Air transport statistics

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Social & General Statistics

Air transport has recently fallen in the UK and worldwide, following the 2008-09 global recession. This followed a long period of expansion, in terms of passenger numbers and flight volumes over the decades leading up to the recession. This rapid expansion has raised concerns about the negative impacts of air travel which have centred on new terminals/runways, noise pollution and atmospheric emissions.

This note looks in detail at trends in air travel in the UK and the latest official projections, passenger fatality rates; fares, air freight, energy use and greenhouse gas emissions. It includes some key facts on aviation's contribution to the economy and employment. Some international comparisons of air transport are also given.

The following standard notes and Research Papers give policy background in related areas:

Airports in the South East
Regional airports
Aircraft noise
Aviation emissions: calculation and climate costs
Aviation and climate change

The report Aviation and the Environment, published by the Parliamentary Office for Science and Technology, gives detailed scientific background on a number of the environmental effects of aviation. Various statistics on aviation are available from the Department for Transport's website. The Civil Aviation Authority (CAA) produces monthly data on activity at UK airports and on UK airlines. This is published on the statistics section of their website.

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211 million passengers passed through UK airports in 2010; their numbers have increased around 100-fold since 1950 and are forecast, despite recent falls, to reach 480 million in 2030.

Research has suggested that much of the recent growth in air travel in the UK has been due to those from richer households flying more frequently, rather than flying becoming more common across all income groups.

There were 2.0 million aircraft take-offs or landings at UK airports in 2010.

Growth in domestic passengers was faster than that for international travel in the years until 2007, but since the start of the recession, has declined at a faster rate.

1.1% of the total distance travelled by passengers in Great Britain was by air travel in 2009. The total distance travelled by passengers on all carriers across the world increased by over 150% in the 20 years to 2005, but has declined significantly since 2007.

2.3 million tonnes of freight were handled at UK airports in 2010.

0.5% of the UK's international freight tonnes were lifted by air transport in 2008.

According to research for the Department for Transport aviation directly contributed 1.1% of GDP in 2004, the industry directly employs around 186,000 people, over 520,000 UK jobs depend indirectly on aviation and visitors arriving by air contribute over £12 billion a year to tourism and support a further 170,000 jobs.[1]

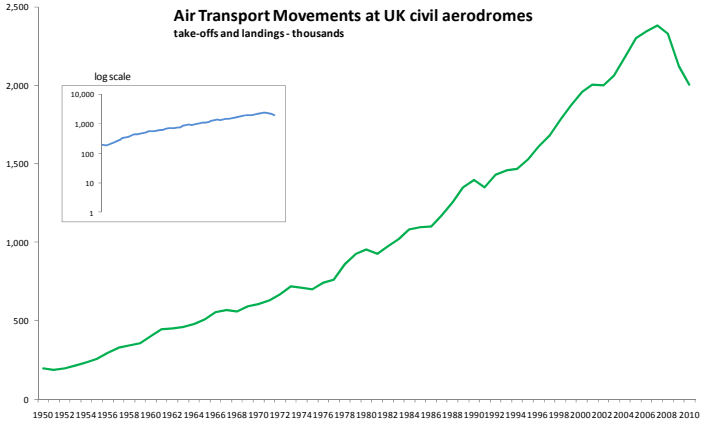
Aircraft in the UK used 22.5% of all energy consumed by transport in 2009 and 8.3% of all energy used by final consumers.

[1] The economic contribution of the aviation industry in the UK, Oxford Economic Forecasting 2006 http://www.oxfordeconomics.com/Free/pdfs/Aviation2006Final.pdf

3 Trends in UK air transport

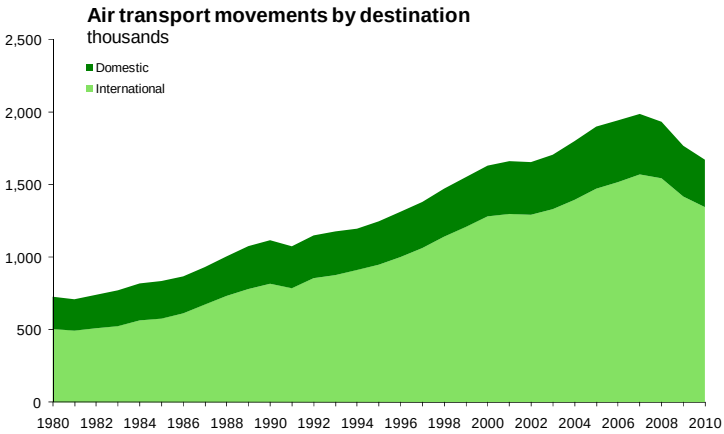
3.1 All air transport

In 2010 there were just over 2.0 million air transport movements (take offs and landings) at UK civil aerodromes. There is an element of double counting in this figure as it includes both stages for domestic flights, but this series has been collected for half a century. It excludes non-commercial flights such as club, private and training flights, as well as military-related aviation.



Until recent years, there has been a rapid and near continuous increase in the number of air transport movements since the 1950s, as illustrated opposite and detailed in Table 1 at the end of this note. The number increased from below 200,000 in 1950 to 0.5 million in 1965, more than 1 million in 1983 and more than 2 million in 2001. The main periods of decline or slowdown were in times of recession. There was a slight fall of 0.3% in the first full year after the September 11th terrorist attacks on the United States. However, the most significant downturn has been the total 16% fall between 2007 and 2010. The inset detail in the chart plots the growth on a log scale. This gives equal importance to proportionate (rather than absolute) changes and shows a remarkable consistency in the long-term growth rate until 2007.

Table 2 and the chart alongside give more trends, excluding the double counting of domestic flights. In 2010 international flights made up four fifths of the total. They have also increased by a greater amount over this period; a three-fold increase compared to a doubling of domestic flights since 1979. However, the number of domestic flights has declined more rapidly since 2007, dropping by 22% as opposed to a 13% decline in international air travel.



