring name TRADEOFF¹³, has found that when the cirrus cloud effect is included the impact is even higher. Their conclusion is that the radiative forcing impact is 4.1 times the

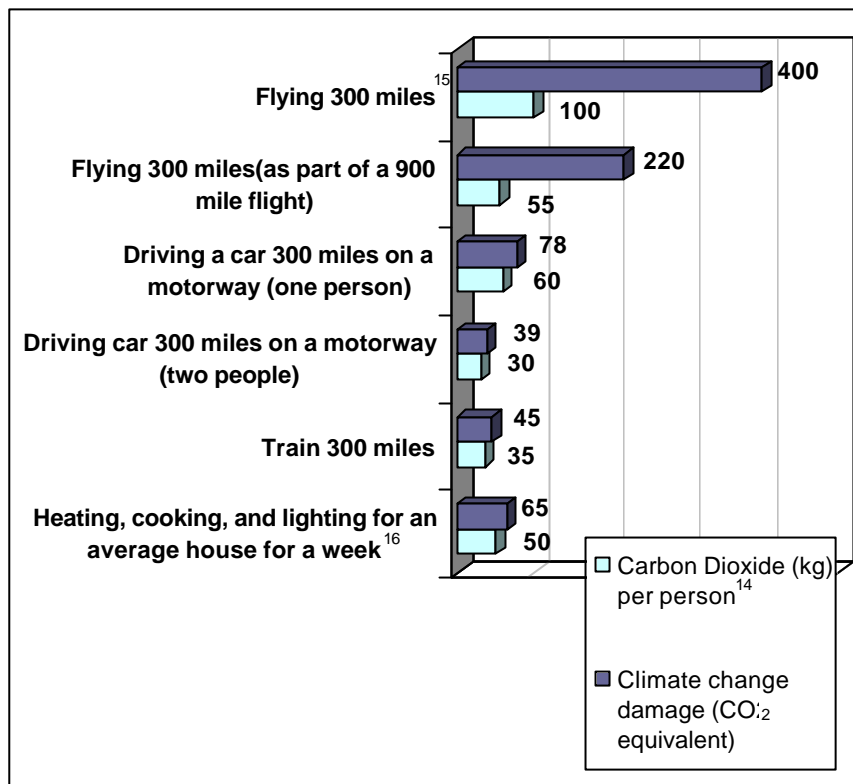


Chart 1.1 Personal contributions to climate change. This assumes a radiative forcing factor of 4 is applied to aviation and a factor of 1.3 is applied to other activities.

impact of CO₂ alone. Although this work has not yet been confirmed by other scientists, it seems reasonable to use a factor of around 4.

At ground level, other uses of energy, such as power stations or domestic cooking, also have a larger effect on global warming than measured by CO₂ alone. On average this is about 1.3.

Of all the things which an ordinary person does which damage the planet, flying is far the worst. This is shown in Chart 1.1 above, in which a radiative forcing factor of 4 has been applied to flying, and a factor of 1.3 has been applied to other activities.

Obviously a table like this depends on the somewhat arbitrary choices of the items in the left hand column. One could pick other examples (see Chart 1.2 below):

It is not generally realised that flying is so damaging. Young eco-warriors who care passionately about recycling set off to backpack around the world with hardly a thought that they may be undoing tenfold what they have tried to achieve. Politicians fly to international conferences to make speeches on how to protect the environment, accompanied by a bevy of advisers and journalists, unaware of the

The dirtiest industry in the world

The aviation industry has a wonderful image. Pretty air hostesses. Romantic destinations. Amazing technical advances. An excellent safety record. Ever falling prices. Tax free shops. Tax free flights. Government departments throughout the world whose purpose is to support the industry. Newspaper travel supplements which portray air travel as the passport to beaches, sunshine and sex.

It is time for a re-assessment.

Aircraft each year release more than 600 million tonnes of CO₂ into the atmosphere.¹⁷

Britain is one of the worst culprits. There are so many aircraft taking off from the UK, that they emit more CO₂ than those from any other country in the world except the United States.¹⁸

Aviation is the industry with the fastest growing contribution to climate change. Between 1990 and 2000 worldwide aviation emissions grew by 50%.

While other industries, such as power stations or chemical plants, have been cleaning up their act, air transport is pumping out more and more pollution each year. In previous centuries it was believed that the rivers and the sea could absorb whatever sewage and filth was tipped into them. Now we know better. Yet people who fly still blithely assume that the air can absorb whatever invisible chemicals are poured into it.

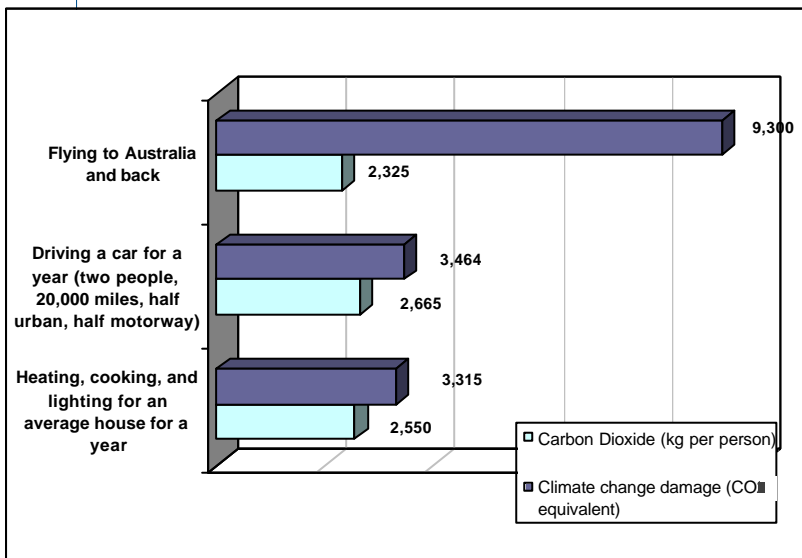


Chart 1.2 Contributions to climate change from various activities. This assumes a radiative forcing factor of 4 is applied to aviation and a factor of 1.3 is applied to other activities.

contradiction. Elderly couples proudly tell their friends how they have flown half way round the world to visit their grandchildren without recognising that they themselves have helped to destroy their grandchildren's future.

Airbus predict that in the next twenty years the number of aircraft worldwide will double - and they are building the vast new Airbus 380 to cope with the growth in air travel.¹⁹ Around the world, governments are actively encouraging this expansion in the belief that it brings employment and wealth. The Prime Ministers of Britain, France, Germany and Spain attended and applauded (and subsidised) the Airbus launch. Many of the developing countries see air travel as their means to share in western living standards. Governments everywhere see the expansion of aviation as the driver of economic progress - without realising that the environmental cost may be greater than the economic benefit.

The Intergovernmental Panel on Climate Change, the world's top climate scientists, were so worried about the growing impact of air travel that in 1999 they produced a special report, "Aviation and the Global Atmosphere", their first report on a single industry. They found that in 1992 aviation contributed 3.5% of man-made global warming - a figure that is quoted regularly by the airlines to show how good they are. Because it is difficult to forecast how the world will change in the more distant future, the scientists worked on a number of different scenarios. Most of their calculations were based on 'business as usual', that the rest of industry carries on as at present. But if it is assumed that aviation carries on expanding, while all other emissions are reduced by 60%, then on most scenarios it is clear that by 2050 (even with optimistic assumptions about improvements in aircraft fuel efficiency)

flying will account for a quarter or more of total world global warming.

Thus aviation is set to become the world's dirtiest industry.

Look at some facts about the UK.

- A few years ago there was much concern about acid rain which was killing the forests in the northern hemisphere. Since 1991 UK emissions of the chemicals which cause acid rain, mainly sulphur dioxide, have been cut by nearly half. The only sector which has shown an increase is air transport.²⁰

- Between 1990 and 2003 greenhouse gas emissions from British industry fell in line with our Kyoto target. But, as the Office of National Statistics has pointed out, to the embarrassment of government Ministers, in this period greenhouse gas emissions from air transport rose by over 85%.²¹



Sending goods by air, weight for weight, results in up to a hundred times as much pollution as sending them by train.

Photo © Emmanuel Wuyts

· The Department for Transport is promoting with enthusiasm a huge growth in air travel - from 200 million passengers in 2000 to 476 million in 2030.²²

· Air freight is forecast to increase even faster – and is even more damaging. Sending goods by air, weight for weight, results in up to a hundred times as much pollution as sending them by train. And up to two hundred times as much as sending them by boat.²³

· The Department for Transport has admitted, sotto voce, that between now and 2020 the increase in aviation emissions (including radiative forcing) will more than cancel out the reductions forecast for all other sectors of the economy. They also admit that by 2030 aviation emissions “could amount to about a quarter of the UK’s total contribution to global warming.”²⁵

· By 2050 emissions caused by passenger aircraft taking off from UK airports are forecast to double. That is what the Department call their ‘central case forecast’.²⁶ Double the damage at a time when every other industry is expected to halve their damage.

The House of Commons Environmental Audit Committee has pointed out that the planned expansion of air travel is incompatible with the government’s target of a 60% reduction in CO₂.²⁷ A recent report by the Tyndall Centre for Climate Change Research has concluded that unrestrained aviation growth in the EU could by 2050 use up all allowable

emissions, leaving none for all other sectors of the economy. Even if all other industries, and personal users of energy, reduce their CO₂ emissions to zero, the 60% target cut could be impossible to achieve.²⁸

Fly to your heart’s content, but disconnect your electricity and gas supply, lock your car in the garage, bicycle to the airport.

Facing questioning on this issue in the House of Commons, the civil servants’ answer was that “given that one fifth of all international air passengers in the world are on flights to or from a UK airport, it is not surprising that CO₂ emissions from UK aviation are high”.²⁹ Anyway, they added, aviation brings us great economic benefits.

The government cannot both claim the economic benefits and deny responsibility for the environmental damage. To do so would be no better than the brothel keeper who tells the police: ‘Its not my business what the girls do upstairs.’

Since - apart from the United States - Britain is the country that makes the most profit from aviation and is the worst polluter, it is for us to take the first action; it is for us to set an example to the rest of the world.

The airlines try a different line. They say that the problem will be solved by technical progress. Aircraft engines of the future will be more efficient. So will aircraft design. So will the systems of air traffic control. Don’t be fooled.

Technical improvements, although welcome, won't solve the problem. The Department for Transport central case forecasts, quoted above, already include an assumption - a very optimistic assumption according to the Environmental Audit Committee - of a 50% improvement in fuel efficiency.

