

Airports Commission Discussion Paper 02

AVIATION CONNECTIVITY AND THE ECONOMY

SUBMISSION BY THE RICHMOND HEATHROW CAMPAIGN

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This submission is the response from the Richmond Heathrow Campaign (RHC) to the Airports Commission's *Discussion Document 02: Aviation Connectivity and the Economy*. We do not consider that the contents are confidential and we have no objections to its publication.

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CHAPTER 2: THE NATURE OF CONNECTIVITY IN THE UK AND ITS DRIVERS

2.1: Do you agree with the definition of connectivity presented in the paper? What other factors, if any, should we take into account and how do they impact connectivity?

Subject to the comments that we make in response to other questions, we agree with much of the discussion paper's analysis of the many components of connectivity. But a working definition of connectivity has not been offered that could be readily applied to individual airports. While we accept that macro analysis of connectivity is necessary, the delivery of connectivity is at the micro level of individual airports. We would therefore respectfully suggest that the connectivity profile of individual airports should be assessed against the following four criteria:

- Destination connectivity: the total number of destinations that are served or could be served and the identity of the individual destinations.
- Frequency connectivity: the frequency with which individual destinations are served or could be served over a given period (e.g. per week, per day, per morning, per afternoon, per evening, per night).
- Connectivity ratio: the ratio between the number of destinations that are served directly (i.e. airport to airport) and indirectly (i.e. by transferring or transiting at an intermediary airport).
- Surface connectivity: the ease with which passengers departing and arriving at an airport can travel to and from the airport by surface transport (i.e. as the first or final stage of their overall journey).

Chapter 2 of the discussion paper recognises the first three bullet points and comments on them in some depth, albeit mainly at the macro level. But in our view, paragraph 2.2 dismisses too readily the scale of the problem of surface access from increased future passenger numbers. For example, please see Annex 1 to this response concerning surface access problems at Heathrow that were identified at the Terminal Five Public Inquiry but which have still not been resolved even with existing passenger numbers.

2.2: Do you agree with the assessment we have made of the UK's current aviation connectivity?

We agree with much of the discussion paper assessment of the strengths and weaknesses of the UK's connectivity.

We note that the UK is currently one of the best connected countries, with the London area being particularly well served by its five main airports; and with direct connectivity increasing at airports in the regions outside the London area.

We note that long distance connectivity to new destinations may become the main area of weakness in future. But it is not clear from the discussion paper why the introduction of new connections should be a problem for long distance destinations but not for short distance destinations. The short distance market has been shaken up by the competition between many airlines for existing destinations and for new destinations, but competition has not affected the long distance market to the same extent. The Commission should consider the extent to which a lack of competition between the airlines may be responsible for the apparent weakness in opening new long distance connections.

2.3: What factors do you think contribute to the fact that the UK is directly better connected to some regions of the world than others?

The UK's connectivity with regions outside Europe was built on the administrative, military and commercial links with the dominions, provinces and protectorates of the British Empire that were developed before the Second World War; and on the special relationship with the United States that was developed during the Second World War and the subsequent Cold War. The connections were further strengthened as ticket prices have come down by the increasing number of visits to and from overseas family members and friends, as well as by pure leisure travel.

Within Europe, the main boost to business connectivity has been the increase in the proportion of UK trade with other EU countries, including the rise over the last decade of significant short-term employment opportunities in the UK for nationals of other EU countries. The main boost to leisure connectivity has arisen from the growth of mass tourism to other EU countries, supplemented by property ownership by UK nationals in other EU countries and the partial or permanent emigration by UK nationals to other EU countries.

Relatively poor connectivity with regions such as Central and South America, and with some destinations within other regions, may be due to insufficient passenger demand to make better connectivity feasible financially, which in turn is likely to reflect the absence of some or all of the factors identified in the previous two paragraphs that have resulted in good connectivity with those regions and countries.

Poor direct connectivity may also be due to airline merger and alliance strategies. For example, Madrid has strong connectivity with Central and South America, with Iberia a major supplier of that connectivity. Iberia and BA were in an alliance and subsequently merged, a long-term commercial relationship that may have stimulated more short distance movements between London and Madrid in order to take advantage of the existing Central and South American schedules operating from Madrid but at the expense of direct UK connectivity.

2.4: Given connectivity trends in the UK versus other European countries, how much scope is there for route network available to UK residents to radically change over the coming years?

The UK aviation industry has long since been privatised. It has adapted to changing passenger demand in the past and it would be surprising if it did not continue to do so in the future. For illustrative purposes, the table in Annex 2 to this response sets out the number of destinations in each global region that airlines at Heathrow accessed in 1990, 2001 and 2011¹. The table shows that there were considerable changes to Heathrow's connectivity profile for destinations carrying more than 2 000 passengers per year (arrivals and departures combined):

- There was a net decrease by thirty six in the number of destinations that were served in 2011 compared with 1991: thirty two on short distance (within the UK, Western and Central Europe) and four on longer distance (three in the Near East and one in Africa).
- There was a net increase by sixteen in the number of destinations (all on longer distance routes) that were served in 2011 compared with 1991: eight to Eastern Europe (including to former Soviet republics bordering countries in the Near East and Far East), five to the Far East and three to the Americas.
- The majority of the thirty six connections discontinued at Heathrow (e.g. Antwerp, Corfu, Las Palmas) are accessed now from one or more of London's other major airports (Gatwick, Stansted, Luton and London City).

The trend has therefore been one of the airlines at Heathrow developing new long distance connections and shedding short distance connections which are then accessed by airlines at London's other airports. There is no reason why this trend should not continue in the future. We consider the implications of capacity constraints in response to the questions in Chapter 4 on connectivity and capacity.

2.5: To what extent do you consider indirect connectivity to be an important part of presenting an accurate picture of the UK's nature of connectivity?

It must be assumed that air passengers, if given the choice, would prefer direct connections over indirect connections. But it is highly unlikely that the economics of aviation would permit every airport to have direct connections to every possible destination, even given the projected increase in passenger numbers. Indirect connectivity is therefore likely to be a continuing feature of air travel for the foreseeable future and it should be recognised as a distinct component of connectivity.

¹ 1990 has been taken as the base year for this assessment because air travel was depressed in 1991 and we assume that 1990 would have been more representative of Heathrow's destinations approximately twenty years ago. A comparison has not been made between 1990 and 2010 because air travel in 2010 was still in recession from the financial crisis.

We note that the discussion paper takes an even handed approach to the fact that some passengers at UK airports (9 per cent) are transfers (the majority of whom would be passengers transferring at a UK airport en route between two non-UK airports) and that some UK-resident passengers (10 per cent) transfer at a non-UK airport en route to their ultimate non-UK destination ². It is sometimes argued that no UK residents should have transfer at a non-UK airport and that non-UK residents should all transfer at a UK airport. We consider that this is an entirely unachievable objective. The reality of the transfer market is more likely to be reflected in the near equilibrium in the figures reported in the discussion paper.

Although we recognise that transfers are an inescapable component of air travel, we consider that there is scope for considerable discussion about how large the transfer market should be compared with direct routes. In our view the transfer market has become over-inflated, mainly in response to airline strategies rather than passenger preference. In the capacity debate, particularly at the so-called hub airports, the arguably excessive number of transfer passengers has itself contributed to congestion problems. We assume that the Airport Commission's discussion document on hub operations will provide the opportunity to address this issue in more detail.

² The number of transfers is much higher at Heathrow. We assume that the role of transfers at Heathrow will be addressed in the Airport Commission's discussion paper on hub operations.

CHAPTER 3: HOW AVIATION CONNECTIVITY SUPPORTS TRADE IN GOODS AND SERVICES; TOURISM; BUSINESS INVESTMENT AND INNOVATION; AND PRODUCTIVITY

3.1: To what extent do you agree with evidence that aviation connectivity supports the UK's economic growth through trade in goods and services; tourism; business investment; and productivity?