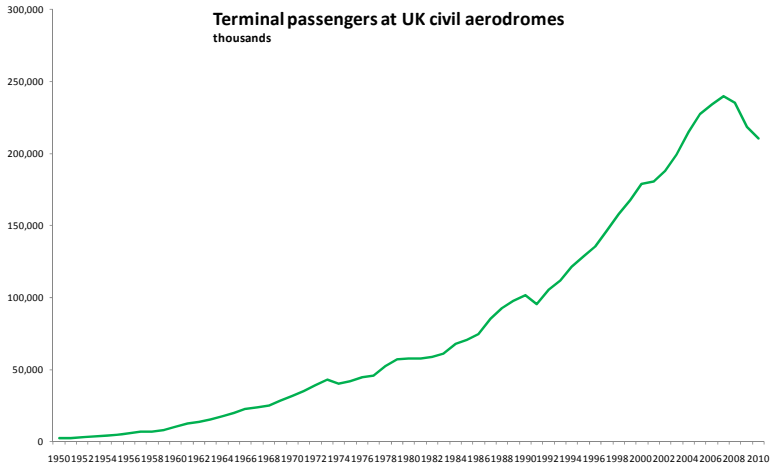
3.2 Passenger transport

Terminal passengers

210.6 million passengers passed through UK airports in 2010. This figure excludes transit passengers who arrive and depart on the same flight, but includes passengers that changed aircraft (who are counted both on arrival and departure). As with the first set of movement data there is an element of double counting with domestic passengers.

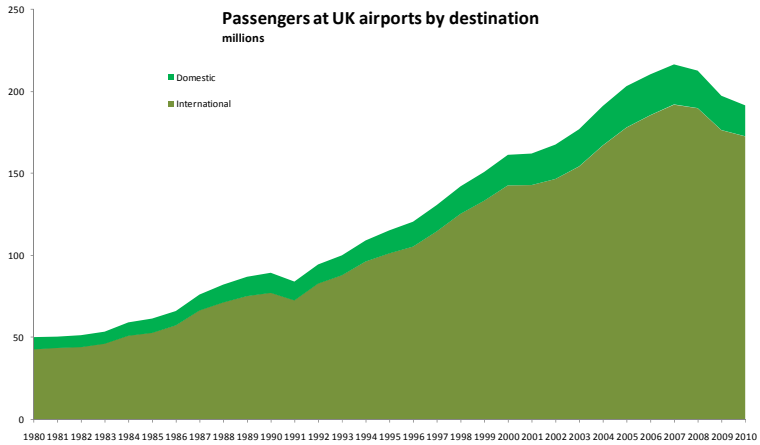
Data from 1950 is included in Table 1 at the end of this note and illustrated in the chart overleaf. The trend shown is very similar to that for air transport movements, but the extent of the overall increase was much larger, their number has increased more than 100-fold since 1950, compared to a 12-fold increase in movements. The greater increase in passenger numbers is the result of much larger passenger aircraft. The decline since 2007 is slightly smaller than the decline in the number of flights – just over 12%.

The chart below, and Table 2, give trends in international and domestic passengers excluding the element of double counting. Less than one in ten passengers were on domestic flights in 2010. The patterns of increase and decline were very similar to those for air transport movements with a larger overall increase in international passengers, but faster growth in domestic passengers up to 2005, and a faster reduction since 2007. The number of domestic passengers continued to increase in the immediate aftermath of the September 11th terrorist attacks, while growth in international passengers stalled. Since 2007, the number of domestic air passengers has declined by 23%.



Heathrow was by far the busiest UK airport in 2009, with 65.7 million passengers, a third of the UK total. The proportion of passengers going through the then three busiest airports in 2000 (Heathrow, Gatwick and Manchester) all fell between 2000 and 2010, as smaller airports became busier.[2] Stansted saw the largest increase in passenger numbers from 11.8 million to 18.6 million (taking it into third place) as its large number of budget carriers expanded their share of the market.

The majority of international passengers who passed through UK airports were going to or coming from EU member states. The chart overleaf shows that their numbers increased proportionately more (58%) than the total number between 1998 and 2007 (53%). However, EU passenger traffic fell by 14% between 2007 and 2010. 107 million passengers flew between the UK and EU Member states in 2010. The largest proportion of remaining international passengers flew between the UK and the Americas. This data is given in Table 3 at the end of this note.

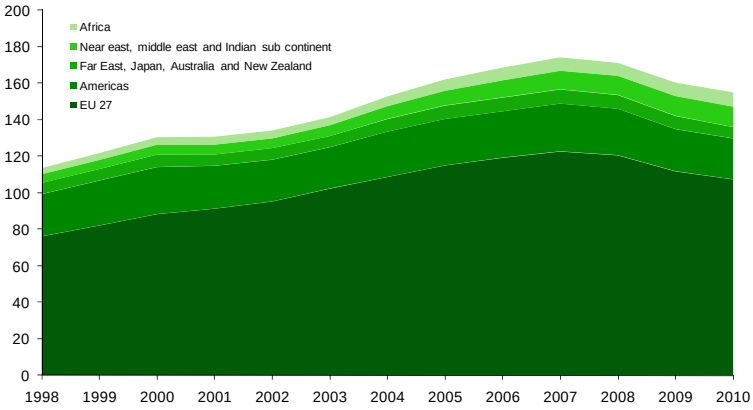


There are a number of interesting patterns within the overall EU24 trend shown above. The most popular destination/origin was Spain, almost 3 times more popular than any other single destination, followed by Germany, France, Italy and Ireland. The largest increases have been in flights to/from the new EU member states. This is not surprising as in the early 1990s there were few flights to many former Eastern Bloc countries and the last decade has seen a significant increase in the range of flights and destinations and especially in cheap flights from budget carriers. The largest proportionate increases have been in passengers

2 UK Airport Statistics 2010, CAA. Table 1

to/from the Slovak Republic and the Baltic states. These countries started from an extremely low base in 1998, but have seen very large increases over the last decade.

International passengers to/from the UK, by country
thousand

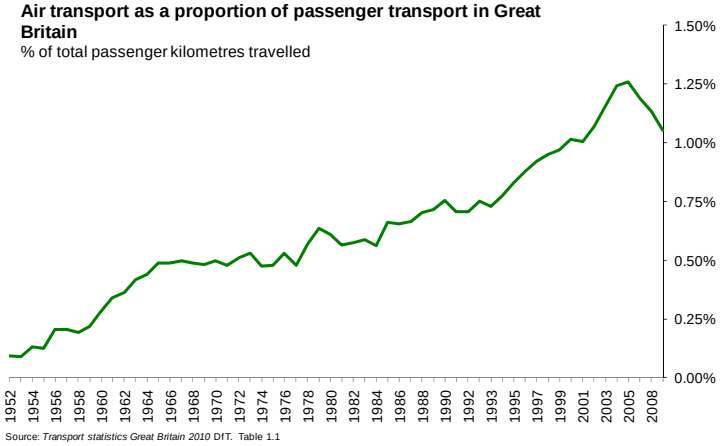


The new member states joined the EU in 2004 and some of the largest increases came in that year –a doubling in passengers to/from Latvia and Slovenia and a four-fold increase in passengers between the UK and the Slovak Republic. The number of passengers between the UK and Poland nearly doubled in 2004, 2005 and 2006. However, the rate of increase fell in 2007 and 2008, and the absolute numbers declined by 16% in 2009 before remaining roughly constant in 2010. Individual member state data is also given in Table 3.