Mike Clasper, Chief Executive of BAA, has summed up the problem: "So how does a growing industry which will continue to rely on aviation kerosene cut its emissions? Frankly, we can't. For probably the next half century and longer, aircraft will continue to rely on fossil fuels, and while there will continue to be incremental improvements in fuel consumption, these will be considerably outweighed by the increasing number of flights".³⁰

Thank you for telling me about your travels.

***Seldom have I met anyone who has visited
so many wonderful places.***

***Please accept this card as a confirmation of
your personal contribution to climate
change.***

The case for taxing air travel

Why fly tax-free?

The main reason air travel is expanding so fast is that it is virtually tax free. In the UK there is no tax on aviation fuel. There is no VAT on air travel. By comparison with these concessions, the Air Passenger Duty is small.

The situation is similar in all other countries. The United States imposes a 3% duty on aviation fuel used for domestic flights. Some European countries charge fuel tax and VAT on internal flights. The Netherlands and Norway levy a (small) charge on CO₂ emissions. But the general picture is that of a tax free industry.

Even apart from climate change, there is a sound economic case for a fair rate of tax on air travel. A level tax playing field improves public welfare. So it is not a choice between tackling climate change or economic progress - level tax would provide both.

The Danish economist, Bjorn Lomborg, has suggested that the cost of trying to stop climate change is higher than the cost of dealing with it when it happens.³¹ But in relation to air travel, level tax will bring an economic benefit, not a cost, so the world will get double advantage.

Tax makes a big difference to the rate of growth. If aviation was taxed properly across the world, its contribution to climate change would be significantly reduced. When the Department for Transport reworked its forecasts on the assumption that by 2030 air travel would pay the same rate of tax as car travel, they showed a rate of growth of 2% a year instead of 4%.³²

Various studies of the demand for air travel across the world show roughly similar results.³³

There is now a growing recognition in Europe that aviation fuel should be taxed. In 2003 the EU Commission and a large majority of member states agreed in principle, in the interests of a consistent tax system, that aviation fuel should be taxed on the same basis as other fuels. Both the EU Transport Commissioner and the Environment Commissioner have told the European Parliament that taxation of air travel is on the agenda.³⁴ President Chirac suggested at a meeting of EU finance ministers in February 2005 that a tax on aircraft kerosene, or a tax on airline tickets, should be considered as a means of financing extra overseas aid.

In *The Hidden Cost of Flying*,³⁵ I calculated that the revenue lost by the Treasury as a result of the exemption from fuel tax and VAT, and tax free sales, amounted to £10.1 billion a year. Against this I set the revenue from air passenger duty at £0.9 billion. Thus the net tax subsidy to aviation amounted to £9.2 billion a year. This figure has been widely quoted, and has not been challenged. It has been confirmed by consultants working for the BAA.³⁶ There is no need to revise it.

Thus the UK Government is in effect subsidising air travel, and subsidising growing climate change danger, to the tune of around £9 billion a year.

In addition, airports get low interest loans from the European Investment Bank, and aircraft manufacturers get large subsidies for the development of new aircraft. Boeing has accused Airbus of having received \$15 billion in subsidies since 1992. Airbus, supported by EU Commissioner Peter Mandelson, has accused Boeing of having received \$29 billion over the same period.³⁷

Air tax is fair tax

The airlines are on the defensive. Their first argument is that tax on flying would stop the lower income groups, who have benefited in recent years from cheap flights, from travelling abroad. That is a weak argument because it could be used against any tax. Tax on beer stops the poor drinking. Taxes on motoring stop the poor driving.

It is also wrong. Taxes on air travel, imposed gradually, would not put air fares up, merely cancel the forecast fall. The official forecasts are based on a fall in air fares of 1.5% a year over twenty years³⁸ - equal (at compound rate) to a total fall of 35%. Yet the Department for Transport have stated that the effect of taxing air travel at the same rate as car travel would be to put air fares up by 30%. The net effect would be to leave fares slightly lower than in 2000. So no one would be priced off planes.

An alternative argument used by the airlines is that the forecast fall in air fares will enable less well-off people, who cannot at present afford to fly, the opportunity to travel abroad in future. Yet this argument also does not stand up to examination. If poor people at present do not wish to fly to Prague for £9.99, they are hardly likely to decide to do so if the fare falls to £6.66. Many of those who do not fly at present are the old and frail, or families with young children, or even those who prefer a holiday in Blackpool.

The left-of-centre think tank, the Institute for Public Policy Research, has pointed out that despite the fall in air fares, "leisure air travel remains highly skewed towards the better off. ... People from the top three social classes take, on average, more than four times as many flights as those in the bottom three. Any tax on aviation would be relatively progressive".³⁹

But surely the boom in low cost flights must benefit the poor? Not so. The Institute's research reveals that "the top

three social classes take more than three quarters of all low cost flights.” Ryanair and easyJet sell nine out of ten tickets online but many poor people do not have easy access to the internet.

Confirmation of these points came from the Civil Aviation Authority (CAA) with their 2003 survey of air travellers.⁴⁰ Based on 180,000 interviews, it showed that the boom in air travel is largely caused by a rich minority taking several holidays a year. Despite a glut of cheap flights, poorer people tended either not to fly at all or to make only one trip abroad each year. Those in social groups D and E (low skilled workers and people on benefits) took only 6% of flights despite making up 27% of the population.

In fact putting taxes on flying could benefit the poor.

It is the poor who suffer most from inadequate health services. An extra £9 billion a year would enable the NHS to employ 200,000 more nurses.

It is the poor who suffer most from inadequate education. An extra £9 billion a year would be sufficient to employ 200,000 extra teachers.

It is the poor who suffer most from having to pay income tax on low earnings. Those on low incomes start paying PAYE when they earn over £94 a week. An extra £9 billion applied in tax relief would mean they could earn almost twice that amount before starting to pay tax.

People on the national minimum wage start to pay tax when they work more than 19

hours a week. Taxing air travel at a fair rate could nearly double the number of hours they could work without tax.⁴¹

Taxes on air travel could help the poor abroad by making it possible to more than double the UK’s overseas aid budget.

It is the poorest countries of the world who will suffer most from climate change. In the coming forty years 150 million people could be displaced due to sea level rise and drought. In Bangladesh alone, a 1 metre rise in the sea level would cause 15 million people living on the low lying delta of the Ganges to lose their homes.⁴² Across the world poor people are most at risk from hurricanes, heat waves and floods.

All that misery and death so that well-off people in Europe and America can continue to fly tax-free.

Public transport twaddle

Another line tried by the aviation industry is that air travel should not be taxed because it is public transport. BAA published a study by Volterra Consultancy⁴³ which showed that trains and buses pay low rates of tax. Volterra, however, made no attempt to justify why aircraft should be given the same exemptions.

There is nothing magic about ‘public transport’. Planes are not *publicly owned*, and nor are buses or trains. Airlines do not provide a *public* service in the form of cheap fares for the elderly or an essential service for the needy. It is true that aviation does

provide a service for the *public* - but so do all service industries, from hotels to hairdressers, from plumbers to taxi drivers. Unlike aviation, they all pay VAT. Unlike aviation, they all pay tax on any fuel they may use.

Trains and buses pay low rates of tax because traditionally they have been seen as an essential means of travel to work whereas four out of five air trips are for leisure. Trains and buses help to relieve traffic congestion in towns, whereas low tax on aviation merely increases congestion in the sky. The only thing which makes planes similar to trains or buses is that the passengers sit in rows. Sitting in rows is not generally recognised as a fundamental principle of fiscal policy.

Volterra did perform one useful function: they calculated that if air travel were to pay tax at the same rate as car travel, the additional annual revenue would be £8.9 billion – a confirmation of my own calculations.

False forecasts

All over the world new airports are being built, or existing airports expanded, to meet the forecast rise in demand. Hong Kong, Osaka and Athens have new airports. New runways have been built, or are being built, at Addis Ababa, Amsterdam, Anguilla, Atlanta, Denver, Doha, Frankfurt, Madeira, Memphis, Orlando, Paris, Seattle, Sofia, Toronto - and at many places in China.

Everywhere it is assumed that the present tax-free bonanza will continue.

In the UK, the Air Transport White Paper published in December 2003 proposed new runways at Stansted, at either Heathrow or Gatwick, at Birmingham and at Edinburgh, perhaps at Glasgow. Airports including Aberdeen, Belfast, Bournemouth, Bristol, Cardiff, Dundee, East Midlands, Inverness, Leeds-Bradford, Liverpool, London City, Luton, Manchester, Manston, Newcastle, Norwich, Prestwick, Southampton, and Southend were all encouraged to expand. The plans are designed to provide capacity to handle 476 million passengers a year - based on the assumption that air fares will continue to fall, and that there will be no change in the tax treatment of air travel.

The White Paper did refer in an appendix to the possibility that a 100% tax on aviation fuel might be introduced. 100% might sound a high rate of tax, but on aviation fuel it would only amount to about half the duty (before VAT) on motor vehicle fuel.

A 100% tax on aviation fuel, it was stated, would cause a 10% rise in air fares and a 10% fall in demand.⁴⁴ The fall in demand would be substantial, equivalent to 50 million passengers a year, twice the size of Stansted at present. It would mean that one whole new runway would no longer be required. Yet, having admitted that a change in tax could have this dramatic effect, the Department for Transport used a conjuring trick to make it disappear. As a result of the advent of low cost airlines, they announced, air fares would fall faster than forecast. Hey presto! this would cancel out the effect of the tax increase.⁴⁵

Very convenient. The statisticians did not need to rework their forecasts. Expansion could continue as planned. But too simple.



No need for new runways or airport expansions.

Photos © Marvin Galero and Tim Van Damme

The faster fall in fares, and the consequent higher demand, will mean that the climate change danger is more serious than previously expected. Thus it proved that 100% tax on aviation fuel would be insufficient.

The Department are very proud of their computer model, called SPASM, which produced the forecasts on which the Air Transport White Paper was based. But computers are only as good as the data fed into them. A number of national environmental groups asked the Department to run the computer again on the assumption that by 2030 air travel would be paying the same rate of tax as car travel.⁴⁶

The results were spectacular. The computer model showed that

- Demand would rise to 315 million passengers a year instead of 500 million.
- Aviation would continue to grow, but at 2% a year instead of 4%.
- There would be no need for any new runways in the UK
- The economic benefit of building new runways would be negative.

