Department for Transport

PASSENGER FORECASTS : ADDITIONAL ANALYSIS

Department for Transport

December 2003

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Executive Summary

This paper explains the work undertaken by the Department for Transport (DfT) on the nature of demand for air traffic, and expands on the information available in Annex A of the Government's Air Transport White Paper "***The Future of Air Transport***". The paper explains the use of two different methodologies that together forecast the level, composition and geographical location of air traffic demand.

The first methodology forecasts future levels of unconstrained demand for the UK as a whole. These forecasts, published in May 2000, were econometrically modelled using historical data on disposable income, fares, and other variables. This approach forecasts unconstrained demand at UK airports to rise to 400 million passengers per annum (mppa) in 2020 and further to 500 mppa by 2030. These forecasts include the mix of traffic by type of carrier, by distance travelled, and by purpose of travel [leisure or business]. The focus of these forecasts is on long term trends, not short term cyclical patterns.

The second, complementary approach is the DfT Air Passenger Forecasting Model. This model forecasts how passengers choose which airport to use in order to minimise their costs and how additional capacity at individual airports affects their choices. In this model, ' fare premia ' bring demand back into line with capacity at airports where there is excess demand. The latest version of this model, taking account of changes in the aviation market as detailed in paras A. 23 and A. 24 of the Aviation White Paper, is described.

In the rest of the paper, different combinations of capacity development at individual London airports are considered in terms of their impact on the level and composition of traffic at individual UK airports, including those in the regions. The economic benefits of alternative development proposals are then assessed.

Chapter 1: INTRODUCTION

1.1 Annex A of *The Future of Air Transport* White Paper (ATWP) describes the air traffic forecasts and makes reference to the DfT Air Passenger Forecasting Model and its most recent version. This paper gives further background to Annex A of the ATWP and presents and explains the newest forecasts and their consequential economic results.

1.2 Annex A of the ATWP introduces the forecasts of continuing UK air travel growth over a 30 year period. Even at decreasing rates of growth, these forecasts generate concerns that ***'we will all have to fly too often to generate this number of trips***' or ***'there won't be the tourist facilities to cope with this number of trips'***.

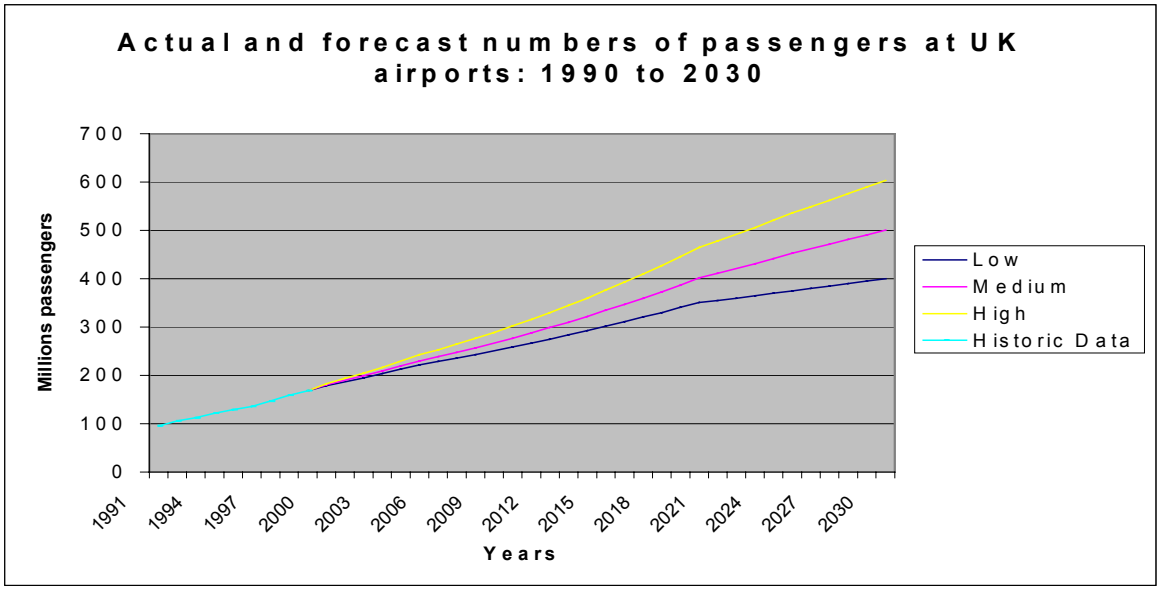
1.3 To put such arguments in context, the approximate breakdown of 2030 air passenger movements in a high airport capacity scenario is as follows:

- Unconstrained 2030 terminal passengers = 500 million passengers per annum (mppa) ;
- High airport capacity scenario 2030 terminal passengers = 484 mppa;
- Excluding connecting trips = 430 mppa;
- Of these, 68 mppa are domestic passengers = 17 million return trips, 86 per cent by UK residents;
- Approximately 150 mppa are international trips by foreign residents = 75 million return trips;
- Approximately 206 mppa are international trips by UK residents = 103 million return trips.

1.4 So, by 2030, 64 million UK residents may be making 103 million international return trips and most of the 17 million return domestic trips, around 120 million in total. This gives an average of just under two return trips per UK resident (compared with 0.8 return trips in 2000). Similarly return trips by foreign residents rise to 75 million in 2030 (compared with 21 million in 2000), or a bit more than UK population projected then.

Chapter 2: THE NATIONAL FORECASTS

Figure 1



2.1 The data for 1991 to 1999 in the above graph comes from DfT's '***Transport Statistics Great Britain***' 2002[1]. Data from 2000 to 2030 comes from DfT's national air traffic forecast model. Throughput in 2000 was 180 mppa ; our ' flash estimate ' for 2003 is 200 mppa.

2.2 The mid point forecast for demand at UK airports in 2020 is 400 million passengers rising to 500 million passengers by 2030. These are figures relating to unconstrained passenger demand i.e. before account is taken of capacity limitations at any individual airports.

2.3 The long-term factors driving the increase in future demand for air travel in the UK were econometrically modelled i.e. using statistical techniques on historic data. These factors included future growth in UK and world GDP, increased world-trade, declining air fares, and exchange rates. Another key factor modelled in the forecasts is the onset of increasing market maturity, i.e. declining growth in the demand for air travel through time given rising GDP per person.

2.4 Future demand for air travel has a cyclical as well as a trend growth element. The modelling in the econometric forecasts does not deal with short-term effects. Such short-term effects include random shocks to the aviation sector (eg September 11th 2001, SARS virus), which temporarily affect demand for air travel.

[1] *Transport Statistics Great Britain 2002*, 28th Edition, Department for Transport, October 2002.

2.5 Major shocks to air passenger traffic at UK Airports since 1960 are shown below :

Year	Annual Change	Shock	Source of Shock: Demand – Economy	Source of Shock: Demand – "Consumer Perception"	Source of Shock: Supply – Airline costs
1968	3.1%	The Six-Day War in the Middle East in 1967 and the 1967/68 foot-and-mouth epidemic in the UK.		√	
1974	-7.3%	The 1973 oil price shock and the subsequent worldwide economic recession (1973/1975 in the UK).	√		√
1980	0%	The 1979/82 economic recession in the UK.	√		√
1985	4.2%	Terrorist incidents in 1985: Downing of Air India flight 182 (329 dead); Simultaneous attacks on Vienna (2 dead and 37 wounded) and Rome (16 deaths and 73 wounded) airports; Hijacking of the Achille Lauro cruise ship (1 dead).		√	
1991	-6.7%	The 1989/93 economic recessions in the UK, the 1990 oil price shock and the 1991 Gulf War.	√	√	√
2001	0.8%	September 11 terrorist incidents in the US.		√	

Forecast Assumptions

2.6 The long term GDP growth assumption for the UK used in calculating forecasts was 2.25 per cent per annum. World GDP was projected at higher rates in less developed and newly industrialised countries (such as China and Eastern Europe) than in OECD countries.

2.7 Forecasts assume 1 per cent decrease in air fares in real terms per annum between 2000 and 2020. This is 1 percentage point less than the historic trend of a 2 per cent decrease over the last 20-30 years.

Performance of the Forecasts

2.8 Historically, official forecasts have tended to under-estimate future traffic growth. Outturns to date have exceeded the upper bound estimate of the 1994 and 1997 forecasts.

Composition of the Forecasts

2.9 People fly for a multiplicity of reasons; **Annex A** shows the range of activities by UK business and leisure travellers through the four principal London airports. Additionally, **Annex B.1** shows the mix of traffic by type (scheduled, charter and No Frills Carriers (NFC)), by range (short haul, long haul), and by purpose (business, leisure) at major London airports under various development scenarios.

2.10 The higher demand in the long term from business passengers in the national forecasts reflects the lower maturity in this market compared with the leisure market.

2.11 Demand from foreign leisure passengers is forecast to grow faster than demand from UK leisure passengers (see **Annex B.2** for major London airports under various development scenarios). This reflects higher economic growth rates for countries outside of Western Europe and North America.

2.12 The development and success of hubs is a result of both strong catchment area and high connecting levels. The connection of routes through hubs with a substantial origin/destination catchment ensures that hubbing traffic can be supported by a strong base of point-to-point demand. At the same time, this point-to-point demand provides the fuel for the operation of new routes, which can be supported through connecting traffic.

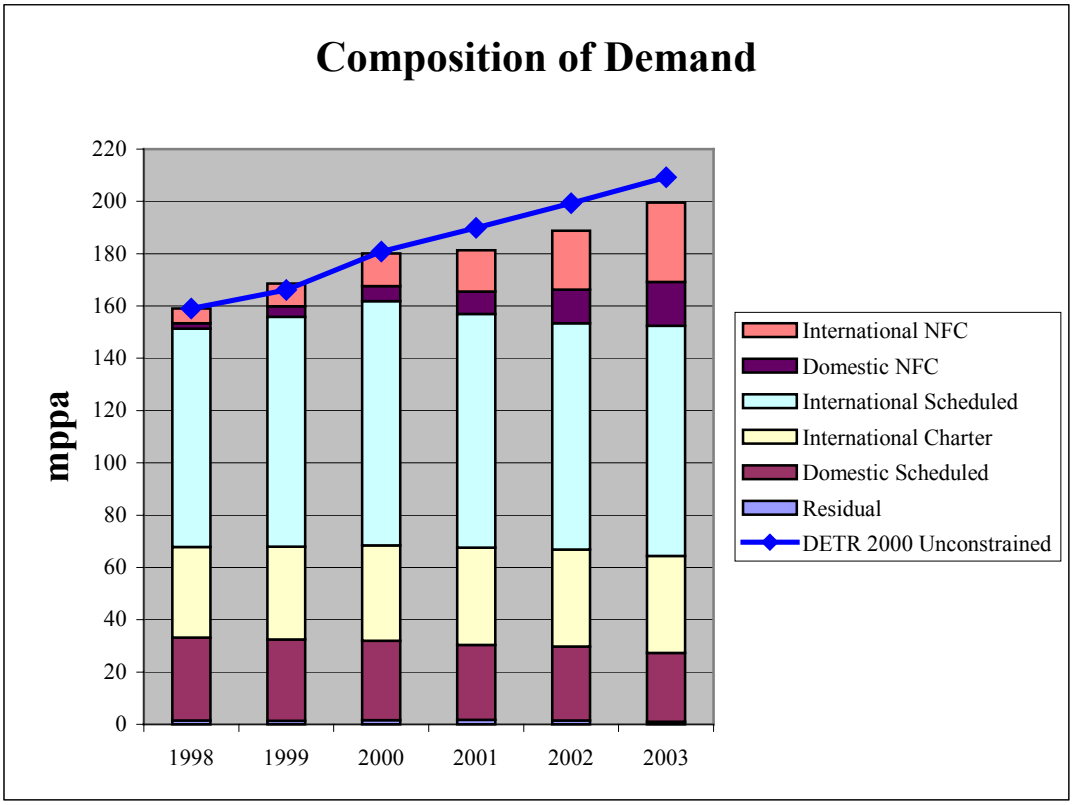
2.13 International-to-International (I-to-I) connecting passengers, if airport capacity is unconstrained, are predicted to grow at the same rate as foreign leisure traffic. But I-to-I connecting routes will change over time; there will be opportunities to grow new connecting markets as hubs with large origin/destination demand bring on new services. London has the potential to develop deeper services in the decades ahead to regions where it has strong historic links e.g. Southern Africa and to emerging markets in the former Soviet bloc and China. (**Annex B.3** shows forecast interlining at major London airports under various development scenarios, both I-to-I interlining and domestic-international interlining from other UK airports.)

Chapter 3: RECENT DEVELOPMENTS

Introduction

3.1 Since the national forecasts were published in May 2000[2], there has been a mild world economic slowdown accompanied by international events, particularly 11 September 2001. As a result there has been a significant underperformance of long haul traffic and other difficulties for the traditional carriers. No Frills Carriers (NFCs – see **Annex E** for methodology for categorising NFC traffic) have given a greater stimulus to UK aviation than seemed likely three years ago. There has been more than a six–fold increase in the NFC sector on UK domestic routes – from 2 mppa in 1998 to 13 mppa in 2002, with international NFCs, growing from 6 mppa to 22 mppa[3]. There has been only limited growth in the charter market.

Figure 2



3.2 Around one year's UK overall air passenger growth has been lost as a result of the impact of 11 September 2001 and weak world economic activity. The 'gap' between outturn and forecast, however, has been substantially reduced in large part by growth in international and domestic NFC services. The extent to which NFCs will continue to take market share (if at all) will depend on a range of factors, not least the competitive response of traditional airlines cutting their costs. However, the degree to which our forecasts have assumed growth in foreign resident demand to exceed that of UK residents' demand makes

[2] *Air Traffic Forecasts for the United Kingdom 2000,* May 2000, Department of the Environment, Transport and the Regions.
[3] International NFCs by airport are given in **Annex E**, Table E1. The corresponding data for domestic NFCs is at Table 2 below.

clear the extent to which growth in the long haul market in particular must recover to meet that forecast.

3.3 Numbers of passengers corresponding to Figure 2 above are given in ***Table 1*** below:

Table 1: UK Passengers 1998-2003

	Million Passengers per Year					
	1998	1999	2000	2001	2002	2003
TOTAL NO FRILLS CARRIERS	7.7	12.7	18.2	24.3	35.4	47.2
Domestic Scheduled	31.6	31.1	30.4	28.7	28.1	26.3
Domestic NFC	2.0	4.0	5.8	8.6	13.0	16.8
TOTAL DOMESTIC	**33.6**	**35.1**	**36.1**	**37.2**	**41.1**	**43.1**
International Charter	34.7	35.4	36.5	37.2	38.2	37.1
Of which : long haul charter	3.8	3.7	3.4	3.1	2.9	2.8
International Scheduled	83.5	88.0	93.4	89.3	86.0	88.0
Of which : long haul scheduled	32.2	34.6	37.5	35.1	35.2	34.2
International NFC	5.7	8.7	12.4	15.8	22.4	30.4
TOTAL INTERNATIONAL	**123.9**	**132.1**	**142.3**	**142.4**	**146.6**	**155.5**
TOTAL INT + DOMESTIC	157.6	167.2	178.4	179.6	187.7	198.6
Other	1.5	1.3	1.6	1.7	1.5	1.0
TOTAL PASSENGERS	**159.1**	**168.5**	**180.1**	**181.3**	**189.1**	**199.5**
DETR 2000 Unconstrained Forecast	159.0	166.2	180.9	189.9	199.3	209.0

Figures may not total exactly due to rounding to nearest 0.1m.

3.4 The weakness in long haul has reflected itself in the switch of some such services from Gatwick to Heathrow. This weakness should be reversed at some stage, perhaps sharply, and will be a key factor in inward tourism as well as in the business market. Liberalisation of the long haul market would help reduce costs and fares in that sector. The national forecasts for growth of foreign resident passengers would also be supported by NFCs increasing their contribution to inward tourism. The forecast for passengers on domestic flights requires a period of below trend growth later on, given high growth rates of NFCs on domestic routes in recent years.

3.5 There has been very little change in the demand for international charter services over the last five years. Nationally demand has risen from 34.7 million passengers in 1998 to 37.1 million passengers in 2003. Gatwick is and has been the UK's number one airport for charter service with Manchester a close second.

Greater Competition

3.6 Since publication of the national forecasts in May 2000, there are reasons for believing that increased airline competition, mainly prompted by the growth of NFCs, will exert greater downward pressure on air fares than previously thought, thus acting as an additional stimulus to demand.

3.7 DfT has looked at this issue in more detail during the consultation period. The principal factors underlying this thesis are:

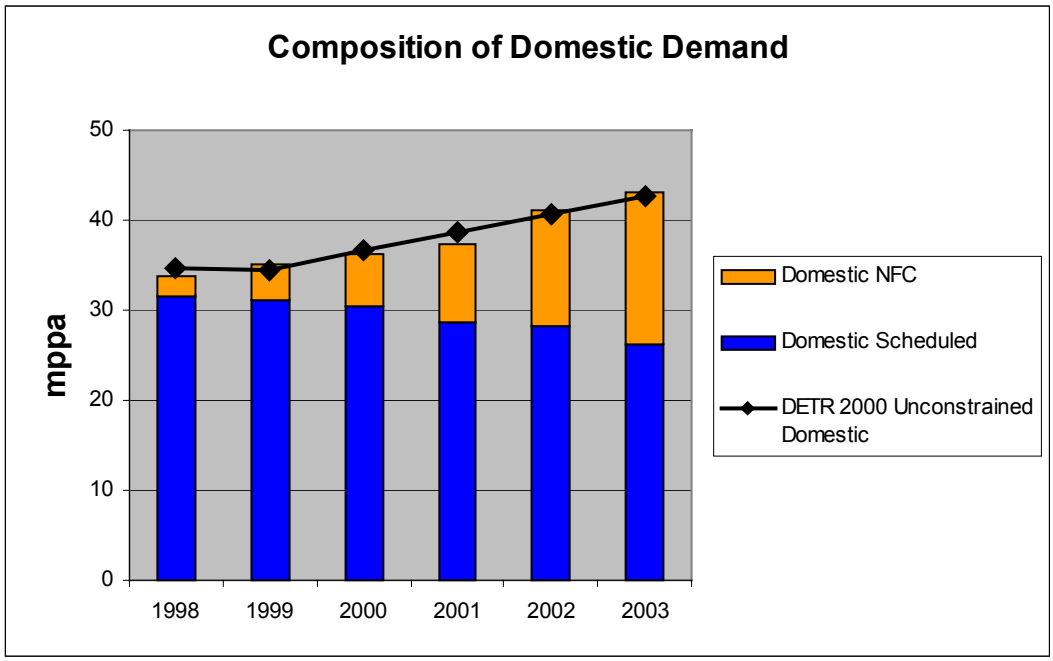
- the year 2000 national air traffic forecasts underestimated the impact of the NFCs, for example, in not reflecting the high generated traffic on fast-growing scheduled routes and high abstraction from charter demand on principal “sun” holiday routes;
- NFCs achieve much lower operating costs than traditional carriers with high daily utilisation of aircraft, low labour costs and internet sales. It is estimated they can deliver unit costs as much as 40 per cent lower than their traditional rivals who will have to make material cost savings in order to remain competitive – of the order of 20 per cent;
- The key contestable markets are scheduled domestic and short haul, accounting for around one half of UK air passengers. Critics question whether the ' no frills business model ' is sustainable. It is true that some low cost airlines have been sold or gone out of business, but the sector as a whole is both highly profitable and expanding rapidly – in both the USA and Europe. The downward pressure on airline costs is a fact of life and is already feeding through to traditional airlines.

3.8 In the long haul market, liberalisation brought about by a Trans Atlantic Common Aviation Area might lead to fare reductions of the order of 10 per cent in that market.

3.9 The impact of aviation on climate change is the large environmental cost which can be quantified in monetary terms. The Treasury/DfT discussion paper, ***Aviation and the Environment: Using Economic Instruments,*** uses an illustrative value of the cost of carbon to determine the reduction in national air demand which would result from an economic instrument designed to ' internalise ' this cost. A fares decrease to 2030 of 0.5 percentage points per annum due to greater competition, including the impact of NFCs, would balance a 10 per cent reduction in demand due to economic instruments dealing with aviation’s contribution to global warming.

The Domestic Market

Figure 3



3.10 The UK domestic market has performed better than was forecast in the unconstrained demand forecasts over the period 1998 to 2002. This is due to the rapid rise in the demand

for domestic NFC services, despite the reduction in the demand for scheduled domestic services over the same period. The reasons for this growth are given above.

3.11 Growth in the demand for domestic NFC services has been 'explosive'. See ***Table 2*** below, which shows on a selected airport by airport basis, demand for domestic NFC traffic over the last five years.

Table 2: Recent Demand for Domestic NFC Traffic at Selected UK Airports (mppa)[4]

	1998	1999	2000	2001	2002	2003
Belfast International	0.05	0.37	0.62	1.42	2.27	3.00
Bristol	0	0	0	0.11	0.57	0.65
East Midlands	0	0	0	0.01	0.22	0.73
Edinburgh	0.35	0.71	0.82	1.17	2.02	2.45
Gatwick	0	0	0.07	0.02	0.33	0.68
Glasgow	0.26	0.33	0.47	0.97	1.50	1.83
Liverpool	0	0.16	0.46	0.49	0.54	0.60
Luton	0.76	1.24	1.62	1.67	1.70	1.72
Stansted	0.26	0.68	1.06	1.81	2.37	2.68
Prestwick	0.22	0.27	0.44	0.63	0.70	0.79
All UK airports	**2.05**	**3.99**	**5.75**	**8.57**	**12.85**	**16.78**

3.12 Belfast International has seen growth in passengers flying on domestic NFC routes from 0.05 mppa to 3 mppa between 1998 and 2003. Similarly at Edinburgh, passengers flying on domestic NFCs have grown from 0.35 million passengers in 1998 to 2.5 million in 2003. Stansted has also experienced rapid growth in domestic NFC traffic, growing from 0.27 million passengers in 1998 to 2.7 mppa in 2003, a ten-fold increase. Such has been the growth of demand at Stansted of NFC traffic, that it could be viewed as an informal hub in the South East, with passengers arriving from the regions making their own arrangements to connect to international flights. With the rise in domestic NFCs out of Stansted, scheduled domestic flights there have all but vanished in the last five years.

3.13 Demand for domestic scheduled traffic has declined 17 per cent since 1998 across all UK airports. At the other major airports in the South East, Heathrow has experienced an overall decline in domestic traffic from 7.2 m to 6.7 m between 1998 and 2003, entirely from the loss of scheduled domestic flights. At Gatwick, the story has been different between 1998 and 2003. After September 11th 2001, a material amount of long haul traffic migrated to Heathrow. The availability of slots at Gatwick allowed easyJet to start NFC services there.

3.14 At Birmingham and Edinburgh, domestic scheduled traffic has been flat over the period 1998-2003. For the same period, all other regional airports have seen a reduction in domestic scheduled services, apart from Manchester, Newcastle, Belfast City and Plymouth, which all had some growth in domestic scheduled services.

3.15 London City airport has capitalised in developing domestic scheduled services, with passenger throughput on such services in the past five years growing from 177 K

[4] CAA statistical returns (1998- mid 2003); projections for second half of 2003. The total at 'all UK airports' includes the demand for NFCs for a number of UK airports not shown in the table.

passengers in 1998 to 417 K passengers in 2003. London City has developed these services largely to cater for business passengers with high values of time.