Importance of Aviation

We accept that the aviation sector is part of the UK economy, in common with every other sector. But it is difficult to establish objectively the relative importance of each sector. Aviation portrays itself as a dynamic stimulus to activity in other sectors, but it is difficult to establish which sectors stimulate their neighbours and which sectors depend on stimulation from their neighbours. The signs are that aviation does not grow faster than the economy as a whole and therefore does not contribute more to growth than the average non-aviation sector. For example, in the years of growth between 2001-2007 the number of passengers per year at UK airports grew from 180.5 million to 240.0 million, a growth of 33 per cent over seven years. But in the subsequent downturn between 2008-2010, annual passenger numbers dropped to 210.1 million, a contraction of 12.5 per cent over three years. It would seem equally wrong to praise the sector for stimulating the wider economy in the good years, or to blame it for the downturn in the bad. In both cases, aviation simply reflected what was going on in the economy more generally.

Excellent existing UK Connectivity

The discussion paper and the Government's Aviation Policy Framework 2013 provide clear evidence for and acknowledgment of the current excellent UK connectivity. The recent DfT Aviation Demand Forecasts, 2012 record that in 2010 there was demand for 183 million passengers to connect to international destinations from the UK and that this was met with 1.45 million flights. There were 178 separate destinations and 455 routes to these destinations from UK airports with at least daily service. The international connectivity surpasses other European countries on most counts. The number of destinations and service frequency are interchangeable but we can reasonably assume the market-led mix is what the 183 million passengers wanted. There are some imperfections in the market concerning the allocation of destinations and frequency and we refer to these below.

Evidence suggests the UK should continue to be one of the best connected countries in the world

The Aviation Policy Framework 2013 stated that "One of our main objectives is to ensure that the UK's air links continue to make it one of the best connected countries in the world. This includes increasing our links to emerging markets so that the UK can compete successfully for economic growth opportunities." We believe this objective can be met on the basis set out below.

Aviation Sector Value is not relevant to connectivity other than through its impact on prices

People do not use the aviation transport because of its own intrinsic value - rather it is a means to an end. Therefore, where the introduction to chapter 3 of the discussion paper refers to the economic value of aviation, employment and indirect outputs, in our view these are not relevant to the discussion on connectivity other than that there are equal and opposite costs which are reflected in the price charged for air transport. Price affects demand and in turn connectivity but according to the DfT Demand Forecasts 2012 leisure travel has relatively low price elasticity and business travel even lower elasticity. Also, we see no relevance to connectivity of the value of the aerospace sector referred to in the discussion paper. This is not to dismiss the economic value of the aviation sector itself - its growth will add to the UK economy but our concern here is with the international trade and tourism facilitated by the sector.

Historic trends and framework for estimating future connectivity are largely absent

The historic trend analysis of relationships between the connectivity variables is sparse in the discussion paper and looking to the future the paper does not provide a framework for assessing the rate and patterns of international economic growth in which it will be vital for the UK to share in order to assure its own prosperity. This is surely the starting point to assess the need for future connectivity and its support of the UK's economic growth.

DfT Aviation Demand Forecasts relate connectivity with economic growth

The DfT Aviation Demand Forecasts 2012 come to the rescue. They are derived from the National Air Passenger Demand Model in the years up to 2050. We understand that the forecasts are based on evidence that historically there have been two key drivers of the long-term increases seen in aviation demand: the long-term rise in incomes and economic activity and the long-term decline in fares. We have not had access to all the detailed assumptions input into the model which take account of various markets and economic growth rates around the world but we have said in our response to the Airports Commission on aviation demand that the DfT approach seems reasonable. The output of the model includes connectivity in terms of number of destinations and frequency of service. The model therefore derives connectivity from the input for markets and economic growth around the world. We are not intending here to examine the quantitative results of the DfT model but wish to comment on the relationship between markets, economic growth and connectivity. We use the model's results to illustrate the points.

The relationship between connectivity and economic growth

The Table below extracts data from the DfT Aviation Demand Forecasts, 2012. Based on world econometric and market analysis, growth of unconstrained UK international passenger demand between 2010 and 2050 is 2.3 times or around 2.1% per annum; the annual demand shown in the Table below is constrained by airport capacity and is just 8% less in 2050 than the unconstrained demand. The number of ATMs rises by 2.0 times in the constrained case (we do not know the figure in the unconstrained case).

Table: Number of UK international destinations and frequencies constrained by airport capacity

| | | <i>Table/Annex</i> ¹ | 2010 | 2050 | <i>Growth</i> |
|--|-----|---------------------------------|------|------|---------------|
| Passengers: International destinations including transfers (mppa) | a | Annex E1 | 183 | 388 | 2.1 |
| ATMs: International destinations (000) | b | Annex F1 | 1446 | 2910 | 2.0 |
| Aircraft load factors, passengers per flight | a/b | calculated | 122 | 133 | 1.1 |
| International Destinations ² | c | Table 5.8 | 178 | 242 | 1.4 |
| International Routes (destination-origin pairs) ² | d | Table 5.8 | 455 | 778 | 1.7 |
| Notes to table: | | | | | |
| 1. Source. DfT Aviation Demand Forecasts 2012 - central case. | | | | | |
| 2. The destinations and routes are those served with at least a daily service. | | | | | |
| 3. The table shows the number of individual destinations (c) and also their aggregate (d) which in effect also takes account of different points of origin in the UK and is therefore a route analysis. | | | | | |
| 4. Annex D1 to the Demand Forecasts shows the unconstrained international passengers as being 420mppa in 2050 and D 9 shows the unconstrained international destinations in 2050 being 250 and the routes (taking account of origin and destination) as being 775. | | | | | |
| 5. The higher growth in routes (d) compared to destinations (c) is a reflection of regional airports increasingly duplicating services to destinations currently served by London airports. | | | | | |

The Table above tells us that the growth in ATMs of 2.0 times is comprised of growth in number of routes of 1.7 times and by deduction the growth in average service frequency per destination from all routes is 1.2 times ($1.7 \times 1.2 =$ approximately 2.0). This applies to the destinations with at least a daily service and preferably the calculation should be based on all destinations but we do not have these figures. Destinations and frequency are the two key components of connectivity. In other words, passenger demand grows with economic growth and ATMs grow with passenger demand and connectivity grows with ATMs. **So a simple equation links economic growth, passenger growth, ATMs and connectivity.** The important point is that through this chain connectivity grows directly in relation to economic growth. The analysis here has not referred explicitly to freight but a similar relationship between economic growth, the number of ATMs and connectivity applies.

We have three caveats:

- Passenger and freight demand may not exactly match economic growth. The faster growth rates of developing countries, which the UK trade can benefit from, also brings new participants to the market so the UK share of world trade may decline. We assume this is included in the DfT model.
- Aviation may be constrained by airport capacity and CO2 limits but in the current DfT forecasts this appears to be only an 8% reduction over 40 years, at least in the central case.
- Increased aircraft load factors reduce the number of ATMs and therefore connectivity. As shown in the Table above this does not mean connectivity will decrease but means it will grow at a slower rate. For example, between 2010 and 2050 the number of routes grow by 1.7 times and average frequency grows by 1.2 times compared to passenger growth of 2.1 times. Load factors are shown to grow just 1.1 times.

We refer more specifically to channels 1-5 in our response to the later question on channels 1 - 5.

3.2: Are there other channels through which aviation might facilitate economic growth? What are they; and what evidence is there to support this?

We believe the five channels are broadly comprehensive but of course they could be further analysed in greater detail for the many sub-markets. We would support any initiative to examine the growth in the specific markets served by UK aviation now and in the future.

3.3: How effective do you consider that the aviation connectivity of the UK may facilitate economic growth now and in the future? What risks and opportunities does it present?

Uncertainty

Undoubtedly long-term forecasts of economic growth, potential constraints such as CO2 limits, passenger demand, fleet character, load factors, etc. are uncertain. We believe free enterprise markets are the best able to judge and absorb the risks. There is flexibility in that business connections are more important to the health of the UK economy than leisure connections and pricing does distinguish between the two. As can be seen from Annex 3 to this response growth in UK resident business passengers between 2010 and 2050 is 2.5 times but still represents only 18% of all passengers in 2050. Leisure travel by UK residents grows by 2.3 times and represents 59% of all passengers. A significant increase in business passengers would have proportionately much less effect on reducing leisure passengers should the number of passengers be constrained by airport capacity, surface transport congestion and/or CO2 limits, for example. In other words the leisure market provides a safety net.