In addition there would be an extra £9 billion a year to improve public services or reduce other taxes.

If similar tax changes were made in other countries, the rate of growth of air travel would be substantially reduced. Growth would not stop, just proceed more slowly. Although the airlines would set up a terrible hullabaloo, it would not be a disaster. 2% annual growth would be considered quite reasonable for any other industry. That rate might just be within scope for technological improvement. The danger of a huge addition to climate change would be largely removed. Aviation would still not be contributing to the 60% target, but at least they would not be going in the wrong direction.

Another reason why the White Paper forecasts are likely to be wrong is that they were based on an oil price of \$25 a barrel. In May 2005 it was over \$50. Doubling the oil price has the same effect as a 100% fuel

tax . One whole new runway will not be required.

Some experts predict that oil supplies will run out, and that the price of oil will continue to rise; others say that supplies will last for centuries. If oil prices stay up, or go up further, is it necessary to put taxes up as well? Yes, because all the same arguments, about level tax, about climate change, and about the need to make the polluter pay, still apply. And if the oil is running out, it makes sense to conserve supplies.

The way we live now

Trollope's novel by this name described the practice in Victorian England of puffing shares, attracting funds by making dud developments in foreign countries sound attractive. Eventually the bubble broke. So air travel today is partly based on creating an illusion that everything foreign is superior. Everyone likes to boast that they have just come back from a holiday in China, or Thailand, or Australia: anyone who admits to having spent their holiday in England is treated with kind condescension.

Professor John Adams has coined a title for the modern craze for car and plane travel: 'hypermobility'.⁴⁷ He shows how society becomes more dispersed - with second homes abroad and mass migration mixing people up; more prone to crime, as people no longer know their neighbours; less democratic as more decisions need to be taken at a global level; more frenetic as people try to fit more and more travel into busy lives.

The forecasts in the Air Transport White Paper were based on an assumption that life will get even more frenetic. Business travellers were assumed to value their time now at £45 an hour; by 2030 it was assumed that in real terms this would have doubled to around £87 an hour.⁴⁸ Get out of my way - I'm on important business - no time to say hallo!

Leisure travellers were assumed to value their time now at around £6.60 an hour. But by 2030 it was guessed that this would have nearly doubled (nothing to do with inflation) to £12.80. Everyone in a desperate hurry to get away on holiday. Not a minute to spare. For a family of four, every minute wasted will cost nearly £1. Hurry up – stop dawdling children!

When the environmental groups asked to re-run the SPASM computer model, we also asked for a separate re-run with a revised assumption - that people do not put any higher value on their time than at present.. The results showed that the economic benefits of new runways were roughly halved.⁴⁹

Predict and provide got itself a bad name. In the 1980's the UK Government proposed a massive road building programme. It was based on predicting the growth in car travel, and then providing the necessary roads. To the transport planners that seemed simple commonsense. But the policy resulted in two large public protests, at Twyford Down near Winchester, and on the site of the Newbury Bypass. Both protests brought together long-haired eco-warriors and green welly families who did not wish to see the countryside destroyed.

Neither protest succeeded in stopping the road in question – governments do not like to back down in face of protests – but they did force a re-think of the policy. It was realised that ‘predict and provide’ was flawed. When the marginal cost of travel was low, the more new roads which were built the further people travelled. If someone was prepared to drive for an hour to go to work, or to see a friend or relative, and if a new road halved the journey time, they would drive twice as far. Thus building new roads merely created extra traffic.

The same is true for air travel. As flying becomes cheaper, people alter the way they live. They tend to take more short breaks abroad, instead of one long holiday. It becomes expected to attend weddings or funerals on the other side of the world. Migrants move to look for work in other countries, and fly home to see their relatives on a regular basis.

About 50,000 second homes abroad are purchased by British people each year, and second home owners make an average of 6 trips a year. On present growth rates, owners of second homes will soon be taking 12 million flights a year.⁵⁰ Commuting to work by air is also on the increase, with reports that house prices near regional airports have soared with the arrival of low cost flights.⁵¹ All that would be welcome and beneficial - if it had no environmental cost.

What was surprising was that Transport Ministers did not appear to have learnt the

lesson from the roads experience. The plans produced in December 2003 were classic predict and provide. Forecasts were made, and plans were announced to provide new airport capacity to enable the growth to take place. This approach was denounced by every national environmental organisation, and especially by the Sustainable Development Commission.⁵² If the plans for a new runway at Stansted go ahead, it seems inevitable that they will provoke another massive protest. It would be more sensible to reconsider the fundamental philosophy before the battle, not after.

The polluter must pay – even airlines

The economic theory that the polluter should pay for the cost of the pollution caused is generally agreed. 160 nations signed up to it at the Rio Earth Summit in June 1992. The theory states that the price at which goods or services are sold should reflect not only the cost of production but also the cost of the damage caused to the environment. Only if the price reflects the full costs are consumers able to make an informed choice.

The UK government supports the theory, stating that they will work to ensure that “aviation pays the external costs its activities impose on society at large - in other words that the price of air travel reflects its environmental and social impacts.”⁵³

Environmentalists support the polluter pays theory but feel that it does not go far enough. First, the calculations are subject to wild uncertainties and difficulties, for example in valuing the cost of loss of human lives, and tend to ignore anything which does not have a direct money value. Second, even if the full external costs are paid that does not provide a licence to continue polluting: motorists are compelled to pay insurance in case they kill or maim pedestrians, but that does not give them a permit to drive recklessly. Third, payment of external costs is not sufficient: as has been said, leisure activities such as flying should in addition make a contribution to the general public revenue to help pay for public services.

Nevertheless it is worth trying to calculate the external costs of aviation, if only to establish a basic minimum rate of tax.

The UK Treasury have published an estimate that the cost of global warming caused by passenger aircraft (excluding freight) was £1.4 billion a year in 2000, rising gradually to £4.8 billion in 2030.⁵⁴

The rise is due to the forecast increase in the number of flights, and to the fact that the climate change danger gets cumulatively worse as CO₂ accumulates in the atmosphere. On a steady progression the figure for 2005 can be taken as £2 billion.

A much higher figure was given in a report by BAA consultants, Oxford Economic Research Associates (Oxera). They suggested that by 2050 if taxes were set in line with Treasury global warming

estimates (ie if aviation was required to pay its external costs) the financial impact on the UK aviation industry would be around £31.5 billion per annum.⁵⁵ That is significant but not strictly comparable because, as well as external costs, it includes lower airline profits due to demand growing more slowly.

A more relevant calculation of the external costs of aviation is that made jointly by two research institutes, INFRAS at Zurich and IWW at the University of Karlsruhe, whose work on this issue has been used by the European Environment Agency. In a report published in October 2004 they showed that the total external costs of passenger aviation in 2000 for all aircraft departing from EU airports amounted to €84.7 billion (£59.3 billion) a year. For the UK the total external costs of passenger aviation were far higher than for any other EU country. They came to €19.8 billion - equivalent to £13.8 billion.⁵⁶

That was for 2000. By now the figure would be around £16 billion.

The Treasury calculation was based on a radiative forcing ratio of 2.7, and the INFRAS study on a ratio of 2.5. Yet, as previously mentioned, recent research points to a figure of around 4. That would mean that the Treasury figure should be increased to £3 billion a year and the INFRAS figure to £25 billion.

£3 billion or £25 billion? Some reasons for this large difference are given in Box 1.

As will be seen, trying to put a figure on the external costs of aviation is open to huge uncertainties, and more academic study is required. Perhaps the best one can say is that, for the reasons given in Box 1, the Treasury estimate should be at least doubled, and the INFRAS estimate probably halved. Thus it would seem that the external costs of UK passenger aviation lie somewhere in the broad range £6 billion – £12.5 billion a year.

That is a measure of the damage that is done to the world by passenger planes taking off from the UK. When account is also taken of the need for air travel to make some contribution to the cost of public services, it provides broad confirmation that air travel should be taxed at the same rate as car travel, that it should pay around an extra £9 billion a year.

What these figures also mean is that on average the cost of the damage caused by

each of the 100 million passengers who fly out from Britain each year (each with the 300 bags of sugar) is somewhere between £60 and £125. And the same again on the return flight. That is the amount by which fares should rise if they are to comply with the government guidelines of covering external costs.

Newspaper headline writers please note that this applies to average fares, that the rise would take place over a period of ten or twenty years, and that it would be largely cancelled out by the fall in fares forecast over that period.

Box 1: External costs - calculations compared

The INFRAS study includes calculations of the cost of noise, and the cost of local pollution around airports, and the impact of airports on nature and the landscape. It also includes the upstream and downstream costs, that is for example the external costs of manufacturing aircraft, and of disposing of them. All these are excluded from the Treasury study. The INFRAS method seems correct.

The biggest difference is in the estimates of the cost of climate change. The Treasury use a figure of £70 per tonne of carbon emitted (but admit that it may be as high as £140, or even higher) while INFRAS use a figure equivalent to £360 per tonne of carbon.

The Treasury figure of £70 is only sufficient to meet the UK's (fairly minimal) obligations under Kyoto.⁵⁷ The INFRAS price of carbon is designed to achieve a more ambitious target of a 50% reduction in CO₂ between 1990 and 2030 in line with a recommendation of the Intergovernmental Panel on Climate Change. Again the INFRAS approach looks more correct.

INFRAS assume that all the reduction has to be achieved within the EU transport sector, whereas the Treasury calculation is based on an average global cost for carbon. When one is calculating the external cost of transport, there may be a case for saying one should start from an assumption that this sector should pull its full weight in the battle against climate change. Nevertheless the Treasury method would probably be supported by most economists.

The Treasury admit that their figure "takes no account of uncertainties including the probability of: so-called climate catastrophe (eg melting of the West Atlantic ice sheet, Gulf Stream suppression etc); or the socially contingent impacts of climate change (eg famine, mass migration etc)."⁵⁸ It is difficult to know what price should be put on the (perhaps remote) possibility of a catastrophe such as a new ice age with mass extermination of human and wildlife populations. But it must be wrong to ignore it. The INFRAS figure, based on the action needed to avoid a dangerous build-up of CO₂, and thus avoid these risks, has much to commend it.

Doing nothing not an option

Air miles for all

Tackling the rapidly rising emissions caused by air travel will not be easy. Aviation is an international industry: if controls or taxes are imposed in one country, airlines threaten to move elsewhere. Airlines have ultra-strong lobbying power. Air travel is popular, and provides jobs. Millions of people in the developing countries, Eastern Europe, China, India, South America or Africa, would love to have the opportunity to fly. Everywhere governments believe that expanding air travel will drive their economies forward.