Hub Traffic

3.16 ***The Future Development of Air Transport in the United Kingdom: South East*** states that "*Heathrow's extensive route network is only viable because of the large number of international passengers transferring through the airport (at around 15mppa – almost a quarter of the total – the most at any airport in the world). As a result, UK travellers and businesses benefit from having direct flights to more destinations and higher frequencies.... Regional travellers benefit from having an increased range of destinations served one-stop via a hub*."

3.17 Traditionally, UK and European travel patterns have supported a high proportion of connecting traffic at major hubs, reflecting a multiplicity of ultimate destinations**.** The full-service network model is dependent for survival on passenger feed at hub airports. But a reduction in network operation in response to growing point-to-point demand would not in itself signal the end of the hub. While an increase in point-to-point demand could certainly strip the network model of many of its routes and shrink it to fit more closely localised demand, the success of the point-to-point model is itself dependent upon strong local catchment and hence will also tend to develop most successfully at locations which also lend themselves best to hub development. At the hub, demand for destinations not large enough to be supported by direct services can be 'bundled' together. Despite some claims to the contrary, it is clear that not all journeys, especially those originating in areas of relatively low catchment, can be catered for by direct, point-to-point flights. With its strong catchment area, London is well suited to meet the needs of both the network and the point to point models. Whatever the exact pattern of demand in the future, there is a strong economic argument in favour of London - and Heathrow in particular - remaining a global hub.

3.18 The aviation industry is unanimous in its belief that there is no real scope for the development of a major hub in the regions. London has the only major UK hub and this situation is likely to persist. There was also broad agreement that the South East showed the greatest potential to take advantage of additional capacity. Should extra capacity not be provided, the view was that the resulting congestion would squeeze short-haul services and allow much valuable foreign connecting traffic to bypass the UK in favour of gateways on the continent. Such an outcome would not only adversely impact on the UK aviation industry but also critically affect London's future as a global hub.

3.19 Trans-Atlantic demand is the vital component of I-to-I demand. The UK is the dominant European destination for American passengers and therefore has a head-start in both thickening trans-Atlantic frequencies and starting new US routes. The UK accounts for 40 per cent of passengers travelling between the US and the EU, a market share which, according to the CAA, has remained broadly unchanged over the past decade. The UK has a larger origin/destination catchment than any other country.

3.20 Nearly 80 per cent of the connecting flows involved a long-haul flight on either the inbound or the outbound sector or on both supporting BA's assertion that the future of connecting markets at London depends heavily on the way long-haul services develop.

Traditional carriers will be anticipating an eventual return of traffic on long haul routes and can be expected to defend vigorously their position on short haul routes feeding passengers to long haul networks.

3.21 The UK, with its thickness of point-to-point demand, would have a comparative advantage in I-to-I connecting traffic if UK airport capacity permits. Other things being equal, the airport with the largest existing catchment on an indirect routing will be the first to set up a successful direct route.

3.22 Over the next 30 years, in a liberalised environment, demand growth will mean many more direct routes between North America and Europe. The Brattle Group report (' ***An Analysis of the Economic Effects of an EU-US Open Aviation Area*** ', Jan 2003) assumed that liberalisation would lead to a substantial increase in capacity and frequencies on US-UK routes, despite congestion problems at Heathrow and Gatwick. US airlines will continue to regard London (particularly Heathrow) as a prime destination because of the size of its origin/ destination demand area, compared to the European competition, and its geographical position. So they will not miss out on London traffic, even when they are part of an alliance with a major Continental airline. Flying direct from a UK hub to new ultimate US destinations rather than servicing US airline hub airports may mean that competition with US hubs becomes as significant as competition with European hubs to UK airlines.

Chapter 4: The DfT Air Passenger Forecasting Model

Introduction

4.1 The DfT Air Passenger Forecasting Model is a traffic forecasting model used to forecast how air passengers might make use of different amounts of new capacity at different airports around the UK. The forecasts are on an annual basis from 1998 to 2030 and allocate demand between 29 existing UK airports and up to three potential new airports. The level of air passenger demand depends on the overall costs faced by passengers wanting to fly. Such 'generalised' costs include surface access journeys to the desired airport, the number and range of flights offered and flight times and fares on specific routes from that airport. In the model, fare premia apply at congested airports. A fare premium is the extra price on top of the normal passenger costs required to bring demand into line with supply of capacity at a given airport, should demand exceed the number of flights.

4.2 In a market-based system, passengers' generalised costs (surface access costs, and frequency as well as fare) determine the best location of new airport capacity. Extra airport capacity which improves the fit between the geographical distribution of capacity and the geographical distribution of demand will give rise to greater economic benefits than an extra bit of capacity which worsens that fit.

4.3 In the modelling, the propensity to fly grows more quickly in the regions, reflecting the greater maturity of the market in the South East. Specifically, in the period to 2015, after making allowance in particular for the recent development of regional NFCs, the propensity to fly in areas outside of the South East grows at a rate approaching 1 per cent per annum greater than the demand for air travel in the South East.

4.4 Recent enhancements enable the modelling to take better account of:

- developments in the NFC market (as recommended in the latest report of the Transport Select Committee);
- the impact of measures to internalise aviation's external costs: and
- changes to the actual distribution of air traffic since 1998.

Updating the DfT's Air Passenger Forecasting Model

4.5 The most-up-to-date version of DfT's air passenger forecast model, 'DLL25', is an umbrella term for a model upgrade which builds on older versions but includes modifications which better reflect the changing aviation market since 2000. (The consultation documents, used earlier 'DLL23/24' versions of the model). The objectives of the DLL25 version of the DfT air passenger forecasting model are to:

- better represent recent trends in demand for flights since the national forecasts were published in May 2000. DLL25 provides appropriate mechanisms to model the recent rapid growth in No Frills Carriers (NFCs). DLL25 forecasts are controlled to the national forecast inputs in terms of total mid-point throughputs for 2020 and 2030 (400mppa and 500mppa respectively) and in the balance between UK/foreign, business/leisure passengers and international/domestic sectors.

- reflect the implementation of Government policy that aviation meets its external costs internalising the costs of climate change. This effect is offset by the judgement that airlines will be more successful in reducing their costs through the stimulus of NFCs, the competitive response of scheduled airlines and the liberalisation of long haul markets. Specifically, DLL25 models the imposition of an economic instrument suppressing demand over 2006-2015 by 10 per cent, which is largely balanced by a 10 per cent stimulus to demand from reduced fares up to 2015. The fare stimulus is largely (but not completely) represented by an increased forecast of NFC demand.
- in addition to its validated base of 2000, make credible 'forecasts' of airport throughputs for 2001-2003. The purpose of the air passenger forecasting model is to allocate national trend forecasts to airports, while constraining the forecasts to available runway and terminal capacity. Using trend forecasts, the model normally does not attempt to model cyclical fluctuations in growth. However, to better reflect the most recent actual outturns, DLL25 has been calibrated to better represent actual passenger returns since 2000.
- DLL25 makes full use of the latest CAA passenger surveys (the CAA1999-2001 survey programme) and the latest CAA statistical returns.
- A fundamental methodological difference between DLL25 and its predecessors is its use of 'demand overlays' to model the generative effects of NFCs and allowing user input of new geographical patterns of demand to be introduced in any year between 2000-2030.

4.6 Earlier versions of the DfT Air Passenger Forecasting Model, DLL23/24, assumed a blanket 1 per cent per annum growth differential in demand across all types of traffic in the regions compared to the South East until 2015. In the latest DLL25 forecasts, the impact of this adjustment has been maintained in the overall South East / Regional split. However the rapid growth of regional NFCs has meant that this adjustment has to be applied by different mechanisms. The 1 per cent regional uplift is strictly only applied to international scheduled traffic in the regions; the more mature charter market has a reduced growth differential and domestic full service traffic grows at national growth rates. The seeding of the new demand for recent regional NFC services produces a regional uplift in excess of 4 percentage points per annum over NFC growth in the South East. This process offsets the use of lower growth increments for other traffic types.

4.7 Specific changes compared to earlier forecasts are:

- Domestic traffic is no longer adjusted on the grounds that the majority of this demand is between the regions and the South East. The adjustment removes the risk of differential growth between two regions depending on the direction of the traffic.

- New NFC demand in both the regions and the South East has been created in DLL25 in line with the revised national NFC control total of 103 mppa by 2030. The distribution of this demand has been modified in the model to specifically reflect the recent geographical location of new NFC routes and this demand has also been brought forward. By 2005 the forecast of 57 million passengers flying on NFCs is more than halfway to the 2030 forecast and represents an average 26 per cent per annum growth since 2000. However, by 2010 the NFC forecast is 72 mppa, which - at an average growth rate of 5 per cent per annum from 2005 onwards - represents an abrupt deceleration of national NFC growth. From 2011 to 2030 the NFC growth rate slows further to an average of less than 2 per cent per annum. The shape of this growth profile is not so far from the original DETR 2000 mid-point NFC forecasts which gave an

average growth rate of 15 per cent per annum for 1998-2005, slowing to 2.5 per cent per annum cent for 2006-2010 and 2.7 per cent per annum for 2010-2020. (An alternative higher growth NFC growth forecast, undertaken as a sensitivity test, is described later in this chapter).

- The rapid spread of NFC services and the bringing forward of demand outside the South East since 2001 has modified the balance of regional and South East demand to the extent that international NFCs in the regions are modelled as growing by on average 13.3 per cent per annum compared to demand in the South East, which grows by only 9.2 per cent per annum. Thus demand for NFC services grows by a 4.1 percentage points differential between the regions and the South East in the latest modelling.

- Demand for charter services has been disproportionately stronger in the regions than compared to the South East. Given this, the DLL25 forecasts assumed that the growth differential in the demand for charter services in the regions would be only 0.3 per cent per annum in over the South East. This assumption was required to neutralise the effect of increased national demand for NFC services in the DLL25 forecasts, which effectively substitutes charter traffic for NFCs and maintain the 1 per cent per annum differential across all sectors.

Modelling Recent NFC Growth

4.8 The underlying pattern of demand in the DfT Air Passenger Forecasting Model is drawn from the CAA's surveys of air passengers which are now undertaken annually at the four major London airports and at Manchester. Regional airports tend to be surveyed approximately every four to five years.[5] Consequently much of the recent growth in regional NFC demand has not been captured in the most recent CAA passenger surveys. The DLL25 version incorporates a supply-side model which generates and geographically distributes the new NFC demand stimulated by the start-up of new low cost services. This process uses relationships between the reduction of the total costs of air travel and the stimulation to demand at the local (district) level caused by the appearance of low price frequencies to new destinations. These relationships have been derived from CAA surveys at NFC airports including Stansted, Edinburgh, Liverpool and Luton.

4.9 Not all of the regional NFC demand will be newly generated. New services will also attract existing demand currently using less convenient airports. The NFC stimulation model therefore creates supplementary demand to that existing demand which will be clawed back by new regional services. The process of NFC stimulation is controlled nationally to the central forecast of 103 m NFC passengers in 2030.

4.10 The supply side assumptions built into the core model forecasts are not speculative. They take account of NFC routes which have started since the last CAA passenger survey including routes announced during 2003. An allowance is made where NFC airlines have revealed their hand: for example the stated policy of Ryanair of building up services is modelled. However new NFC demand is not stimulated locally unless there is firm evidence of a significant commitment (for example at least year round daily services) by an established NFC airline. See **Annex E** for discussion of the classification of NFC airlines. NFC stimulation modelling is a key input to the modelling of the significant recent growth of

[5] The precise interval will vary between airports and will be dependent on funding of the CAA's survey programme and logistical considerations.

international NFCs at East Midlands, Birmingham, Bristol, Cardiff, Manchester, Leeds Bradford, Newcastle and Prestwick in addition to the significant extension of the range of service at Stansted and Gatwick during 2003.

4.11 The breakdowns of national demand in the standard DLL25 model run compared with DLL23, used in the Aviation consultation documents, are given in Figure 4 below:

Figure 4

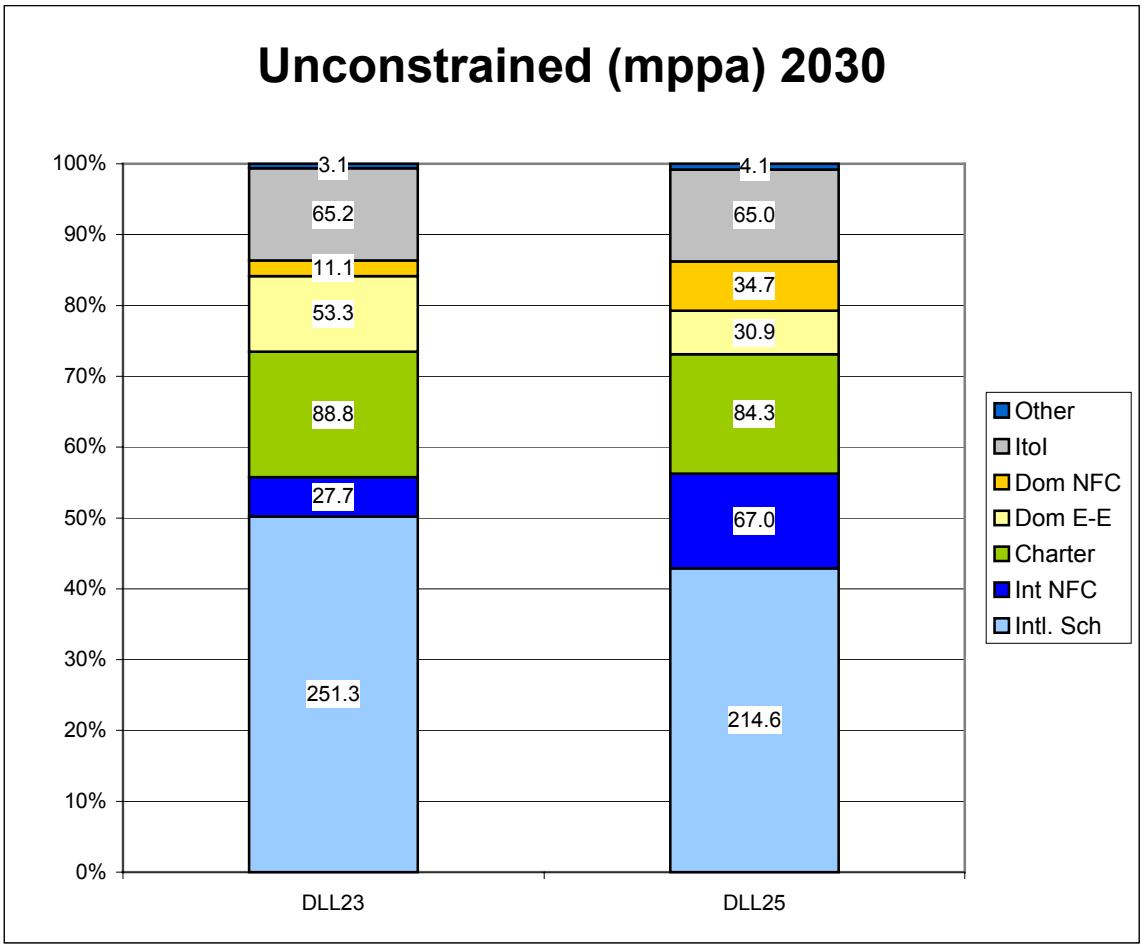


Figure 4: Composition of Unconstrained Demand (mppa) DLL23 & DLL25

Key

Other	Un-modelled services such as air taxis	Charter	International Charter
I to I	International to International Connector	Int NFC	International No Frills Carriers
Dom NFC	Domestic No Frills Carriers	Intl Sch	International 'Full Service' Scheduled
Dom E-E	Domestic 'Full Service' end to end service		

National NFC Sensitivity Test

4.12 In addition to core DLL25 forecasts under the new traffic composition assumptions, an NFC high growth sensitivity test was also run. The high NFC growth sensitivity test increased the national total demand for NFCs in 2030 from 102.2 mppa to 135 mppa. This test was undertaken assuming an additional runway at Stansted opening in 2011/12.

4.13 The test's higher NFC demand forecast was calculated by assuming the proportion of total demand for NFCs remained constant over the period 2003 to 2030. The unconstrained forecast for total demand in 2030 is 500mppa, an increase to 2.5 times the 2003 total demand of 200mppa. Considering this growth in total demand, the unconstrained demand for NFCs is assumed to be 2.5 times the 2003 level of 47.3 mppa. This process gives a mid point estimate demand of 118.4 mppa in 2030. The standard modelling forecast for NFC demand in 2030 is 102.2 mppa, and assuming this is a 'low' case estimate, then a 'high' case NFC demand forecast would by symmetry would be 135 mppa[6].

4.14 Consistent with the main case, the national 2030 demand was constrained at 501 mppa in the modelling, so the increase in demand for NFCs was offset by a decrease in demand for other types of services. Thus in 2030, the sensitivity test also included national demand reductions of:

- 13 mppa international scheduled flights,
- 6 mppa reduction in charter,
- 4 mppa reduction in I-I interliners and
- 10 mppa reduction in domestic scheduled services.

The increase in demand for NFCs has influenced the composition of demand in the model results. This is due to the constraint on the model and can be thought of as a substitution away from the scheduled and charter flights causing a higher demand for NFCs. The problem of classification of NFCs also impacts on the above results. The composition of demand figures are influenced by the possibility of reclassification of airlines as their business model evolves. For example airlines currently seen as schedule flight operators may meet criteria for NFC status in the future meaning demand patterns to some extent may reflect reclassification and not a shift in service patterns. Classification of airlines as NFCs is discussed in more depth in **Annex E**.

4.15 In making these compensatory changes, the regional to South East/regional growth balance inputs were unchanged from the standard case, ie allowing regional scheduled to grow by 1 percentage point over the national rate with regional charter growing by 0.3 percentage point over the national rate. There is a small reduction in the outcome growth differential between South East and regional NFCs as regional NFCs grow by 12.9 per cent per annum compared to 9.4 per cent per annum in the South East over the same period. This is a disparity of 3.5 percentage points per annum in favour of the regions over the South East, which is less than the 4.1 percentage points differential between growth in NFC traffic in the regions compared to the South East in the standard model.

4.16 ***Table E.2*** in **Annex E** reports the detail of the results and changes in total terminal passengers and NFC traffic in 2030 of the NFC sensitivity case compared to the standard DLL25 case on an airport by airport basis. **Chapter 6** discusses the impact of the test on airport throughputs in the description of the test case of one additional runway at Stansted.

Generalised Costs and Fare Premia

4.17 All versions of the model work on the basis of representing the effects the changing generalised costs of getting from domestic origin or destination to the foreign or domestic airport of choice have on business and leisure passengers. For example in 2015:

[6] 118.4 mppa – 102.2 mppa = 16.2 mppa. Thus by symmetry a 'high' case NFC demand would be 118.4 + 16.2 ≅ 135 mppa.

- For passengers from the City of London to Zurich, only 12 per cent of UK Business traffic will be allocated to Heathrow with a fare premium there of £24 in a total cost (excluding fares) of £225. When an additional runway at Heathrow causes this fare premium to drop to £10 out of a total cost of £209, the allocation of short haul business passengers at Heathrow increases to 26 per cent. As might reasonably be expected, the preferred airport in this example remains London City.

- For passengers from Oxford to Zurich, the reduction in generalised costs with an additional runway at Heathrow causes Heathrow's share of the business market to increase from 77 per cent to around 90 per cent. Heathrow thus re-captures a significant proportion of the demand which had diverted to Birmingham in reaction to its high fare premium when it had only two runways.

- For long haul leisure passengers, taking the example of Sevenoaks to US West, the choice between Heathrow and Stansted is finely balanced. In 'maximum use of existing runways', the total generalised cost (excluding fares) of using Stansted (£146.43) is only £1.28 more costly than using Heathrow. The fare premium differential between Heathrow and Stansted of £2.50 more than offsets the £2.07 frequency generalised cost advantage held by Heathrow The reduction of the fare premium from £5.43 to £2.28 at Heathrow with an additional runway there reduces Stansted's share of the Sevenoaks: US West leisure market from 43 per cent to 36 per cent but does not lead to all long haul returning to Heathrow because:
    a) the fare premium is also significantly lowered for Stansted passengers;
    b) the level of fare premium and therefore the rate of change for long haul is much lower because, with larger aircraft, the fare premium reduction is spread amongst more passengers.

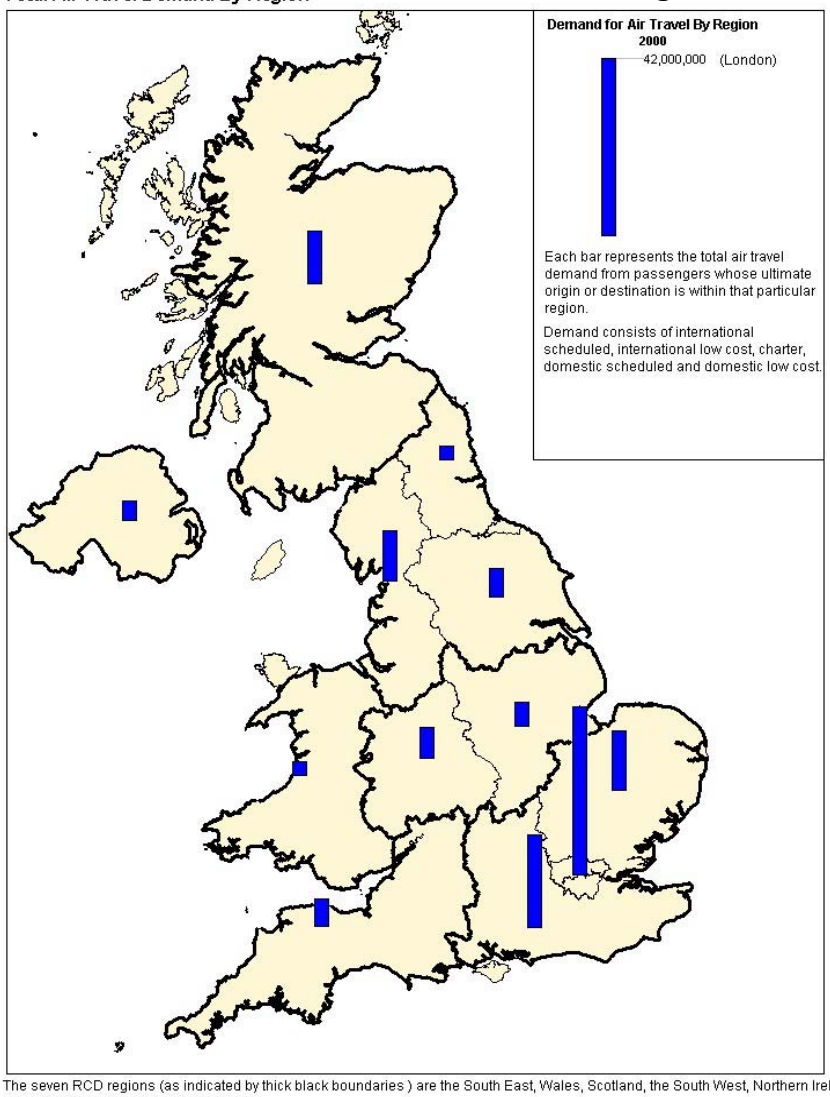
Chapter 5: AIR TRAVEL IN THE SOUTH EAST

5.1 There were about 118 million passengers through South East airports in 2002 out of a national total of 189 million.

5.2 Figure 5 below shows the total air travel demand for each country and region in the UK. The propensity to fly for each country and region in the UK is defined as the number of passengers – both UK and foreign residents – on one-way trips with origin or destination in that region, divided by that region's population. It is shown **Table 3** below:

Figure 5

Total Air Travel Demand By Region



The seven RCD regions (as indicated by thick black boundaries) are the South East, Wales, Scotland, the South West, Northern Ireland the Midlands, and the North of England.