UK residents used air transport for 46.7 million overseas visits in 2009, down from 56 million in 2008. This represented a relatively sharp fall, compared to a gentle decline since 2006. 79.6% of all overseas visits by UK residents were made by air. Although this was slightly below the 2008 rate, it has increased steadily over time from below 60% in the early 1980s. It fell after the Channel Tunnel opened but has since resumed its long-term trend.[3]

Passenger transport within the UK

Air transport as a proportion of passenger transport in Great Britain
% of total passenger kilometres travelled



Source: *Transport statistics Great Britain 2010* DfT. Table 1.1

Just under 1.1% of the total distance travelled by passengers in Great Britain in 2009 was by air. The chart opposite illustrates the growth in domestic air transport compared to all forms of transport within Great Britain. This trend has been more erratic than those on air transport movements or passenger numbers. It increased very little between the mid-1960s and late 1970s when the expansion of motoring more than matched the rates of increases in air travel. The only sustained period of increase in recent history came between 1991 and 2005 when air travel went from 0.7% to over 1.2% of the total distance travelled. The share of air travel has fallen from a peak of 1.24% in 2006 to 1.08% in 2009. This is consistent with the fall in the number of passengers on domestic flights described earlier.

Passenger fatality rates

Accidents are rare in air travel, but tend to be major disasters when they do occur. Because of this casualty and fatality rates are normally averaged out over a decade for air travel, like those for rail and sea travel. The latest 10 year fatality rate for UK air travel was 0.00 per billion passenger kilometres. This was the lowest of any mode. Rail travel had a rate of 0.2,

[3] DfT Transport Trends 2009 Table 6.3a

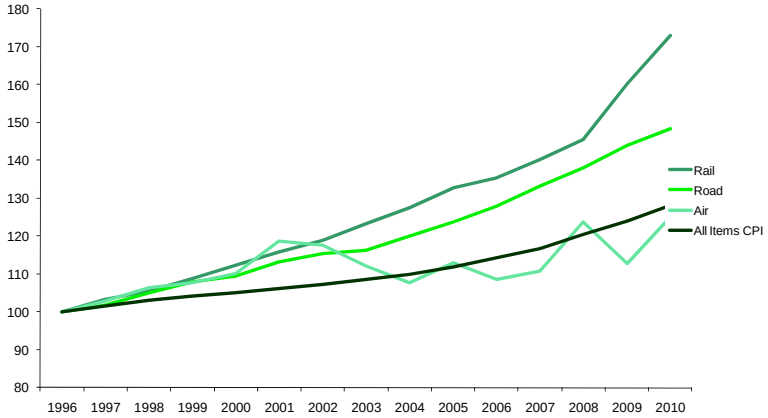
bus and coach 0.3, and car 2.4 per billion passenger kilometres. Motorcycles had by far the highest fatality rate at 104 per billion passenger kilometres.[4]

The rate per billion passenger kilometres is the only comparative indicator currently published by the Department for Transport. Data has been published in the past on rates per journey or hour travelled. The indicator based on journeys in the decade to 1995 gave air travel a higher rate than all other modes apart from sea travel and motorcycles. The rate for air travel based on hours travelled was higher than that for rail or bus travel.[5] The difference between these rates is as a result of the air travel's much higher average journey length and lower journey time.

Fares

Detailed data published alongside the Government's current preferred measure of inflation - the Consumer Prices Index (CPI) - separately identifies air fares. This has been calculated back to 1996. The chart opposite plots the indices for passenger transport by rail, air, and road (bus/coach).

CPI indices for passenger transport by road, rail and air (1996=100)

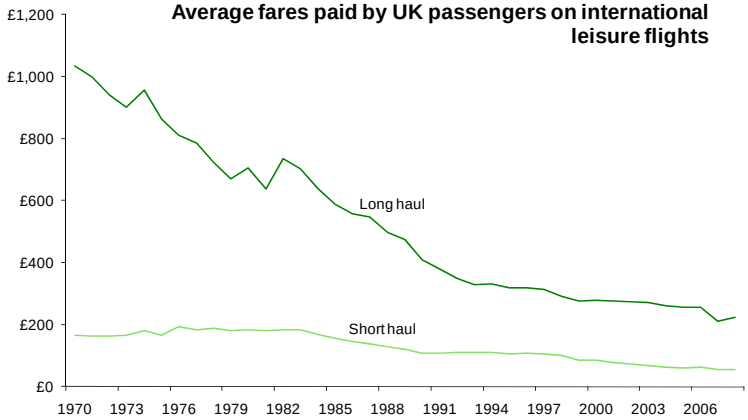


This shows that after increasing at a rate above the all-items index up to 2001, the price of air fares fell by 10% between 2001 and 2004, increased in 2005 and fell back again in 2006. Since 2006 air prices have increased again at a rate above the all-items index, although subject to considerable seasonal variation which is not excluded from the published figures. .

Official data from the *International Passenger Survey* can be used to look at longer term trends in air fares. The limitations of this data are that it only includes international flights and could be skewed by longer term changes in flight patterns and hence average distance travelled.