At present the average American flies twice as far each year as the average European, and the average European flies ten times as far as the average inhabitant of Asia (even including Japan). If people in the rest of the world were to fly as much as those in the United States, the number of planes in the sky would rise nearly twenty-fold. Climate change disaster would be upon us.

Demographic trends don't help. World population is projected to grow from 6 billion to 8 billion by 2030, with almost all the growth taking place in the nations where air travel is set to expand most rapidly.

One way to solve the problem would be by a variation in the air miles scheme. At present air miles are handed out as an (irresponsible) sales gimmick. Suppose instead that everyone in the world was issued with an equal allocation of air miles, and no one was allowed to fly without the requisite number. If the present amount of air travel was shared out, everyone would get 380 air miles. Suppose the market price settled at 1p per air mile. A Chinese peasant who did not wish to fly could sell his allocation for £3.80 a year. Someone in England who wished to fly to New York and back, 6,880 miles, would need to purchase 6,500 air miles at a cost of £65.

Such a scheme, which would be similar to the principle of 'contract and converge' much discussed in climate change negotiations, would help to prevent climate change damage by limiting air travel to its present level.

There are, however, more conventional ways in which the growth in air travel could be restrained, for example putting tax on aviation fuel, charging VAT on air tickets, or increasing air passenger duty. The British government has not been keen on any of them but, egged on by the airlines (who see it as a cheap cop-out), wishes instead to see aviation brought into the new

EU emissions trading scheme. Other European countries are unenthusiastic about that approach, being suspicious that perfidious Albion is trying to protect its own (aviation) interests. They prefer a scheme for taxing aircraft emissions directly.

Is fuel tax feasible?

Many people are surprised to discover that there is no tax on aviation fuel. Motorists pay 47p duty per litre, plus VAT charged on the price including duty. The result is that petrol for cars costs about four times as much as fuel for aircraft.

Petrol duty has increased over the past century, first as a method of paying for road building and maintenance, then as a simple method of raising revenue for the Exchequer, and more recently for environmental reasons. The cost of road building and maintenance is now fully covered by the revenue from the annual car licence fee.

If petrol duty is seen as a convenient way of raising revenue, in order to help pay for public services such as health, education or the police, then there is absolutely no reason why air travellers should not contribute at a similar rate. Indeed because many people rely on their cars for getting to work, while four-fifths of air travel is for leisure,⁵⁹ *there is a case for taxing aviation fuel at a higher rate than the petrol duty.*

If the case for petrol duty is that it has an environmental purpose, then because aircraft cause worse climate change damage than cars, the case is re-enforced that *the tax on aviation fuel should be higher than the petrol duty.*

On the other hand petrol duty in other EU countries is lower than in Britain. So it would seem appropriate to suggest an EU duty rising over a period of years to around the British rate of 47p a litre.

Lobbyists for the airlines constantly tell politicians and civil servants that taxing aviation fuel is not feasible because if one country alone were to tax fuel, aircraft would merely fill up in other countries. This practice has even been given its own name – ‘tankering’, and has been subject to various studies showing the environmental disadvantage of aircraft having to take-off with a heavier weight of fuel on board.

The problem would be solved if all countries in Europe agreed to tax aviation fuel. It would need to be all countries, not just members of the EU, because otherwise aircraft might flock to fill up in non-EU countries, such as Switzerland. There would, however, still be some risk of tankering around the edges of Europe, for example, flights from Russia to Poland might fill up in Russia for the return journey.

It is often said that the 1944 Chicago Convention, which has been signed by 180 countries, prohibits any tax on aviation fuel.

Not so. Article 24 states: "Fuel, lubricating oil, spare parts ... on board an aircraft on arrival in a contracting state, and retained on board on leaving, shall be exempt from customs duty or similar national or local duties and charges." This does not prevent any country imposing a tax on aviation fuel, but does provide a legal basis for aircraft to fill up in a country where fuel is untaxed.

A more serious difficulty is that governments all over the world have signed bilateral treaties regulating air traffic. Britain has treaties with about 130 different countries. Most of these treaties prohibit any tax on aviation fuel. The best known example is the 1978 Bermuda 2 treaty between Britain and the United States. Article 9 states that: "fuel ... for use in an aircraft ... shall be relieved from all customs duties, national excise taxes, and similar national fees and charges..."

When every major country has a similar number of bilateral treaties, the world is stitched up like a huge skein of knotted knitting wool. The airlines like to give the impression that the skein is too tangled to be unravelled. They are wrong.

If all European countries wish to impose tax on aviation fuel on flights within Europe, they would have no difficulty in amending the relevant treaties between themselves. There could, however, still be a problem in taxing fuel used by American (or other non-EU) airlines on flights within Europe.

If European countries wished - as would be sensible - also to tax aviation fuel loaded

onto aircraft bound for countries outside Europe, then the treaties with those countries would need to be amended. If the destination country was unwilling to cooperate, then the treaty could be brought to an end. For example, in the Bermuda 2 agreement, Article 19 states that: "Either Contracting Party may at any time give notice in writing to the other Contracting party of its decision to terminate this Agreement."

No great world disaster would occur if the Bermuda 2 agreement was terminated. It limits the American cities to which airlines can fly from Heathrow, and limits the number of airlines permitted to operate on each route. Fares are subject to approval by both countries. No such restrictions exist in Europe, and there could well be economic benefit in removing them.

The EU Commission is already in the process of rewriting all the bilateral aviation treaties. It has been agreed that the EU will in future be responsible for these treaties, rather than individual countries; also that when new treaties are negotiated the aim will be, if possible, not to write in any prohibition of fuel tax. So far, however, only one new treaty has been agreed, between the EU and Chile. It permits either country to tax aviation fuel.

One action the UK government could take immediately to show it means business would be to pass legislation (a few clauses added to the next Finance Bill would be a simple method) imposing tax on aviation fuel at a rate of 20p a litre, increasing in subsequent years - but with a proviso that

the new tax would only come into effect when all European countries have passed similar legislation, and when the relevant bilateral agreements had been amended.

The question whether the fuel tax should only apply to flights within Europe, or to all destinations, raises an important issue. There is often confusion between a tax levied by EU countries, and a tax confined to flights between EU countries. It makes sense for EU countries to act together: both to reduce tankering, and to set an example to the rest of the world.

To tax flights only within Europe makes less sense. It would be a good start but over half the emissions are caused by flights to other destinations. Moreover, fares to non-EU destinations would become relatively cheaper, so there would be an incentive for people to fly longer distances. Therefore the ultimate aim should be that any new taxes on air travel should apply to flights to all destinations.

VAT on air tickets

The case for charging VAT on all air travel is equally compelling. Since the early days of the European Common Market, VAT has been written into the European treaties, and has been applied throughout Europe as a comprehensive tax on all types of expenditure with a few exceptions for essential items such as food. No one could claim that for most people air travel is essential. The minimum standard rate is

15%, but reduced rates are permitted on some goods or services, such as the 5% rate on domestic heating fuel in the UK.

Because of the way the tax works, putting VAT on air tickets would mean that VAT was paid on aircraft fuel (on top of the duty, as with petrol for cars), on aircraft purchasing and servicing (as with the purchase and servicing of cars), and on aircraft meals (as with meals at motorway cafes).

Nearly all European countries, except Britain, charge VAT on domestic flights. For some of the larger countries such as Germany (VAT rate 16%) or France (5.5%) this may encourage some transfer of passengers to (less polluting) rail travel. It is difficult, however, to believe that the 3% VAT charged on domestic flights within Luxembourg brings in much revenue, nor that it will do much to alleviate climate change.

There is a good case for saying that Britain should come into line with the rest of Europe by putting VAT on domestic flights. On a £50 flight from London to Edinburgh or Belfast, VAT at 17.5% would add £8.75. In terms of administration, however, it would probably be easier to increase the existing air passenger duty.

The German government announced in their 2004 budget that VAT at a standard rate of 16% would be put on aircraft tickets to and from all other EU countries. The additional revenue of €500 million would be used to finance a cut in VAT on long

distance rail travel. The plan was, however, defeated by the opposition controlled upper house, following pressure from the airlines.

The UK government has been reluctant to recognise the possibility of VAT on air travel. There is no mention of VAT in the recent White Paper on Air Transport, and Treasury officials refuse to answer parliamentary questions on the subject.⁶⁰

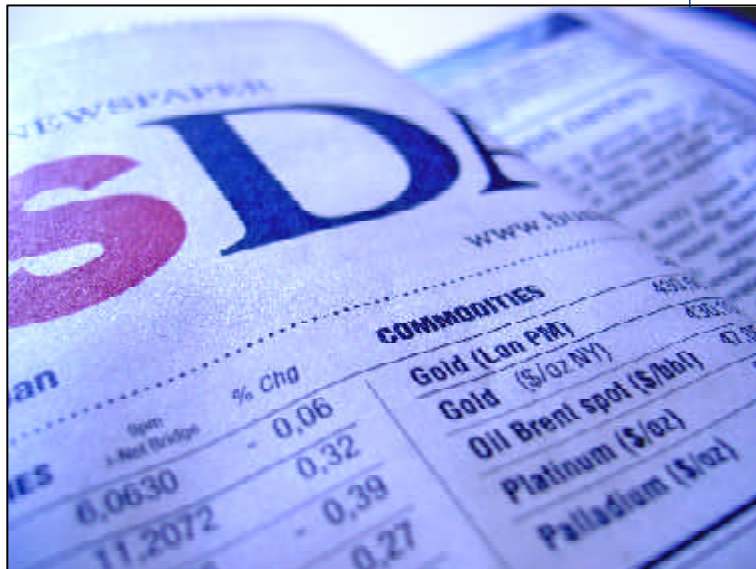
There are no international treaties which would prevent VAT being imposed on air travel.

By making the cost of flying more nearly cover its full cost, VAT on air tickets would directly implement the polluter pays principle. To impose VAT on tickets for all flights from the UK to the EU, and all domestic flights, would be administratively simple. Airlines would be given the legal responsibility to pay the tax, and the work involved would be no more complicated than that undertaken each week by any shopkeeper.

The EU Commission is currently engaged in a review of all VAT rates and exemptions. The aim is to create a more uniform tax structure in order to improve economic efficiency and remove anomalies. The UK has an opportunity to join with Germany in seeking to persuade the Commission to recommend charging VAT on all air travel within the EU.