	Propensity to fly per year in 2000
East Midlands	1.47
Eastern	2.93
London	5.95
North	1.39
North West	1.89
Scotland	3.49
South East	2.78
South West	1.45
Wales	1.15
West Midlands	1.51
Yorkshire & Humberside	1.44
Northern Ireland	2.92

5.3 Most trips through London airports for passengers with origin or destination in the UK have an origin or destination within the South East - more than 80 per cent in 2000 and forecast to rise over time. The propensity to fly (annual air trips per resident) in London is the highest in the UK.

5.4 Demand for air travel in the South East is high principally because of the strength and nature of the economy of the region, and London in particular – arguably the only World City in Europe and highly attractive as a tourist destination. International service businesses have historically been attracted by the good world-wide air connections, which has then supported development of a dense route network which in turn attracts high numbers of air travellers transferring though London airports, which in turn helps make more routes viable. Many major companies have their global or European headquarters in London.

5.5 The combination of a large local population, high numbers of inbound travellers (both business and leisure) and a significant proportion of international I-to-I connecting passengers (i.e. those without a UK origin or destination) enables London to maintain a high density scheduled route network.

5.6 NFCs would reduce supporting feed to hubs insofar as they fly to secondary airports, and insofar as their route networks bypass traditional hubs. But the airport with the largest increase in passengers on international NFC routes in 2002 was Gatwick – the airport second only to Heathrow in terms of transfer traffic. Stansted, the largest NFC airport in the UK, is becoming increasingly 'hub-like' with passengers engaging in 'do-it-yourself' connecting.

5.7 Demand for air travel to specific overseas destinations is not spread evenly across the UK; it is highest in the South East. There is a hierarchy of airports according to their catchment area. Many regional airports lack sufficient catchment for a very wide range of destinations.

5.8 The modelling shows substantial growth in new services from UK regional airports as demand grows. Even one outward frequency a day to a hub in the US is viable on the basis of regional demand (although many such services may carry hubbing traffic at the overseas destination). A range of regional airports offer long haul services, including charter services. But there is a hierarchy of airports which is related to catchment area and whether that

catchment area is contested by airports with a wider range of services and frequencies. Most regional UK airports have a large number of very small markets which are unlikely ever to be served other than by connecting services through a major airport (for example, CAA surveys record passengers at Aberdeen airport using some 300 indirect routes). Many regional airports lack sufficient uncontested catchment for a very wide range of destinations.

5.9 The modelling also indicates a growing business share at Heathrow, a substantial part of which is for short haul business routes which would be served by an additional runway. By contrast, long haul is a ' mixed cabin ' with less support proportionately from business travellers who have a high value of time; more marginal long haul operators particularly on secondary routes will not try to get into Heathrow at all costs. There will be limits to the capacity to handle long haul demand at Heathrow.

5.10 With a fare premium due to a runway constraint, a passenger on a larger aircraft faces a smaller fare premium than one on a smaller aircraft, which points to a higher percentage of long haul at Heathrow. However, domestic and short haul traffic at Heathrow has a much higher business component than long haul; the higher value of time of business passengers will tend to help maintain its short haul market share. In 2000, 64 per cent of passengers on domestic flights out of Heathrow carried business travellers with 36 per cent leisure. International short haul services carried a business share of 51 per cent, long haul routes to the US and Canada 36 per cent and other long haul routes 30 per cent.

5.11 **Annex B.5** shows total passengers originating in the regions flying through London airports. Surface access journeys to London airports fall as a proportion of total regional demand. Larger packages of development in the South East allow more domestic end-to-end passengers from the regions. **Annex B.6** shows that unless there are several new runways in the South East, regional passengers at South East airports by 2030 are less than they were in 2000 as regional airports set up their own direct routes. The proportion of regional demand met by regional airports goes up in all scenarios.

Leakage

5.12 The DfT modelling of economic benefits of various development packages in the South East assumed that regional capacity was unconstrained. Even with fully adequate capacity (or even unlimited capacity) in the regions, the principal economic need is for more capacity in the South East.

5.13 Even in 2000, around 85 per cent of terminating passengers at South East airports had origins and destinations in the South East – see **Annex B.6**. This percentage is forecast to rise under all development scenarios by 2030.

5.14 If no new runways were built by 2030 in the South East, and airports were operating at 'maximum use of existing runways in the South East ', the forecasts suggest that 27 mppa with South East origins and destinations would not travel by air at all (8 mppa regional passengers would also not travel by air at all) – see **Annex B.6**. In addition, 18 million passengers with South East origins or destinations would have to undertake longer surface access journeys to regional airports.

Chapter 6: CAPACITY AND DEMAND IN THE SOUTH EAST

Recent Trends at South East Airports

6.1 The last five years has seen an increase of 18 mppa (18 per cent) of total throughput at the four largest London airports from 100 mppa in 1998 to 118 mppa by the end of 2003. During the same period national growth has been 25 per cent from 159 mppa to 199 mppa. Growth in traffic at Heathrow (+2 mppa) and Gatwick (+1 mppa) has been subdued over the period. The spectacular growth has been at Stansted which experienced a 3-fold growth in the number of passenger throughput, rising from 6.8 mppa in 1998 to approaching 19 mppa in 2003. Luton's increase is more modest, but its additional 3m passengers in the last 5 years represents an increase in throughput of 73 per cent, also far exceeding the national trend.

6.2 The rapid growth in traffic at **Stansted** is largely because of the growth in NFCs, and in particular Ryanair. EasyJet's purchase of go (in addition to Ryanair's acquisition of buzz) has seen the two largest NFC airlines both establishing major operations at the airport. International NFC services grown meteorically from 2.1m passengers in 1998 to an estimated 13.6m passengers in 2030. Stansted's share of the national demand for international NFC traffic has grown from 37 per cent to 45 per cent over the last five years. However, of the London airports it is **Gatwick**, which has had the greatest percentage growth in international NFCs, with passenger throughput growing from 0.3 million in 1998 to 2.6 million in 2003 – a growth of 766 per cent. **Luton** has also had a strong growth in international NFC passenger throughput of 138 per cent over the last five years from a relatively high base of 2.3 mppa in 1998, although its share as a proportion of the national demand has fallen from 28 per cent to 13 per cent. This is largely because of the diversification of easyJet activities at Stansted and Gatwick.

6.3 The proportion of passengers carried by NFC airlines in 2002 and the range of services are turning **Stansted** into an informal NFC hub. Ryanair (with buzz) carried 61 per cent of all passengers passing through Stansted in 2002 while easyJet (with go) carried a further 25 per cent. All principal NFC destinations are served including Dublin, the Iberian Peninsula, the Low Countries, Scandinavia, France and Germany. In total NFCs operated from Stansted to 92 different international destinations in 2003, contrasting with Luton which served 14 NFC destinations and Gatwick with 12 destinations. Domestic NFC services at Stansted have grown tenfold from 0.26 mppa in 1998 to 2.68 mppa in 2003, in the process overtaking Luton (1.72 mppa) as London's primary domestic NFC airport.

6.4 In contrast to NFC traffic, which has grown by over 500 per cent during the past five years, the demand for international scheduled services nationally has grown by a modest 5 per cent in the same period. During this time, Heathrow's share of international scheduled passenger demand as a proportion of the national demand for such services has stayed constant at 63 per cent. Gatwick however lost some international scheduled services, largely replaced by NFCs, when demand temporarily dipped in the aftermath of September 11th 2001. As a consequence its share of international scheduled services as a proportion of the national demand fell from 18 per cent to 16 per cent between 1998 and 2003.

6.5 The thinning or loss of full service scheduled routes at **Gatwick** and their replacement by NFCs epitomises recent trends. For example, scheduled traffic to and from Cork has fallen from 0.248 million passengers in 2000 to zero in 2002. Equally, scheduled traffic to

and from Zurich, Stockholm, Oslo and Hamburg ceased by 2002. All these destinations are still served by NFCs in the London area and, in the case of Zurich from Gatwick itself.

6.6 Many other routes have been drifting sharply downward with Gatwick losing over 20 per cent of full service international scheduled traffic between 2000 and 2002: In this period demand for flights to Frankfurt have fallen by 27 per cent, Brussels by 59 per cent, Dusseldorf by 23 per cent and Munich 43 per cent. The nature of short haul demand at Gatwick has been changing. For example, Frankfurt and Brussels are now not particularly important routes at Gatwick. Out of 121 scheduled destinations in 2002, Frankfurt ranked 40th, and Brussels 82nd.

6.7 The decline in full service scheduled traffic at Gatwick has now ceased and in 2003 a number of routes have continued to grow steadily. Among the thicker Gatwick scheduled routes where demand has grown year on year and is now significantly higher than 2000 are Alicante, Bolgona, Bordeaux, Faro, Gibraltar, Madrid, Malaga, Marseille, Nantes, Nice Toulouse and Valencia. These are routes which carry high proportions of leisure passengers and emphasise that full service carriers still compete effectively for London short haul demand with the NFCs. However, continued recovery of demand will shortly bring in fare premia at Gatwick (in parallel with Heathrow) making the continued recovery of such routes and start ups to similar destinations fragile before new capacity is provided in the London system.

6.8 Leaving aside NFCs and charter, the proportion of leisure passengers on scheduled flights at Gatwick has increased from 71 per cent to 75 per cent between the 2000 and 2002 CAA surveys. At **Heathrow** the leisure proportion in 2002 was 63 per cent, but 7 out of 10 of the routes with the highest proportions of leisure passengers are long haul and many of the leisure passengers are interlining. The CAA 2002 Passenger Surveys data show services flying from Heathrow to the West Coast of Canada carried 85 per cent leisure passengers. Other thick leisure passenger routes from Heathrow are Spain (83 per cent), Australia (78 per cent), Iceland (77 per cent), East Canada (76 per cent), India and the Far East (75 per cent), South Africa (74 per cent) and the west coast of the US (73 per cent).

6.9 Routes with a such high leisure content are potentially footloose. For example: this year the current average plane size on Heathrow routes to the Far East is 333 seats. With 80 per cent leisure passengers with lower values of time – and therefore much greater sensitivity to fare premia - the effect of premia on such services would be the same as on a 165 seat short haul plane to a destination such as Zurich with 60 per cent business passengers.

6.10 CAA statistical returns for 2002 give the following breakdown of passengers on direct scheduled flights for the London long haul market:

3.0 mppa	Middle East
1.0 mppa	Canada
14.7 mppa	US
3.4 mppa	Africa
1.8 mppa	Caribbean/South America
1.4 mppa	India/Pakistan
4.7 mppa	Far East
1.5 mppa	Australasia.

This totals 31.5 million passengers in 2002. The major London long haul market is the US which accounts for 47% of all long haul demand. Of the 3 million passengers flying to the

Middle East from London airports, 43 per cent are making onward connections with 33 per cent of the total flow bound for India (0.747m) and the Far East (0.208m). In the modelling these will show up as demand to the ultimate destination (e.g. the Far East) rather than the 'next sector' intermediate hubs such as Middle East (Dubai) reported in the CAA statistical returns.

6.11 At **Stansted** leisure passengers constituted 72 per cent of the cabin on full service scheduled flights. But recently both conventional scheduled and charter traffic have been swamped by the rise of NFCs which have created pressures on runway space during certain hours. While NFCs have been growing strongly at Stansted in the last five years, demand for international scheduled services have decreased by 26 per cent and charter demand has been stagnant. Initiatives to establish long haul at Stansted floundered with the in 2001: the Continental Airlines service from Stansted to Newark, which started in May 2001, ceased in September 2001. The only other scheduled long haul service was an El Al weekly service to New York in the summer of 1998.

6.12 Despite rising pressure on its runway, there has however been some recent growth in scheduled international services at Stansted. By the end the third quarter of 2003, the CAA statistics show that 1.092 m passengers had flown on scheduled international services compared with 0.995m for all four quarters of 2002. This significant growth is down to inbound passengers on Eurowings and Air Berlin, airlines which might be classified German NFCs (See **Annex E** for discussion of the classification of NFCs). For example, 106 K passengers flew from Berlin Tegel on Air Berlin in 9 months of 2003 compared to 0 K passengers in 2002; 115 K passengers flew from Cologne to Stansted on Eurowings in the same time period compared to 27 K passengers in 2002. In total, Air Berlin has carried 500 K passengers up to the end of September 2003 compared with 127 K in 2002 and in December begins its first non German based daily service to Palma.

Forecast Demand and Implications for Capacity in the South East

6.13 National unconstrained demand in 2030 is 501 mppa (334 mppa in 2015). The central DfT unconstrained demand forecast for the South East in 2030 is 300 mppa, or 60 per cent of the national total. Due to uncertainty in the long term forecasts, a +/- 20 per cent range around the 2030 forecasts is applied (i.e. an uncertainty range of 240 – 360 mppa in the South East). The corresponding mid-point figure for 2015 is 200 mppa.

6.14 Various combinations of airport development options at one or more locations could provide major increments of capacity. The largest combinations, i.e. those with three or four new runways, provide a theoretical maximum capacity in the South East of 290-315 mppa by 2030. However, it is more relevant to consider the forecasts of traffic under the different development scenarios. Combinations that provide three or four new runways are forecast to serve 281 mppa (see **Annex B.4)**. None of the options put forward meets the headline demand figure of 300 mppa in full since the location of airport development packages considered is not fully in line with demand[7].

[7] For example, the consultation document noted that unconstrained demand for Heathrow in 2030 is 200 mppa, which is far in excess what can be delivered with 3 additional runways.

Fare Premia

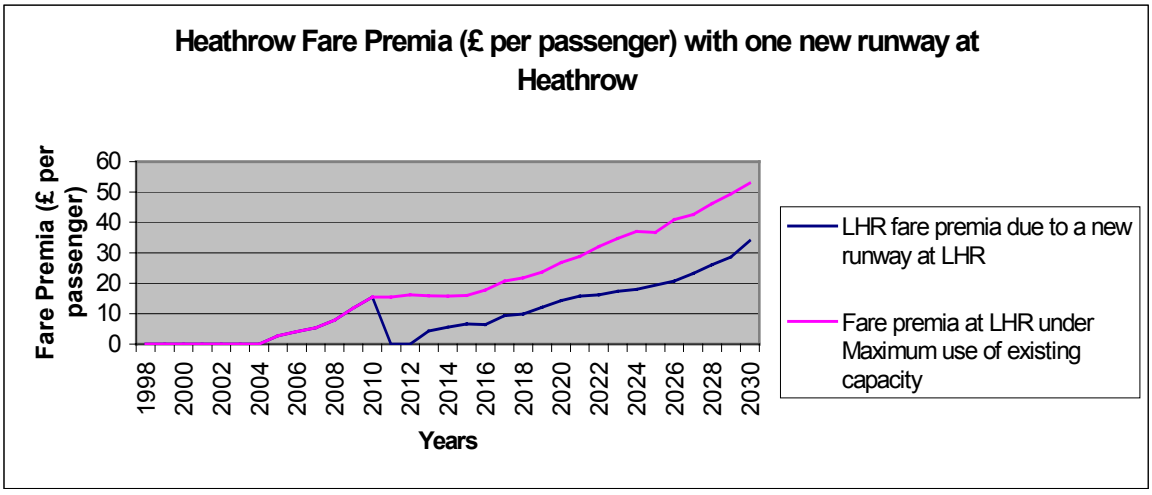
6.15 While recent patterns in the development of South East air traffic have been dominated by the mild economic downturn, events such as September 11 and the rise of NFCs, as future demand in exceeds capacity in the South East, future traffic patterns will be much influenced by the development of fare premia at congested airports. Fare premia are the sums of money required to limit demand at an airport to its capacity. They work to reduce demand by effectively 'pricing off ' excess demand at an airport.

6.16 Passengers base their decision on which airport to fly from taking account of a bundle of costs. These costs include those of the surface journey to the airport, fares, flight times and frequencies combined with qualitative attributes of services on offer at each airport. Together they are known as the passenger's 'generalised cost'. Different passenger types will have different generalised costs: business passengers have a higher value of time than leisure passengers and hence, other things being equal, a higher 'generalised cost'.

6.17 Further into the future, as demand rises, capacity constraints bite harder and airport fare premia rise, potential passengers at any constrained airport will look harder at alternative options from other airports which lower their personal cost of air travel. Any differential in fare premia between airports would encourage a redistribution of demand, as those priced out of Heathrow in particular look for cheaper alternatives elsewhere or reconsider their decision to travel.

6.18 Because Heathrow has the largest unconstrained demand (200 mppa by 2030), it tends to develop the largest fare premia. Figure 6 below shows the scale of fare premia expected at Heathrow for a one-way trip with and without a new runway. The fare premia are higher in the base case scenario of ' maximum use of existing capacity in the South East '; but they re-emerge quickly at a lower level after an additional runway opens.

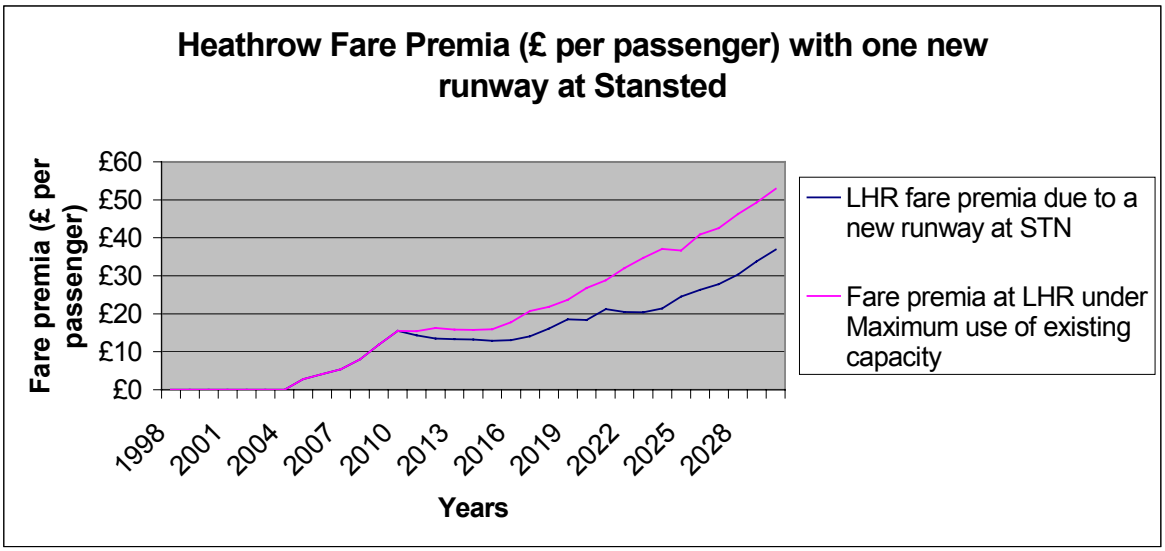
Figure 6



6.19 However, as shown in Figure 7 below, if a new runway is provided at Stansted Heathrow's fare premium is also reduced, reflecting the value of an additional runway at Stansted in relieving the growing pressure on demand throughout the South East. Other

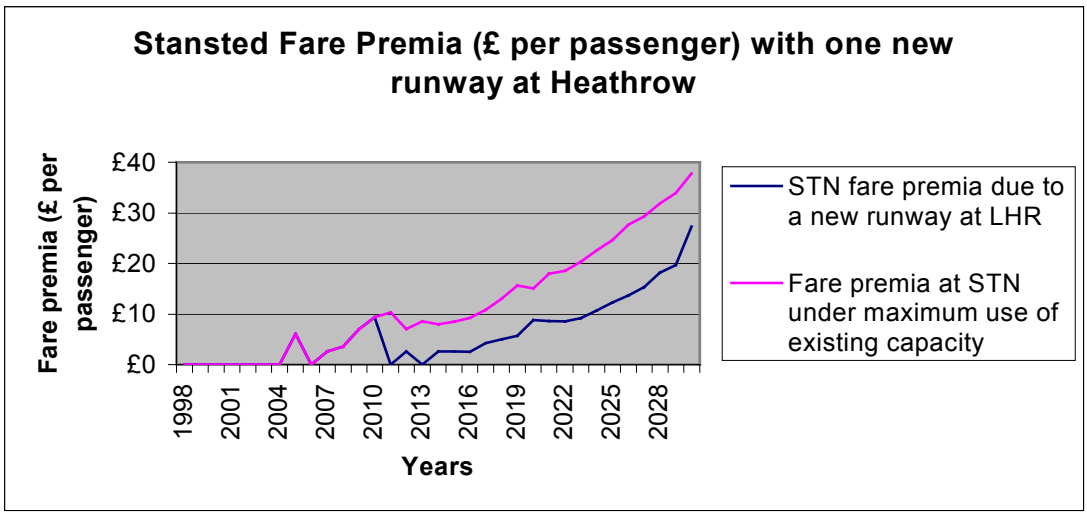
London airports subject to fare premia would also benefit. In practice new capacity which lowers fare premia would also attract an increment to fares at any airport which has been expanded. This is not directly modelled, but such increments will be very small in relation to both the passenger fare and the reduction in the fare premia.

Figure 7



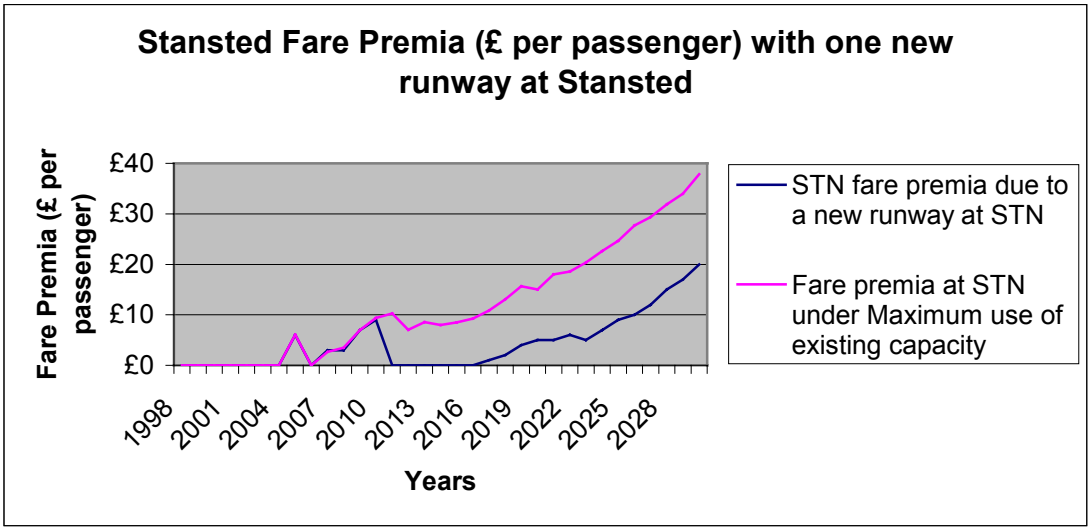
6.20 Figure 8 shows the effect on fare premia at Stansted, with and without new runway capacity at Heathrow. Again, without any additional runway capacity anywhere in the London system, large fare premia build up.

Figure 8



6.21 Figure 9 below shows the growth in fare premia through time at Stansted for a further two options: the base case scenario of 'maximum use of existing capacity' and an option for one new runway at Stansted. At Stansted, demand is lower than at Heathrow and a new runway provides capacity for a greater number of additional passengers than permitted by a Heathrow option, so fare premia are lower.