Allocation of ATMs between destinations and frequency of service is the issue

It is important to recognise that UK economic performance is the aggregate performance of all businesses. Ideally businesses segment their markets and differentiate their products so as to compete. In principle one would expect businesses to promote themselves in the markets where there is growth with the highest returns. Businesses do not have to serve every conceivable market to be competitive and should be selective of whom they seek to serve. In aggregate the UK economy should reflect this. In turn, one would expect the allocation of available connectivity in terms of the number of destinations and frequency to match the markets businesses seek to exploit. The issue is one of priorities and allocation of connectivity and not a matter of supply of connectivity (i.e. the number of flights), providing aviation can provide the flight capacity to satisfy passenger demand.

An analysis of passenger numbers suggests that “contract-rich” destinations and “popular” destinations do not always correspond. It seems that for businesses getting to the chosen destination is paramount rather than whether that is direct or through a hub and that some destinations are more contract rich than others. Less important but often more popular are the leisure orientated destinations. The value of certain destinations, and particularly those destinations that are business destinations, is probably more important than the number of destinations.

In the short and medium term at least there is sufficient airport capacity to satisfy passenger demand and in the longer term, while the central DfT forecast shows a shortfall in 2050, we believe (and on a separate occasion we will seek to demonstrate) that even this shortfall can be satisfied by inter alia increasing load factors. Under these circumstances we believe it is reasonable to say that there will be adequate connectivity to support UK economic growth and what is important is the choice of priorities and the allocation of ATMs in terms of destination and frequency so as to optimise business returns and hence UK economic value and this process is well left to the markets to determine. If there is to be Government intervention then it is best concentrated on reducing market imperfections and should not seek to guess what future markets there might be and what connectivity is required to facilitate the future economic activity.

Aircraft Fleet: aircraft seat capacity

The Aircraft Fleet plays an important role in connectivity. As the average aircraft seating increases and load factors rise this tends to reduce the growth in number of ATMs and hence connectivity (destinations x frequency). As the above Table on destinations shows the number of ATMs are still expected to rise (2.0 times) between 2010 and 2050 and therefore connectivity will also rise but at a slightly slower rate than that for passenger demand.

The recent introduction of A380s, each capable of seating 860 passengers, could usefully consolidate not only the 26 existing daily flights to New York from Heathrow with average loads of under 200 passengers but also accommodate the doubling in demand over the next 40 years. At the other extreme the new Boeing Dreamliner can efficiently travel to the other side of the world with just 200 passengers. The impact of technological change on replacement fleets will have a big impact on how aviation demand is facilitated and connectivity enhanced in terms of number of destinations and service frequency. Our understanding is that these factors are incorporated in the DfT Demand model.

Market Imperfections

We have dealt above with the mechanism of how we see connectivity facilitating economic growth. In reality the provision of connectivity is not optimal and here we refer to its allocation to different markets. Broadly we believe the allocation is driven by markets but there are imperfections. There are various degrees of monopolistic behaviour by airlines and airports for their own benefit which can reduce the effectiveness of connectivity and its contribution to the UK economy as a whole. For example the allocation and use of slots at Heathrow we believe distorts the aviation market. Taxes such as APD distort the market and could be improved. The constraint on passenger demand by airport capacity in the long term, if it should arise, similarly will distort connectivity and hence aviation's ability to facilitate passenger and freight demand and for market and economic opportunities to be fully realised.

Competition

As we have said above, the risk of future airport constraint is not as potent as often claimed and the suppressed demand of 34 mppa in 2050 estimated by the central DfT Aviation Demand Forecasts we believe can be reduced or removed altogether by increasing aircraft loads. We believe that providing an airport with four or more runways, given the current arrangement of five London airports and regional airports, will unduly concentrate the airport and airline markets and reduce competition and connectivity will be determined in the interests of a handful of key players. This is contrary to the approach the Government has recently taken in promoting competition by new independent ownership of the London airports.

3.4: How important do you consider each of trade in goods and services; tourism; business investment; and productivity?

We do not propose dealing with each of the channels 1-5 referred to in the discussion paper because this requires knowledge of specific markets around the world. But the approach we have outlined above in general for economic growth and connectivity we believe applies equally to sub-markets. Again we refer to the DfT Aviation Demand Forecasts and in Annex 3 to this response we illustrate the growth in passenger demand between 2010 and 2050 in terms of purpose (business/leisure), residency (UK/foreign) and distance (long-haul/short-haul). The DfT has derived these forecasts from their assumptions on economic growth in the sub-markets and converted the passenger numbers into ATMs and specific destinations and frequency of service (i.e. connectivity). The DfT model provides the granularity sought by this question on channels 1-5 but only some of the model output is published (e.g. the number of destinations per named UK airport); the estimated destinations and frequency of service from each UK airport over the next 40 years have not been published but would be useful to see how connectivity may change.

From Annex 3 it can be seen that UK business long haul passengers represent just 2% of passengers (excluding transfers) in 2010 and 3% in 2050. The number of such business passengers increases from 3.7 mppa to 11.7 mppa. If we assume the average long haul load is 200 passengers per ATM then that growth requires an additional 40 000 flights a year or 110 UK departures and arrivals per day. The Table above shows there to be an increase between 2010 and 2050 in international ATMs of 1.46 million per year or 4000 per day. This demonstrates the overwhelming availability of flights to cater for long-haul business growth not only in passenger terms but in the number of destinations that could be added. The supply/demand ratio of 4000 ATMs compared to 110 ATMs is a factor of 36 times. Developing countries are in the long-haul market but even if the short haul and foreign business passengers are accounted for with an average load factor of say 130 passengers per ATM then the additional 41.4 mppa between 2010 and 2050 require an additional 875 flights a day; the supply/demand ratio is still 4.5 times. These figures negate the arguments that there are not enough flights to business-rich destinations.

Some other points in Annex 3 we should mention: New demand overall has a greater tendency to go to regional airports. There is a net tourism balance of payments deficit and this seemingly will grow; one only has to compare the number of UK leisure passengers (104.5 mppa) and foreign leisure passengers (32.5 mppa) in 2010 with similar analysis in 2050 of 241.9 mppa and 64 mppa, respectively.

In theory it should be possible to take the passenger pattern and level of demand shown in Annex 3 and calculate the economic value of channels 1-5. For example, there are 16.8 million UK business short and long haul passengers in 2010 and 45 million in 2050. We assume the model produces details of the associated connectivity, although this has not been published. We cannot say how feasible it is to calculate the amount of trade and tourism created at each connection by the passengers but we suggest it is worth considering. The results are likely to have a high degree of uncertainty but the exercise closes the circle on starting with world economic growth, the aviation response and the resultant value to the UK.

3.5: Are there any other relevant policy issues which should be taken into account?

We believe the markets should be the principle drivers in creating economic value. Where Policy can help is to reduce or remove barriers and imperfections in the markets and this applies equally to connectivity. We have discussed above where Policy might be applied, e.g. runway slot allocation and use, taxes and aviation and surface transport capacity. We believe that increasing load factors is not only a way to avoid additional runways but even were there to be more runways it continues to be viable. It is a relatively low cost, low risk and flexible way to provide for increasing numbers of passengers and to improve the efficiency of existing operations. However, by reducing the growth in ATMs through higher load factors, connectivity growth is dampened, as discussed above, and therefore Policy might consider the balance but we would rather Policy assisted the markets in finding the balance rather than determining the balance itself.

3.6: To what degree can causality be established between connectivity and trade in goods and services; tourism; business investment; and productivity? Are there any particular research methods that we should be looking at and why?

We have seen above how economic growth drives passenger demand and hence ATMs and therefore connectivity but we doubt that connectivity generates economic growth. Businesses go where there is potential demand for their products and services - this applies to UK businesses trading overseas and foreign businesses trading in the UK. Connectivity facilitates economic growth so while it does not generate growth it can inhibit growth. A window does not generate light but its size determines how much light there is. Airlines surely are not going to add destinations or frequency in the belief that this will generate markets for goods and services about which they have no expertise. Tourism and other leisure purposes are similar. Airlines do not create attractive destinations for leisure or determine where relatives live. People choose a destination because they want to visit it and that is what drives demand; the choice of destination may be affected by the ease of access (i.e. connectivity) but that is not an end in itself. Airlines surely do not put on flights to create tourism - rather they facilitate potential tourist demand.