Unlike fuel tax, it would not be essential for every country in Europe to act together - the problem of tankering does not arise. Airlines would be required to pay VAT on all relevant flights even if the tickets were bought elsewhere. Thus it would not be

necessary for the EU to make VAT mandatory, a recommendation would be sufficient.



How Emissions Trading Works

An emissions trading scheme for most major industries in the EU, such as power, oil, steel, cement, bricks, minerals and paper - but not aviation - came into effect in January 2005. It works like this: A cap is agreed for the total level of CO₂ emissions that can be allowed in Europe. Each country adopts a target in line with the cap, and then decides how many permits will be allocated to each company. If a company wants to increase its emissions it has to buy spare permits from other firms. If a company succeeds in reducing its emissions, it is rewarded by being able to sell its spare permits. In order to achieve climate change targets, the cap is, or should be, reduced year by year.

One possibility under consideration is to set up a separate semi-detached scheme just for aviation, with airlines able to buy permits from the main scheme.

In theory an emissions trading scheme has much to recommend it. It acts directly to control and reduce the total level of emissions. It allows industries, such as aviation, which find it technically difficult to reduce emissions to buy permits from other industries, such as obsolete power stations or steel works in Eastern Europe. Thus the total reduction in emissions can be achieved in the most efficient way.

A sales tax, similar to VAT, should also be imposed on tickets for flights to non-EU destinations, for example for a flight from Heathrow to New York. Since VAT is technically an EU tax, it would be necessary to use a different method and a different name, for example an air fare sales tax, but the effect would be similar. Again the administration would be simple. It would not be contrary to any international treaty; nor any of the bilateral treaties.

Emissions trading - permits to pollute

Britain is hoping to persuade the EU to include aviation in the emissions trading scheme with effect from 2008. Tony Blair has promised to make this a priority during the six months that Britain holds the presidency of the EU Commission, during the second half of 2005. It looks possible, however, that this initiative will not succeed. Or if it does succeed, it may be at the cost of a fudged scheme which is so weak that it will have little impact on climate change.

Extending the trading scheme to air travel would be complicated to negotiate, difficult to administer, and of doubtful benefit.

The scheme would only apply to flights within Europe, and would thus have no impact on about half the emissions by aircraft taking off from EU airports.

If the initial allocation of permits is related to current emissions (grandfathering) then each airline could continue to operate as many flights as at present and would only

need to buy extra permits if they wished to expand. Thus airlines would pay nothing for their current emissions. It therefore would not conform with the Government's policy that the price of air travel should cover its external costs. The scheme has a £6 billion hole in the middle. Maybe a £12.5 billion hole.⁶¹

An economic disadvantage of a trading scheme is that expanding, efficient, airlines would have to pay, while contracting airlines would get an undeserved bonus. The UK voluntary scheme in operation since 2002 provides a good illustration. The only airline to join was British Airways. Since their route network has contracted, they have received a substantial subsidy from the British taxpayer.

Unless allocations are based on data relating to several years past, there could be a temptation for airlines to postpone buying new aircraft so as to ensure a large initial allocation. The dirtier you are when the scheme starts, the bigger allocation you get.

Clapped-out power stations and steel works in Eastern Europe may well be going to be closed down anyway in the next few years in order to improve efficiency. In that case permits will be going cheap, airlines can buy them up without difficulty and continue to increase their emissions. Thus the scheme may fail to make any significant difference to the level of European emissions.

A trading scheme would do nothing to tackle the present fiscal inequity whereby air travellers, unlike car users, pay no contribution to public services. Indeed

because of this hidden subsidy the airlines would have the resources to buy sufficient credits to enable them to continue to expand and pollute.

Complicated to negotiate and difficult to administer

To get aviation into the EU emissions trading scheme, many issues have yet to be decided. At every stage it can be predicted that each of the 25 EU member states will argue their own national interest, and that the airlines will use their lobbying power to try to delay or derail the process.⁶²

The first step will be to establish whether the existing cap will be raised to cover emissions from aviation. Second, will the permits be allocated by the EU Commission or by member states; if the latter, how many permits will be allocated to each member state? Already in the existing (non-aviation) scheme the British government has undermined its green credentials by seeking to increase its allocation, with the EU Commission threatening to take the issue to the European Court.

Some of the smaller new EU countries, such as Latvia or Slovakia, which have few flights at present, will argue strongly that they should not be confined for ever to a minor role. To get agreement, either they will need to be given a larger allocation, thus defeating the aim of the scheme; or the UK, as the largest player, will have to accept a cut in its allocation. Cries of anguish can be predicted from the UK airlines.

Will permits be allocated to airlines or to airports? If to airlines, will they be handed out according to the country in which the airline operates or in which it is based? Will Ryanair count as Irish or British? If the allocation is based on the level of emissions in a past year, fast growing airlines such as easyJet would be penalised. More cries of anguish.

British Airways has suggested to the Environmental Audit Committee that allocations should allow for future growth but, as the Committee commented, that would “undermine the integrity of the whole scheme.”⁶³

If permits are allocated to airports, will each airport be given sufficient to allow them to proceed with current expansion plans, thus again defeating the purpose of the scheme; or will they be given permits only sufficient to permit their present level of operations (with a need to buy more if they wish to expand)?

Another major issue is whether to include radiative forcing, and what figure to use for it. If it were to be included at a factor of 4, then airlines would be required to pay three or four times as much for each permit as a power station or chemical plant. Cries of anguish have already been heard. BA are arguing that, because scientists are unsure of the exact figure to use, radiative forcing should be excluded.⁴ If you don't know for certain whether it should be 2.7 or 4.0, let's call it zero.

If the overall cap is reduced each year, so as to cut total emissions by 60% by 2050, how will this impact on aviation? The airlines blithely assume that other industries will

be able to cut their emissions by more than previously required, and so will be able to sell the spare permits to allow the number of flights to continue to grow. Not so. The Tyndall report found that by 2040, even if every other industry in Europe reduced their emissions to zero, there would not be enough permits available to allow the continued expansion of aviation.⁶⁵

The House of Commons Environmental Audit Select Committee reported in March 2005: “We see no possibility of the UK Government achieving its objective of incorporating aviation in Phase 2 of the EU ETS, and we continue to think that a mixture of other policies – including the scope for taxation and emissions charging – should be pursued.”⁶⁶ The EU Commission, which is due to produce a Communication later this summer examining all the options for dealing with aviation and climate change, may reach the same conclusion.

Why airlines love emissions trading

BAA and some airlines support emissions trading because they hope it would be relatively painless. A report in 2001 by consultants Arthur Anderson, commissioned by IATA, the powerful international airline trade organisation, forecast that if airlines were permitted to buy up permits from other industries, such as steel works or power stations in Eastern Europe, they would be likely to be able to

meet 90% of their requirements that way. The price of pollution permits in the EU scheme would be low, and the effect would only be to put a few pounds on air fares.⁶⁷

BAA consultants, Oxera, reached similar conclusions. An emissions trading scheme would be “much cheaper for the industry – up to 40 times – than any of the scenarios involving a tax on part or all of climate damage costs.”⁶⁸

Thus Mike Clasper, Chief Executive of BAA, knows he is on to a good thing when he recently set out his vision of a future with emissions trading: “In this future, the climate will not be a constraint on growth or a limit on the expansion of aviation, or of airports.”⁶⁹

Rod Eddington, the outgoing Chief Executive of British Airways, wrote an article in the Financial Times supporting the inclusion of aviation in the trading scheme and claimed that this ‘surprising’ attitude showed environmental responsibility.⁷⁰

Surprising? Not in the least. BA aircraft emit over 15 million tonnes of CO₂ each year (the world’s dirtiest airline?) but only one fifth of this occurs in Europe,⁷¹ so only a fifth would be covered by a trading scheme. If we assume that BA’s emissions increase by 5% a year, then the trading scheme is likely to require them to purchase permits only for that extra 5%. If radiative forcing is rejected, as BA insist, the trading scheme will only cover about a quarter of the climate change damage. Thus in total the

trading scheme would cover one fifth ... of 5% ... of a quarter ... of the climate change damage done by BA. Work that out and it means that BA would only have to purchase permits to cover one quarter of 1% of the damage they do.

Go to the local supermarket, fill your trolley, run up a bill for £100. The check-out assistant tells you: 'Under our new trading scheme, you only need pay 25 p.' Not surprising that you support the trading scheme!

In recognition of his miniscule contribution to the reduction of global warming, Rod Eddington has been appointed to advise ministers on long-term sustainable transport policy. On his retirement from BA he will undertake this task by commuting from his home in Melbourne, Australia.⁷²

Another airline ploy is to argue that the only long term solution is a world-wide emissions trading scheme. Several technical papers have been produced on how such a scheme might work, but only as a theoretical possibility.⁷³ If negotiating an EU scheme is difficult, reaching agreement on a world-wide scheme would be ten-fold worse. No such scheme is on the table. Nor is one even on the horizon. The International Civil Aviation Organisation (ICAO) has been asked to produce a scheme but is so under the control of the United States, and so tied up by the airline lobbyists, that the chances of success are next to nil.

Yet the Air Transport White Paper solemnly stated that: "The Government believes that the best way of ensuring that aviation contributes towards the goal of climate stabilisation would be through a well-designed emissions trading regime. For an international industry, an international trading regime is the best solution."⁷⁴ Pure pie in the sky.

No scientific study has yet been done on the climate change impact of pie in the upper atmosphere.

Emissions charge – a tax on pollution

Why not tax every aircraft according to the climate change damage it causes? That is the idea of an emissions charge.

Most European governments think that an emissions charge would be a better idea than the plan for including aviation in the EU emissions trading scheme.

A charge would have a number of advantages:

- It would be easier to negotiate, and easier to administer.
- An emissions charge would apply to all emissions not merely, as seems probable with a trading scheme, additional emissions. It would thus be in line with the polluter pays principle.

- It could take into account the radiative forcing effect. Simple. Multiply the charge by 4.

- It could be imposed by any country, or any group of countries, who wished to do so. The problem of ‘tankering’ – aircraft filling up in a low tax country - would not arise. Thus there would be no need to impose it as a compulsory EU directive, no need for unanimous agreement.

- An emissions charge could be applied to flights departing to all destinations throughout the world, not merely to those within Europe.

- Indeed in logic there is a case for imposing a charge on all arriving and all departing aircraft. Flights in both directions are equally damaging to the climate. The charge could be remitted on one direction if the country at the other end had a similar charge in operation That would give a powerful incentive to other countries to impose their own charge, in order to get their hands on the tax revenue.