Figure 9



Maximum Use of Existing Runways

6.22 The modelling shows that there would be 70 mppa who cannot use UK airports if no new runway is provided in the South East by 2030 although nearly all of this suppressed demand is for use of South East airports. Even as early as 2015, 24 mppa are lost to the airport system, reflecting the build up of excess demand to travel through South East airports. **Annex B.4** shows passengers lost to the UK airport system with the various capacity scenario packages from 2015 and 2030.

6.23 Maximum use of existing runways at the main London airports (Heathrow, Gatwick, Stansted, Luton) could provide a theoretical maximum capacity approaching 198 mppa by 2030[8] with very large aircraft in service. But not all this capacity is well-located in relation to demand, and the market sets a constraint on the size of aircraft on individual routes. For example, it is unlikely that jumbo jets would ever operate on high frequency routes out of London to such destinations as Amsterdam or Manchester.

6.24 Assuming the benefits of Terminal 5 are realised and Gatwick achieves the throughput of 40 mppa agreed under a S.106 agreement in 2000, there is little scope for increasing capacity from existing runways other than at Stansted and Luton. BAA secured planning approval in 2002 to increase Stansted's terminal capacity to 25 mppa. The airport handled 16 mppa in 2002 and recent analysis suggests that the airport could reach 25 mppa by 2007 and maximum use of its runway by the end of the decade – before any new runway could be built. Luton has more potential to expand as it has less traffic today (about 6 mppa in 2002), but is at present the least attractive of the London airports to air passengers and is forecast not to fill up until the 2020s even with no new runways in the South East.

6.25 **Annex B.6** shows that, by 2030 without any new runways in the South East, 18 mppa of South East demand would be forced to use less convenient airports - adding to pressures on surface transport systems. Only around one-half of regional passengers by 2030 who would prefer to travel via South East airports (say on specialised long haul flights) would be able to do so – see **Annex B.6** for details.

[8] Assumes no extra capacity beyond T5 at Heathrow and only marginal extra capacity through greater use of off-peak slots and larger average loads at Gatwick.

6.26 **Annex B.4** shows that many potential passengers would be deterred from travelling altogether: 70 mppa nationally if no new runways are provided in the South East (compared with 17 mppa with three new runways). Excluding I-to-I connecting passengers, 28 mppa are lost with no new runways in the South East compared to 6 mppa with three new runways. **Annex D** shows the composition of traffic by business and leisure and by UK and foreign residents for a range of development packages.

6.27 Many long haul passengers with UK origins or destinations are now having to use continental hubs such as Amsterdam and Paris. In 2002 there were nearly 7 million such trips from UK airports, compared to nearly 5 million domestic-international trips via London airports. Prosperity in parts of the UK is to an extent being made dependent on the decisions of other governments rather than their own.

6.28 British Airways has analysed the impact on the London air route network of capacity constraints. This suggests that, with no new runway development by 2015, about 25 routes will be lost at Heathrow and about 40 at the four main London airports as a whole. At the same time, the route networks and frequencies at Schiphol, CDG and Frankfurt will increase.

6.29 Based on DfT modelling, capacity constraints would have the following effects:

- domestic-to-international connecting passengers would be among the first to be forced out of Heathrow as they face fare premia on both the domestic and international legs of the journey and the smaller aircraft sizes of domestic services entails each passenger having to pay a higher share of the extra cost of using the congested runways;

- international-to-international (I-to-I) connecting passengers would be almost as vulnerable to being displaced from Heathrow; they too will face fare premia on both arrivals and departures. The effect of the dilution of the premium per passenger through larger aircraft used on at least one leg of the journey being offset by the high proportion of lower value of time leisure passengers in this category of traffic. Given the additional cost of travelling through Heathrow compared to other hubs, London would become increasingly uncompetitive compared to Amsterdam and Paris. As a result, thin routes supported largely by I-to-I connecting passengers would be lost, thus weakening services on the other leg of interlining routes, principally North America and Asia. These losses precipitate a self-reinforcing spiral: as Heathrow stops supporting a dense network of routes it becomes less attractive as a hub, accelerating the shift of connecting traffic to Continental Europe;

- low yielding domestic and European short-haul routes would also be lost as airlines shift services to the more profitable services. There will be some reduction in the overall number of destinations served from anywhere in the London system, and importantly fewer services from airports of choice - thus imposing costs on passengers. Adding an extra runway at Stansted for example would enable many more routes to be served not only from that airport but also from Gatwick. Adding a runway at LHR would enable 19 additional routes to be served there, as well as increasing the frequency of services;

- all passengers including those on NFC and charter airlines would face large fare increases; and,

- by constraining capacity in the South East, some passengers with origins in the South East would be forced to make surface access journeys to regional airports. This is known as 'leakage'.

ONE EXTRA RUNWAY

6.30 Actual throughput at each of the four major London airports depends on the capacity increment provided by the relevant additional runway. In the **Annexes**, the increments of capacity used are: LHR – 26 to 46 mppa, STN - 48 mppa, LGW - 43 mppa. Heathrow capacity would fill up quickly; Stansted takes much longer to fill up; Gatwick is intermediate. The **Annexes** report the single one runway case of one additional runway at Stansted, but all options have been tested and economic results are presented in **Annex C**.

6.31 Relative to 'maximum use of existing runways in the South East', **Annex B.6** shows that by 2030 one extra runway in the South East could enable 18 mppa more South East passengers to travel through South East airports. Regional demand using regional airports would drop only 2 mppa, but more regional passengers would be able to fly through South East airports where this was cost-effective. I-to-I connecting passengers at South East airports would rise between 7 mppa and 10 mppa. Nationally, passengers travelling through UK airports would be up to 17 mppa higher compared with 'maximum use of existing runways in the South East' (see **Annex B.4**].

6.32 In the scenario of 'maximum use of existing runways in the South East', there is heavy demand at Heathrow resulting growing shares of business and long haul traffic. In this scenario Heathrow is constrained by its runway capacity; and this favours the larger long haul planes which are more resistant to the resulting high levels of fare premia.

Additional Runway at Heathrow

6.33 An additional **Heathrow** runway relieves the runway constraint allowing routes served by smaller aircraft into Heathrow. So, in 2015, only 25 per cent of additional passengers enabled by the new runway are long haul. The traffic which grows fastest with an additional runway is principally that most affected by fare premia: short haul, I to I connectors, other hubbing traffic and predominantly leisure routes.

6.34 But, with an additional runway at Heathrow alone in 2011/12, Heathrow would be at full ATM capacity by 2015 - albeit at a higher level of (say) 655 K ATMs pa rather than 480 K ATMs per annum off two runways. Significant excess demand would return at this time, with some leisure-oriented long haul once again spilling out of Heathrow. Even with Stansted limited to its single runway capacity, spillover of some long haul services to mainly leisure destinations from more constrained South East airports is forecast, with possibly an additional 6 mppa in total flying through Stansted on such services compared to 2000.

6.35 The principal effects by 2030 of developing only at Heathrow would be:

- throughput at London airports rising by 27 mppa;

- national traffic rising by 9 mppa, with traffic outside the London airports falling 19 mppa and more South East passengers able to travel through London airports;
- 15 mppa more South East passengers travelling through South East airports;
- 3 mppa more regional passengers travelling cost-effectively through South East airports;

- 7 mppa more international I-to-I connecting passengers at South East airports.

Additional Runway at Stansted

6.36 **Stansted** experienced considerable growth in traffic between 1998 and 2003, with throughput increasing by 12.1 mppa, from 6.8 mppa to 18.9 mppa - growth which was driven essentially by NFCs. Currently Stansted has 35 per cent of the expected national 47 mppa NFC traffic in 2003. By the time of opening an additional runway early in the 2010s, Stansted traffic is forecast to be twice current levels.

6.37 The forecasts with an additional runway opening at Stansted in 2011/12 suggest:

- in 2015, business travel is expected to make up 27 per cent of all passenger traffic at Stansted, with 13 mppa business travellers and 35 mppa leisure travellers;
- a total of 57 mppa will fly out of Stansted in 2015, including 28 mppa on NFCs, 1 mppa on charter and 28 mppa on full service scheduled airlines;
- by 2030, business travel is expected to make up 32 per cent of all passenger traffic; and
- a total of 73 mppa will fly out of Stansted in 2030 including 29 mppa on NFCs, 0 mppa on charter and 44 mppa on full service scheduled airlines.

6.38 Aircraft size at Stansted is likely to rise. By 2015, it is forecast that the passenger per ATM ratio for international NFCs will reach 148 at Stansted. Overall, on average, the passengers per ATM ratio will rise from its current 116 to 142 by 2030. Although domestic full service carriers nearly disappear from Stansted, there is no associated material change on demand for such services in the regions and a range of domestic NFC services will remain.

6.39 As **Annex B.6** and **Annex B.7** show by 2030, the principal effects of an additional runway only at Stansted would be:

- 19 mppa with South East origins and destinations would not travel by air at all, nor would 6 mppa with regional origins.
- 8 mppa passengers with South East origins or destinations would have to undertake generally longer surface access journeys to regional airports.
- Around 90 per cent of terminating passengers would have surface origins or destinations in the South East.

6.40 The net present value of net economic benefits of this development option over the base case of ' maximum use of existing runways' are £9.0 B discounting at 3.5 per cent and assuming cost optimisation bias. See **Annex C**.

6.41 With a new runway opening at Stansted in 2011/12, Gatwick, currently the UK's number airport for charter services, will see its national share of this type of traffic fall from roughly one third in 2000 to roughly one fifth by 2030, a material change. This is mainly due

to leisure passengers substituting away from international charter services at Gatwick to international NFCs at Stansted. Stansted is forecast to have 26 mppa flying on international NFCs by 2030, 37 per cent of the national total of international NFCs. At the same time demand for international NFCs at Gatwick is also forecast to decline between 2000 and 2030.

Potential Interactions between Stansted and Heathrow

6.42 The strong growth in demand for NFC services at Stansted is in part a reaction to the expressed preference of US carriers, operating long haul routes, for flying into Heathrow in preference to other London airports. Apart from the revenue advantages of Heathrow, there can be operational savings for airlines in concentrating services at one base. The large number of passengers at Heathrow allow airlines to take advantage of strategic alliances to further extend the range of destinations for passengers. The major US carriers' London strategies may depend to a large extent on the alliances that they forge (or the mergers that take place by 2015/2030), assuming that there is life left in the network model. Alliances could allow access to Heathrow through their partners' slots - American/BA, United/Lufthansa/SAS/bmi, and the other US carriers via Air France and KLM. Thus, the US majors may be the least likely of the long-haul carriers to need to go to Stansted. SIA might also look at London in the same way as US carriers with a very strong preference for Heathrow, particularly given its link with Virgin.

6.43 There are implications for an additional Stansted runway as a first additional runway in the South East if a third Heathrow runway (or the adoption of mixed mode at Heathrow) remains a prospect. But these should not be over-emphasised. With older versions of the DfT Air Passenger Forecasting Model, there would have been concern about the fundability of a Stansted runway as the first additional runway in the South East, if a subsequent Heathrow runway had NOT been ruled out. This concern centred on the 'seeding' of long haul services assumption that was made at the time a new runway opened at Stansted. With the prospect of a Heathrow runway, it would have been less likely that a significant amount of long haul capacity would have willingly started up operations at Stansted.

6.44 'Seeding' at the time of the new runway is no longer required to get long haul to Stansted. A key point in the forecasts is that Heathrow will strengthen further as a business airport, while Stansted will continue mainly as a leisure airport. Recovery of long term trend growth would lead to a major boost in foreign leisure long haul markets. Like the larger airports in the regions, Stansted should serve some second-tier leisure-oriented long haul. Heathrow and Stansted will not have completely differentiated markets, but funders could well see the commercial case for a leisure- oriented additional runway at Stansted and a business -oriented and premium runway at Heathrow.

6.45 Second-tier US carriers could well operate out of Stansted. this is evidenced by the US carriers currently serving regional airports in the UK. For example, American Airlines operates Chicago services from much smaller catchments in Glasgow and Manchester. Other US-UK regional services are provided by Delta, with Manchester-Atlanta and Continental with Newark served from Manchester, Birmingham and Glasgow. Manchester's long haul services (including charter) had reached 3 mppa by 2000. This suggests that the power of US hubs should enable some of the secondary carriers to serve a South East airport other than Heathrow and Gatwick. Similarly, Emirates is also becoming an

enthusiastic user of UK regional airports to feed their hub in Dubai. In the future it is likely that Dubai will be served from Scotland, the North, and the Midlands. Although, national airlines focusing on business passengers will probably continue to favour Heathrow, second-tier airlines with a focus on the leisure passenger may well be willing to use Stansted.

6.46 Longer haul point to point services may also find a home at Stansted, clawing back demand from overseas hubs. Apart from the US and the Near East, the countries in 2002 that had long haul services of any significance to the UK regions were Kenya, Gambia, UAE, India, Pakistan, Malaysia, Singapore, Canada, Cuba, Dominican Republic, Mexico, Venezuela, Bahamas, Barbados, Jamaica, Trinidad, and the Maldive Islands. Some of these routes were quite thin and many were charters. Canadian charter/scheduled carriers also fly to a range of UK destinations. As demand increases such services may find a home at Stansted.

6.47 As the DfT Air Passenger Model does not represent long haul hubs but only ultimate overseas destinations, a proportion of the Far East / Australasia demand allocated at Stansted might in practice initially sustain a service to a Middle East hub, possibly at Dubai in the United Arab Emirates rather than direct to the ultimate destination. But in the longer term the total modelled demand to Australia and New Zealand will increase as demand growth allows indirect traffic to be replaced by direct services. Recent CAA London passenger surveys show that current direct demand to Australia and New Zealand (1.5 mppa) is matched by the indirect traffic using overseas hubs (1.6 mppa). Of the indirect connecting passengers 76 per cent use a Far East hub and 13 per cent a Middle East hub. All such demand at Stansted (which has almost 50% of the demand to these regions in 2015) could be viewed as clawed back.

6.48 In summary, four types of long haul operation might eventually go to Stansted

(a) airlines operating to an overseas hub which is so strong that they can run services from all three BAA London airports on the strength of the sub-regional demand for each of the three;
(b) airlines which at present have no operation to London and probably no alliance partner to provide slots at Heathrow or Gatwick ;
(c) airlines catering for overspill predominantly leisure demand.
(d) long haul charter to thinner specialised destinations.

6.49 Even with Stansted getting an additional runway in the early 2010s, there will be a rapid return to overall excess of demand over capacity in the South East. Airlines will all be making super-profits from such a situation (provided they do not allow this potential to leak into excessive costs). Airlines will thus be keen to secure more slots wherever they are on offer in the London airport system because the services using those slots should be immediately profitable, and because they will appreciate in value as capacity shortages again increase. During any period when the only major addition of capacity in the South East is at Stansted, airlines will have the incentive to take up the newly available slots at Stansted to maintain market share.

6.50 If demand does not catch up with the long term trend and long haul services do not materialise at Stansted but recent short term trends persist, more NFCs and other traffic (such as the recent influx of European budget airlines) would probably develop by the time that any first new runway opens at Stansted. By 2015 with an additional runway, the NFC

share of total Stansted traffic will be 49 per cent. If Stansted simply retains its current 35 per cent share of the 80 m NFCs forecast nationally for 2015, Stansted NFC throughput would be 6 mppa higher. If the national NFC total in 2030 were 125 mppa rather than 102 mppa in the main forecast (equating to 98 mppa in 2015), Stansted's 35 per cent share might increase by a further 6 mppa. This 12 mppa equates with the forecast for 12 mppa long haul traffic at Stansted with an additional runway in 2015.

6.51 Whatever the uncertainties about the mix of traffic moving into a two runway Stansted, it will remain a fundamentally different sort of airport to Heathrow. Stansted will remain essentially a leisure-oriented airport, where over 80 per cent of traffic is short haul and half the passengers use NFCs.

The High NFC Sensitivity Test at Stansted

6.52 The NFC high growth sensitivity test which increased the national total demand for NFCs in 2030 from 102.2 mppa to 135 mppa which is described in **Chapter 4** was run on case of one additional runway at Stansted. ***Table E.2*** in **Annex E** reports the detail of the results and changes in total terminal passengers and NFC traffic in 2030 of the test compared to the standard DLL25 case on an airport by airport basis

6.53 Under the NFC sensitivity test, total throughput at Stansted drops by 2 million to 71 mppa although the number of NFCs increases by almost 5 mppa. Long haul demand at Stansted also drops from 17.5 mppa to 13 mppa in the sensitivity test. By 2030, at the other London airports, Heathrow and London City are unchanged, Gatwick loses 0.3 mppa but gains 1.1 mppa on NFCs and Luton has the greatest change increasing by almost 5 million total terminal passengers and gaining 8.5 mppa on additional NFCs.

6.54 In the regions, the larger airports specialising in scheduled traffic tend to lose to neighbouring airports with NFCs: Birmingham is down 2.7 mppa, but East Midlands gains 1.3 mppa. Likewise, Manchester loses 2.7 mppa but Liverpool gains 1.4 mppa; and Glasgow loses 0.5 mppa with Prestwick gaining 1.2 mppa.

6.55 ***Table E.3*** in **Annex E** shows the NFC share of total traffic at each airport. In the South East, NFCs dominate at Luton (rising by 19 percentage points) whereas Stansted gains only 7 percentage points to 47 per cent and Gatwick 2 percentage points to 5 per cent.

6.56 The impact of the sensitivity test on the South East regional split is to increase the South East[9] share of all types of traffic marginally from 53.1 per cent to 53.5 per cent as total regional traffic drops by 1.5 mppa. This may be because the level of scheduled regional clawback is slightly reduced. However of the additional demand (30.7 mppa) for NFCs in the additional runway at Stansted case, 16.4 mppa (or 54 per cent) of the additional traffic is at regional airports. The NFC component at South East airports rises 6 percentage points from 18 per cent to 24 per cent whereas the NFC component at regional airports rises from 8 percentage points, from 23 per cent to 31 per cent. ***Table E.4*** in **Annex E** consolidates this information.

[9] Counting Heathrow, Gatwick, Stansted, London City, Southampton and Norwich as 'South East' airports.

TWO EXTRA RUNWAYS

6.57 The main case exemplified of two additional runways comprises an additional Stansted runway first in 2011/12, which will allow for 513 K ATMs per annum and 82 mppa, then one at Heathrow in 2020 with a capacity of 550 K ATMs per annum and 112 mppa rising to 600 K ATMs per annum and 120 mppa by 2025. **Annex B.4** shows that by 2030 the effects of adding the additional runway at Heathrow in 2020 over and above the 'one extra runway' case at Stansted in 2011/12 are:

- throughput at London airports rises by 28 mppa
- national traffic rises by 18 mppa, with traffic outside the London airports falling 9 mppa ; more South East passengers are able to travel through London airports.

6.58 **Annex B.6** shows, by 2030, that there are

- 11 mppa more South East passengers travelling through South East airports.
- 8 mppa more regional passengers travel cost-effectively through South East airports.
- 3 mppa more international I-to-I connecting passengers.

6.59 This net present value of the economic benefits of such a development, using a 3.5 per cent discount rate and with a cost optimisation bias adjustment are estimated as £17.0 B over and above the benefits of maximum use of existing capacity. Full details of the economic benefits of all of the development options considered in this paper are given in **Annex C**.

6.60 An alternative to the preceding development option is to have an additional runway opening at Stansted in 2011/12 but to have a slightly larger Heathrow runway development opening in 2020. This Heathrow development allows for 655 K ATMs per annum in 2020, with capacity rising to allow for 700 K ATMs per annum by 2025. Stansted has the same capacity as described above and economic benefits are improved: using a 3.5 per cent discount rate and with a cost optimisation bias adjustment the NPV is estimated as £21.2 B over and above the benefits of maximum use of existing capacity.

6.61 **Annex B.4** shows that by 2030 the effects of adding the additional and slightly larger runway at Heathrow in 2020 over and above the ' one extra runway' case at Stansted in 2011/12 are:

- throughput at London airports rises by 43 mppa
- national traffic rises by 31 mppa, with traffic outside the London airports falling 12 mppa; more South East passengers are able to travel through London airports.

6.62 **Annex B.6** shows, by 2030, that with the additional and slightly larger Heathrow runway there are:

- 18 mppa more South East passengers travelling through South East airports.
- 10 mppa more regional passengers travel cost-effectively through South East airports.
- 16 mppa more international I-to-I connecting passengers.

6.63 A third variant of the Stansted plus Heathrow options is to have an additional runway opening at Stansted in 2011/12 as described above but to have a Heathrow runway

development opening in 2016. This Heathrow development allows for 550 K ATMs per annum in 2016, with capacity rising incrementally by 10 K ATMs per annum until it reaches 690 K by 2030. The economic benefits are very similar to the case of the additional larger Heathrow runway described above: using a 3.5 per cent discount rate and with a cost optimisation bias adjustment the NPV is estimated as £21.1 B over and above the benefits of maximum use of existing capacity.

6.64 **Annex B.4** shows that by 2030 the effects of adding the additional incrementally increased runway at Heathrow in 2016 over and above the 'one extra runway' case at Stansted in 2011/12 are:

- throughput at London airports rises by 40 mppa
- national traffic rises by 28 mppa, with traffic outside the London airports falling 12 mppa; more South East passengers are able to travel through London airports.

6.65 **Annex B.6** shows, by 2030, that there are:

- 17 mppa more South East passengers travelling through South East airports.
- 9 mppa more regional passengers travel cost-effectively through South East airports.
- 11 mppa more international I-to-I connecting passengers.

6.66 The alternative to providing the second runway at Heathrow is for a second wide-spaced runway at Gatwick. With two additional runways, the first at Stansted in 2011/12 and a later wide spaced runway opening at Gatwick in 2024 the forecasts are similar to the two higher capacity Heathrow options. By 2030 the number of South East passengers using regional airports will be 3 mppa, with only 8 mppa with South East origins not travelling by air at all. Around 90 per cent of all terminating passengers in 2030 will have surface origins or destinations in the South East. This scenario increases the capacities of both airports, allowing for a maximum 82 mppa and 513 K ATMs per annum to fly out of Stansted and 486 K ATMs per annum and 83 mppa to fly out of Gatwick.

6.67 The net present value of the net benefits arising from this option are similar to adding the smaller Heathrow runway, £17.4 B over and above the benefits resulting from maximum use of existing runways, using a 3.5 per cent discount rate and cost optimisation bias.

THREE EXTRA RUNWAYS

6.68 If a third additional wide-spaced runway is added at Gatwick, following runways at Stansted (opening in 2011/12) and Heathrow (opening in 2020, capacity of 550 K ATMs per annum and 112 mppa rising to 600 K ATMs per annum and 120 mppa by 2025) compared to the two runway case:

- throughput at London airports rises 22 mppa (see **Annex B.4**)
- national throughput rises 18 mppa, with only 17 mppa lost passengers nationally (see **Annex B.4**).
- South East passengers at London airports rise by 10 mppa, regional passengers by 2 mppa, and I-to-I connecting passengers by 15 mppa (see **Annex B.6**).

6.69 The net present value of the net benefits arising from this option are high at £25.4 B over and above the benefits resulting from maximum use of existing runways, using a 3.5 per cent discount rate and cost optimisation bias. If a 2024 Gatwick wide-spaced runway is added to a 2011/12 Stansted runway and a larger Heathrow runway (655 K ATMs in 2020 rising to 700 K ATMs in 2025), the net present value of the net benefits rises further to £27.7 B over and above the benefits resulting from maximum use of existing runways. This is, however, conditional on aircraft reaching a size of roughly 200 passengers per ATM and the Heathrow ATM throughput reaching its ATM capacity of 700 K per annum.