4.1: What is the best approach to measuring the UK's aviation connectivity?

The airport statistics that are collected by the Civil Aviation Authority enable a detailed profile to be drawn up of trends in connectivity at all UK airports, together with the passenger numbers and the average number of passengers per movement. We would strongly urge that these historic data are fully utilised for measuring UK connectivity. An approach that takes 2013 as the base year runs the risk of over-dependency on essentially speculative studies into the future (particularly those funded by the aviation sector) with little basis on the historical trend and could produce a distorted measurement. Modelling based on speculative studies without adequate historical data could be equally misleading.

4.2: Connectivity depends on many factors, such as number and frequency of flights and time and cost of travelling to passengers. Do you consider any of these factors to be of particular relevance to facilitating any of trade in goods and services; tourism; business investment; and productivity?

Much of the evidence that is submitted in response to this question may focus on countries where the UK is said to be losing out to better connected competitors (invariably France, Germany and the Netherlands). We strongly urge the Commission to consult the historic data on trade between those countries and the UK and between those countries and the UK's competitors. We feel intuitively - but we have not had the resources or time to carry out the necessary research - that our competitors have a long-standing better record of trade than the UK with the disconnected countries. While that historic record does not mean that the UK should accept second best to our competitors in some countries in future, there are likely to be many other factors than connectivity to explain the UK's inability to trade more than any of our competitors with every other country.

4.3: We have outlined a few different measures of connectivity in the paper. What alternative measuring approaches that we have not mentioned should we take into account?

As we state more fully in response to the final question in this Chapter, passenger numbers at Heathrow have increased significantly over the last twenty years but the number of destinations that Heathrow accesses has decreased. Part of the reason for that development seems to have been the provision of many services per day to the most popular destinations, thereby squeezing out slots for less popular destinations. But, on the sample that we have examined, the average number of passengers per movement to the most popular destinations is lower than the aggregated average number of passengers per movement for all destinations at Heathrow.

While we recognise that frequency of services forms part of the connectivity assessment we consider that ever-increasing levels of frequency should not be accepted uncritically as an optimum outcome from the market. We would therefore suggest that a destination that has four services per day to and from Heathrow (four arrivals and four departures) on every day of the year should be classified as good connectivity; and that all routes at Heathrow should be assessed against that measure.

We have noticed also that there is a large incidence of duplication at London's main airports for services to the most popular destinations. We would suggest that the scale of duplication at airports within the same region should be assessed as part of the measure of connectivity.

4.4: What kinds of impact do you consider capacity constraints to have on the frequency and number of destinations served by the UK? And, if any, are any particular kinds of routes or destinations likely to be more affected than others?

Where the capacity of an airport exceeds the level of demand from the travelling public, the connectivity profile of the airport (i.e. the identity of the individual destinations served, the frequency of service to each destination, the ratio of direct to indirect services, surface access) should reflect in full the demand from passengers, unless factors other than capacity constraints come into play. For example, we understand that UK airports outside the London area have no capacity constraints, but that their connectivity profiles are weaker than the London airports, where capacity constraints are said to exist. Weaker connectivity outside London may reflect the lack of a sufficient level of demand to sustain direct or frequent connections to some destinations; which may reflect in turn the imbalance of

the national economy in the direction of London (see the table in Annex 4 to this response for passenger numbers at UK airports in London and other regions since 1972) ¹.

Where the level of demand from the travelling public exceeds the capacity of an airport, that demand should still determine the connectivity profile, even if the demand cannot be met in full. The airlines would prioritise the connectivity options by reference to the relative popularity of destinations and the break-down of that popularity between the different classes of passenger. Destinations for which there was a high demand from first class passengers would get priority over destinations for which there was a low level of demand from second class passengers, with permutations between these two extremes.

In practice, capacity constraints would be likely to produce an emphasis on business-popular routes at the expense of leisure routes because business passengers are less price sensitive than the great majority of leisure passengers because business travel forms part of a much larger economic transaction than the disposal of individual surplus personal income. That is to say, if capacity constraints exist, they would be unlikely to damage those sectors of the economy that depend on good air connectivity, with the exception of the leisure sector (but see next paragraph).

Since the number of business passengers is small relative to the number of leisure passengers, it is likely that leisure passengers would continue to be able to fly in large numbers even with capacity constraints. But connections with the most popular leisure destinations would be given priority over the less popular leisure destinations, and there would probably be some increase in air fares. But displaced leisure passengers would still have their individual surplus disposable income, which would be re-directed to other leisure activities within the UK or to other consumer goods and services (i.e. neither the individual nor the economy would “lose” the money that would otherwise have been spent on leisure flying).

4.5: To what extent do you consider that the need for additional connectivity may support the argument that additional capacity may be required?

The discussion document does not set out a definition of airport capacity. We acknowledge that the debate about airport capacity over the last decade has focussed almost exclusively on the need for additional runway capacity. But we consider that a broader approach is needed in order to assess all the potential capacity flexibilities and constraints at individual airports, within regions, and across the UK as a whole. We therefore respectfully suggest that the assessment of airport capacity should take account of four capacity factors and their inter-dependence:

- Surface capacity for transporting passengers to and from the airport.
- Terminal capacity for processing passengers between surface arrival and air departure.
- Seating capacity for carrying passengers per air transport movement (ATM).
- Runway capacity for handling the number of ATMs determined by the previous three factors.

Additional capacity for one or more of the factors listed in the previous paragraph may be required to accommodate additional connectivity, but only if there is a large increase in the overall number of passengers at every UK airport. Conversely, an increase in the overall number of passengers would not necessarily increase the number of connected destinations. These points can be illustrated by reference to connectivity developments at the London airports since 1990.

The table in Annex 2 to this response shows that Heathrow accessed fewer destinations in 2001 than in 1990 and fewer destinations in 2011 than in 2001. Three of the four capacity factors listed above are, for Heathrow: (i) 90 million passengers per year (which is the physical limit of the terminals); (ii) 480 000 movements per year (which is the legal limit on runway use); (iii) 187 passengers per movement (which would enable 90 million passengers to be carried in 480 000 movements). The table on the next page sets out Heathrow’s use of the three capacity factors in 1990, 2001 and 2011. The largest decrease in destinations occurred between 1990 and 2001, when Heathrow handled fewer passengers, fewer movements and fewer passengers per movements than in 2011. The decrease in the number of destinations cannot therefore be explained by a lack of capacity.

¹ There has been much public debate about the need to re-balance the UK economy away from excessive activity in South East England to other regions. It might be helpful to commission a comparative study of the UK regions: to what extent can regional economic differences be attributed to the abundance or scarcity of aviation connectivity in each region? How does the international connectivity of major airports outside the South East (e.g. Manchester and Glasgow/Edinburgh) compare with airports in some of the smaller EU countries with similar population sizes to the UK regions?

| | <u>Passengers (millions)</u> | <u>Movements (thousands)</u> | <u>Passengers per movement</u> |
|------|------------------------------|------------------------------|--------------------------------|
| 1990 | 45.6 | 368 | 123.9 |
| 2001 | 60.4 | 458 | 132.1 |
| 2011 | 69.4 | 476 | 145.8 |

London's other airports expanded their number of destinations since 1991, including taking over many of Heathrow's discontinued destinations. Gatwick served more destinations in 2011 than Heathrow and Stansted nearly equalled the number of destinations at Heathrow ¹ despite the fact that Heathrow handled more passengers than Gatwick or Stansted. The growth in connectivity and passenger numbers at other London airports has been proceeding over the last thirty years, a long term trend that is likely to continue following the break-up of BAA's ownership of London's three largest airports (see the table in Annex 5 to this response for the number of passengers at London's main airports since 1972).

¹ According to the airport websites.

Surface Connectivity at Heathrow

The Aviation Commission's discussion paper on aviation connectivity and the economy states in paragraph 2.2 that 90 per cent of the UK population live within two hours of an airport with international connections and appears to assume that this statement is sufficient consideration of landside connectivity.