Even with these caveats in mind it is clear that there was a significant fall in the real cost of long haul fares in the 25 years before the data presented earlier. Long haul prices have fallen in real terms since 1996, but at a much slower rate. Short haul fares fell in the mid-1980s, and, after little real change for most of the 1990s, continued this decline from the late 1990s onwards as 'no-frills' budget

Average fares paid by UK passengers on international leisure flights



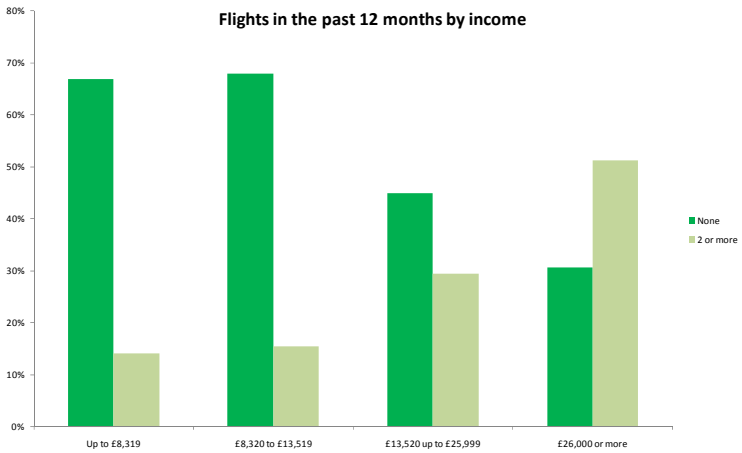
Source: *Number of passengers travelling from UK airports to foreign destinations*, DfT response to FOI request 10 August 2009

[4] Transport statistics Great Britain 2010, DfT Table 1.7

[5] Transport Trends 1998, DETR. Table E.1

airline really started to take off. Fares data on long haul business travel is more erratic largely due to the relatively small sample size. Short haul business fares have followed a very similar trend to short haul leisure fares over the last 10 years.[6]

Who flies and how often?



Recent growth of air travel and concern about its environmental impact has led to calls for various measures to restrict flying or the negative impacts of aviation. These in turn have led to concern about the possible impacts on the poorest sections of society and a focus on how air travel varies by income and social groups.

Data from the Department for Transport's 2010 *Public experiences of and attitudes to air travel* survey [7] found that 53% of respondents had not flown in the previous year. The breakdown by income chart opposite shows a clear picture. Two-thirds of those with household income below £8,320 had not flown in the previous year; over half of those in the £26,000+ group had taken two or more flights. There was a similar pattern of results when the responses were analysed by socio-economic grouping.

The findings of the Department for Transport's survey are very similar to the 2008/09 British Social Attitudes Survey data.[8] This found that income was a key determinant of flying. Only a quarter of those in households in the lowest income quartile had flown in the previous year compared with 85% of those in households in the highest income quartile.

The other main source of data on income and other demographic factors is the CAA's annual passenger survey. The 2009 survey found that home ownership abroad and household income of £115,000 or greater are the two most influential variables in predicting the number of leisure air trips. Owning a home abroad or having household income of £115,000 or more is expected to increase the number of leisure air trips by a factor of about 1.6 (or, by about 60%). Individuals with a home abroad, or with household income over £115,000, take an average of 3.4 leisure trips per year compared to an average of 2.1 trips for those with no property abroad and household incomes less than £40,000. Those with income over £115,000 and a property abroad take an average of over 5 leisure trips per year.

The CAA survey also found that single people and couples without children take more trips than family households with children, all else being equal. Being a single householder increases the number of leisure air trips by a factor of about 1.5 while couples living together without children can be expected to take about 1.3 times more trips than those with children.

[6] Number of passengers travelling from UK airports to foreign destinations, DfT FOI response 10 April 2009 http://www.dft.gov.uk/foi/responses/2009/aug/foi5469/

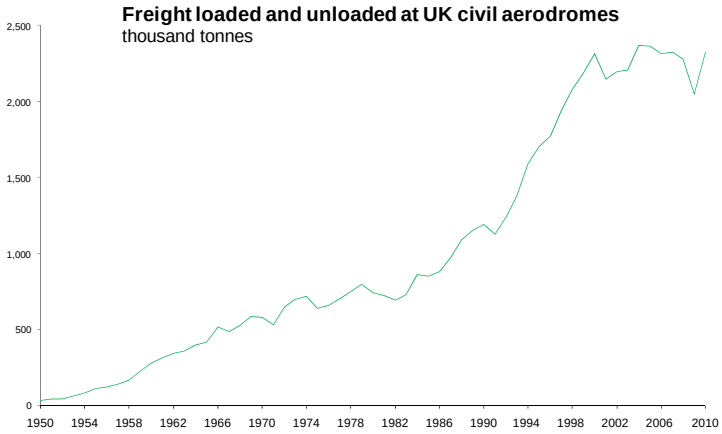
[7] http://www.dft.gov.uk/pgr/statistics/datatablespublications/trsnstatsatt/airtravel

[8] *Pay more, fly less*. Chapter 6, British Social Attitudes 2008/09.London: SAGE.

3.3 Freight

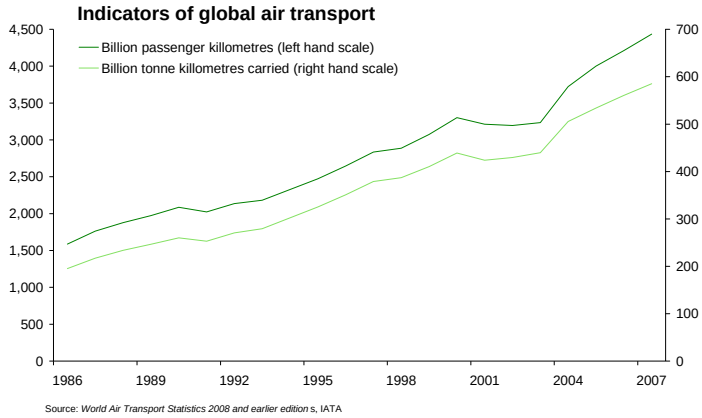
2.3 million tonnes of freight was handled at UK airports in 2010. This excludes passengers' baggage and mail. Trends since 1950 are given in Table 1 at the end of this note, and illustrated in the adjacent chart. The trend was more erratic than that for air transport movements or passengers in the 1960s, 1970s and 1980s and the growth in the 1990s was sharper. The amount more than doubled between 1991 and 2000. There was a noticeable downturn after the September 11th terrorist attacks, a 12% drop between the 2004 peak and 2009, and a 13.5% increase in 2010.

The vast majority of UK air freight is international. In the latest year just over 2% was carried within the UK[9] where road freight particularly has a cost advantage. In 2008 air transport was responsible for just 0.5% of the tonnage of the UK's international freight.[10] While this figure has increased slightly the nature of air transport means that it will never be able to compete with sea or rail for bulk items. Air transport's comparative advantage is in high value/low weight items and/or time critical cargo.