6.70 A further alternative of an additional close-spaced runway opening at Stansted in 2024 after additional runways opening at Stansted in 2011/12 and at Heathrow in 2020 (with a capacity of 550 K ATMs per annum in 2020 rising to 600 K ATMs per annum in 2025) provides no material benefit, adding only an additional £2.1 B net benefit to the UK from the equivalent two runway case. Likewise, adding a an additional close-spaced runway opening at Stansted in 2024 after additional runways opening at Stansted in 2011/12 and a larger Heathrow in 2020 (capacity of 655 K ATMs per annum in 2020 rising to 700 K ATMs per annum in 2025) adds only £2.4 B to the equivalent two runway option.

6.71 ***Table 14.6*** in ***The Future Development of Air Transport in the United Kingdom: South East*** shows that the greatest economic benefits accrue from a dispersed pattern of capacity around the South East. This is confirmed by the most recent DLL25 results. By 2030, the provision of additional capacity at each of a number of airports in the South East would both facilitate substantial hub operations (though less so if Heathrow were not among the airports expanded) and allow for the efficient servicing of local catchment demand for point-to-point trips, by both traditional carriers and NFCs.

Luton

6.72 The throughput at **Luton** in 2002 was 6.5 mppa and is forecast to reach between 26 mppa and 29 mppa by 2030 for the 'maximum use of existing runways' and one and two additional South East runway cases. With the exception of three additional runways, when demand drops to 22 mppa, growth at Luton is relatively independent of development at Stansted.

6.73 With 10 mppa terminal capacity and limited runway capacity until 2012, Luton is expected to be subject to fare premia in this decade. The increment of 21 mppa additional terminal and major improvement to the capacity of its single runway will boost throughput to the extent that by 2030 activity is forecast to be at the same level as present day Gatwick.

6.74 Very recently NFC growth at Luton has temporarily slowed as its principal airline, easyJet, has been developing routes at Stansted, Gatwick and East Midlands. But Luton has a strong catchment area of centred on London, Bedfordshire and Hertfordshire and with capacity expanded in all the options and with two major NFC airlines unlikely to concentrate their activities at the same airport in the long term, Luton is likely to consolidate its position as the principal base for at least one major NFC airline. The strength of local South East NFC demand at Luton is illustrated by the NFC high growth sensitivity test, where despite the background of one additional runway at Stansted, Luton captured 8.5 mppa (28 per cent) of the extra 31 mppa NFC demand and NFCs grew to 72 per cent of Luton's throughput. See **Annex E** for details of airport throughputs in the NFC high growth sensitivity test.

Other South East Airports

6.75 London City and Southampton are two other airports in London and the South East included in the modelling, but both have short runways. **London City** had a throughput of 1.6 mppa in 2002 and demand is forecast to reach between 3.3 mppa and 3.5 mppa by 2030. The mix of traffic will remain short haul scheduled with a strong business component. Demand at London City is ultimately constrained by its runway and the size of aircraft it can handle. If runway improvement permit larger aircraft, London City could approach its capacity of 5 mppa.

6.76 Throughput at **Southampton** was 0.8 mppa in 2002 and is forecast to grow strongly to between 5 mppa and 6 mppa by 2030 in the two additional South East runway cases, and only a third additional runway in the South East significantly reduces its future growth potential with a drop to 4 mppa. By 2030 Southampton has also become constrained by its runway, and if it could handle larger aircraft, it too could attract more passengers than currently forecast.

Chapter 7: REGIONAL AIRPORTS

7.1 The tables in **Annex B.6** show, for a selection of representative packages of development of South East runways the number of passengers proceeding by 'Surface to South East airports'. Clearly, the overwhelming majority of passengers at South East airports have origins or destinations in the South East.

- With no additional runways in the South East ('maximum use of existing runways'), there are 166 mppa with South East origins or destinations in 2030 making surface access journeys to airports in the South East. They rise to 184 mppa with one new runway, 195-201 mppa with two additional runways, and 205 mppa with three additional runways.
- There are 12 mppa regional passengers preferring to travel through South East airports in 2030 with no additional runways in the South East (compared with 15 mppa in 2000). The number of these passengers would rise to 16 mppa with one additional runway in the South East, 22-25 mppa with two additional runways, and 26 mppa with three additional runways.
- Overall, passengers with UK origins and destinations are up to 52 mppa higher at South East airports with three additional runways in the South East.

7.2 By contrast, the 'Other Airports' panel of the table in **Annex B.6** shows that usage of regional airports by regional passengers changes comparatively little as additional runways are added in the South East. The number of South East passengers having to use regional airports, 18 mppa with no additional South East runways, decreases as more runway capacity is added in the South East.

7.3 The 'Grand Total' panel shows that total passengers at UK airports increase, as more runway capacity is added in the South East. This includes more international-to-international passengers connecting at South East airports. With the development of additional routes at regional airports, the amount of interlining at South East airports to reach international destinations is limited, even with larger development packages in the South East. Interlining from regional airports via Continental hubs remains a factor. The final panel - Passengers with Regional Origins/Destinations - shows that up to 8 mppa passengers from the regions do not fly if South East runway capacity is constrained. But far more South East passengers are unable to fly from UK airports with less runway capacity in the South East. In particular, a potential 27 mppa in 2030 with origins or destinations in the South East do not fly if there are no additional runways in the South East.

Forecasts of Regional Airports

7.4 Forecasts of international and domestic routes are produced for every significant regional airport and for each year between the present day and 2030, under any specific scenario for development of capacity in the South East. The assumption that regional capacity is unconstrained means that there is comparatively little difference in throughput for regional airports as the number and location of additional South East runways varies except for those airports which receive 'overspill' demand from the South East when airport capacity there is substantially constrained. The DfT's air passenger forecasting model allows routes to start at any airport that captures sufficient local demand to make a new service attractive to an airline. As airport catchments overlap, the forecasting reflects competition between airports for the underlying demand. There will be winners and losers and some new routes will not prove commercially viable.

7.5 Route development in the regions will take the form of:

- new destinations;
- improved frequencies;
- more choice of airline; and
- more conveniently timetabled services.

7.6 **Annex B.10** shows throughputs at all modelled airports for a range options for both 2030 and 2015. Where it is appropriate to give ranges below they represent the full range for 2030 passenger throughputs shown in Annex B.10. The representative throughput for the option of one additional runway at Stansted in 2011/12 and one additional runway at Heathrow within the 2015-2020 period is shown underlined and in square brackets [ ].

7.7 The forecasts are under-pinned by the assumption that one new runway is provided for the Midlands at Birmingham and one new runway is provided for Central Scotland at Edinburgh.

7.8 Presently **Manchester** is the third busiest UK airport; just ahead of Stansted, although current trends suggest this order may soon reverse. Manchester Airport is forecast to have a passenger throughput of between 47.6 and 56.5 [48.4] mppa by 2030, rising from a 2002 throughput of 18.9 mppa. Although additional capacity is unlikely to be needed by 2030, there is space available for expansion. Manchester has a very strong demand for charter flights, almost 10 mppa presently, and could become the number one UK charter airport if Gatwick is constrained. In contrast, due to the competitiveness of nearby Liverpool airport, it suffers a poor throughput of NFC traffic. In the latest DfT forecasts, it is reasonable to anticipate that, under the scenario of additional runways at Heathrow, Gatwick and Stansted, I to I connectors would not exceed 1 mppa at Manchester. Manchester also gives back some future traffic (possibly as much as 5 mppa) to other northern airports which broaden their range of routes (Leeds Bradford, East Midlands and Teesside in particular). The principal driver for this potential reduction in demand growth depends on the substitution of scheduled long haul services for NFC demand.

7.9 Most other major Northern UK airports expect strong growth between 2000 and 2030. Demand at **Newcastle** is forecast to grow from the current 3.4 mppa in 2002 to between 9.3 and 9.6 [9.4] mppa by 2030, mostly reliant on NFC routes to northern Europe. **Liverpool** will continue its dominance in NFC traffic in the North West, with demand rising from 2.8 mppa in 2002 to between 7.5 and 7.7 mppa [7.5] in 2030. **Leeds Bradford** also sees growth in demand between 2002 and 2030, from 1.5 mppa to between 5.8 and 6.9 [6.5] mppa with a solid NFC component. **Teesside** has demand doubling from 0.7 mppa in 2002 to between 1.4 - 1.5 [1.4] mppa in 2030. Growth may be weakest at **Humberside** with demand only rising slowly from 0.5 mppa in 2002 and remaining under 1 mppa [0.6] in 2030 as it is expected to retain its existing local charter market, but struggle to further increase its catchment with the development of Finningley.

7.10 Edinburgh and Glasgow are the premier Scottish Airports. In 2002 **Glasgow** (7.9 mppa) had more passenger demand in 2002 than Edinburgh (7 mppa). However, that is forecast to reverse, with demand at **Edinburgh** by 2030 with two additional runways in the South East reaching 21.2 mppa [overall range : 19.2 - 21.6 mppa] , and Glasgow 15.4 mppa [overall range : 15.4 - 16.0 mppa]. The reason for Glasgow's slower growth is partly

dependent on the continued dominance of NFC traffic at **Prestwick**, which claws some demand away from Glasgow. Prestwick grows from 1.5 mppa in 2002 to between 5.3 and 5.7 [5.4] mppa by 2030. Current modelling reflects the stimulation of West of Scotland demand caused by the rapid growth of low cost routes at Prestwick. If demand forecasts at Glasgow and Prestwick are combined, they approximately equal the forecast at Edinburgh. Airlines operating to Edinburgh are expected to capture the strengthening local underlying demand and start direct scheduled international services, doing away with much of the current need for Scottish residents to interline at London airports. Glasgow meanwhile will consolidate its position as Scotland's number one charter airport.

7.11 The forecasts reported above utilise the distribution of demand in central Scotland from the most up-to-date survey data from CAA and Prestwick. By 2030, traffic at Edinburgh could exceed 23 mppa and be around 14 mppa at Glasgow, if demand growth in the east of central Scotland continues in line with recent historic trends.

7.12 **Aberdeen** is currently the third busiest Scottish airport with 2.5 mppa in 2002. This is forecast to rise to between 4.5 and 4.6 [4.5] mppa by 2030. A significant proportion of this demand is currently oil related and there is a risk of the forecast proving high if the local economy slows down later in the period. With 0.4 m passengers in 2002 **Inverness** is the smallest of the Scottish airports and is forecast to rise to up to 0.7 m [0.6] by 2030. However, recently Inverness has proved popular as a destination for domestic NFCs and if the potential of the surrounding area to increase inbound tourism is fully realised then future throughput at Inverness could exceed 1 mppa.

7.13 The major airports in the Midlands are Birmingham and East Midlands. **Birmingham** had a passenger throughput of 8 mppa in 2002 and is forecast to increase to between 30.6 and 41.3 [31.7] mppa by 2030. Even the lower of the Birmingham forecasts is a 250 per cent increase in traffic, well in excess of the national average. If no new capacity is provided in the South East, Birmingham will attract the largest amount of 'spillover' demand from the South East, with East Midlands a close second. Even without substantial 'spillover ' demand, an additional runway at Birmingham is indicated at some point post 2016. Currently Birmingham specialises in business-orientated scheduled services rather than charter or domestic services. Like Manchester, Birmingham has lost ground to a local rival – East Midlands Airport – in the development of NFC traffic. However, there are indications that there may be considerable scope for more NFC growth at Birmingham. The current 1 mppa of NFCs are forecast to rise to at least 4 mppa.

7.14 Demand at **East Midlands** is expected to rise from 3.2 mppa in 2002 to between 11.8 and 18.2 [12.2] mppa by 2030, largely due to the continuing strength of NFC traffic and potential to attract South East overspill. Despite the possibility of some NFC traffic moving to Birmingham and Finningley, the forecasts fully capture the recent success of East Midlands in attracting and generating low cost demand which is predicted to grow to between 5.5 mppa and 9.5 mppa by 2030. New charter services are also forecast to start up.

7.15 **Bristol** is the principal airport in the South West and is expected to continue this dominance. However, a significant number of passengers from the South West 'leak' from the region making journeys by road and rail to London's airports (although some apparent leakage is localised cross-boundary Dorset and Wiltshire traffic using Southampton). Much of the South West leakage could be clawed back if London's capacity is constrained.

Demand forecasts for Bristol suggest between 10.7 and 12.1 [11.6] mppa by 2030, up from a demand of 3.4 mppa in 2002. Much of this higher local demand and propensity to fly has been brought forward by the establishment of NFCs at Bristol.

7.16 **Cardiff** is forecast to grow solidly over the next thirty years to 5 or slightly higher [5.0] mppa by 2030 from 1.4 mppa in 2002, utilising NFC traffic and the local demand in charter services. Current forecasts reflect the stimulation to demand following the establishment of the bmibaby base. Given its southerly location, Cardiff is largely independent of the volume of capacity provided in the South East and forecasts do not greatly vary between the options.

7.17 Throughput at **Bournemouth** was 0.4 mppa in 2002 and is forecast to rise to between 2.3 - 6.0 [2.7] mppa by 2030. Bournemouth is more likely than other small regional airports to be influenced by the level of capacity provided in the South East, being a potential recipient of South East 'spillover' demand.

7.18 In the far South West, **Exeter** had a throughput of 0.3 mppa in 2002. This is forecast to rise to between 1.7 - 2.5 [1.8] mppa by 2030. Of the Devon and Cornwall airports, Exeter has the largest catchment population and is likely to remain the principal airport west of Bristol. Inward tourism in Devon and Cornwall may be higher than other UK regions; if the region does experience locally higher economic growth, there is a risk that the Exeter forecast is on the low side.

7.19 **Plymouth** only had 0.1 m passengers in 2002. This is forecast to rise to 0.3 [0.3] mppa by 2030. With no current international services, Plymouth's future in the forecasts is uncertain.

7.20 **Newquay** also had 0.1 m passengers in 2002, but this is forecast to rise to between 0.4 -0.5 [0.4] m by 2030, outperforming Plymouth. This year Ryanair doubled the frequency of the new service from Stansted. With the Eden Project nearby, the growing popularity of North Cornwall as a holiday destination and relatively difficult road and rail links there may be scope for higher throughput than forecast if with more domestic inbound tourism using low cost services from Prestwick and Dublin and several airports in northern England.

7.21 **Norwich** may experience some of the effects of South East overspill. In 2002 Norwich handled 0.4 mppa and is forecast to increase to between 0.9 and 3.1 [0.9] mppa by 2030. The higher figure is associated with the case of 'no new runways in the South East'. When one or more runways are added in the South East the forecast 2030 throughput drops back to between 0.9 mppa and 1.3 mppa.

7.22 A mix of charter and NFC traffic is expected at Northern Ireland's premier airport, **Belfast International**, with demand growing from 3.6 mppa in 2002 to between 8.1 and 9.0 [8.7] mppa by 2030. At **Belfast City**, which handled 1.9 passengers in 2002, an increase to 4.2 [4.2] mppa is expected by 2030. Potentially both Belfast forecasts could be too high as some Northern Ireland demand will 'leak ' to Dublin and **Derry**, but these effects are currently outside the scope of the modelling.

Annex A

UK Residents' Purpose of Journey by London Airport

Purpose of journey (thousands)	**Gatwick**	**Heathrow**	**Luton**	**Stansted**
Airline Staff	40.5	124.5	5.5	37.1
Armed Services	31.8	94.8	18.5	19.0
Au pair	0.0	1.9	0.0	2.6
Business - Attending Internal Company Business	921.3	3,803.5	464.5	682.0
Business - Conference/Congress	317.6	978.7	119.1	262.9
Business - Meetings with Customers	807.0	3,511.3	467.5	863.1
Business - Trade Fair/Exhibition	62.0	226.5	35.9	121.6
Contract Home Leave	13.9	96.5	9.0	7.0
Cultural/sports	102.0	162.6	29.0	97.2
Holiday fare paid separately	4,397.0	4,389.1	1,451.8	3,898.6
Holiday IT package - Cruise	321.5	213.6	9.5	40.0
Holiday IT/Package - Hotel	6,206.6	3,075.3	582.0	786.8
Holiday IT/Package - Self Catering	3,198.5	43.4	294.8	393.3
Migration	48.9	123.9	5.2	46.9
Other	86.8	73.5	24.2	28.3
Other Business	327.6	1,273.0	151.8	342.4
Overseas Employment - 12 months or more	25.4	73.3	7.9	4.0
Overseas Employment - less 12 months	79.9	184.4	29.5	31.7
Ski - Holiday fare paid separately	38.6	77.5	23.7	59.3
Ski - Holiday IT/Package - Hotel	414.1	50.1	1.5	12.6
Ski - Holiday IT/Package - Self Catering	63.3	5.8	0.5	6.1
Studies paid by employer - formal academic course	6.4	23.4	7.8	16.0
Studies paid by employer - other course	15.1	27.9	7.9	14.2
Studies private/grants - formal academic course	98.6	284.4	27.6	41.7
Studies private/grants - other course	18.2	53.7	9.9	23.6
Unaccompanied school children	3.8	12.2	0.0	0.0
Visiting friends and relatives	3,361.9	8,456.6	1,351.6	3,561.7
Grand Total	21,008.1	27,441.2	5,136.2	11,399.8
Source	CAASurvey2002			

ANNEX B: DLL25 Results

Option Codes

See also Annex C : Table C.2 for descriptions of each option.

Code	Runways	Detail
s07	STN+1 (2011/12)	STN + 1 (513 K ATMs per annum / 82 mppa) in 2011/12.
s12s1	STN+1 (2011/12), LHR+1 (2020)	STN + 1 (513 K ATMs per annum / 82 mppa) in 2011/12, LHR + 1 (550 K ATMs per annum / 112 mppa) in 2020, (600 K ATMs per annum / 120 mppa) in 2025.
s12s2	STN+1 (2011/12), LHR+1 (2016)	STN + 1 (513 K ATMs per annum / 82 mppa) in 2011/12, LHR + 1 (550 K ATMs per annum / 112 mppa) in 2016 +10 K ATM increments to 2030.
s12s3	STN+1 (2011/12), LHR+1 (2020)	STN + 1 (513 K ATMs per annum / 82 mppa) in 2011/12, LHR + 1 (655 K ATMs per annum / 135 mppa in 2020 rising to 700 K ATMS per annum in 2025)
s15s1	STN+1 (2011/12), LHR+1 (2020), LGW+1 (2024)	STN + 1 (513 K ATMs per annum / 82 mppa) in 2011/12, LHR + 1 (550 K ATMs per annum / 112 mppa) in 2020, (600 K ATMs per annum / 120 mppa) in 2025, LGW W-S (486 K ATMs per annum / 83 mppa) in 2024.

Annex B.1

Mix of Traffic at Major London Airports 2030

2030	(Millions of Terminal Passengers)	Type				Range		Purpose[1]		
		Scheduled[2]	Charter	NFC[3]	Total	Short Haul[4]	Long Haul[5]	Business	Leisure	*Business %*
Heathrow	*2000Actual*	*64*	*0*	*0*	*64*	*31*	*26*	*20*	*29*	*41%*
	2Max Use of Existing Runways	89	0	0	89	33	48	43	26	*62%*
	7STN + 1	89	0	0	89	32	49	41	26	*62%*
	12s1STN + 1, LHR +1 (2020, 550/600)	119	0	0	119	50	59	50	35	*59%*
	12s2STN + 1, LHR +1 (2016, 550-690)	132	0	0	132	58	63	54	38	*58%*
	12s3STN + 1, LHR +1 (2020, 655/700)	135	0	0	135	61	64	55	40	*58%*
	13STN + 1, LGW + 1 (w-s)	89	0	0	89	34	46	42	26	*62%*
	15s1STN+1, LHR+1 (2020), LGW(ws)	119	0	0	119	50	59	50	35	*59%*
Gatwick	*2000Actual*	*21*	*11*	*0*	*32*	*18*	*11*	*5*	*21*	*18%*
	2Max Use of Existing Runways	23	16	1	40	24	14	8	27	*23%*
	7STN + 1	23	16	1	40	24	13	7	26	*22%*
	12s1STN + 1, LHR +1 (2020, 550/600)	22	17	1	40	24	12	7	27	*20%*
	12s2STN + 1, LHR +1 (2016, 550-690))	21	17	1	39	25	11	6	27	*18%*
	12s3STN + 1, LHR +1 (2020, 655/700)	20	17	1	39	25	11	6	27	*18%*
	13STN + 1, LGW + 1 (w-s)	56	18	1	76	45	26	14	38	*27%*
	15s1STN+1, LHR+1 (2020), LGW(ws)	49	20	1	71	48	19	13	41	*24%*
Stansted	*2000Actual*	*3*	*1*	*8*	*12*	*8*	*0*	*3*	*9*	*23%*
	2Max Use of Existing Runways	18	0	18	36	23	10	9	22	*30%*
	7STN + 1	44	0	29	73	52	17	19	41	*32%*
	12s1STN + 1, LHR +1 (2020, 550/600)	37	1	32	70	50	16	19	42	*31%*
	12s2STN + 1, LHR +1 (2016, 550-690)	35	1	34	70	50	15	18	42	*30%*
	12s3STN + 1, LHR +1 (2020, 655/700)	34	1	35	71	50	15	18	43	*30%*
	13STN + 1, LGW + 1 (w-s)	36	1	32	69	50	15	19	40	*31%*
	15s1STN+1, LHR+1 (2020), LGW(ws)	29	1	36	65	47	13	17	40	*30%*
Luton	*2000 Actual*	*1*	*1*	*4*	*6*	*4*	*0*	*1*	*5*	*25%*
	2Max Use of Existing Runways	10	0	18	28	26	0	9	16	*36%*

	7 STN + 1	10	2	14	26	24	0	7	15	*32%*
	12s1 STN + 1, LHR +1 (2020, 550/600)	9	4	15	28	25	0	6	18	*26%*
	12s2 STN + 1, LHR +1 (2016, 550-690)	6	4	16	27	24	0	5	17	*23%*
	12s3 STN + 1, LHR +1 (2020, 655/700)	6	4	16	26	23	0	5	17	*23%*
	13 STN + 1, LGW + 1 (w-s)	9	4	16	29	26	0	6	18	*26%*
	15s1 STN+1, LHR+1 (2020), LGW(ws)	3	3	16	22	19	0	4	14	*24%*

Passengers may not total exactly as a result of rounding to nearest million.

Table Notes

1. Purpose includes all international and domestic passengers with UK mainland ground origins.
2. Scheduled includes I to I interliners (international transfer passengers), domestic full service and others.
3. NFC = No Frills Carrier scheduled services (e.g. easyJet, Ryanair, bmibaby etc.)
4. Short Haul does not include domestics.
5. Long Haul includes medium haul (e.g. US East, Middle East).