Heathrow has the capacity to handle 90 million passengers per year. Assuming a continuation of the ratio of two terminating passengers to one transferring passenger (a ratio that has been roughly constant at Heathrow since the mid 1990s) then there would be an additional 14 million terminating passengers per year at Heathrow by the time that its passenger capacity is fully utilised. How would those additional 14 million passengers get surface access to Heathrow?

The table on the next page sets out the different modes of transport that have been used by terminating passengers for surface access to Heathrow between 1972 and 2010. In 2010 (the most recent year for which the detailed data was available at the time of drafting this response) 30.8 million passengers accessed by road (private car, hire car, taxi/minicab, bus/coach) and 10.8 million passengers accessed by rail (including underground), a ratio of three road accesses to one rail access that has been roughly constant at Heathrow since the opening of the Paddington connection in 2000 (prior to 2000 the ratio was 4 : 1).

Assuming the future continuation of the 3 : 1 ratio, then 10.5 million of the additional 14 million terminating passengers would use road access, an increase to 41.3 million in the total number of road access users per year. Increased passenger numbers would in turn increase the quantity of consumer goods and other supplies that are delivered to Heathrow primarily by road.

The roads around Heathrow already experiences significant levels of road traffic congestion, in part because of the high volume of road traffic to and from Heathrow. In many of these areas the air quality is already poor, with road traffic emissions identified as the main pollutant source. Reducing these related adverse impacts is proving difficult even with the present level of Heathrow road traffic.

If the number of terminating passengers accessing Heathrow by motor vehicles continues to increase then local road traffic congestion would worsen still further and surface access to Heathrow would become even more time-consuming for passengers than at present. There would also be serious implications for local air quality.

Air Quality

The Terminal Five Public Inquiry found that the air quality in areas around Heathrow exceeded what were at the time voluntary World Health Organisation (WHO) limit values for exposure to nitrogen dioxide; and that the exceedences would continue in future with or without Terminal Five. By the time the Secretary of State authorised the development of Terminal Five the WHO limit values had been made mandatory within the European Community, with a deadline for compliance by the end of 2010.

In paragraphs 77 and 78 of the letter dated 21 November 2001 authorising the development of Terminal Five the Secretary of State took issue with what he regarded as an unduly relaxed attitude towards the prospect of continued nitrogen dioxide exceedences around Heathrow:

He [the Secretary of State] considers that the Inspector placed too little weight on the European Community law aspects of the air quality issues and he recognises the obligations that Community law imposes on the UK Government ... The Secretary of State reaffirms his recognition of the UK Government's obligations under the EU Directive. It remains the Government's intention to meet the requirements of the Directive .

But compliance was not achieved by the end of 2010 and the Government had to apply to the European Commission for an extension for compliance until the end of 2015. With the extended deadline due to expire in just over two years' time, compliance has still not been achieved.

Although road traffic in the Heathrow area is considered to be the main source of nitrogen dioxide (and also of particulates, another cause of local pollution for which limit values have been set), much of that road traffic is Heathrow bound; and aviation emissions (particularly take offs) make an additional contribution to the overall nitrogen dioxide and particulate levels. Any significant increase in passenger numbers using road access in future would make compliance with the limit values even more difficult.

Quite apart from the legal obligations on the Government to comply with the EU Directive, the nitrogen dioxide and particulate levels pose a health threat to adults living and working near Heathrow and to children living and

attending schools near Heathrow. Recent research by the Massachusetts Institute of Technology has confirmed the health risks from air pollution in areas around Heathrow.

Heathrow: passenger numbers per transport mode for surface access 1972 - 2010

| Year | Car/taxi | | Bus/coach | | Tube/rail | | Other | | Total | |
|------|----------|------|-----------|------|-----------|------|----------|-----|----------|-----|
| | millions | % | millions | % | millions | % | millions | % | millions | % |
| 1972 | - | 59 | - | 32 | - | 0 | - | 2 | 14.3 | 93 |
| 1978 | - | 63 | - | 14 | - | 20 | - | 1 | 20.8 | 98 |
| 1984 | 14.9 | 66 | 3.3 | 14 | 4.5 | 20 | 0.2 | 1 | 22.6 | 101 |
| 1987 | 17.2 | 64 | 4.0 | 15 | 5.4 | 20 | 0.2 | 1 | 26.8 | 100 |
| 1991 | 19.7 | 66 | 3.9 | 13 | 6.0 | 20 | 0.2 | 1 | 29.8 | 100 |
| 1996 | 25.0 | 67 | 6.0 | 16 | 6.0 | 16 | 0.3 | 1 | 37.3 | 100 |
| 1997 | 25.3 | 66 | 6.2 | 16 | 6.6 | 17 | 0.4 | 1 | 38.5 | |
| 1998 | 27.2 | 67 | 5.7 | 14 | 6.3 | 18 | 0.4 | 1 | 40.6 | |
| 1999 | | | | | | | | | | |
| 2000 | 28.4 | 63.7 | 6.2 | 13.9 | 9.8 | 22.1 | 0.3 | 0.4 | 44.6 | |
| 2001 | 26.6 | 64.7 | 5.4 | 13.1 | 8.9 | 21.5 | 0.3 | 0.7 | 41.2 | 100 |
| 2002 | 25.9 | 65.3 | 4.9 | 12.3 | 8.8 | 22.1 | 0.1 | 0.3 | 39.7 | |
| 2003 | 25.9 | 64.3 | 5.1 | 12.6 | 9.2 | 22.9 | 0.2 | 0.3 | 40.2 | |
| 2004 | 27.8 | 63.7 | 5.4 | 12.4 | 10.2 | 23.5 | 0.3 | 0.3 | 43.6 | |
| 2005 | 27.3 | 62.7 | 5.7 | 13.0 | 10.4 | 23.9 | 0.2 | 0.4 | 43.6 | |
| 2006 | 28.5 | 64.4 | 5.8 | 13.1 | 9.9 | 22.9 | 0.0 | 0.0 | 44.2 | 100 |
| 2007 | 27.2 | 61.5 | 5.8 | 13.2 | 11.0 | 24.9 | 0.1 | 0.3 | 44.1 | |
| 2008 | 25.7 | 59.8 | 6.1 | 14.1 | 11.1 | 25.7 | 0.1 | 0.3 | 43.0 | |
| 2009 | 24.5 | 59.6 | 5.7 | 14.0 | 10.6 | 26.0 | 0.2 | 0.5 | 40.9 | |
| 2010 | 25.2 | 60.5 | 5.6 | 13.4 | 10.8 | 25.9 | 0.1 | 0.3 | 41.7 | |

Source: Civil Aviation Authority *Passenger Survey Reports*. The surveys have been undertaken annually from 1996 at Heathrow; at less frequent intervals before 1996. The report for 1999 had not been consulted at the time of preparing the table.

Notes: The Passenger Survey Reports indicate the use of each mode of transport shown in the table ¹ as a percentage ² of the total number of terminating passengers ³. The reports from 2007 onwards indicate the percentage use of private, public and other surface modes of transport. The number of passengers using each mode has been calculated by applying the individual percentages to the total number of terminating passengers in each year from 1984 onwards ⁴ The column car/taxi includes private hire cars and minicabs.

¹ The reports since 2007 indicate the percentage use of public, private and other surface modes of transport, but not the percentages for the individual modes of transport published in the reports prior to 2007. The percentages for the individual modes since 2007 have been supplied by BAA Heathrow to the local authorities.

² Rounded percentages prior to 2000, percentages to one decimal point since 2000. The individual percentages for 1972, 1978 and 1984 sum to 93 per cent, 98 per cent and 101 per cent respectively. For the subsequent years, the individual percentages sum to 100 per cent (or to one decimal point for 2000, 2003 and 2004).

³ Transfer passengers are excluded because they do not arrive at or depart from Heathrow by surface transport.

⁴ 1972 and 1978 are excluded because the data are evidently incomplete for those years - see footnote 2.