3.4 International data

The International Air Transport Association (IATA) publishes detailed statistics on the operations of its member organisations and two series –passenger kilometres flown and tonne kilometres (passengers, baggage, freight and mail) carried- for all carriers across the world. 20 year trends in these are illustrated opposite, but data is not available from 2008 onwards, meaning that the effects of the recession cannot be seen. Both indicators follow a very similar trend- high and steady growth rates other than in the early 1990s and the years following the September 11th terrorist attacks on the United States. Both indicators more than doubled between 1986 and 2000. 2008 saw an increase of 6.6% in passenger kilometres and 5.6% in tonne kilometres flown, but both figures cover scheduled services only, which are less susceptible to economic performance, at least in the short-term.

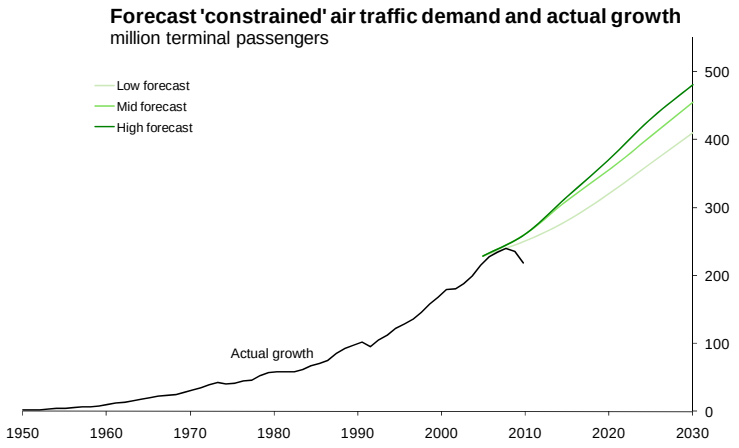


Source: *World Air Transport Statistics 2008 and earlier editions*, IATA

Similar indicators are published for UK airlines, rather than all flights from UK airports. UK airlines saw a faster increase in both indicators for this period. Passenger kilometres increased worldwide between 1986 and 2007. EU data indicates that in EU27 states air passenger kilometres (domestic and international) increased by an average of 3.8% per year between 1995 and 2008, with a 1.9% decrease between 2008 and 2009. This meant air travel overtook rail and bus/coach travel to become the second largest form of transport across the EU behind the car.[11]

9 UK airport statistics 2009, DfT AVI 0102C
10 Transport Trends 2009, DfT Table 5.9
11 Energy & Transport in figures, statistical pocketbook 2009, EC DG Energy and Transport

4 Air traffic forecasts



The latest official air traffic forecasts were published in January 2009.[12] A summary of the main traffic forecasts is given in Table 4 at the end of this note. The chart adjacent plots actual growth against these forecasts.

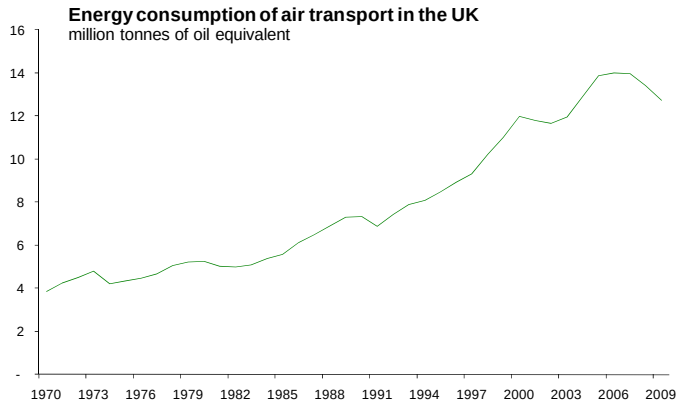
As with all such forecasts they are presented as a range of estimates which represent different sets of outcomes for the assumptions behind the model. The main points are:

- The demand from passengers is expected to increase from 228 million in 2005 to 465 million in 2030 (range from 415-500 million). This is the 'unconstrained' demand – the number we would expect with no limits on capacity.
- If capacity constraints are included the central estimate for 2050 is 455 million passengers (range of 410-480 million).

These forecasts are subject to a large degree of uncertainty, as illustrated by the wide range given for demand in 2030. The prime determinants are economic growth and the price of oil. It should be noted that the estimates were made before the full extent of the downturn in aviation as a result of the 2008-09 recession became apparent.

5 Energy Use

Official statistics on the energy used by air transport are based on inland deliveries of aviation fuels in the UK. This includes the fuel used by UK and international airlines and, unlike earlier data in this note, consumption for private flying and by the military.



In 2009 air transport used 12.7 million tonnes of fuel. This was 17.5% of the total final consumption of petroleum products and 23.2% of that consumed by the whole transport sector.[13] The final consumption of all types of energy (petroleum-based, solid fuels, electricity, gas etc.) can be converted to a 'common currency' (tonnes of oil equivalent) and summed. On this basis air transport was responsible for 8.3% of all final energy consumption[14] in 2009. This figure has increased consistently from 2.7% in 1970, as has the absolute consumption. These data are also given in Table 5 at the end of this note.

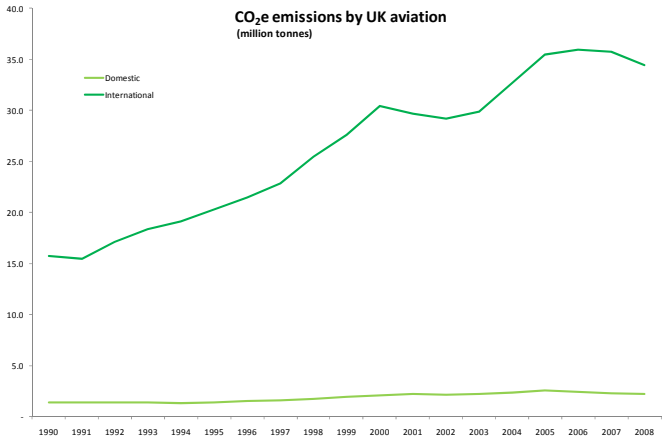
Road transport used around three times more energy than air transport in 2009, but the former has fallen slightly since the late 1990s. Since 1998 energy consumption of air transport has increased by 24%, while the consumption for road transport has declined by

[12] UK Air Passenger Demand and CO2 Forecasts, DfT (January 2009)
[13] Digest of UK Energy Statistics 2010, Table 3.2
[14] Total energy demand less transformation losses and energy industry use.