A study by the Dutch Centre of Energy Conservation and Environmental Technology (CE Delft) found that an emissions charge would be “both environmentally effective and feasible”, would not distort competition, and at a rate of \$0.2 per litre of fuel would roughly halve the projected growth in emissions from civil aviation in Europe.⁷⁵ Another

academic study confirmed these conclusions and suggested a rate of €0.3 per kg of fuel, which would add €92.8 (£65) to the cost of a one-way flight from Heathrow to New York.⁷⁶

The simple method to calculate how much damage each aircraft does to the climate is to measure the fuel used. Every tonne of fuel burnt creates exactly 3.15 tonnes of CO₂ (plus a lot of other nasty chemicals). Some legal experts, however, think that if the charge was based on fuel consumption it might be challenged as contrary to the Chicago Convention, and to the numerous bilateral agreements. Norway tried to introduce an emissions charge a few years ago, but abandoned it in the face of threats of legal challenges from the airlines.

At a meeting of ICAO in September 2004, the United States proposed a resolution to rule out any emissions charging schemes anywhere in the world until after further studies. The EU fought hard to retain permission to impose a charge on intra-EU carriers. Partly as a result of lobbying by the airlines, the Americans were supported by 140 other countries, against 41 votes from Europe. In the end a compromise was reached ruling out any charges before 2007. The EU put a brave face on it, saying they had never intended to take action before 2008.

Is Europe prepared to allow the United States to veto action which is essential for the benefit of the whole world? Should European countries pluck up their courage and withdraw from the Chicago

Convention, and refuse to accept an ICAO ban on charges? The Convention was drawn up during the Second World War, when aviation was in its infancy, and is well past its sell-by date. Nations are allowed to opt out - although the wording is archaic. Article 95 states that: "Any Contracting State may give notice of denunciation of this Convention ... denunciation shall take effect one year from the date of the receipt of notification ..."

ICAO resolutions are not mandatory. Indeed in autumn 2004 there was serious discussion among EU governments whether to refuse to accept the jurisdiction of ICAO, but a reluctance to step out of line with a United Nations institution.⁷⁷

For Europe to withdraw from the Chicago Convention, and from ICAO, would be a controversial step. But it may become necessary if there is no other way to prevent dangerous climate change.

Set an example to the world

Act now

The problem of climate change cannot wait. Every year aircraft add 600 million tonnes of CO₂ to the atmosphere. Once there, much of it lasts for 100 years or more.⁷⁸ The Chief Scientist, Sir David King, has stressed the urgency of action on climate change: “Delaying action for decades, or even just years, is not a serious option. I am firmly convinced that if we do not begin now, more substantial, more disruptive, and more expensive change will be needed later on.”⁷⁹

It is not good enough for the UK merely to seek co-operation from other countries. If we wait for international agreement it may be too late to prevent severe climate change. It is no use preaching when, apart from the United States, it is UK aviation which causes the most climate change damage, and it is the UK which draws the biggest profit from aviation. We need to set an example - now.

Even if taking action on climate change does slightly clip the wings of British airlines and British airports, that may be a price we have a moral duty to pay if they are the among the worst polluters in the world.

Another important reason for taking action without waiting for other countries arises from the public opposition to any strengthening of the EU. People strongly dislike having taxation imposed from Brussels. It is no use environmentalists calling for co-ordinated action to tax aviation while at the same time the political parties resist harmonisation of tax rates. Better for Britain to act, and encourage other countries to follow our example. We may be surprised to find how many do so.

There are several steps that can be taken without needing to wait for EU agreement. Making air travel subject to VAT is one. Another is to raise the air passenger duty (APD).

Double air passenger duty

At present air passenger duty is lower than it was a few years ago. It amounts to only a tenth of the revenue lost from the fuel tax and VAT exemptions. An increase would bring in revenue which could be used to help the poor either here or abroad. It would be administratively simple and would not conflict with any international treaty obligations.

A clever line invented by the airlines, and repeated by transport ministers, is to describe APD as a 'blunt instrument', meaning that it does not provide specific environmental incentives. In fact, however, an increase in APD would directly address the climate change problem caused by the rapid expansion of air travel, by reducing the main cause – the tax subsidies. By increasing air fares, an increase in APD would move directly towards the key objective of the 'polluter pays' principle, that the price paid by the public for any service should reflect its environmental cost. If you wish to hit a nail on the head, a blunt instrument, like a hammer, is often the best thing to use.

It has been suggested that APD should be levied per aircraft rather than per passenger. This would have the advantage that it would catch cargo aircraft and would encourage higher load factors. It would, however, mean taxing large aircraft at the same rate as small ones, and would thus be open to criticism as being unrelated to climate change damage. There are other ways APD could be amended to achieve a similar environmental purpose.

- Extend APD to include international transfer passengers. Passengers who merely change planes at Heathrow or other airports bring comparatively small benefit to the UK economy but create their full share of pollution.

- Extend APD to include freight, per tonne, whether carried in all-freight aircraft or in the holds of passenger aircraft.

- Charge APD on a sliding scale according to the distance of the destinations, instead of merely distinguishing between EU and non-EU flights.

- Charge APD, including the cargo charge, at double rates on night flights.

End tax-free sales

Duty-free sales of alcohol, tobacco and perfume were abolished in 1999 for flights within the EU, but remain for flights outside the EU. Air passengers to all destinations can also buy goods without paying VAT. These concessions mean that airports make a large profit, enabling them to keep landing charges down, and air travellers get an unjustified bonus. They thus contribute to climate change damage by increasing the demand for air travel.

There is no rational reason why duty-free and tax-free sales at airports should continue. The UK could end them immediately without needing to wait for international agreement. To end them would contravene no international treaties.⁸⁰

Duty-free enables airports to operate a con-trick on the borderline of misleading advertising. BAA advertises "Tax-free prices for all destinations." The small print shows that, for flights to Europe, this only applies to VAT, not drink and tobacco. The deal is not as good as it sounds: since the prices are merely reduced below High

Street prices by the amount of VAT, it is often possible to buy the same goods more cheaply online.⁸¹ Nevertheless few can resist the lure of getting something tax-free: result - in 2004 BAA made £744 million from retail and duty-free sales, compared to £717 from airport charges.⁸²

At Gatwick alone each year BAA sells 150 million cigarettes.⁸³

Warn of dangers ahead

Once there is more general recognition that aviation is set to become the world's dirtiest industry, a number of other policy changes begin to look sensible.

Tony Blair has said that most people are concerned about climate change but "need a clear message what they can do that would make a difference."⁸⁴ He could start by suggesting that they could fly less.

The government funded Energy Saving Trust does good work encouraging people to stop draughts, turn down their thermostats, close their curtains, shut the fridge doors, insulate their walls, to walk instead of using their car. They could mention the possibility of flying less.

A government £12 million climate change communications initiative was announced in February 2005, designed to help the public reduce their personal contributions to climate change. It is surprising that it has no plans to encourage people to fly less.

A small step to help educate the public would be to print climate change warnings on airline tickets. Where airlines sell their tickets online, they could be required to put an official warning on screen. There is already an excellent web site, <http://chooseclimate.org/flying/>, on which you can enter your point of departure and arrival, and be told the amount of fuel you will use, the amount of CO₂ which you will be responsible for emitting, and much more. It should be made compulsory for airlines to provide the same information about your chosen flight when you book a ticket online. To avoid people clicking without reading, a simple test could be devised to be completed before the ticket sale became valid.

Many charities are prohibited from investing in non-ethical shares, mainly those of companies engaged in tobacco, alcohol and defence. If air travel is set to become Britain's main contributor to climate change, then airline and airport shares need to be classified as non-ethical.

On the opposite side of the picture, there are a number of schemes which purport to help people act in an environmentally friendly way, but which, instead of warning of the dangers ahead, understate the magnitude of the problem.

For example, Luton Airport launched a scheme under which air passengers were invited to contribute 0.2p a mile to plant a tree to soak up their CO₂ emissions.⁸⁵ 65p for, say, a flight to Belfast sounds good -

until it is realised that the environmental damage works out at around £32.⁸⁶ Moreover, anyone who has any practical experience of volunteer conservation work knows that planting a tree is the easy bit. If the tree is to survive, it has to be kept watered in dry weather, and the brambles and undergrowth have to be kept cut back for several years. Young trees are usually planted close together and then thinned out as they grow larger. Luton Airport has recently donated 415 saplings to tree planting projects - good in principle, pathetic in size.

Tree planting can help to soak up CO₂, so long as it is done on a vast scale (and so long as the trees are never cut down and burnt). Using figures calculated by Sir John Houghton, Chairman of the Royal Commission on Environmental Pollution, it can be shown that an area the size of Ireland would need to be planted each year in order to soak up world aircraft emissions.⁸⁷

Congratulations to the Environment Department for starting a scheme to offset the air miles travelled by government Ministers by investing in projects to reduce greenhouse gases such as bio-cooking stoves in Nepal or solar home systems in Bangladesh.⁸⁸

Travel agents have set up the Travel Foundation, described by Tony Blair as "a world-leading initiative", to help limit the environmental impact of tourism. Holidaymakers are asked to contribute 50p per booking, or to donate their left-over foreign currency. The Foreign Office has

chipped in with £200,000. If, as shown on previous pages, the cost of the damage caused by each person who flies out from Britain is on average somewhere between £60 and £125, with the same again on the return flight, a contribution of 50p seems to underestimate the problem..

Well meaning initiatives like these are dangerous because they fool the public into thinking that the environmental cost of flying is small.

Toughen the planning rules

The Planning and Compulsory Purchase Act 2004 partly stemmed from the frustration felt by the government at the long drawn out inquiry into Heathrow Terminal 5. Few would quarrel with the aim of speeding up public inquiries, but a more fundamental aim of the Act was to make it easier to push through big infrastructure projects such as new airports. Under the Act, government policy, for example the the Air Transport White Paper, has to be reflected in regional and local plans.

To grant planning decisions on the basis of a White Paper which has been shown to be inconsistent with the government's climate change targets makes no sense. New forecasts are due to be produced in 2006 as part of the review of the White Paper: they should be based on the current price of oil and on an assumption that by 2030 air travel will be paying the same rate of tax as car travel.