Mix of Traffic at Major London Airports 2015

2015	(Millions of Terminal Passengers)	Type				Range		Purpose[1]		
		Scheduled[2]	Charter	NFC[3]	Total	Short Haul[4]	Long Haul[5]	Business	Leisure	*Business %*
Heathrow	*2000Actual*	*64*	*0*	*0*	*64*	*31*	*26*	*20*	*29*	*41%*
	2Max Use of Existing Runways	80	0	0	80	34	40	27	29	*48%*
	7STN + 1	80	0	0	80	33	41	26	26	*50%*
	12s1STN + 1, LHR +1 (2020, 550/600)	79	0	0	79	32	41	26	26	*50%*
	12s2STN + 1, LHR +1 (2016, 550-690)	79	0	0	79	32	41	26	26	*50%*
	12s3STN + 1, LHR +1 (2020, 655/700)	79	0	0	79	32	41	26	26	*50%*
	13STN + 1, LGW + 1 (w-s)	79	0	0	79	33	41	26	26	*50%*
	15s1STN+1, LHR+1 (2020), LGW(ws)	79	0	0	79	32	41	26	26	*50%*
Gatwick	*2000Actual*	*21*	*11*	*0*	*32*	*18*	*11*	*5*	*21*	*18%*
	2Max Use of Existing Runways	19	13	2	34	21	10	5	23	*18%*
	7STN + 1	19	13	1	33	21	10	5	22	*17%*
	12s1STN + 1, LHR +1 (2020, 550/600)	19	13	1	33	21	10	5	22	*18%*
	12s2STN + 1, LHR +1 (2016, 550-690)	19	13	1	33	21	10	5	22	*18%*
	12s3STN + 1, LHR +1 (2020, 655/700)	19	13	1	33	21	10	5	22	*18%*
	13STN + 1, LGW + 1 (w-s)	19	13	1	34	21	10	5	23	*17%*
	15s1STN+1, LHR+1 (2020), LGW(ws)	19	13	1	33	21	10	5	22	*18%*
Stansted	*2000Actual*	*3*	*1*	*8*	*12*	*8*	*0*	*3*	*9*	*23%*
	2Max Use of Existing Runways	11	0	21	33	21	7	7	21	*26%*
	7STN + 1	28	1	28	57	42	11	13	35	*27%*
	12s1STN + 1, LHR +1 (2020, 550/600)	28	1	28	57	42	11	13	35	*27%*
	12s2STN + 1, LHR +1 (2016, 550-690)	28	1	28	57	42	11	13	35	*27%*
	12s3STN + 1, LHR +1 (2020, 655/700)	28	1	28	57	42	11	13	35	*27%*
	13STN + 1, LGW + 1 (w-s)	28	1	28	57	42	11	13	35	*27%*
	15s1STN+1, LHR+1 (2020), LGW(ws)	28	1	28	57	42	11	13	35	*27%*
Luton	*2000Actual*	*1*	*1*	*4*	*6*	*4*	*0*	*1*	*5*	*25%*
	2Max Use of Existing Runways	7	2	16	26	23	0	6	16	*26%*

	7 STN + 1	4	2	12	18	16	0	4	11	*24%*
	12s1 STN + 1, LHR +1 (2020, 550/600)	4	2	12	19	16	0	4	12	*24%*
	12s2 STN + 1, LHR +1 (2016, 550-690)	4	2	12	19	16	0	4	12	*24%*
	12s3 STN + 1, LHR +1 (2020, 655/700)	4	2	12	19	16	0	4	12	*24%*
	13 STN + 1, LGW + 1 (w-s)	5	2	12	19	17	0	4	12	*25%*
	15s1 STN+1, LHR+1 (2020), LGW(ws)	4	2	12	19	16	0	4	12	*24%*

Options	Code	Description
12,15	LHR+1	12s1& 12s3=2000m Runway in 2020; 12s2 =2016
7,12,13,15	STN+1	07, 12s1, 12s2, 12s3, 13 = 1 Full length runway in 2011/12
13,15	LGW+1	13 & 15 = Full length wide-spaced runway in 2024

Passengers may not total exactly as a result of rounding to nearest million.

Table Notes

1. Purpose includes all international and domestic passengers with UK mainland ground origins.
2. Scheduled includes I to I interliners (international transfer passengers), domestic full service and others.
3. NFC = No Frills Carrier scheduled services (e.g. easyJet, Ryanair, bmibaby etc.)
4. Short Haul does not include domestics.
5. Long Haul includes medium haul (e.g. US East, Middle East).

International Passenger Purposes at all UK Airports

2030 (Millions of Terminal Passengers)	FoBus	UKBus	FoLei	UKLei
2000 Actual	*14*	*18*	*22*	*71*
2 Max Use of Existing Runways	59	53	85	138
7 STN + 1	60	55	86	141
12s1 STN + 1, LHR +1 (2020, 550/600)	61	57	88	144
12s2 STN + 1, LHR +1 (2016, 550-690)	62	59	89	145
12s3 STN + 1, LHR +1 (2020, 655/700)	62	59	89	146
13 STN + 1, LGW + 1 (w-s)	62	58	89	145
15s1 STN+1, LHR+1 (2020), LGW(ws)	62	59	90	147

2015 (Millions of Terminal Passengers)	FoBus	UKBus	FoLei	UKLei
2000 Actual	*14*	*18*	*22*	*71*
2 Max Use of Existing Runways	28	38	63	106
7 STN + 1	29	39	64	108
12s1 STN + 1, LHR +1 (2020, 550/600)	29	39	64	108
12s2 STN + 1, LHR +1 (2016, 550-690)	29	39	64	108
12s3 STN + 1, LHR +1 (2020, 655/700)	29	39	64	108
13 STN + 1, LGW + 1 (w-s)	29	39	64	109
15s1 STN+1, LHR+1 (2020), LGW(ws)	29	39	64	108

Passengers may not total exactly as a result of rounding to nearest million.

Table Notes

1. Excludes international transfer and domestic end-to-end passengers.
2. All charter passengers are assumed to be leisure, 15.5% of which are foreign by 2015.
3. Foreign component of NFC traffic assumed to have grown to 37.5% by 2015.

Interlining at London Airports 2030

2030				Domestic Interlining			
	(Millions of Terminal Passengers)	Direct	I to I	Scotland	N. Ireland	North	South West
Heathrow	*2000Actual*	*45*	*15*	*2.087*	*0.711*	*1.837*	*0.025*
	2Max Use of Existing Runways	69	20	0.021	0.070	0.008	0.000
	7STN + 1	67	21	0.088	0.113	0.017	0.000
	12s1STN+1, LHR+1 (2020, 550/600)	84	34	0.351	0.230	0.051	0.000
	12s2STN+1, LHR +1 (2016, 550-690)	92	39	0.433	0.267	0.087	0.000
	12s3STN+1, LHR +1 (2020, 655/700)	94	40	0.446	0.274	0.075	0.000
	13STN+1, LGW+1 (w-s)	68	21	0.227	0.166	0.029	0.000
	15s1STN+1, LHR+1 (2020), LGW(ws)	85	34	0.433	0.260	0.066	0.000
Gatwick	*2000Actual*	*24*	*5*	*1.399*	*0.212*	*0.944*	*0.170*
	2Max Use of Existing Runways	36	4	0.039	0.008	0.001	0.001
	7STN + 1	34	5	0.137	0.016	0.002	0.004
	12s1STN+1, LHR+1 (2020, 550/600)	34	5	0.130	0.023	0.020	0.007
	12s2STN+1, LHR +1 (2016, 550-690)	34	5	0.118	0.024	0.009	0.053
	12s3STN+1, LHR +1 (2020, 655/700)	34	5	0.121	0.024	0.021	0.012
	13STN+1, LGW+1 (w-s)	53	22	0.298	0.055	0.055	0.088
	15s1STN+1, LHR+1 (2020), LGW(ws)	54	16	0.370	0.071	0.085	0.151
Stansted	*2000Actual*	*11*	*0*	*0.287*	*0.027*	*0.010*	*0.000*
	2Max Use of Existing Runways	35	1	0.000	0.000	0.000	0.000
	7STN + 1	64	9	0.000	0.005	0.000	0.000
	12s1STN+1, LHR+1 (2020, 550/600)	64	6	0.000	0.011	0.012	0.000
	12s2STN+1, LHR +1 (2016, 550-690)	65	5	0.000	0.014	0.024	0.000
	12s3STN+1, LHR +1 (2020, 655/700)	66	5	0.000	0.015	0.030	0.000
	13STN+1, LGW+1 (w-s)	63	6	0.000	0.012	0.020	0.000
	15s1STN+1, LHR+1 (2020), LGW(ws)	62	3	0.000	0.009	0.022	0.000
Luton	*2000Actual*	*6*	*0*	*0.194*	*0.032*	*0.067*	*0.000*
	2Max Use of Existing Runways	26	1	0.000	0.000	0.000	0.000
	7STN + 1	24	2	0.000	0.000	0.000	0.000
	12s1STN+1, LHR+1 (2020, 550/600)	26	2	0.000	0.000	0.000	0.000
	12s2STN+1, LHR +1 (2016, 550-690)	26	1	0.000	0.000	0.000	0.000
	12s3STN+1, LHR +1 (2020, 655/700)	25	1	0.000	0.000	0.000	0.000
	13STN+1, LGW+1 (w-s)	28	1	0.000	0.000	0.000	0.000
	15s1STN+1, LHR+1 (2020), LGW(ws)	21	0	0.000	0.000	0.000	0.000

Passengers may not total exactly as a result of rounding to nearest million.

Table Notes

1. Direct includes international interliners from the London airports, charter, all NFCs and all domestics.
2. Domestic Interlining is counted 2* i.e. terminal passengers at the hub.
3. No domestic interlining from Wales and the Midlands.

Interlining at London Airports 2015

2015				Domestic Interlining			
	(Millions of Terminal Passengers)	Direct	I to I	Scotland	N. Ireland	North	South West
Heathrow	*2000Actual*	*45*	*15*	*2.087*	*0.711*	*1.837*	*0.025*
	2Max Use of Existing Runways	55	24	0.773	0.197	0.157	0.000
	7STN + 1	52	27	1.055	0.199	0.175	0.000
	12s1STN+1, LHR+1 (2020, 550/600)	51	27	1.005	0.195	0.165	0.000
	12s2STN+1, LHR +1 (2016, 550-690)	51	27	1.005	0.195	0.165	0.000
	12s3STN+1, LHR +1 (2020, 655/700)	51	27	1.005	0.195	0.165	0.000
	13STN+1, LGW+1 (w-s)	51	27	1.035	0.196	0.171	0.000
	15s1STN+1, LHR+1 (2020), LGW(ws)	51	27	1.005	0.195	0.165	0.000
Gatwick	*2000Actual*	*24*	*5*	*1.399*	*0.212*	*0.944*	*0.170*
	2Max Use of Existing Runways	29	4	0.197	0.054	0.028	0.015
	7STN + 1	28	5	0.238	0.053	0.028	0.024
	12s1STN+1, LHR+1 (2020, 550/600)	28	5	0.229	0.052	0.026	0.024
	12s2STN+1, LHR +1 (2016, 550-690)	28	5	0.229	0.052	0.026	0.024
	12s3STN+1, LHR +1 (2020, 655/700)	28	5	0.229	0.052	0.026	0.024
	13STN+1, LGW+1 (w-s)	28	5	0.211	0.054	0.029	0.024
	15s1STN+1, LHR+1 (2020), LGW(ws)	28	5	0.229	0.052	0.026	0.024
Stansted	*2000Actual*	*11*	*0*	*0.287*	*0.027*	*0.010*	*0.000*
	2Max Use of Existing Runways	32	0	0.000	0.000	0.000	0.000
	7STN + 1	52	5	0.000	0.062	0.172	0.000
	12s1STN+1, LHR+1 (2020, 550/600)	52	5	0.000	0.062	0.143	0.000
	12s2STN+1, LHR +1 (2016, 550-690)	52	5	0.000	0.062	0.143	0.000
	12s3STN+1, LHR +1 (2020, 655/700)	52	5	0.000	0.062	0.143	0.000
	13STN+1, LGW+1 (w-s)	52	5	0.000	0.065	0.217	0.000
	15s1STN+1, LHR+1 (2020), LGW(ws)	52	5	0.000	0.062	0.143	0.000
Luton	*2000Actual*	*6*	*0*	*0.194*	*0.032*	*0.067*	*0.000*
	2Max Use of Existing Runways	24	1	0.000	0.000	0.000	0.000
	7STN + 1	17	1	0.000	0.000	0.000	0.000
	12s1STN+1, LHR+1 (2020, 550/600)	18	1	0.000	0.000	0.000	0.000
	12s2STN+1, LHR +1 (2016, 550-690)	18	1	0.000	0.000	0.000	0.000
	12s3STN+1, LHR +1 (2020, 655/700)	18	1	0.000	0.000	0.000	0.000
	13STN+1, LGW+1 (w-s)	18	1	0.000	0.000	0.000	0.000
	15s1STN+1, LHR+1 (2020), LGW(ws)	18	1	0.000	0.000	0.000	0.000

Passengers may not total exactly as a result of rounding to nearest million.

Table Notes

1. Direct includes international interliners from the London airports, charter, all NFCs and all domestics.
2. Domestic Interlining is counted 2* i.e. terminal passengers at the hub.
3. No domestic interlining from Wales and the Midlands.

National Traffic Totals

2030 (Millions of Terminal Passengers)	London Airports	Other UK Airports	Total	*Lost to UK System*
2000 Actual	*116*	*64*	*180*	*n/a*
2 Max Use of Existing Runways	197	235	431	*-70*
7 STN + 1	231	217	448	*-53*
12s1 STN+1, LHR+1 (2020, 550/600)	259	206	466	*-35*
12s2 STN+1, LHR +1 (2016, 550-690)	271	205	476	*-25*
12s3 STN+1, LHR +1 (2020, 655/700)	274	205	479	*-22*
13 STN+1, LGW+1 (w-s)	266	208	474	*-27*
15s1 STN+1, LHR+1 (2020), LGW(ws)	281	203	484	*-17*

2015 (Millions of Terminal Passengers)	London Airports[1]	Other UK Airports	Total	*Lost to UK System*
2000 Actual	*116*	*64*	*180*	*n/a*
2 Max Use of Existing Runways	175	136	310	*-24*
7 STN + 1	192	133	325	*-9*
12s1 STN+1, LHR+1 (2020, 550/600)	191	133	325	*-9*
12s2 STN+1, LHR +1 (2016, 550-690)	191	133	325	*-9*
12s3 STN+1, LHR +1 (2020, 655/700)	191	133	325	*-9*
13 STN+1, LGW+1 (w-s)	192	133	325	*-9*
15s1 STN+1, LHR+1 (2020), LGW(ws)	191	133	325	*-9*

Passengers may not total exactly as a result of rounding to nearest million.

Table Notes

1. London Airports are Heathrow, Gatwick, Stansted, Luton and London City.

Annex B.5

Regional Passengers at Major London Airports 2030

2030		(Millions of Terminal Passengers)	Surface						Air				
			SE	Scotland	North	Midlands	Wales	South West	SE	N. Ireland	Scotland	North	South West
Heathrow	*2000*		*37.2*	*0.2*	*1.5*	*2.5*	*0.6*	*2.7*	*0.0*	*1.2*	*3.4*	*2.1*	*0.0*
	2	Max Use of Existing Runways	63.0	0.0	0.5	1.6	0.6	3.2	0.0	2.0	3.8	2.2	0.0
	7	STN + 1	61.0	0.0	0.5	1.7	0.7	3.5	0.0	2.0	4.1	2.3	0.0
	12s1	STN+1, LHR+1 (2020, 550/600)	74.9	0.0	1.6	2.3	0.9	4.5	0.0	2.1	4.8	2.3	0.0
	12s2	STN+1, LHR +1 (2016, 550-690)	81.3	0.0	1.7	2.5	1.0	5.1	0.0	2.1	4.9	2.5	0.0
	12s3	STN+1, LHR +1 (2020, 655/700)	83.4	0.0	1.7	2.6	1.1	5.2	0.0	2.1	4.9	2.3	0.0
	13	STN+1, LGW+1 (w-s)	61.2	0.0	0.6	1.7	0.7	3.6	0.0	2.1	4.4	2.2	0.0
	15s1	STN+1, LHR+1 (2020),LGW(ws)	74.6	0.0	1.7	2.5	1.0	5.0	0.0	2.1	4.7	2.2	0.0
Gatwick	*2000*		*22.4*	*0.1*	*0.5*	*1.4*	*0.3*	*1.8*	*0.0*	*0.3*	*1.3*	*0.8*	*0.2*
	2	Max Use of Existing Runways	33.8	0.0	0.2	0.5	0.1	1.3	0.0	0.7	1.7	0.4	0.1
	7	STN + 1	32.3	0.0	0.2	0.5	0.1	1.4	0.0	0.7	1.8	0.5	0.1
	12s1	STN+1, LHR+1 (2020, 550/600)	31.7	0.0	0.2	0.6	0.1	1.6	0.0	0.8	1.9	0.7	0.1
	12s2	STN+1, LHR +1 (2016, 550-690)	31.3	0.0	0.2	0.6	0.1	1.7	0.0	0.8	1.9	0.5	0.1
	12s3	STN+1, LHR +1 (2020, 655/700)	31.5	0.0	0.2	0.6	0.1	1.7	0.0	0.8	1.9	0.7	0.1
	13	STN+1, LGW+1 (w-s)	48.9	0.0	0.3	1.1	0.2	2.6	0.0	0.8	2.2	0.8	0.1
	15s1	STN+1, LHR+1 (2020),LGW(ws)	49.3	0.0	0.4	1.1	0.2	2.9	0.0	0.8	2.4	0.8	0.2
Stansted	*2000*		*9.4*	*0.0*	*0.4*	*0.8*	*0.1*	*0.3*	*0.0*	*0.1*	*1.0*	*0.1*	*0.0*
	2	Max Use of Existing Runways	32.7	0.0	0.8	1.1	0.1	0.5	0.0	0.6	1.9	0.6	0.1
	7	STN + 1	58.5	0.0	1.4	2.7	0.2	1.0	0.0	0.6	1.9	0.6	0.1
	12s1	STN+1, LHR+1 (2020, 550/600)	56.7	0.0	2.2	3.6	0.2	1.3	0.0	0.7	2.3	0.7	0.2
	12s2	STN+1, LHR +1 (2016, 550-690)	57.3	0.0	2.3	3.8	0.2	1.4	0.0	0.8	2.6	0.8	0.2
	12s3	STN+1, LHR +1 (2020, 655/700)	57.6	0.0	2.3	3.9	0.2	1.4	0.0	0.9	2.8	0.9	0.2
	13	STN+1, LGW+1 (w-s)	56.4	0.0	1.7	3.5	0.2	1.2	0.0	0.7	2.2	0.8	0.2
	15s1	STN+1, LHR+1 (2020),LGW(ws)	54.6	0.0	2.2	3.9	0.2	1.2	0.0	0.9	2.8	0.9	0.2
Luton	*2000*		*4.7*	*0.0*	*0.1*	*0.7*	*0.0*	*0.2*	*0.0*	*0.4*	*1.2*	*0.2*	*0.0*
	2	Max Use of Existing Runways	25.1	0.0	0.1	0.8	0.1	0.4	0.0	0.5	1.4	0.0	0.0
	7	STN + 1	22.5	0.0	0.1	1.1	0.1	0.4	0.0	0.6	1.5	0.0	0.0
	12s1	STN+1, LHR+1 (2020, 550/600)	23.3	0.0	0.1	2.0	0.1	0.6	0.0	0.6	1.8	0.0	0.0
	12s2	STN+1, LHR +1 (2016, 550-690)	22.3	0.0	0.2	2.3	0.2	0.7	0.0	0.8	2.2	0.0	0.0
	12s3	STN+1, LHR +1 (2020, 655/700)	21.4	0.0	0.1	2.2	0.2	0.7	0.0	0.8	2.2	0.0	0.0
	13	STN+1, LGW+1 (w-s)	24.4	0.0	0.1	2.1	0.2	0.7	0.0	0.8	2.2	0.0	0.0
	15s1	STN+1, LHR+1 (2020),LGW(ws)	18.6	0.0	0.1	1.9	0.1	0.6	0.0	0.8	2.2	0.0	0.0

Table Notes

1. SE Passengers are from London, South East and Eastern Regions
2. North: Northern, North-West and Yorkshire and Humberside
3. Dom-ils are counted *1 at the hub
4. No surface trips from Northern Ireland; no air trips from Wales and the Midlands
5. 2000 Figures are modelled.

Regional Passengers at Major London Airports 2015

(Millions of Terminal Passengers)			Surface						Air				
2015			SE	Scotland	North	Midlands	Wales	South West	SE	N. Ireland	Scotland	North	South West
Heathrow	*2000*		*37.2*	*0.2*	*1.5*	*2.5*	*0.6*	*2.7*	*0.0*	*1.2*	*3.4*	*2.1*	*0.0*
	2	Max Use of Existing Runways	47.7	0.2	1.2	2.0	0.7	3.4	0.0	1.1	2.6	1.3	0.0
	7	STN + 1	44.1	0.2	1.1	1.9	0.7	3.5	0.0	1.1	2.8	1.3	0.0
	12s1	STN+1, LHR+1 (2020, 550/600)	43.6	0.2	1.3	1.9	0.7	3.5	0.0	1.1	2.8	1.3	0.0
	12s2	STN+1, LHR +1 (2016, 550-690)	43.6	0.2	1.3	1.9	0.7	3.5	0.0	1.1	2.8	1.3	0.0
	12s3	STN+1, LHR +1 (2020, 655/700)	43.6	0.2	1.3	1.9	0.7	3.5	0.0	1.1	2.8	1.3	0.0
	13	STN+1, LGW+1 (w-s)	43.7	0.2	1.1	1.9	0.7	3.5	0.0	1.1	2.9	1.3	0.0
	15s1	STN+1, LHR+1 (2020),LGW(ws)	43.6	0.2	1.3	1.9	0.7	3.5	0.0	1.1	2.8	1.3	0.0
Gatwick	*2000*		*22.4*	*0.1*	*0.5*	*1.4*	*0.3*	*1.8*	*0.0*	*0.3*	*1.3*	*0.8*	*0.2*
	2	Max Use of Existing Runways	25.9	0.1	0.3	0.8	0.2	1.7	0.0	0.5	1.5	0.3	0.1
	7	STN + 1	24.5	0.1	0.3	0.9	0.2	1.7	0.0	0.5	1.5	0.3	0.1
	12s1	STN+1, LHR+1 (2020, 550/600)	24.4	0.1	0.3	0.8	0.2	1.7	0.0	0.5	1.5	0.3	0.1
	12s2	STN+1, LHR +1 (2016, 550-690)	24.4	0.1	0.3	0.8	0.2	1.7	0.0	0.5	1.5	0.3	0.1
	12s3	STN+1, LHR +1 (2020, 655/700)	24.4	0.1	0.3	0.8	0.2	1.7	0.0	0.5	1.5	0.3	0.1
	13	STN+1, LGW+1 (w-s)	24.8	0.1	0.3	0.9	0.2	1.7	0.0	0.5	1.4	0.3	0.1
	15s1	STN+1, LHR+1 (2020),LGW(ws)	24.4	0.1	0.3	0.8	0.2	1.7	0.0	0.5	1.5	0.3	0.1
Stansted	*2000*		*9.4*	*0.0*	*0.4*	*0.8*	*0.1*	*0.3*	*0.0*	*0.1*	*1.0*	*0.1*	*0.0*
	2	Max Use of Existing Runways	27.8	0.1	1.5	2.1	0.1	0.7	0.0	0.6	2.2	0.6	0.2
	7	STN + 1	45.3	0.2	2.0	3.4	0.2	1.2	0.0	0.7	2.2	0.7	0.2
	12s1	STN+1, LHR+1 (2020, 550/600)	45.2	0.2	1.9	3.4	0.2	1.2	0.0	0.7	2.2	0.7	0.2
	12s2	STN+1, LHR +1 (2016, 550-690)	45.2	0.2	1.9	3.4	0.2	1.2	0.0	0.7	2.2	0.7	0.2
	12s3	STN+1, LHR +1 (2020, 655/700)	45.2	0.2	1.9	3.4	0.2	1.2	0.0	0.7	2.2	0.7	0.2
	13	STN+1, LGW+1 (w-s)	44.8	0.2	1.9	3.4	0.2	1.2	0.0	0.7	2.2	0.7	0.2
	15s1	STN+1, LHR+1 (2020),LGW(ws)	45.2	0.2	1.9	3.4	0.2	1.2	0.0	0.7	2.2	0.7	0.2
Luton	*2000*		*4.7*	*0.0*	*0.1*	*0.7*	*0.0*	*0.2*	*0.0*	*0.4*	*1.2*	*0.2*	*0.0*
	2	Max Use of Existing Runways	21.1	0.0	0.2	2.1	0.1	0.6	0.0	0.6	1.7	0.0	0.0
	7	STN + 1	14.8	0.0	0.2	1.7	0.1	0.5	0.0	0.6	1.7	0.0	0.0
	12s1	STN+1, LHR+1 (2020, 550/600)	15.2	0.0	0.2	1.7	0.1	0.5	0.0	0.6	1.7	0.0	0.0
	12s2	STN+1, LHR +1 (2016, 550-690)	15.2	0.0	0.2	1.7	0.1	0.5	0.0	0.6	1.7	0.0	0.0
	12s3	STN+1, LHR +1 (2020, 655/700)	15.2	0.0	0.2	1.7	0.1	0.5	0.0	0.6	1.7	0.0	0.0
	13	STN+1, LGW+1 (w-s)	15.3	0.0	0.2	1.8	0.1	0.5	0.0	0.6	1.7	0.0	0.0
	15s1	STN+1, LHR+1 (2020),LGW(ws)	15.2	0.0	0.2	1.7	0.1	0.5	0.0	0.6	1.7	0.0	0.0

Table Notes

1. SE Passengers are from London, South East and Eastern Regions
2. North: Northern, North-West and Yorkshire and Humberside
3. Dom-ils are counted *1 at the hub
4. No surface trips from Northern Ireland; no air trips from Wales and the Midlands
5. 2000 Figures are modelled.