0.8%.[15] Energy projections that were published alongside the 2006 Energy Review showed aviation fuel demand rising three-fold between 2010 and 2050.
It could be argued that the international nature of air travel means presenting the energy it uses against that consumed by other types of users - who are predominantly based in the UK and use the energy in the UK - is not comparing like with like. This really depends on interpretation. The official figures look at energy consumed/delivered to users in the UK, not that used by UK nationals (which would be extremely complicated to estimate). They reflect the scale and importance of air transport in the UK and its international nature. The basis of the official figures should always be recognised when interpreting this data.[16]

6 Greenhouse gas emissions

Aviation is split into domestic and international for the purposes of greenhouse gas emissions. Under internationally agreed guidelines emissions from domestic flights are included in the UK totals and hence count against national and international targets to reduce emissions. The emissions from international aviation that passes through UK airports are not included in UK totals, but are estimated as a memo item.[17] Total emission figures are calculated from fuel sales, but are split international/domestic using data on air transport movements, distances travelled and aircraft types. Emissions from international aviation are effectively those from flights leaving the UK.



The latest data is for 2009 when it was estimated that domestic civil aviation produced 2.0 million tones of CO_2 equivalent[18] ($MTCO_2e$). This was 0.4% of total UK net emissions and 1.6% of transport emissions. Estimated emissions from international aviation were 35.0 $MTCO_2$ e. This is not just emissions within UK airspace, but their total emissions. If international aviation emissions were included in the UK total then aviation's share in 2009 would have been 5.8%.[19]

Aviation's estimated emissions have increased broadly in line with energy consumption. Its share of the total has increased by a greater amount because UK emissions have fallen since 1990. Total aviation was responsible for an estimated 2.8% of the UK's CO_2 emissions in 1990, if international aviation is included. Its share more than doubled between 1990 and 2006, but has fallen since then, as expected from the reduced number of flights.

Published data on aviation emissions only look at CO_2, but other aviation emissions –oxides of nitrogen, soot and contrails from water- have an additional impact on climate change. These other emissions are not included in Kyoto Protocol basket of greenhouse gases and therefore comparisons with other sources cannot be made. However, to account for the

[15] Digest of UK energy statistics 2008, BERR. Table 1.1.5

[16] UK energy amd CO_2 emissions projections July 2006, DTI

[17] The data in this section is taken from the UK's submission to the UN Framework Convention on Climate Change using Intergovernmental Panel on Climate Change (IPCC) methodology. This reporting format includes emissions from both the landing/take off cycles of domestic aviation and the cruise stage and hence all are included in the national total. The reporting format for the UN Economic Commission for Europe (UN/ECE) exclude the cruise stage of domestic aviation from national totals, but it is estimated as a memo item, as are emissions from international aviation.

[18] This formula converts all greenhouse gases into their equivalent in terms of carbon dioxide, for ease of comparison.

[19] UK Greenhouse Gas Inventory, 1990 to 2065: Annual Report for submission under the Framework Convention on Climate Change –Common Reporting Format Tables, AEA Technology

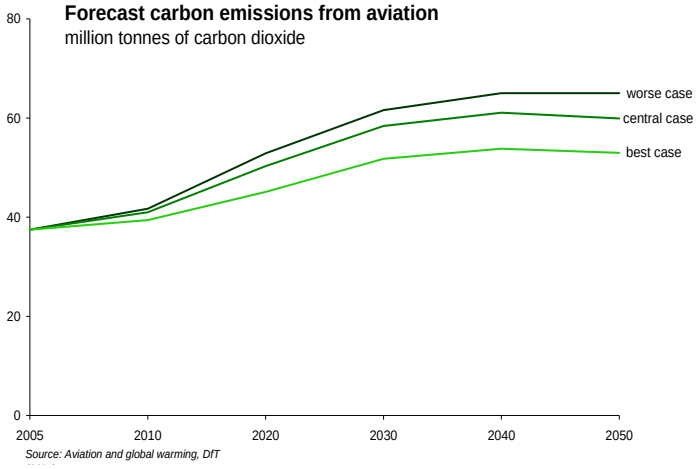
additional impact on climate change a radiative forcing impact can be applied. There is uncertainty about the precise level of this additional impact. Common factors used for aviation are 2.5-2.7, ie 2.5-2.7 times total CO_2 emissions, although the EC TRADEOFF project estimated a value of around 2 (excluding cirrus cloud formation).[20] The aviation White Paper quoted the factor as a range of 2-4 and added "the broad conclusion that emissions are significantly more damaging at altitude is clear".[21]

The Intergovernmental Panel on Climate Change (IPCC) estimated that in 1992 aviation across the world was responsible for 2% of CO_2 emissions from human activities and, after including the impact of radiative forcing, about 3.5% of the total contribution of man to global warming. Under their reference scenario this was projected to increase to 5% by 2050.[22] The IPCC's latest estimate is that aviation accounted for 'around 3%' of the total contribution of man to global warming in 2005. There is still considerable uncertainty about this figure.[23]

6.1 Forecasts

The Department for Transport updated its forecasts of passenger demand and CO_2 emissions in 2009.[24] These used current estimates of emissions (set out above) from domestic *and* international flights and looked at forecasts of the distance flown by aircraft leaving the UK and forecasts of the fuel efficiency of aviation. These were combined with a variety of assumptions about future improvements in fuel efficiency, fuel prices, economic growth the shadow price of CO_2.

The results of three scenarios are shown opposite. Forecasts for 2030-2050 are more tentative than the earlier figures. The central case assumed efficiency improvements of around 1% a year and extra runways at Stansted and Heathrow. The high figures assume the high end of demand forecasts and low end of efficiency projections, and *vice versa* for the low emission forecasts.



Each scenario shows increases in emissions up to 2030. The range of increase (compared to 2005) is 41-73%. The central case sees emissions increasing by just over 21 $MTCO_2$ between 2005 and 2030. The gaps between the different scenarios are more noticeable from 2030 when emissions in the low scenario level out and start to fall (from 2040). Under the central case emissions in 2050 are forecast to be just under 60 $MTCO_2$; around 60% above their 2005 level. The report compared these emissions, which include domestic and international aviation, to the 2020 and 2050 CO_2 targets. This was done by adding the international share to the denominator. Total aviation emissions were 6.4% of UK emissions plus international aviation in 2005. The central forecasts see this increase to 10.3-11.1% in 2020 and 20.6% in 2050.[25] While not relating to actual targets (because of the inclusion of international aviation) this does illustrate the growing importance of aviation emissions compared to the rest of the economy if the emission reduction targets are to be met. Including international aviation within a single target could result in even more stark contrast.