Government guidance being given on other planning issues already emphasises the climate change issue. In September 2004 the Office of the Deputy Prime Minister put out advice that *"In England, it could be argued that climate change is a material consideration in planning terms ... there is a real urgency to strengthen policies that will mitigate and reduce greenhouse gas emissions"*.⁸⁹

The new Planning Policy Statement 1, the corner stone of the planning system, issued in February 2005, states that planning bodies *"should ensure that development plans contribute to global sustainability by addressing the causes... of climate change - through policies which reduce ... emissions"*. It has yet to be seen whether this guidance will apply to airport planning applications.

If air travel is the fastest growing cause of climate change, the planning rules need to be revised to discourage airport expansion. There is a presumption against out-of-town supermarkets because they are considered damaging to the vitality of town centres; and a presumption against development in the green belt around cities since it is considered harmful to the countryside. A similar presumption against airport expansion is now needed.

For roads, this has been the case for some time. Planning Policy Guidance Note 13 encourages development which reduces the need to use cars, stating *"... the continued growth in road traffic is damaging ... harming our countryside and contributing to global warming."* For road traffic read air traffic.

If the politicians cannot face putting taxes on flying, a simple alternative would be not to give planning permission for new runways or major airport extensions. The value of landing and take-off slots at busy airports would rise. The method of slot allocation is controlled by an EU regulation, and is at present under consideration by the EU Commission. The government has told the Commission that it is in favour of secondary trading (allowing airlines to buy and sell slots to each other). That would have little effect on climate change. The government also said that in the longer term it is in favour of auctioning slots, with the proceeds accruing to the national Exchequer.⁹⁰ Slot auctions would raise large sums for the benefit of the public, as was the case a few years ago when mobile phone radio frequencies were auctioned. More important they would gradually raise the cost of air travel with a beneficial effect on climate change.

Strong politicians & sound economics

Courageous politicians needed

Why is it that all over the world, flying remains virtually tax free? First, because politicians everywhere have been afraid of losing votes, and know that the aviation industry has an extremely effective lobbying power. Second, because governments believe that an expanding aviation industry is essential for economic progress.

In the British election in May 2005 there was little discussion of environmental issues, and virtually none on the impact of air travel on climate change. The reason was clear. Protecting the environment would mean imposing restrictions of one sort or another - not popular. Taking action on air travel would mean putting up tax - not popular. So all the main Parties kept quiet.

Politicians need votes, but they also need to earn the respect of the public. That means having the courage to do what is right.

It may not be too difficult: public attitudes are changing. Repeated polls show that people would accept a small increase in tax to help protect the environment.⁹¹ A BAA survey in 2004 showed that half the British people believed that air transport had done too little to address its environmental

impacts, against 13% who thought it had done enough. 46% thought that there should be more tax on air travel to cover the environmental impacts, against only 13% who did not.⁹²

To quote Mike Clasper again: "I truly believe that public opinion is at a cusp, and could be persuaded to accept a tax-based approach to aviation and climate change, believing it to be environmentally and morally justified."⁹³

A spokesman for the Airport Operators Association has written: "We have seen how public attitudes can shift over a single generation - witness the wearing of seat belts, the decline in drink driving, the wearing of fur..... At present the evidence is that people are happy to 'fly now' and worry about the environment later. But attitudes can change quickly, and governments can be surprisingly quick to adjust, especially if there is revenue to be earned."⁹⁴

Government ministers need courage to stand up to the campaign that would inevitably be mounted by the aviation industry against any tax increase. Every airline and airport has its own PR team, part of whose job is to ensure that no action is taken by any government which might be contrary to the interests of the industry.

That was the case, for example, when the EU proposed to abolish duty free sales. All over Europe huge posters at every airport, all passengers urged to sign a petition, adverts in all the papers. Tens of thousands of jobs would be lost. Pilots announced ‘we are now cruising at 30,000 feet and I would just like to warn you about the government’s plans to abolish duty free...’. All governments wilted except Denmark. Since unanimous approval was required to keep duty free, it went. No disaster occurred. No jobs were lost.

The powerful but sinister Air Transport Action Group has been set up to press for more airports, and to oppose any tax on airlines. A similar but more public role is performed by the Airports Council International (ACI), which calls itself “The voice of the world’s airports”. It was an astute move for ACI Europe to appoint Roy Griffins CB as its Director General. As the former UK Director General of Civil Aviation he had been responsible for the Air Transport White Paper, and before that had been principal private secretary to three transport ministers. Who better to know his way around the aerial corridors of power? Within weeks of his appointment he was earning his keep, opposing any taxes on the aviation industry.⁹⁵

A massive campaign, ‘Freedom to Fly’, was mounted in 2002-3 by British airlines and airports to persuade the government to authorise new runways. It worked: the government (advised by Roy Griffins) gave the aviation industry all they wanted. Yet, although the airlines may have won that battle, they may have lost the war. The

campaign forced the environmentalists to realise that it was not sufficient merely to emphasise the value of birds and bees, of clean air and quiet nights: it was necessary to challenge the phoney economics. The aviation industry admits that the campaigners, despite their tiny resources, are winning the intellectual argument.⁹⁶

The oil industry has fought for years to prevent any discussion of its impact on climate change.⁹⁷ The aviation industry is following its example. No longer is it a matter of taking MPs or Ministers out to a good lunch. Now the method is more sophisticated. Employ tame consultants to produce biased reports. Arrange seminars to which Ministers are invited, and where the audience is hand-picked to support the industry view. Congregate at meetings of international bodies such as ICAO. Make sure that national and international civil servants rely on the industry for their technical information. Always find reasons why any action adverse to aviation won’t work. Never, never, suggest a constructive solution.

Another tactic is to set up a study, and persuade the government to put in a small financial contribution. Thus, although the remit has been decided by the industry, the government becomes committed to the results.

One such exercise is ‘Greener by Design’ set up in 2000 with a government grant (another subsidy) to find technological methods of reducing the impact of aircraft on the environment. The game is given away by the fact that one of its aims is to

‘educate the public and the government about aviation’s environmental achievements’; indeed its website reads like a publicity blurb for the industry.⁹⁸

Another pseudo-study initiated by the aviation industry was that by Oxford Economic Forecasting (OEF) on the economic contribution of aviation.⁹⁹ The Department for Transport paid up (yet another subsidy), swallowed the results whole and regurgitated them almost verbatim in the White Paper on Air Transport. Yet the study was fundamentally flawed. It failed to take external costs into account; and it produced bogus figures for the loss to the economy if aviation were to be taxed, failing to recognise that the revenue from the extra taxes would be spent elsewhere, failing to recognise that people who were not employed in aviation would find (better because unsubsidised) jobs elsewhere.

Now the aviation industry are trying to pull the same trick again, this time on a European scale. Eurocontrol, the air traffic control body for Europe, has asked OEF to undertake a study of the economic benefits of aviation in Europe.

Economic arguments found frayed

Governments around the world are reluctant to tax air travel because they believe that an expanding aviation industry brings great economic benefits. The very first sentence in the Air Transport White Paper is: *“Air travel is essential to the United Kingdom’s economy and to our continued prosperity.”*

This belief, assiduously fostered by the airline lobbyists, consists of a number of strands which need to be disentangled.

1. The size of the industry. One strand in the argument is that the importance of the aviation industry to the economy justifies its special treatment. The size of an industry is normally measured by its contribution to the gross domestic product. In the UK, as the OEF report correctly stated, ‘aviation contributed £10.2 billion to GDP’ and represented ‘1.4% of total GDP.’ Those figures are some years old: by now the contribution to the GDP has probably risen to around £12 billion a year.

Nevertheless, aviation is only a medium sized industry, similar in size to mechanical engineering, or to the hotels and restaurants. In most other countries aviation represents well under 1% of GDP. So size by itself does not justify any special treatment.

2. Economic benefits. The argument here is that aviation brings great economic benefit. The direct economic benefit is measured by its contribution to GDP, about £12 billion a year.

Economic Cost / Benefit

	£ billion per year	
Contribution to UK economy	12	12
External cost (low / high estimate)	- 6	- 12.5
Net economic benefit	+ 6	- 0.5

Yet, as previously shown, the external costs of UK passenger aviation may be between £6 billion and £12.5 billion a year. That is the measure of the damage the industry does to the world.

Thus, on the lower estimate of external costs, the net economic benefit of the aviation industry works out at around £6 billion a year, bigger than the ice cream industry but less valuable to the nation than pubs.¹⁰⁰

If further academic work shows that the higher estimate of external costs is realistic, it will prove that the economic value of the industry is actually negative. The damage UK air travel causes to the world will be found to be greater than the benefit it provides for Britain.

3. Indirect benefits. The Air Transport White Paper, following the line suggested in the OEF report, waxed lyrical about the indirect benefits that aviation brings to the rest of the economy by expanding horizons, helping exports, enabling businessmen to travel, encouraging inward investment and promoting tourism.¹⁰¹

It is easy to draw up a similar list of indirect benefits for any other industry. Road transport, for example, expands horizons, helps exports, enables businessmen to travel, encourages inward investment and promotes tourism. But that is not considered a good reason for exempting it from fuel tax and VAT. The computer industry widens horizons, enables businessmen to communicate, encourages investment, and enables

millions to spend hours playing games. But that does not mean that everything on sale in computer stores should be exempt from VAT. The hotel industry promotes tourism but is not exempt from VAT.

The claim about helping exports harks back to the mercantilist approach to economics, popular in the seventeenth century. If this line is to be pursued, it should also be recognised that aviation is detrimental because it facilitates imports. If aviation is good because it brings tourists to Britain, then it must be bad because it encourages far more Brits to travel abroad. As the National Trust has pointed out, British tourists spend £17 billion a year more abroad than visitors to the UK do here.¹⁰²

4. Expansion as a driving force. Another strand in the belief that aviation is “essential” is that its rapid rate of growth acts as a driver for the rest of the economy. If it expands, other industries will grow too. For many of the developing countries this appears the key to prosperity. Yet the ultra-rapid expansion is largely due to the tax subsidies which the industry receives. If the money from taxes on aviation were to be spent on health and education, then the expansion of those services would equally act as a driving force for the economy. They too would be able to show many indirect benefits. If the money were spent on tax cuts, that too would stimulate the economy.

5. Providing employment. According to the Air Transport White Paper, another reason why air travel is important is that: “200,000 people are employed in the aviation industry ...”¹⁰³

Yet the tax subsidy of £9 billion means that on average -

- the subsidy per job is £45,000 a year.
- the subsidy per job is £865 a week.
- the subsidy per job is £173 a day.
- the subsidy per job is £25 an hour.