Heathrow: Number of destinations in 1990, 2001 and 2011

| Region | 1990 | | | 2001 | | | 2011 | | |
|----------------|------------|--------------|-------------|------------|--------------|-------------|------------|--------------|-------------|
| | | | | | | | | | |
| United Kingdom | 24 | (18) | (6) | 14 | (10) | (4) | 11 | (7) | (4) |
| Western Europe | 54 | (40) | (14) | 33 | (32) | (1) | 35 | (29) | (6) |
| Central Europe | 53 | (41) | (12) | 33 | (31) | (2) | 35 | (32) | (3) |
| Eastern Europe | 16 | (13) | (3) | 26 | (23) | (3) | 21 | (21) | (-) |
| Near East | 20 | (17) | (3) | 18 | (17) | (1) | 15 | (14) | (1) |
| Africa | 29 | (24) | (5) | 24 | (21) | (3) | 23 | (23) | (-) |
| Far East | 25 | (25) | (-) | 29 | (28) | (1) | 30 | (30) | (-) |
| Americas | 43 | (33) | (10) | 35 | (34) | (1) | 41 | (36) | (5) |
| Totals | 264 | (211) | (53) | 212 | (196) | (16) | 211 | (192) | (19) |

Source: Civil Aviation Authority, *Aviation Statistics*, Table 12.1 (International Air Passenger Traffic to and from Reporting Airports) and Table 12.2 (Domestic Air Passenger Traffic to and from Reporting Airports)

The table sets out the number of destinations per listed region served by air transport movements from Heathrow in the years 1990, 2001 and 2011. The first column of numbers is the total number of destinations. The second column of numbers is the number of destinations to which 2 000 or more passengers (arrivals and departures) were transported. The third column of numbers is the number of destinations to which less than 2 000 passengers (arrivals and departures) were transported.

The total number of destinations served by Heathrow decreased by approximately 20 per cent in 2001 compared with 1990, with a further decrease by approximately one per cent in 2011 compared with 2001. The number of destinations that carried less than 2 000 passengers in 1990 decreased by approximately 65 per cent. The number of destinations that carried 2 000 or more passengers in 1990 decreased by approximately 5 per cent.

Over the same period the number of passengers at Heathrow increased from 45.6 million in 1990 to 60.4 million in 2001 (an increase by 32 per cent compared with 1990), and to 69.4 million in 2011 (an increase by 52 per cent compared with 1990). The number of air transport movements (ATMs) increased from 368 000 in 1990 to 458 000 in 2001 and to 476 000 in 2011.

Changes in the number of services to destinations carrying more than 2 000 passengers in 1990 varied between regions, with five regions experiencing net decreases and three regions experiencing net increases. The largest decreases affected the United Kingdom (down from eighteen destinations to seven), Western Europe (down from forty destinations to twenty nine) and Central Europe (down from forty one destinations to thirty two), with smaller decreases in the Near East (down from seventeen destinations to fourteen) and Africa (down from twenty four destinations to twenty three). There were increased services to Eastern Europe (up from thirteen destinations to twenty one), the Far East (up from twenty five destinations to thirty) and the Americas (up from thirty three destinations to thirty six).

Analysis of the individual destinations within the regions served by Heathrow shows variation between regions and countries and within countries, with some destinations closed and others newly opened. The data upon which the table is based indicate that the majority of destinations that are no longer served by Heathrow (e.g. Antwerp, Corfu, Las Palmas) are now served by one or more of London's other airports.

A. PASSENGER DEMAND EXCLUDING TRANSFERS 2010 AND 2050

ANNEX 3

2010

| All Airports Demand 2010 mppa | | | | |
|-------------------------------|------------|-----------|-------|--|
| Domestic | Short Haul | Long Haul | Total | |
| 3.7 | 9.2 | 3.3 | 16.2 | |
| 3.1 | 34.0 | 14.1 | 51.2 | |
| | 7.1 | 3.0 | 10.1 | |
| | 16.1 | 7.0 | 23.1 | |
| 0.5 | | | 0.5 | |
| 7.3 | 66.4 | 27.4 | 101.1 | |

| Non-London Airports Demand 2010 mppa | | | | |
|--------------------------------------|----------|------------|-----------|-------|
| | Domestic | Short Haul | Long Haul | Total |
| UK Bus | 9.0 | 4.0 | 0.4 | 13.4 |
| UK Lei | 8.9 | 38.0 | 6.4 | 53.3 |
| Fo Bus | | 2.7 | 0.3 | 3.0 |
| Fo Lei | | 7.7 | 1.7 | 9.4 |
| Misc | 2.0 | | | 2.0 |
| Total | 19.9 | 52.4 | 8.8 | 81.1 |

| UK Airports Demand 2010 mppa | | | | |
|------------------------------|----------|------------|-----------|-------|
| | Domestic | Short Haul | Long Haul | Total |
| UK Bus | 12.6 | 13.1 | 3.7 | 29.4 |
| UK Lei | 12.0 | 72.0 | 20.5 | 104.5 |
| Fo Bus | | 9.8 | 3.2 | 13.0 |
| Fo Lei | | 23.8 | 8.7 | 32.5 |
| Misc | 2.5 | | | 2.5 |
| Total | 27.1 | 118.7 | 36.1 | 181.9 |

| All Airports Demand 2010 mppa | | | | |
|-------------------------------|------------|-----------|-------|--|
| Domestic | Short Haul | Long Haul | Total | |
| 4% | 9% | 3% | 16% | |
| 3% | 34% | 14% | 51% | |
| | 7% | 3% | 10% | |
| | 16% | 7% | 23% | |
| 0% | | | 0% | |
| 7% | 66% | 27% | 100% | |

| Non-London Airports Demand 2010 mppa | | | | |
|--------------------------------------|----------|------------|-----------|-------|
| | Domestic | Short Haul | Long Haul | Total |
| UK Bus | 11% | 5% | 0% | 17% |
| UK Lei | 11% | 47% | 8% | 66% |
| Fo Bus | | 3% | 0% | 4% |
| Fo Lei | | 9% | 2% | 12% |
| Misc | 2% | | | 2% |
| Total | 25% | 65% | 11% | 100% |

| UK Airports Demand 2010 mppa | | | | |
|------------------------------|----------|------------|-----------|-------|
| | Domestic | Short Haul | Long Haul | Total |
| UK Bus | 7% | 7% | 2% | 16% |
| UK Lei | 7% | 40% | 11% | 57% |
| Fo Bus | | 5% | 2% | 7% |
| Fo Lei | | 13% | 5% | 18% |
| Misc | 1% | | | 1% |
| Total | 15% | 65% | 20% | 100% |

2050

| All Airports Demand 2050 mppa | | | | |
|-------------------------------|------------|-----------|-------|--|
| Domestic | Short Haul | Long Haul | Total | |
| 8.0 | 19.6 | 8.0 | 35.6 | |
| 6.0 | 46.3 | 30.4 | 82.7 | |
| | 12.5 | 5.4 | 17.9 | |
| | 22.0 | 12.3 | 34.3 | |
| 0.6 | | | 0.6 | |
| 14.6 | 100.4 | 56.1 | 171.1 | |

| Non-London Airports Demand 2050 mppa | | | | |
|--------------------------------------|----------|------------|-----------|-------|
| 2010 | Domestic | Short Haul | Long Haul | Total |
| UK Bus | 20.7 | 13.7 | 3.6 | 38.0 |
| UK Lei | 19.7 | 115.9 | 23.7 | 159.3 |
| Fo Bus | | 7.5 | 0.9 | 8.4 |
| Fo Lei | | 25.5 | 4.2 | 29.7 |
| Misc | 4.4 | | | 4.4 |
| Total | 44.8 | 162.6 | 32.4 | 239.8 |

| UK Airports Demand 2050 mppa | | | | |
|------------------------------|----------|------------|-----------|-------|
| 2010 | Domestic | Short Haul | Long Haul | Total |
| UK Bus | 28.7 | 33.3 | 11.7 | 73.7 |
| UK Lei | 25.7 | 162.1 | 54.1 | 241.9 |
| Fo Bus | | 20.0 | 6.3 | 26.3 |
| Fo Lei | | 47.5 | 16.5 | 64.0 |
| Misc | 5.0 | | | 5.0 |
| Total | 59.4 | 262.9 | 88.6 | 410.9 |

| All Airports Demand 2050 mppa | | | | |
|-------------------------------|------------|-----------|-------|--|
| Domestic | Short Haul | Long Haul | Total | |
| 5% | 11% | 5% | 21% | |
| 4% | 27% | 18% | 48% | |
| | 7% | 3% | 10% | |
| | 13% | 7% | 20% | |
| 0% | | | 0% | |
| 9% | 59% | 33% | 100% | |

| Non-London Airports Demand 2050 mppa | | | | |
|--------------------------------------|----------|------------|-----------|-------|
| | Domestic | Short Haul | Long Haul | Total |
| UK Bus | 9% | 6% | 2% | 16% |
| UK Lei | 8% | 48% | 10% | 66% |
| Fo Bus | | 3% | 0% | 4% |
| Fo Lei | | 11% | 2% | 12% |
| Misc | 2% | | | 2% |
| Total | 19% | 68% | 14% | 100% |

| UK Airports Demand 2050 mppa | | | | |
|------------------------------|----------|------------|-----------|-------|
| | Domestic | Short Haul | Long Haul | Total |
| UK Bus | 7% | 8% | 3% | 18% |
| UK Lei | 6% | 39% | 13% | 59% |
| Fo Bus | | 5% | 2% | 6% |
| Fo Lei | | 12% | 4% | 16% |
| Misc | 1% | | | 1% |
| Total | 14% | 64% | 22% | 100% |