[20] HC Deb 2 May 2007 c1670-1w
[21] *The future of air transport*, DfT (2003), para. 3.36
[22] Aviation and the Global Atmosphere, IPCC 1999
[23] Climate Change 2007 – Mitigation of Climate Change. Contribution of Working Group III to the Fourth Assessment Report of the IPCC. Chapter 5
[24] UK Air Passenger Demand and CO2 Forecasts, DfT (January 2009)
[25] ibid. Annex K

It remains to be seen what effect the recession-related reductions in aviation will have on these figures on a long-term basis. The estimates were produced in 2008, before the extent of the decline in air travel following the recession became apparent. The reduction in demand for air travel may have the effect of pulling the results down towards the lower estimates. However the same reduction may reduce the economic incentive for more efficient means of air travel to be developed, mitigating this effect

A report by the Tyndall Centre for Climate Change in 2006 concluded that (all) UK aviation emissions could account for 35-38% of UK emissions in 2050 if it is to meet its 60% reduction target and international aviation is included within the current limit. If an 80% reduction target were adopted then aviation would account for 77-100% of UK emissions.[26]

It should be noted that none of these comparisons take account of the additional radiative forcing of aviation. The DfT forecasts used a factor of 1.9 and this saw total aviation emissions rise to an equivalent of 115 $MTCO_2$ in 2050 in their central scenario. This was 29% of the 2050 target level plus international aviation emissions.[27]

[26] Bows et al, Contraction & Convergence: UK carbon emissions and the implications for UK air traffic: Tyndall Centre Technical Report 40, Tyndall Centre for Climate Change

[27] UK Air Passenger Demand and CO2 Forecasts, DfT January 2009). Annex K

7 Data Tables

Table 1

Activity at civil aerodromes in the UK

	Air transport movements *000s*	Terminal passengers *000s*	Freight handled *000 tonnes*
1950	195	2,133	31
1951	187	2,471	44
1952	195	2,776	40
1953	214	3,419	64
1954	232	4,004	84
1955	259	4,831	113
1956	293	5,617	121
1957	329	6,600	139
1958	340	6,761	167
1959	358	7,867	226
1960	402	10,075	279
1961	447	12,249	313
1962	449	13,793	344
1963	458	15,506	360
1964	480	17,649	399
1965	508	19,918	418
1966	556	22,582	517
1967	566	24,003	488
1968	560	24,845	524
1969	591	28,064	585
1970	607	31,606	580
1971	630	34,934	532
1972	669	39,125	649
1973	719	43,125	699
1974	710	40,082	717
1975	701	41,846	638
1976	740	44,666	659
1977	759	45,927	705
1978	862	52,829	748
1979	924	56,992	797
1980	954	57,823	744
1981	927	57,771	724
1982	974	58,778	693
1983	1,019	61,109	726
1984	1,079	67,572	861
1985	1,097	70,434	850
1986	1,102	74,719	881
1987	1,169	85,514	976
1988	1,254	92,586	1,088
1989	1,347	97,956	1,151
1990	1,398	101,768	1,193
1991	1,348	95,211	1,126
1992	1,427	105,582	1,238
1993	1,460	111,640	1,376
1994	1,465	121,573	1,589
1995	1,530	128,784	1,703
1996	1,610	135,208	1,772
1997	1,681	145,987	1,943
1998	1,782	158,116	2,080
1999	1,873	167,619	2,189
2000	1,957	179,125	2,314
2001	2,005	180,501	2,146
2002	1,998	188,031	2,195
2003	2,059	199,211	2,208
2004	2,176	214,926	2,371
2005	2,301	227,416	2,363
2006	2,344	234,416	2,315
2007	2,379	239,968	2,326
2008	2,327	235,359	2,282
2009	2,124	218,126	2,048
2010	2,002	210,656	2,325

Note: All these three series include the double counting of domestic traffic

Sources: *UK airport statistics, various years, CAA. Tables 2.3 and 13.2*

Table 2

Traffic at UK airports, by destination

Excluding the double counting of domestic traffic

	Air transport movements (000s)			Terminal passengers (millions)		
	Domestic	International	Total	Domestic	International	Total
1980	223	507	730	7.5	42.9	50.4
1981	216	496	712	7.0	43.7	50.7
1982	231	512	743	7.3	44.2	51.5
1983	247	527	774	7.4	46.3	53.7
1984	256	566	822	8.2	51.1	59.3
1985	259	579	838	8.8	52.9	61.7
1986	255	615	870	8.9	57.4	66.3
1987	259	676	935	9.7	66.6	76.3
1988	273	735	1,008	10.9	71.4	82.3
1989	296	783	1,079	11.8	75.3	87.1
1990	301	819	1,120	12.2	77.3	89.5
1991	289	789	1,078	11.5	72.7	84.2
1992	295	858	1,153	11.6	83.0	94.6
1993	302	879	1,181	12.1	88.0	100.1
1994	285	915	1,200	12.9	96.3	109.2
1995	300	951	1,251	14.0	101.4	115.3
1996	313	1,004	1,317	15.2	105.4	120.6
1997	319	1,066	1,385	16.0	114.7	130.7
1998	331	1,145	1,476	16.7	125.4	142.1
1999	343	1,213	1,556	17.5	133.4	150.9
2000	350	1,285	1,635	18.6	142.7	161.3
2001	364	1,302	1,666	19.2	142.9	162.1
2002	364	1,296	1,660	21.0	146.6	167.6
2003	376	1,335	1,695	22.6	154.3	176.9
2004	405	1,399	1,786	23.9	167.1	191.0
2005	429	1,476	1,905	25.1	178.0	203.1
2006	427	1,521	1,948	24.9	185.5	210.4
2007	417	1575	1,992	24.4	192.0	216.4
2008	390	1,548	1,938	22.8	189.8	212.6
2009	351	1,422	1,773	20.9	176.4	197.3
2010	327	1,349	1,676	18.8	172.6	191.4