Any industry could employ a lot of people if it was subsidised at that rate.

The White Paper sentence quoted above continues: “... with three times as many jobs supported by it indirectly.” This claim is lifted straight from the OEF report which explains that it includes jobs in firms producing aircraft fuel, jobs in firms which build aircraft, jobs in firms who make air traffic control computers, jobs in the companies which supply the duty-free shops, and the jobs of those in travel agencies who sell package holidays . When all those people spend their money, the jobs of the people who supply them with goods are also counted.¹⁰⁴ You count the man on the oil rig in the North Sea, and the farmer who provides him with a beef steak. You count the fitter in Wales who builds the wings for the Airbus, and you count the person who sells him a TV set. You count the shop assistant who sells a haggis to the worker in the distillery who makes the whisky to sell to the air passenger in the duty-free shop.¹⁰⁵

That sort of rubbish calculation can be made for any industry. It was not surprising that consultants paid by the airlines should have tried it on. What is surprising is that the government were

prepared to believe it, and put it on the front page of their explanation of why they wish to encourage the expansion of air travel.

6. Tax on aviation would mean loss of jobs. Employment in aviation is forecast to double by 2030 - an extra 200,000 jobs. If the tax on air travel were gradually increased during that period to the same level as on car travel, there would be no loss of jobs, merely fewer extra jobs. Suppose the extra £9 billion a year was spent on health or education, that could mean 200,000 extra nurses or 200,000 extra teachers. Thus instead of 200,000 more pilots and air hostesses and other airline staff being recruited, the same number of extra doctors or teachers could be employed. Better for the community. Better for the climate.

7. Putting British airlines at a competitive disadvantage. Most people feel a patriotic anger if they think that foreign companies are being given an unfair advantage over British firms. And people in other countries feel the same anger if they think their firms are being discriminated against. When the airline lobbyists cry ‘competitive disadvantage’, government ministers jump. So it is a good ploy for the airline lobbyists to use. Used skilfully it can prevent any country taking action on its own to reduce climate change damage. A glance at ICAO papers show that they are littered with references to the need for action ‘without putting airlines of any nation at a competitive disadvantage’.

Therefore the cry needs careful examination. If a tax is imposed evenly on

all airlines flying in and out of a country, for example if the UK were unilaterally to increase APD on all passengers passing through UK airports, or impose an emissions charge on all aircraft using UK airports, then no airline would suffer a competitive disadvantage.

Anyway, since British airports and airlines are among the worst climate change culprits, it is only right that any restraint should bear most heavily on them.

8. Airlines likely to go broke. Whenever any action adverse effect to aviation is mooted, the airlines immediately protest that a large number of them will go out of business. When President Chirac proposed a tax on air travel a spokesman for easyJet commented that it would “drive a third of airlines in Europe out of business within a year.”¹⁰⁶ It requires strong minded ministers to resist such a threat.

The threat is usually exaggerated. For instance, when the EU proposed to make compensation for delays and cancellations compulsory, it was claimed that half the low cost airlines would go out of business. Compensation is now compulsory but none have gone out of business as a result.

It is difficult to understand why airlines which are part of an industry said to be so dynamic, of such great economic importance, so technologically advanced, so essential to the happiness of millions, can go broke so easily. Why are so many American airlines in quasi-bankruptcy? The answer lies in the nature of the

industry - airlines need to order expensive planes far in advance. They believe their own publicity that demand will continue to rise inexorably. When conditions change, they are left with half-empty planes. The solution is that tax increases need to be gradual, and need to be signalled well in advance. Thus all airlines will be able to set their prices to cover the tax. All will be able to adjust the size of their fleets to cater for a demand that continues to grow, but less fast.

9. Destroying a successful industry. The airlines frequently claim that any increase in tax would destroy one of the most successful industries in Europe. Emotive stuff. But it would not be destroyed, merely restrained; and far from being the most successful, aviation is one of the most subsidised, and due to become the dirtiest, industry in Europe.

Thus all nine strands in the argument that rapid growth in air travel is essential to economic success have been examined. All have been shown to be frayed. When a mountaineer depends on a rope in which all the strands are frayed, he is in great danger. So too if the nations of the world rely on frayed economic arguments they face great danger of climate change disaster.

What should be done

How to go on enjoying air travel - without adding to climate change

If nothing is done, air travel is set to become the world's largest contributor to climate change.

The British Government's policy for dealing with this situation - to include aviation in the EU emissions trading scheme - looks unlikely to succeed. A more practicable alternative would be to tax air travel, or impose an emissions charge on aircraft.

If, for example in the UK, air travel paid the same rate of tax as car travel -

- the rate of growth would be halved
- the climate change impact would be much reduced
- an extra £9 billion a year would be available for improving public services or cutting taxes.

It would NOT -

- mean higher air fares, merely cancel the forecast fall
- stop people flying, merely discourage them from flying more

- harm the poor, it could benefit them
- stop the aviation industry growing, merely slow down its growth rate

Action which needs to be taken

1. Air passenger duty should be doubled, and should be extended to include transfer passengers and freight, with higher rates on night flights.
2. Duty-free and tax-free sales should be abolished.
3. Legislation to impose tax on aviation fuel should be passed now, to come into effect when all other European countries do likewise.
4. VAT should be imposed on air fares to EU destinations, with an equivalent sales tax on fares to non-EU destinations. A low rate should be fixed to start with, increasing to the full rate as other countries also impose VAT.
5. New forecasts for the future growth in air travel should be produced, based on the

current price for oil, and on an assumption that all the actions listed here (numbers 1-10) are put into practice.

6. In planning decisions the Air Transport White Paper should be read in the context of these new forecasts. Planning policies should be changed to include a presumption against airport expansion.

The actions above can all be implemented by the UK without waiting for other countries to agree. They could be announced immediately, to take effect within the next two years.

The actions below should be phased in gradually over the next ten years or so, but need to be announced well in advance so that airlines and airports can plan ahead.

7. Aviation fuel should be taxed. The tax might start at 20p a litre but be increased gradually to around 47p a litre, the UK rate on petrol for cars. The tax would need to be applied by all European countries, and should apply to fuel for aircraft departing to all destinations. If a position is eventually reached in which air travel pays full rates of fuel tax and VAT, air passenger duty could be abolished.

8. As an alternative to fuel tax, the EU should introduce an emissions charge to cover the full climate change damage done by aircraft. It should apply to flights to all parts of the world. Flights arriving from

other countries should also be charged unless the country of departure has an equivalent emissions charge.

9. Tax on aviation fuel or an emissions charge may mean renegotiating or cancelling bilateral aviation treaties; and may mean the EU withdrawing from the Chicago Convention. That would not be the end of the world.

10. Negotiations to include aviation in the EU Emissions Trading Scheme should be seen as only a part of what is necessary. They should not be allowed to dominate discussion or delay other action essential to ensure that aviation pays its full external costs. If air travel is not to have a disastrous effect on climate change, emissions trading and charges and taxes may well all be needed.

Britain, as the leading aviation nation in Europe, should formally announce our support for these policies.

If these actions are taken, Britain will be in a strong moral position to lead the world on climate change issues.

If the growth in air travel is not restricted, all other action to deal with climate change will be negated.

Notes

- 1 Nature. January 2004
- 2 The six greenhouse gases covered by the Kyoto protocol are carbon dioxide, nitrous oxide, methane, sulphur hexafluoride, hydrofluorocarbons and perfluorocarbons.
- 3 Science. January 2004
- 4 14 September 2004
- 5 Energy – the changing climate. June 2000.
- 6 Energy White Paper. February 2003
- 7 They were endorsed by a conference in Exeter of 200 internationally renowned scientists, organised by the Met. Office in February 2005.
- 8 See, for example, evidence given by Dr Andrew Sentance, Head of Environmental Affairs, British Airways, to the Environmental Audit Committee. 11 February 2004
- 9 Rio Declaration on Environment and Development. Principle 15.
- 10 Revised Article 6 of the EU Treaty.
- 11 Derived from Aviation and Global Warming DfT 2004. There is no reason why roughly the same figure should not be correct for other countries.
- 12 Royal Commission on Environmental Pollution. Environmental Effects of Civil Aircraft in Flight. 2002.
- 13 The TRADEOFF project involves scientists from the universities of Cambridge, L'Aquila and Oslo, and research institutes in France, Germany, Greece, Netherlands, Norway, Switzerland, UK
- 14 Based (except where indicated) on van Essen et al. CE Delft. 2003.
- 15 Comparative Study of the Environmental Effects of Rail and Short-haul Air Travel. Commission for Integrated Transport. 12 September 2001. Flights for short distances are more damaging because of emissions during take-off and landing.
- 16 Derived from Office of National Statistics. 31 March 2004
- 17 Aviation and the Global Atmosphere. Intergovernmental Panel on Climate Change. December 1999
- 18 External costs of transport. INFRAS. October 2004
- 19 Global Market Forecast 2003. Airbus Industrie 2003
- 20 Office of National Statistics. 20 May 2003
- 21 Office of National Statistics. 22 July 2004.
- 22 Air Transport White Paper.
- 23 The Environmental Effects of Civil Aircraft in Flight. Royal Commission on Environmental Pollution. 2002
- 24 Aviation and Global Warming. DfT. January 2004. Paragraph 4.12
- 25 Air Transport White Paper. Para 3.35. Note that this appears to refer to the best case forecast and the central case forecast but not to the worst case forecast.
- 26 Aviation and Global Warming. DfT 2004. Central case emissions forecast (para 3.56)
- 27 Environmental Audit Committee. Fourth Report 2004-5. 16 March 2005. para. 47
- 28 Report commissioned by Friends of the Earth. To be published June 2005 See www.foe.co.uk/campaigns/transport/resource/experts.html
- 29 Evidence to Environmental Audit Select Committee. 24 February 2004
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- 31 Sunday Times 10 October 2004.
- 32 Answer to Parliamentary Question by Rt Hon Francis Maude 3 November 2003
- 33 Meeting external costs in the aviation industry. CE Delft. August 2003 Also Brons. Price elasticities of demand for passenger air travel. Journal of Air Transport Management. Number 8. 2002
- 34 Financial Times. 30 September 2004
- 35 Aviation Environment Federation. February 2003
- 36 Volterra Consulting. November 2003
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Conversion factors

Aircraft fuel (weight) x 3.15 = CO₂ emissions

Carbon (weight) x 3.67 = CO₂

1 euro = 70 p

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