GROWTH 2010 TO 2050

| All Airports Demand 2010 to 2050 mppa | | | | |
|---------------------------------------|------------|-----------|-------|--|
| Domestic | Short Haul | Long Haul | Total | |
| 2.2 | 2.1 | 2.4 | 2.2 | |
| 1.9 | 1.4 | 2.2 | 1.6 | |
| | 1.8 | 1.8 | 1.8 | |
| | 1.4 | 1.8 | 1.5 | |
| 1.2 | | | 1.2 | |
| 2.0 | 1.5 | 2.0 | 1.7 | |

| Non-London Airports Demand 2010 to 2050 mppa | | | | |
|--|----------|------------|-----------|-------|
| | Domestic | Short Haul | Long Haul | Total |
| UK Bus | 2.3 | 3.4 | 9.0 | 2.8 |
| UK Lei | 2.2 | 3.1 | 3.7 | 3.0 |
| Fo Bus | | 2.8 | 3.0 | 2.8 |
| Fo Lei | | 3.3 | 2.5 | 3.2 |
| Misc | 2.2 | | | 2.2 |
| Total | 2.3 | 3.1 | 3.7 | 3.0 |

| UK Airports Demand 2010 to 2050 mppa | | | | |
|--------------------------------------|----------|------------|-----------|-------|
| | Domestic | Short Haul | Long Haul | Total |
| UK Bus | 2.3 | 2.5 | 3.2 | 2.5 |
| UK Lei | 2.1 | 2.3 | 2.6 | 2.3 |
| Fo Bus | | 2.0 | 2.0 | 2.0 |
| Fo Lei | | 2.0 | 1.9 | 2.0 |
| Misc | 2.0 | | | 2.0 |
| Total | 2.2 | 2.2 | 2.5 | 2.3 |

B. PASSENGER DEMAND - TRANSFERS 2010 AND 2050

| Passenger Transfers | 2010 | 2050 |
|--|------|------|
| | mppa | mppa |
| Domestic - International | 7.2 | 0.4 |
| International - International SE Airports | 21.0 | 28.1 |
| International - International at regional airports | 0.1 | 8.1 |
| Sub total | 28.5 | 36.6 |
| UK transfers at overseas hubs | 4.0 | 5.4 |
| Total | 32.5 | 42.0 |
| SE Airports: Heathrow, Stansted, Luton, London City, Southampton, Southend & Norwich | | |

Source: DfT Aviation Demand Forecasts 2012, Table A - Annex E8, E9 & E10 and Table B - Annex E6 & E7

Note: Each transfer passenger is counted twice in Table B (i.e. 2 ATMs)

Passenger numbers at UK airports: 1972 - 2011

| | London airports | | Other UK airports | | All UK airports | |
|------|-----------------|----------|-------------------|----------|-----------------|----------|
| | <i>millions</i> | <i>%</i> | <i>millions</i> | <i>%</i> | <i>millions</i> | <i>%</i> |
| 1972 | 27.0 | 69.4 | 11.9 | 30.6 | 38.9 | 100.0 |
| 1973 | 29.4 | 68.4 | 13.6 | 31.6 | 43.0 | |
| 1974 | 27.4 | 68.5 | 12.6 | 31.5 | 40.0 | |
| 1975 | 28.7 | 68.5 | 13.2 | 31.3 | 41.9 | |
| 1976 | 31.0 | 69.5 | 13.7 | 30.6 | 44.7 | |
| 1977 | 32.2 | 70.2 | 13.7 | 29.8 | 45.9 | |
| 1978 | 36.7 | 69.3 | 16.1 | 30.5 | 52.8 | |
| 1979 | 39.2 | 68.8 | 17.8 | 31.2 | 57.0 | |
| 1980 | 39.6 | 68.4 | 18.2 | 31.5 | 57.8 | |
| 1981 | 39.4 | 68.2 | 18.4 | 31.8 | 57.8 | 100.0 |
| 1982 | 39.7 | 67.5 | 19.1 | 32.5 | 58.8 | |
| 1983 | 41.3 | 67.6 | 19.8 | 32.4 | 61.1 | |
| 1984 | 45.5 | 67.2 | 22.1 | 32.7 | 67.6 | |
| 1985 | 48.3 | 68.6 | 22.1 | 31.4 | 70.4 | |
| 1986 | 50.1 | 66.7 | 25.1 | 33.4 | 75.2 | |
| 1987 | 57.4 | 66.7 | 28.6 | 33.3 | 86.0 | |
| 1988 | 62.1 | 66.7 | 31.1 | 33.4 | 93.2 | |
| 1989 | 65.0 | 65.9 | 33.9 | 34.3 | 98.9 | |
| 1990 | 67.7 | 66.3 | 34.7 | 33.9 | 102.4 | |
| 1991 | 62.6 | 65.5 | 33.2 | 35.6 | 95.8 | 100.0 |
| 1992 | 69.3 | 63.8 | 39.3 | 36.2 | 108.6 | |
| 1993 | 72.4 | 63.1 | 42.2 | 36.8 | 114.7 | |
| 1994 | 77.9 | 62.4 | 46.9 | 37.6 | 124.9 | |
| 1995 | 82.7 | 62.6 | 49.3 | 37.3 | 132.1 | |
| 1996 | 87.8 | 63.3 | 50.8 | 36.7 | 138.6 | |
| 1997 | 94.4 | 63.1 | 54.1 | 36.2 | 149.5 | |
| 1998 | 101.7 | 62.9 | 59.9 | 37.0 | 161.7 | |
| 1999 | 108.4 | 63.4 | 62.6 | 36.6 | 171.1 | |
| 2000 | 115.8 | 63.4 | 66.7 | 36.6 | 182.6 | |
| 2001 | 113.4 | 61.8 | 70.3 | 38.3 | 183.6 | 100.0 |
| 2002 | 116.7 | 61.1 | 74.4 | 38.9 | 191.1 | |
| 2003 | 120.1 | 59.3 | 82.3 | 40.7 | 202.4 | |
| 2004 | 128.6 | 59.0 | 89.5 | 41.0 | 218.1 | |
| 2005 | 133.5 | 57.9 | 97.1 | 42.1 | 230.6 | |
| 2006 | 136.9 | 57.6 | 100.7 | 42.4 | 237.6 | |
| 2007 | 139.7 | 57.4 | 103.6 | 42.6 | 243.2 | |
| 2008 | 136.9 | 57.3 | 101.8 | 42.6 | 238.7 | |
| 2009 | 130.1 | 58.8 | 91.1 | 41.2 | 221.3 | |
| 2010 | 127.2 | 59.5 | 86.5 | 40.5 | 213.7 | |
| 2011 | 133.6 | 60.1 | 88.8 | 39.9 | 222.4 | 100.0 |

Source: For the years 1972 - 1991: Civil Aviation Authority, *Passengers at London Airports in 1991*, Table 1. For the years 1992 - 2007: Civil Aviation Authority, *UK Airports - Annual Statements of Movements, Passengers and Cargoes*. The passenger numbers for the London airports are the aggregate for Gatwick, Heathrow, London City, Luton, and Stansted. The passenger numbers for the other UK regions (including the Isle of Man and the Channel Islands) are the aggregate for fifty seven airports listed in the source. The entries marked in bold indicate a decrease in the number of passengers compared with the previous years.