Table 3

International passengers arriving or leaving UK airports, by origin/destination

Thousands

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
EU 27	76,203	82,185	88,408	91,442	95,309	102,416	108,802	115,106	119,372	122,785	120,680	111,894	107,439
Americas	23,090	24,563	25,731	23,342	22,805	22,538	24,752	25,374	25,326	26,104	25,417	23,001	22,378
Far East, Japan, Australia and New Zealand	6,093	6,253	6,686	6,140	6,333	6,073	6,854	7,311	7,489	7,725	7,476	7,184	6,141
Near east, middle east and Indian sub contine	4,860	5,058	5,500	5,479	5,369	5,969	7,005	8,031	9,344	10,117	10,417	10,855	11,196
Africa	3,367	3,770	4,194	4,350	4,410	4,448	5,372	6,229	7,066	7,424	7,077	7,393	7,870
Other/oil rigs	1,144	1,094	1,245	1,290	1,214	1,239	1,363	1,404	1,533	1,696	1,631	1,554	1,577
Total	**131,021**	**138,837**	**148,300**	**148,407**	**152,674**	**160,481**	**174,237**	**186,306**	**194,555**	**201,901**	**200,355**	**176,036**	**172,388**
EU breakdown													
Austria	1,191	1,201	1,257	1,279	1,443	1,508	1,749	1,796	1,788	1,877	1,826	1,746	1,662
Belgium	2,673	2,858	2,864	2,689	2,343	2,277	1,863	1,712	1,626	1,625	1,398	1,185	1,121
Bulgaria	221	194	172	187	279	382	585	771	919	953	992	881	858
Cyprus	2,034	2,333	2,670	2,962	2,686	2,788	2,776	2,989	3,006	2,969	2,951	2,703	2,596
Czech Republic	520	541	654	736	916	1,299	2,069	2,355	2,159	2,071	1,817	1,516	1,276
Denmark	1,691	1,780	1,965	1,988	2,070	2,013	2,186	2,255	2,306	2,346	2,395	2,452	2,407
Estonia	29	27	28	29	38	45	83	186	178	179	157	99	104
Finland	604	666	770	754	659	702	813	799	931	945	961	946	983
France	7,060	7,581	8,237	8,437	9,658	10,232	10,942	11,009	11,575	11,790	11,683	10,732	9,664
Germany	7,455	8,108	8,718	8,435	8,652	9,572	10,284	10,938	11,503	11,609	11,158	10,717	11,170
Greece	4,435	5,248	5,912	6,410	6,246	6,205	5,841	5,597	5,522	5,457	5,200	4,874	4,724
Hungary	357	398	403	383	360	375	701	1,119	1,014	960	1,096	961	955
Irish Republic	8,523	8,966	9,295	9,294	9,815	10,164	10,863	11,792	12,362	12,260	12,321	10,897	9,556
Italy	5,895	6,454	7,033	7,457	7,655	8,914	9,678	10,715	10,574	11,209	10,740	9,915	9,621
Latvia	68	64	51	54	58	61	126	309	461	479	464	458	550
Lithuania	51	58	51	48	48	55	95	222	319	340	359	319	473
Malta	1,045	994	1,022	1,040	1,025	1,055	1,096	1,110	1,055	1,148	1,101	1,024	1,038
Netherlands	6,477	6,777	7,097	7,314	7,805	7,781	7,934	7,888	8,258	8,353	7,660	6,973	6,877
Poland	419	499	498	453	467	516	998	1,846	3,330	4,352	5,023	4,228	4,226
Portugal	3,178	3,443	3,608	3,753	3,967	4,022	4,256	4,540	4,744	5,272	5,448	4,950	4,897
Romania	131	118	110	110	117	135	143	157	194	333	488	553	630
Spain	22,089	23,805	25,925	27,580	28,953	32,233	33,478	34,560	34,896	35,539	34,559	30,425	28,713
Slovak Republic	1	0	0	0	2	29	127	285	470	529	716	563	505
Slovenia	58	71	69	52	48	53	116	157	183	190	168	139	127
Sweden	1,878	1,896	2,032	1,958	1,976	1,993	2,253	2,321	2,290	2,268	2,296	2,074	2,189
Other EU	400	425	437	428	419	433	490	537	548	555	621	565	517

Table 4

UK terminal passengers forecast

millions

	2005	2010	2015	2020	2025	2030
Unconstrained demand						
Low	228	245	280	325	370	415
Mid	228	260	315	365	410	465
High	228	265	330	385	435	500
Constrained demand						
Low	228	250	280	320	365	410
Mid	228	260	310	355	405	455
High	228	260	315	370	430	480

Source: UK Air Passenger Demand and CO2 Forecasts, DfT (January 2009)

Table 5 Energy consumed by air transport in the UK

Table 5

Energy consumed by air transport in the UK

	Thousand tonnes of oil equivalent	Proportion of energy used by all transport modes	Proportion of energy used by all final consumers
1970	3,869	13.7%	2.7%
1971	4,247	14.5%	3.0%
1972	4,514	14.8%	3.1%
1973	4,806	14.8%	3.1%
1974	4,219	13.5%	2.9%
1975	4,340	14.1%	3.1%
1976	4,476	14.0%	3.1%
1977	4,678	14.2%	3.2%
1978	5,051	14.6%	3.4%
1979	5,224	14.8%	3.4%
1980	5,242	14.7%	3.7%
1981	5,020	14.6%	3.6%
1982	4,993	14.3%	3.7%
1983	5,093	14.1%	3.7%
1984	5,383	14.2%	4.0%
1985	5,582	14.5%	3.9%
1986	6,126	15.0%	4.2%
1987	6,479	15.2%	4.4%
1988	6,905	15.2%	4.6%
1989	7,308	15.4%	5.0%
1990	7,332	15.1%	5.0%
1991	6,872	14.3%	4.5%
1992	7,435	15.1%	4.9%
1993	7,871	15.7%	5.2%
1994	8,070	16.1%	5.3%
1995	8,485	16.9%	5.6%
1996	8,917	17.0%	5.7%
1997	9,322	17.6%	6.1%
1998	10,237	19.1%	6.6%
1999	11,017	20.1%	7.0%
2000	11,978	21.6%	7.5%
2001	11,774	21.4%	7.3%
2002	11,658	20.9%	7.5%
2003	11,936	21.1%	7.6%
2004	12,908	22.4%	8.1%
2005	13,856	23.5%	8.7%
2006	13,999	23.4%	8.9%
2007	13,971	23.7%	8.7%
2008	13,426	22.8%	7.9%
2009	12,730	22.5%	8.3%

Note: The air transport consumption figures are the total inland deliveries of aviation fuel and therefore include non-commercial flights and fuel used on international flights outside UK airspace

Source: Digest of UK energy statistics 2010, DTI. Long term tables 1.1.5