Impact of Options on Regional Passengers 2030

Surface to SE Airports	2000	2 Max Use of Existing Runways	7 STN + 1	12s1 STN+1, LHR+1 (2020, 550/600)	12s2 STN+1, LHR +1 (2016, 550-690)	12s3 STN + 1, LHR +1 (2020, 655/700)	13 STN + 1, LGW + 1 (w-s)	15s1 STN+1, LHR+1 (2020), LGW(ws)	uc UnConstrained
Northern Ireland	0	0	0	0	0	0	0	0	0
Scotland	0	0	0	0	0	0	0	0	0
North	3	2	2	4	4	4	3	4	5
Midlands	6	4	6	9	9	9	8	9	10
Wales	1	1	1	1	2	2	1	2	2
South West	5	6	7	9	10	10	10	10	12
Regional Total	15	12	16	24	25	26	22	26	29
SE Passengers	77	166	184	195	201	202	200	205	209
Total Surface Passengers at SE Airports	**92**	**179**	**200**	**219**	**226**	**228**	**222**	**231**	**238**
Other Airports									
Northern Ireland	4	12	12	13	13	13	13	13	13
Scotland	16	46	47	48	48	49	48	49	49
North	23	71	71	69	69	69	71	70	69
Midlands	9	41	40	37	37	37	38	37	36
Wales	3	11	11	10	10	10	10	10	10
South West	3	20	19	17	16	16	17	16	15
Regional Total	59	201	199	194	194	194	197	194	192
SE Passengers	1	18	8	4	3	3	3	3	2
Total Surface Passengers at Other Airports	59	**219**	**207**	**198**	**197**	**197**	**200**	**197**	**194**
I to I Interliners at SE Airports	21	27	34	37	46	51	50	53	65
I to I Interliners at Regional Airports	0	6	2	2	1	1	1	1	0
Domestic Interliners at SE Airports	5	0	0	1	1	1	1	1	3
Domestic Interliners at Regional Airports	1	1	1	0	0	0	1	0	0
Grand Total	**178**	**431**	**444**	**458**	**472**	**478**	**474**	**484**	**501**
Passengers with Regional O-Ds									
Northern Ireland	4	12	12	13	13	13	13	13	13
Scotland	16	46	47	48	48	49	48	49	50
North	26	73	73	73	74	74	74	74	74
Midlands	15	45	46	46	46	46	46	46	46
Wales	4	12	12	12	12	12	12	12	12
South West	8	25	26	26	26	26	26	26	26
South East	78	184	191	199	204	205	203	207	211
Total Surface Passengers	151	**397**	**407**	**417**	**423**	**425**	**422**	**428**	**432**
Lost Regional Passengers		*-8*	*-6*	*-4*	*-2*	*-2*	*-3*	*-1*	
Lost SE Passengers		*-27*	*-19*	*-11*	*-7*	*-6*	*-8*	*-3*	
Lost I to I Interliners		*-32*	*-29*	*-25*	*-17*	*-13*	*-14*	*-11*	
Lost Domestic Interliners		*-3*	*-3*	*-2*	*-2*	*-2*	*-2*	*-2*	

Notes

1. SE Regional Airports: Heathrow, Gatwick, Stansted, Luton, London City, Southampton and Norwich.
2. SE Passengers are from London, South East and Eastern Regions.
3. Domestic Interliners are counted as surface passengers to first airport and interliners (*2) at the hub.
4. Passengers may not total exactly as a result of rounding to nearest million.
5. 2000 Figures are modelled.
6. All Figures include only the 29 modelled UK airports; in 2000 2m passengers use minor airports.

Impact of Options on Regional Passengers 2015

Surface to SE Airports	2000	2 Max Use of Existing Runways	7 STN + 1	12s1 STN+1, LHR+1 (2020, 550/600)	12s2 STN+1, LHR +1 (2016, 550-690)	12s3 STN + 1, LHR +1 (2020, 655/700)	13 STN + 1, LGW + 1 (w-s)	15s1 STN+1, LHR+1 (2020), LGW(ws)	uc UnConstrained
Northern Ireland	0	0	0	0	0	0	0	0	0
Scotland	0	0	0	0	0	0	0	0	1
North	3	3	4	4	4	4	4	4	4
Midlands	6	7	8	8	8	8	8	8	8
Wales	1	1	1	1	1	1	1	1	2
South West	5	7	7	7	7	7	7	7	9
Regional Total	15	19	21	21	21	21	21	21	23
SE Passengers	77	128	134	134	134	134	134	134	136
Total Surface Passengers at SE Airports	**92**	**147**	**154**	**154**	**154**	**154**	**154**	**154**	**159**
Other Airports									
Northern Ireland	4	8	8	8	8	8	8	8	8
Scotland	16	32	32	32	32	32	32	32	32
North	23	46	46	45	45	45	46	45	45
Midlands	9	24	23	23	23	23	23	23	23
Wales	3	7	7	7	7	7	7	7	6
South West	3	11	11	11	11	11	11	11	10
Regional Total	59	127	127	127	127	127	127	127	125
SE Passengers	1	3	2	2	2	2	2	2	2
Total Surface Passengers at Other Airports	**59**	**130**	**129**	**129**	**129**	**129**	**129**	**129**	**127**
I to I Interliners at SE Airports	21	30	37	38	38	38	38	38	43
I to I Interliners at Regional Airports	0	1	0	0	1	1	0	1	0
Domestic Interliners at SE Airports	5	1	2	2	2	2	2	2	4
Domestic Interliners at Regional Airports	1	1	1	1	1	1	1	1	0
Grand Total	**178**	**310**	**323**	**324**	**324**	**324**	**325**	**324**	**334**
Passengers with Regional O-Ds									
Northern Ireland	4	8	8	8	8	8	8	8	8
Scotland	16	32	33	33	33	33	33	33	33
North	26	49	49	49	49	49	49	49	49
Midlands	15	31	31	31	31	31	31	31	31
Wales	4	8	8	8	8	8	8	8	8
South West	8	18	18	18	18	18	18	18	18
South East	78	131	136	136	136	136	136	136	138
Total Surface Passengers	151	**277**	**283**	**283**	**283**	**283**	**283**	**283**	**286**
Lost Regional Passengers		-2	-1	-1	-1	-1	-1	-1	
Lost SE Passengers		-7	-2	-2	-2	-2	-2	-2	
Lost I to I Interliners		-13	-6	-5	-5	-5	-5	-5	
Lost Domestic Interliners		-2	-2	-2	-2	-2	-2	-2	

Notes

1. SE Regional Airports: Heathrow, Gatwick, Stansted, Luton, London City, Southampton and Norwich.
2. SE Passengers are from London, South East and Eastern Regions.
3. Domestic Interliners are counted as surface passengers to first airport and interliners (*2) at the hub.
4. Passengers may not total exactly as a result of rounding to nearest million.
5. 2000 Figures are modelled.
6. All Figures include only the 29 modelled UK airports; in 2000 2m passengers use minor airports.

Total Leakage from Each Consultation Document Region 2030

(Millions of International Terminal Passengers)

2030 **Surface to Another Region (International Passengers)**	*2000*		2 Max Use of Existing Runways		7 STN + 1		12s1 STN+1, LHR+1 (2020, 550/600)		12s2 STN+1, LHR +1 (2016, 550-690)		12s3 STN + 1, LHR +1 (2020, 655/700)		13 STN + 1, LGW + 1 (w-s)		15s1 STN + 1, LHR + 1 (2020), LGW(ws)		*uc UnConstrained*	
Northern Ireland	*n/a*	*0*	n/a	0	n/a	0	n/a	0	n/a	0	n/a	0	n/a	0	n/a	0	n/a	0
Scotland	*1.2*	*15%*	1.1	4%	1.1	4%	1.1	4%	1.1	4%	1.1	4%	1.0	4%	1.1	4%	1.1	4%
North	*4.2*	*19%*	7.0	11%	7.2	11%	9.0	14%	9.1	14%	9.2	14%	7.3	11%	9.0	14%	9.1	14%
Midlands	*7.6*	*55%*	10.0	24%	11.0	26%	13.1	31%	13.8	33%	13.9	33%	13.1	31%	13.9	33%	14.7	35%
Wales	*2.6*	*69%*	6.5	59%	6.7	61%	7.0	63%	7.0	63%	7.0	63%	6.7	61%	7.1	63%	7.1	63%
South West	*5.8*	*76%*	10.1	45%	10.7	47%	12.1	52%	12.6	54%	12.6	54%	12.3	53%	13.0	56%	13.7	58%
Regional Leaking Total	***21.4***	***38%***	**34.6**	**21%**	**36.7**	**22%**	**42.3**	**25%**	**43.6**	**26%**	**43.8**	**26%**	**40.5**	**24%**	**44.1**	**26%**	**45.7**	**27%**
South East	*0.7*	*1%*	17.6	11%	7.7	4%	4.0	2%	3.3	2%	3.1	2%	3.3	2%	2.9	2%	2.1	1%
National Total	*22.1*	*18%*	52.3	16%	44.4	13%	46.3	13%	46.9	13%	46.9	13%	43.8	13%	47.0	13%	47.8	13%

Table Notes

1. SE Regional Airports: Heathrow, Gatwick, Stansted, Luton, London City, Southampton and Norwich.
2. SE Passengers are from London, South East and Eastern Regions.
3. Domestic Interliners are counted only as surface passengers to first airport
4. All passengers are international scheduled, charter and NFC..
5. 2000 Figures are modelled.

Total Leakage from Each Consultation Document Region 2015

(Millions of International Terminal Passengers)

2015 Surface to Another Region (International Passengers)	*2000*		2 Max Use of Existing Runways		7 STN + 1		12s1 STN+1, LHR+1 (2020, 550/600)		12s2 STN+1, LHR +1 (2016, 550-690)		12s3 STN + 1, LHR +1 (2020, 655/700)		13 STN + 1, LGW + 1 (w-s)		15s1 STN + 1, LHR + 1 (2020), LGW(ws)		*uc UnConstrained*	
Northern Ireland	*n/a*	*0*	n/a	0	n/a	0	n/a	0	n/a	0	n/a	0	n/a	0	n/a	0	n/a	0
Scotland	*1.2*	*15%*	1.6	9%	1.5	8%	1.5	8%	1.5	8%	1.5	8%	1.5	8%	1.5	8%	1.5	8%
North	*4.2*	*19%*	6.6	15%	7.0	16%	7.0	16%	7.0	16%	7.0	16%	6.9	16%	7.0	16%	7.2	16%
Midlands	*7.6*	*55%*	11.0	39%	11.6	41%	11.6	40%	11.6	40%	11.6	40%	11.6	41%	11.6	40%	11.6	40%
Wales	*2.6*	*69%*	4.7	62%	4.8	63%	4.8	63%	4.8	63%	4.8	63%	4.8	63%	4.8	63%	4.9	65%
South West	*5.8*	*76%*	8.5	54%	8.9	56%	8.9	56%	8.9	56%	8.9	56%	8.9	56%	8.9	56%	10.0	62%
Regional Leaking Total	***21.4***	***38%***	**32.3**	**29%**	**33.8**	**30%**	**33.8**	**30%**	**33.8**	**30%**	**33.8**	**30%**	**33.8**	**30%**	**33.8**	**30%**	**35.2**	**31%**
South East	*0.7*	*1%*	2.7	2%	2.1	2%	2.2	2%	2.2	2%	2.2	2%	2.1	2%	2.2	2%	1.6	1%
National Total	*22.1*	*18%*	35.0	15%	36.0	15%	36.0	15%	36.0	15%	36.0	15%	36.0	15%	36.0	15%	36.9	16%

Table Notes

1. SE Regional Airports: Heathrow, Gatwick, Stansted, Luton, London City, Southampton and Norwich.
2. SE Passengers are from London, South East and Eastern Regions.
3. Domestic Interliners are counted only as surface passengers to first airport
4. All passengers are international scheduled, charter and NFC..
5. 2000 Figures are modelled.

Leakage to South East and East from Other Consultation Document Regions 2030

International and Domestic Passengers Using SE Airports	2000		2 Max Use of Existing Runways		7 STN + 1		12s1 STN+1, LHR+1 (2020, 550/600)		12s2 STN+1, LHR +1 (2016, 550-690)		12s3 STN + 1, LHR +1 (2020, 655/700)		13 STN + 1, LGW + 1 (w-s)		15s1 STN + 1, LHR + 1 (2020), LGW(ws)		uc UnConstrained	
Scotland	*0.3*	*2%*	0.0	0%	0.0	0%	0.1	0%	0.1	0%	0.1	0%	0.1	0%	0.1	0%	0.2	0%
North	*2.6*	*10%*	1.7	2%	2.1	3%	4.2	6%	4.4	6%	4.5	6%	2.7	4%	4.5	6%	5.1	7%
Midlands	*5.4*	*37%*	4.1	9%	6.0	13%	8.6	19%	9.3	20%	9.4	20%	8.4	18%	9.4	20%	10.3	22%
Wales	*1.1*	*29%*	0.9	7%	1.0	9%	1.5	12%	1.6	13%	1.6	14%	1.4	12%	1.7	14%	2.1	18%
South West	*5.2*	*63%*	5.9	23%	7.1	27%	9.3	36%	10.0	38%	10.0	38%	9.5	36%	10.5	40%	11.7	44%
Regional Total	***14.6***	***27%***	**12.5**	**7%**	**16.3**	**9%**	**23.5**	**13%**	**25.3**	**14%**	**25.6**	**14%**	**22.1**	**12%**	**26.1**	**14%**	**29.2**	**16%**

Table Notes

1. SE Regional Airports: Heathrow, Gatwick, Stansted, Luton, London City, Southampton and Norwich.
2. SE Passengers are from London, South East and Eastern Regions.
3. Domestic Interliners are counted as surface passengers to first airport and interliners (*2) at the hub.
4. Northern Ireland domestic interliners at SE airports are excluded.
5. 2000 Figures are modelled.

Leakage to South East and East from Other Consultation Document Regions 2015

International and Domestic Passengers Using SE Airports	2000		2 Max Use of Existing Runways		7 STN + 1		12s1 STN+1, LHR+1 (2020, 550/600)		12s2 STN+1, LHR +1 (2016, 550-690)		12s3 STN + 1, LHR +1 (2020, 655/700)		13 STN + 1, LGW + 1 (w-s)		15s1 STN + 1, LHR + 1 (2020), LGW(ws)		uc UnConstrained	
Scotland	*0.3*	*2%*	0.5	1%	0.5	1%	0.5	1%	0.5	1%	0.5	1%	0.5	1%	0.5	1%	0.5	2%
North	*2.6*	*10%*	3.2	6%	3.6	7%	3.6	7%	3.6	7%	3.6	7%	3.5	7%	3.6	7%	4.0	8%
Midlands	*5.4*	*37%*	7.0	23%	8.0	26%	7.9	25%	7.9	25%	7.9	25%	8.0	26%	7.9	25%	8.2	26%
Wales	*1.1*	*29%*	1.1	14%	1.3	16%	1.3	16%	1.3	16%	1.3	16%	1.3	16%	1.3	16%	1.6	19%
South West	*5.2*	*63%*	6.8	38%	7.3	41%	7.3	40%	7.3	40%	7.3	40%	7.3	40%	7.3	40%	8.5	47%
Regional Total	***14.6***	***27%***	**18.6**	**16%**	**20.6**	**17%**	**20.5**	**17%**	**20.5**	**17%**	**20.5**	**17%**	**20.5**	**17%**	**20.5**	**17%**	**22.8**	**19%**

Table Notes

1. SE Regional Airports: Heathrow, Gatwick, Stansted, Luton, London City, Southampton and Norwich.
2. SE Passengers are from London, South East and Eastern Regions.
3. Domestic Interliners are counted as surface passengers to first airport and interliners (*2) at the hub.
4. Northern Ireland domestic interliners at SE airports are excluded.
5. 2000 Figures are modelled.

International Passenger Purpose at Major London Airports in 2030 ("ConDoc Tab 14.7")

2030					
(Millions of Terminal Passengers)		Foreign Business	UK Business	Foreign Leisure	UK Leisure
Heathrow	*2000Actual*	*8*	*8*	*11*	*15*
	2Max Use of Existing Runways	23	13	15	10
	7STN + 1	22	13	14	10
	12s1STN+1, LHR+1 (2020, 550/600)	26	17	19	14
	12s2STN+1, LHR +1 (2016, 550-690)	28	19	21	15
	12s3STN+1, LHR +1 (2020, 655/700)	29	19	22	16
	13STN+1, LGW+1 (w-s)	23	13	14	10
	15s1STN+1, LHR+1 (2020), LGW(ws)	27	17	19	14
Gatwick	*2000Actual*	*2*	*2*	*3*	*17*
	2Max Use of Existing Runways	4	3	9	17
	7STN + 1	3	3	8	17
	12s1STN+1, LHR+1 (2020, 550/600)	3	2	8	18
	12s2STN+1, LHR +1 (2016, 550-690)	2	2	8	18
	12s3STN+1, LHR +1 (2020, 655/700)	2	2	8	18
	13STN+1, LGW+1 (w-s)	6	6	14	23
	15s1STN+1, LHR+1 (2020), LGW(ws)	6	6	15	25
Stansted	*2000Actual*	*1*	*1*	*2*	*6*
	2Max Use of Existing Runways	4	5	11	12
	7STN + 1	9	10	21	20
	12s1STN+1, LHR+1 (2020, 550/600)	9	10	20	21
	12s2STN+1, LHR +1 (2016, 550-690)	8	10	20	22
	12s3STN+1, LHR +1 (2020, 655/700)	8	10	20	22
	13STN+1, LGW+1 (w-s)	8	10	19	21
	15s1STN+1, LHR+1 (2020), LGW(ws)	8	9	19	21
Luton	*2000Actual*	*0*	*1*	*1*	*3*
	2Max Use of Existing Runways	4	4	7	9
	7STN + 1	3	4	6	9
	12s1STN+1, LHR+1 (2020, 550/600)	3	3	7	11
	12s2STN+1, LHR +1 (2016, 550-690)	2	3	6	11
	12s3STN+1, LHR +1 (2020, 655/700)	2	3	6	11
	13STN+1, LGW+1 (w-s)	3	4	7	11
	15s1STN+1, LHR+1 (2020), LGW(ws)	2	3	5	9

Notes

1. Excludes international transfer and domestic end-to-end passengers.
2. All charter passengers are assumed to be leisure, 20% of which are foreign by 2030.
3. Foreign component of NFC traffic assumed to have grown to 40% by 2030.