The total number of passengers at all airports experienced a near continuous year-on-year increase in the period 1972 - 2007, with rates of increase by a factor of five at the London airports and by a factor of more than eight at the other UK airports. Passenger numbers then decreased in each year between 2008 and 2010 in both London and the other regions, with renewed increases in 2011.

London's airports accounted for more than half of passengers at all UK airports in every year since 1972. But the airports in other regions increased their share of total passenger numbers from 30.6 per cent in 1972 to 42.6 per cent in 2007 and 2008, with disproportionate growth particularly noticeable relative to London in the period 1989 - 2007. In the last three years (2009 - 2011) that trend has reversed, with London increasing its share of all passenger numbers.

Passenger numbers at London airports 1972 - 2011

| | Gatwick | | Heathrow | | London City | | Luton | | Stansted | | Total | |
|------|-------------|----|-------------|----|-------------|---|------------|----|-------------|----|--------------|-------|
| | millions | % | millions | % | millions | % | millions | % | millions | % | millions | % |
| 1972 | 5.3 | 20 | 18.3 | 68 | - | - | 3.1 | 11 | 0.3 | 1 | 27.0 | 100.0 |
| 1973 | 5.7 | 19 | 20.3 | 69 | - | - | 3.2 | 11 | 0.2 | 1 | 29.4 | |
| 1974 | 5.1 | 19 | 20.1 | 73 | - | - | 2.0 | 7 | 0.2 | 1 | 27.4 | |
| 1975 | 5.3 | 18 | 21.3 | 74 | - | - | 1.9 | 7 | 0.2 | 1 | 28.7 | |
| 1976 | 5.7 | 18 | 23.2 | 75 | - | - | 1.8 | 6 | 0.3 | 1 | 31.0 | |
| 1977 | 6.6 | 20 | 23.4 | 73 | - | - | 1.9 | 6 | 0.3 | 1 | 32.2 | |
| 1978 | 7.8 | 21 | 26.5 | 72 | - | - | 2.1 | 6 | 0.3 | 1 | 36.7 | |
| 1979 | 8.7 | 22 | 28.0 | 71 | - | - | 2.2 | 6 | 0.3 | 1 | 39.2 | |
| 1980 | 9.7 | 24 | 27.5 | 69 | - | - | 2.1 | 5 | 0.3 | 1 | 39.6 | |
| 1981 | 10.7 | 27 | 26.4 | 67 | - | - | 2.0 | 5 | 0.3 | 1 | 39.4 | 100.0 |
| 1982 | 11.2 | 28 | 26.4 | 66 | - | - | 1.8 | 5 | 0.3 | 1 | 39.7 | |
| 1983 | 12.5 | 30 | 26.8 | 65 | - | - | 1.7 | 4 | 0.3 | 1 | 41.3 | |
| 1984 | 14.0 | 31 | 29.2 | 64 | - | - | 1.8 | 4 | 0.5 | 1 | 45.5 | |
| 1985 | 14.9 | 31 | 31.3 | 65 | - | - | 1.6 | 3 | 0.5 | 1 | 48.3 | |
| 1986 | 16.3 | 32 | 31.3 | 62 | - | - | 2.0 | 4 | 0.5 | 1 | 50.1 | |
| 1987 | 19.4 | 34 | 34.7 | 60 | - | - | 2.6 | 4 | 0.7 | 1 | 57.4 | |
| 1988 | 20.7 | 33 | 37.5 | 60 | 0.1 | - | 2.8 | 4 | 1.0 | 2 | 62.1 | |
| 1989 | 21.1 | 32 | 39.6 | 61 | 0.2 | - | 2.8 | 4 | 1.3 | 2 | 65.0 | |
| 1990 | 21.0 | 31 | 42.6 | 63 | 0.2 | - | 2.7 | 4 | 1.2 | 2 | 67.7 | |
| 1991 | 18.7 | 30 | 40.2 | 64 | 0.2 | - | 2.0 | 3 | 1.7 | 3 | 62.8 | 100.0 |
| 1992 | 19.8 | 29 | 45.0 | 65 | 0.2 | - | 1.8 | 3 | 2.3 | 3 | 69.1 | |
| 1993 | 20.1 | 28 | 47.6 | 66 | 0.2 | - | 1.7 | 2 | 2.7 | 4 | 72.3 | |
| 1994 | 21.0 | 27 | 51.4 | 66 | 0.5 | 1 | 1.8 | 2 | 3.2 | 4 | 77.9 | |
| 1995 | 22.4 | 27 | 54.1 | 65 | 0.6 | 1 | 1.8 | 2 | 3.8 | 5 | 82.7 | |
| 1996 | 24.1 | 28 | 55.7 | 64 | 0.7 | 1 | 2.4 | 3 | 4.7 | 5 | 87.6 | |
| 1997 | 26.8 | 28 | 57.8 | 61 | 1.2 | 1 | 3.2 | 3 | 5.3 | 6 | 94.3 | |
| 1998 | 29.0 | 29 | 60.4 | 59 | 1.4 | 1 | 4.1 | 4 | 6.8 | 7 | 101.7 | |
| 1999 | 30.4 | 28 | 62.0 | 57 | 1.4 | 1 | 5.2 | 5 | 9.4 | 9 | 108.4 | |
| 2000 | 31.9 | 28 | 64.3 | 56 | 1.6 | 1 | 6.2 | 5 | 11.8 | 10 | 115.8 | |
| 2001 | 31.1 | 27 | 60.5 | 53 | 1.6 | 1 | 6.5 | 6 | 13.6 | 12 | 113.3 | 100.0 |
| 2002 | 29.5 | 25 | 63.0 | 54 | 1.6 | 1 | 6.5 | 6 | 16.0 | 14 | 116.6 | |
| 2003 | 29.9 | 25 | 63.2 | 53 | 1.5 | 1 | 6.8 | 6 | 18.7 | 15 | 120.1 | |
| 2004 | 31.4 | 24 | 67.1 | 52 | 1.7 | 1 | 7.5 | 6 | 20.9 | 16 | 128.6 | |
| 2005 | 32.7 | 24 | 67.7 | 51 | 2.0 | 1 | 9.1 | 7 | 22.0 | 16 | 133.5 | |
| 2006 | 34.1 | 25 | 67.3 | 49 | 2.4 | 2 | 9.4 | 7 | 23.7 | 17 | 136.9 | |
| 2007 | 35.2 | 25 | 67.9 | 49 | 2.9 | 2 | 9.9 | 7 | 23.8 | 16 | 139.7 | |
| 2008 | 34.2 | 25 | 66.9 | 49 | 3.3 | 2 | 10.2 | 7 | 22.3 | 16 | 136.8 | |
| 2009 | 32.4 | 25 | 65.9 | 51 | 2.8 | 2 | 9.1 | 7 | 19.9 | 15 | 130.1 | |
| 2010 | 31.3 | 25 | 65.7 | 52 | 2.8 | 2 | 8.7 | 7 | 18.6 | 15 | 127.2 | |
| 2011 | 33.6 | 25 | 69.4 | 52 | 2.9 | 2 | 9.5 | 7 | 18.0 | 13 | 133.6 | 100.0 |

Sources: Civil Aviation Authority, *Passengers at London Airports in 1991* (published in 1993), Table 1, for the years 1972 - 1991. Civil Aviation Authority, *UK Airports - Annual Statements of Movements, Passengers and Cargoes*, for the years 1992 - 2007. Where the totals do not sum this is due to rounding. The entries marked in bold indicate a decrease in the number of passengers compared with the previous year.

Notes: The number of passengers have increased at all of London's main airports between 1972 and 2011. Heathrow handled more than 70 per cent of the total number of passengers at London's main airports between 1974 and 1979, reaching a peak of 75 per cent in 1976. Since 1979 the other London airports have attracted an increasing proportion of the total passenger number, with Heathrow's share decreasing to 49 per cent in the years 2006 - 2009, before increasing to 52 per cent in 2010 and 2011.