International Passenger Purpose at Major London Airports in 2015 ("ConDoc Tab 14.7")

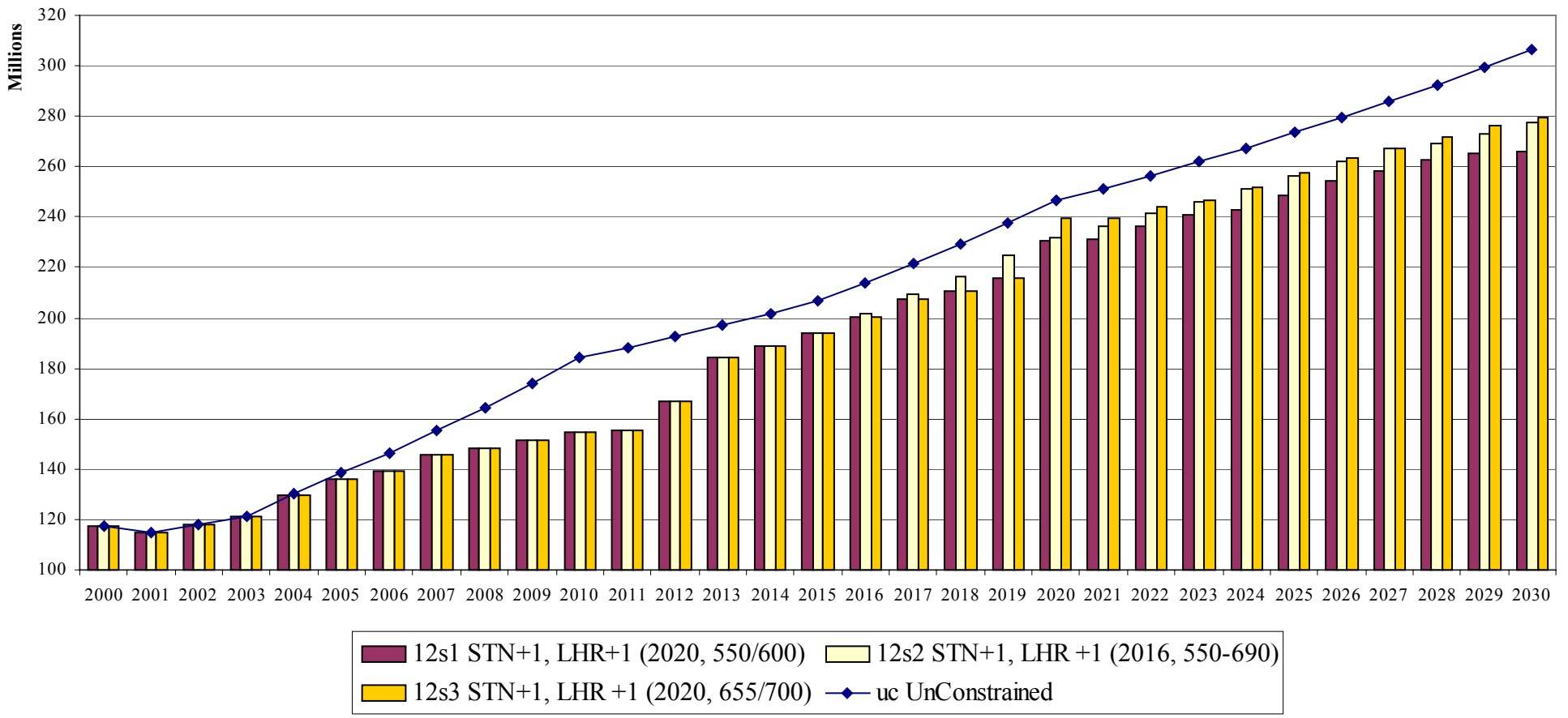
2015					
(Millions of Terminal Passengers)		Foreign Business	UK Business	Foreign Leisure	UK Leisure
Heathrow	*2000Actual*	*8*	*8*	*11*	*15*
	2Max Use of Existing Runways	12	12	16	12
	7STN + 1	11	11	14	12
	12s1STN+1, LHR+1 (2020, 550/600)	11	11	14	12
	12s2STN+1, LHR +1 (2016, 550-690)	11	11	14	12
	12s3STN+1, LHR +1 (2020, 655/700)	11	11	14	12
	13STN+1, LGW+1 (w-s)	11	11	14	11
	15s1STN+1, LHR+1 (2020), LGW(ws)	11	11	14	12
Gatwick	*2000Actual*	*2*	*2*	*3*	*17*
	2Max Use of Existing Runways	2	2	8	15
	7STN + 1	2	2	7	15
	12s1STN+1, LHR+1 (2020, 550/600)	2	2	7	15
	12s2STN+1, LHR +1 (2016, 550-690)	2	2	7	15
	12s3STN+1, LHR +1 (2020, 655/700)	2	2	7	15
	13STN+1, LGW+1 (w-s)	2	2	7	15
	15s1STN+1, LHR+1 (2020), LGW(ws)	2	2	7	15
Stansted	*2000Actual*	*1*	*1*	*2*	*6*
	2Max Use of Existing Runways	3	4	9	12
	7STN + 1	5	8	16	20
	12s1STN+1, LHR+1 (2020, 550/600)	5	8	16	19
	12s2STN+1, LHR +1 (2016, 550-690)	5	8	16	19
	12s3STN+1, LHR +1 (2020, 655/700)	5	8	16	19
	13STN+1, LGW+1 (w-s)	5	8	16	19
	15s1STN+1, LHR+1 (2020), LGW(ws)	5	8	16	19
Luton	*2000Actual*	*0*	*1*	*1*	*3*
	2Max Use of Existing Runways	2	4	6	10
	7STN + 1	1	2	4	7
	12s1STN+1, LHR+1 (2020, 550/600)	1	2	4	8
	12s2STN+1, LHR +1 (2016, 550-690)	1	2	4	8
	12s3STN+1, LHR +1 (2020, 655/700)	1	2	4	8
	13STN+1, LGW+1 (w-s)	1	2	4	8
	15s1STN+1, LHR+1 (2020), LGW(ws)	1	2	4	8

Table Notes

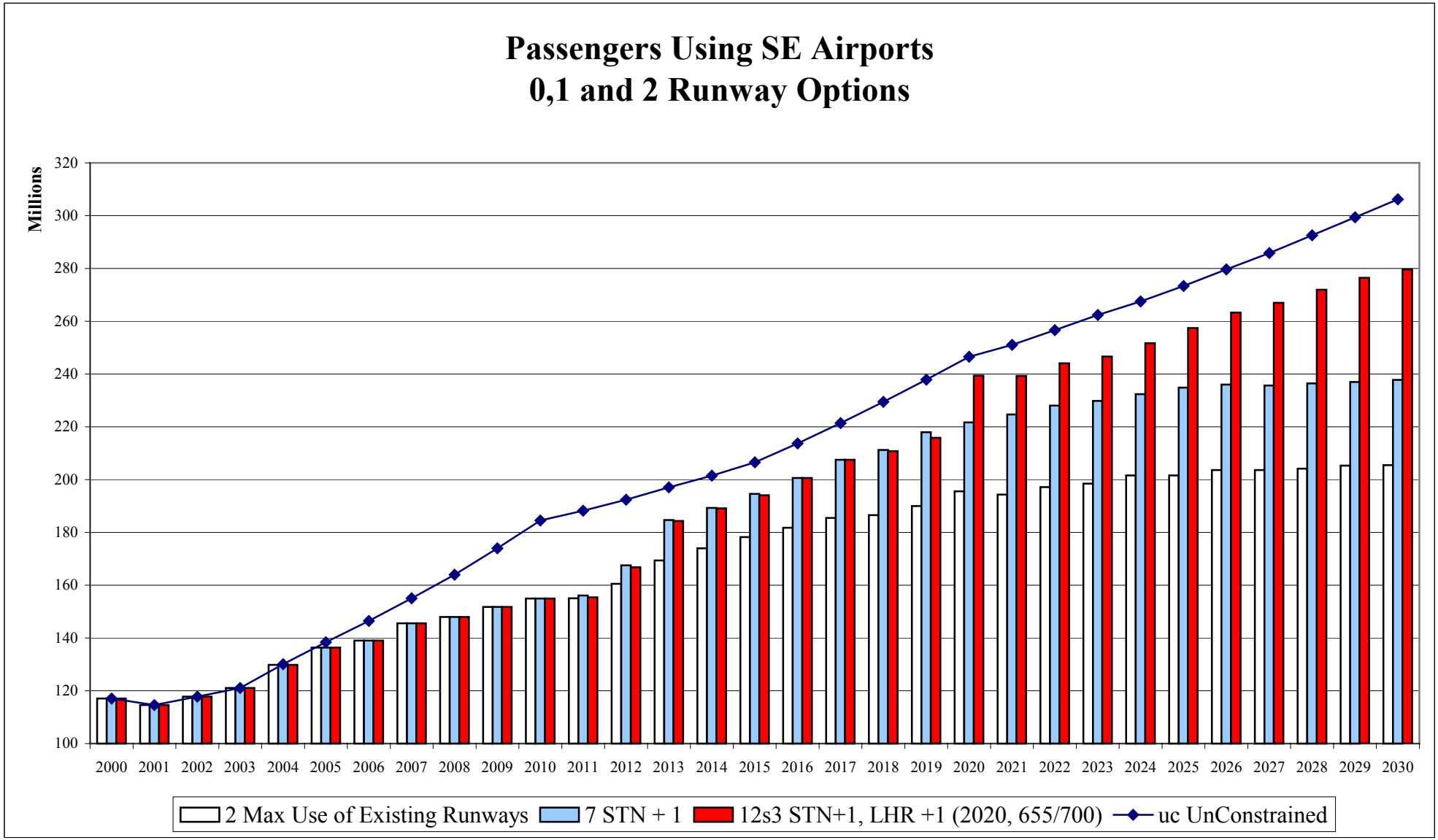
1. Excludes international transfer and domestic end-to-end passengers.
2. All charter passengers are assumed to be leisure, 15.5% of which are foreign by 2015.
3. Foreign component of NFC traffic assumed to have grown to 37.5% by 2015.

Annex B.9

Passengers Using SE Airports
2 Runway STN & LHR Options



Passengers Using SE Airports
0,1 and 2 Runway Options



Passengers at All Modelled UK Airports 2030

Total Terminal Passengers (millions)		*2000*	2 Max Use of Existing Runways	7 STN + 1	12s1 STN+1, LHR+1 (2020, 550/600)	12s2 STN+1, LHR +1 (2016, 550-690)	12s3 STN + 1, LHR +1 (2020, 655/700)	13 STN + 1, LGW + 1 (w-s)	15s1 STN+1, LHR+1 (2020), LGW(ws)
LHR	Heathrow	64.3	88.9	88.9	118.7	131.6	134.9	88.8	119.0
LGW	Gatwick	31.9	40.3	39.7	39.5	39.4	39.0	75.5	71.2
STN	Stansted	11.9	36.5	73.2	69.9	70.1	70.7	68.8	65.4
LTN	Luton	6.2	27.5	25.9	28.0	26.8	25.8	29.0	21.5
LCY	London City	1.6	3.5	3.4	3.3	3.3	3.4	3.5	3.5
NWI	Norwich	0.4	3.1	1.3	0.9	0.9	0.9	0.9	0.9
SOU	Southampton	0.9	5.7	5.5	5.8	5.4	4.9	5.8	4.0
	South East Total	117.1	205.5	237.8	266.1	277.5	279.7	272.4	285.5
ABZ	Aberdeen	2.5	4.5	4.5	4.5	4.6	4.6	4.6	4.6
BFS	Belfast International	3.1	8.4	8.5	8.7	8.9	8.9	8.8	9.0
BHD	Belfast City	1.3	4.2	4.2	4.2	4.2	4.2	4.2	4.2
BHX	Birmingham	7.5	41.3	36.7	31.7	30.8	30.7	31.8	30.6
BOH	Bournemouth	0.3	6.0	4.5	2.9	2.7	2.7	2.8	2.3
BRS	Bristol	2.1	12.1	11.8	11.6	11.0	11.0	10.7	10.9
CWL	Cardiff	1.5	5.5	5.2	5.0	5.1	5.0	5.2	5.0
EMA	East Midlands	2.2	18.2	13.2	12.2	12.1	12.0	11.9	11.9
EDI	Edinburgh	5.5	19.2	20.1	21.2	21.5	21.6	21.1	21.6
EXT	Exeter	0.3	2.5	2.2	1.8	1.8	1.8	2.0	1.7
GLA	Glasgow	6.9	16.0	15.5	15.4	15.6	15.7	15.8	15.7
HUY	Humberside	0.4	0.8	0.7	0.6	0.7	0.6	0.7	0.7
INV	Inverness	0.3	0.5	0.5	0.6	0.6	0.6	0.6	0.7
LBA	Leeds/Bradford	1.6	5.8	6.8	6.5	6.5	6.5	6.7	6.9
LPL	Liverpool	2.0	7.7	7.6	7.5	7.5	7.6	7.6	7.6
MAN	Manchester	18.4	56.5	51.2	48.4	48.0	48.0	49.7	47.6
NCL	Newcastle	3.1	9.3	9.5	9.4	9.6	9.6	9.6	9.6
NQY	Newquay	0.1	0.4	0.4	0.4	0.5	0.4	0.5	0.5
PLH	Plymouth	0.1	0.3	0.3	0.3	0.2	0.3	0.2	0.3
PIK	Prestwick	0.9	5.3	5.3	5.4	5.6	5.6	5.4	5.7
MME	Teesside	0.7	1.5	1.5	1.4	1.4	1.4	1.5	1.4
	Regional Total	60.9	225.9	210.1	199.8	198.8	198.9	201.6	198.5
	National Total	178.0	431.4	447.9	465.9	476.4	478.6	474.0	484.0

Passengers at All Modelled UK Airports 2015

Total Terminal Passengers (millions)		*2000*	2 Max Use of Existing Runways	7 STN + 1	12s1 STN+1, LHR+1 (2020, 550/600)	12s2 STN+1, LHR +1 (2016, 550-690)	12s3 STN + 1, LHR +1 (2020, 655/700)	13 STN + 1, LGW + 1 (w-s)	15s1 STN+1, LHR+1 (2020), LGW(ws)
LHR	Heathrow	64.3	79.9	80.3	79.1	79.1	79.1	79.4	79.1
LGW	Gatwick	31.9	33.5	33.3	33.3	33.3	33.3	33.6	33.3
STN	Stansted	11.9	32.8	57.1	57.4	57.4	57.4	56.8	57.4
LTN	Luton	6.2	25.5	18.3	18.5	18.5	18.5	18.9	18.5
LCY	London City	1.6	2.9	3.0	3.1	3.1	3.1	3.1	3.1
NWI	Norwich	0.4	0.7	0.5	0.5	0.5	0.5	0.5	0.5
SOU	Southampton	0.9	2.8	2.1	2.2	2.2	2.2	2.2	2.2
	South East Total	117.1	178.2	194.6	194.0	194.0	194.0	194.5	194.0
ABZ	Aberdeen	2.5	3.1	3.1	3.1	3.1	3.1	3.1	3.1
BFS	Belfast International	3.1	6.3	6.3	6.3	6.3	6.3	6.3	6.3
BHD	Belfast City	1.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3
BHX	Birmingham	7.5	17.8	18.0	18.0	18.0	18.0	18.0	18.0
BOH	Bournemouth	0.3	2.2	2.0	2.1	2.1	2.1	2.0	2.1
BRS	Bristol	2.1	7.4	7.2	7.2	7.2	7.2	7.2	7.2
CWL	Cardiff	1.5	3.6	3.6	3.6	3.6	3.6	3.6	3.6
EMA	East Midlands	2.2	9.0	8.2	8.3	8.3	8.3	8.3	8.3
EDI	Edinburgh	5.5	13.0	12.9	12.9	12.9	12.9	12.9	12.9
EXT	Exeter	0.3	1.3	1.2	1.3	1.3	1.3	1.2	1.3
GLA	Glasgow	6.9	10.3	10.4	10.4	10.4	10.4	10.4	10.4
HUY	Humberside	0.4	0.6	0.5	0.5	0.5	0.5	0.5	0.5
INV	Inverness	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.4
LBA	Leeds/Bradford	1.6	3.8	3.8	3.8	3.8	3.8	3.8	3.8
LPL	Liverpool	2.0	5.8	5.8	5.8	5.8	5.8	5.8	5.8
MAN	Manchester	18.4	32.9	32.1	32.2	32.2	32.2	32.1	32.2
NCL	Newcastle	3.1	6.3	6.4	6.4	6.4	6.4	6.4	6.4
NQY	Newquay	0.1	0.3	0.3	0.3	0.3	0.3	0.3	0.3
PLH	Plymouth	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2
PIK	Prestwick	0.9	4.5	4.5	4.6	4.6	4.6	4.6	4.6
MME	Teesside	0.7	1.0	1.0	1.0	1.0	1.0	1.0	1.0
	Regional Total	60.9	132.0	130.3	130.5	130.5	130.5	130.3	130.5
	National Total	178.0	310.2	324.9	324.5	324.5	324.5	324.9	324.5

Annex C: Economic Benefits of Increased Airport Capacity

Introduction

C.1 Providing additional airport capacity in the UK would generate large economic benefits. The benefits mainly accrue to air travellers by allowing more people to fly and with a greater choice of timings and routings. The benefits would be many times greater than the costs of the infrastructure. The size of the benefits would depend on the amount of capacity provided and its location: the more capacity falls short of the underlying demand, the lower the economic benefits.

C.2 Airport capacity, which falls short of demand, would increase air fares relative to what they would be otherwise. Return flights from the main South East airports, if no new runways are built by 2030, could cost on average around £100 more (in 2000 prices) than they would if broadly efficient capacity was provided. This 'fare premium' is a common value, which applies to all passengers at a congested airport to price off excess demand.

C.3 The fare premium at any one airport depends on the degree of constraint at that airport and at competing airports; the fare premium at an airport prices off excess demand at that airport. This is an economic deadweight loss and, in consequence, some South East passengers would have to trek to less preferred airports, or not travel at all. Thus location of new capacity is important as this has implications for journey time (and therefore economic value). The journey time and surface access benefits of meeting local demand are central to the economic benefit calculations.

C.4 Passengers' costs include surface access costs of getting to less preferred airports as well as the costs of fewer flight frequencies. Fare premia are part of a passenger's costs of air travel. If new capacity is supplied at an airport where there is significant excess demand, the capacity will be taken up quickly. Because demand at individual London airports is interlinked, increase in capacity at one airport will also reduce fare premia at the other airports to some extent.

Direct Economic Benefits

C.5 The direct economic benefits quantified are:

- the reduction in costs to passengers who, in the absence of additional airport capacity, would transfer to less preferred airports or not travel by air at all. (This saving to passengers is much the largest benefit).
- benefits to existing passengers from additional air frequencies enabled by higher airport capacity.
- producer benefits to airport operators from additional capacity.
- additional Air Passenger Duty (APD) to government from the use of additional airport capacity.
- benefits to air freight movements.

C.6 No account is taken of the following in calculating 'direct economic benefits':

- suppressed traffic at the peak of daily and annual demand.
- the market premium Heathrow currently enjoys.
- benefits to airlines from reducing aircraft delays as a result of higher airport capacity.
- indirect benefits in the form of reduced costs to the economy, including lower business costs, and higher productivity in the wider economy.

- the impact of additional air services on foreign direct investment (FDI), other industries such as tourism and the UK's competitive position *vis-à-vis* other European countries.
- benefits to international to international interliners.

C.7 The UK punches above its weight currently in global connections, which increases services and frequencies for ALL passengers through UK hubs. Hub airports allow for a greater variety of destinations for passengers than a smaller airport could offer, which is more favourable to leisure passengers and also increases the benefits to business, particularly from direct foreign investment. International transfers are important to maintaining and enhancing London's set of connections relative to other major hubs, and that connectivity is vital to London's ongoing success. The additional aviation sector activity is also important (skilled employment, balance of payments surplus).

Benefits and Costs

C.8 The appraisal of the net economic benefits is at the national level because providing capacity at different combinations of airport locations meets different amounts of the total underlying demand and therefore generates different economic benefits. In the analysis of possible packages of development in the South East, it was assumed that there would be sufficient capacity up to 2030 at airports outside the South East to meet local demand. If capacity were constrained outside the South East, the national net economic benefits of additional capacity in the South East would be even greater.

C.9 The appraisal compares the capital costs of airport development (including an appropriate share in necessary investment in road and rail infrastructure) with the user benefits and producer benefits generated by the investment. Costs and benefits have been calculated for each appraisal year and discounted according to Treasury guidelines at 3.5% per annum in real terms with the full correction for 'appraisal optimism.' This provides present values of costs and benefits and Net Present Values (NPV) for each combination of options.

C.10 In principle, it is possible to provide specific climate change costs for each of the airport options appraised, to net off the benefits of that option. The economic appraisal of the shortlisted options in SERAS did not consider the costs associated with compensating those affected by the options or the implementation of mitigation measures to control the impacts. (Monetary valuations of local impacts are relatively small.]

C.11 The option packages for airport capacity expansion presented at ***Table 14.5*** of the South East consultation document, ***The Future Development of Air Transport in the United Kingdom: South East***, February 2003, were 'illustrative examples' of development packages. The £135 fare premium per return journey at LHR presented in ***Table 14.5*** under 'maximum use of existing runways' is the increase in return fares which could be charged above what would be charged if airport capacity was unconstrained. The consultation document assumes airfares fall on average 20 per cent in real terms by 2030. So an average single fare of £150 in 2000 becomes roughly £120 by 2030 - to which a one-way Heathrow fare premium of £112 /2 = £56 would be added if capacity in the South East were limited to 'maximum use of existing runways.'

C.12 The composition of economic benefits can be broken down into various components. For example, UK Residents can be compared with Foreign Residents; existing users of an airport can be compared with generated users who would not be

able to travel from an airport unless capacity there were increased; and Business passengers can be compared with Leisure passengers. The table in **Annex D** shows the mix of domestic and foreign business and leisure passengers passing through South East airports in 2030 and illustrates how more UK leisure passengers originating in the South East are able to travel as capacity increases at South East airports.

Wider Economic Benefits

C.13 Wider economic benefits are hard to quantify satisfactorily and should not be double-counted, but there is qualitative and quantitative evidence that they should not be ignored. The inclusion of direct benefits to foreign nationals - both leisure and business passengers - in the calculation of net economic benefits provides an indicator of some of these wider benefits.

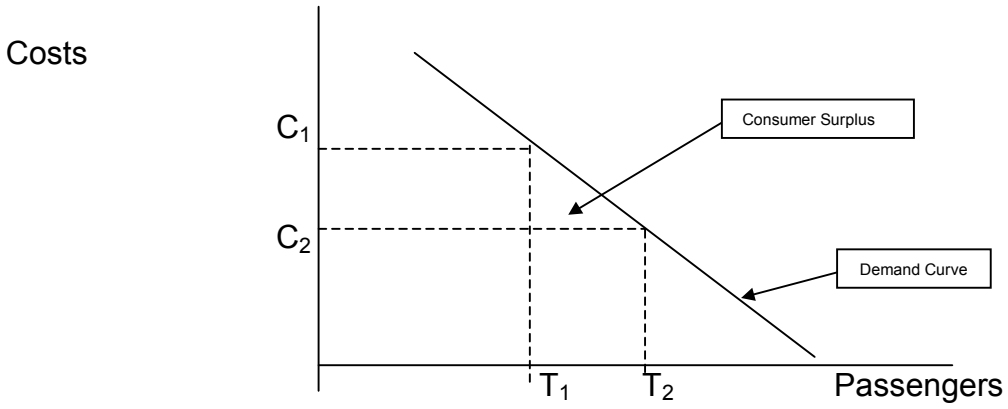
Calculating Direct Benefits

C.14 The benefits of additional airport capacity to be measured are benefits to new (generated) users, benefits to those who already use the airport (existing users), benefits to producers, benefits to freight users and benefits to the Government. The user benefits of each package are generated by an increase in capacity which leads to decreased fare premia (shadow costs), increased frequency, improvements in surface access, reductions in delay, and decreased flight times.

C.15 Much the largest part of the benefits to users comes from the benefits accrued by new passengers who, without the capacity increase at the airport, would not be able to use it. Before the increase in capacity, they would have been priced out of that airport by high 'generalised' costs ('generalised costs' include surface access time and money costs, the value of air service frequency – the airfare, and shadow costs). Some of these passengers may have used another nearby airport that was less convenient and others would have not been able to travel by air at all.

Consumer Surplus Theory

C.16 Consumer surplus theory is used to calculate the benefits to generated users. If there is a reduction in generalised costs (i.e. the costs facing a passenger, reflecting the value of time as well as fares and other money costs), prices fall and demand increases as shown in the graph below. The consumer surplus is the surplus enjoyed by passengers who were not willing to pay C_1 but are willing to pay a price between C_1 and C_2:



Consumer surplus is represented by the triangular area shown.

Shadow Costs

C.17 Shadow costs suppress excess demand at airports once an airport has reached physical capacity i.e. its annual utilisation on a 16-17 hour day basis is very high throughout the year. These costs limit demand to capacity. The more excess demand increases, the more shadow costs will have to increase to manage that excess demand.

C.18 An investment package increases capacity at one or more airports. Shadow costs reduce both at the airport where the extra capacity is introduced and at other airports because they too benefit from the increase in system capacity. This reduction in shadow costs will lead to a reduction in fares. As costs to passengers are now less, passengers not previously priced away the airport will now use it. The change in the number of passengers due to this change in shadow costs forms the basis of the consumer surplus or the benefit to generated users and can be shown in the graph above:

Equation for Benefits to Generated Users

C.19 These benefits are calculated using the following formula:

$$(T_2 - T_1)(C_1 - C_2) \times 0.5 \div 1000000$$

Where

T1 = number of passengers in base case
T2 = number of passengers in package
C1 = base shadow costs
C2 = package shadow costs
For each type of passenger and for each airport.

'Rule of a Half'

C.20 The multiplication by 0.5 in the equation above follows the so-called "rule of a half", which is used to calculate willingness to pay i.e. the area under the demand curve, which is assumed to be linear between the base and package demand estimates.

C.21 User benefits to international to international interliners are not included. However international to international interliners give benefits to the UK economy by increasing frequencies and services relative to what otherwise would be the case (hence their indirect benefit is picked up in calculation of benefits to existing users of an airport – see below).

C.22 Domestic interlining passengers are counted as three passengers: once when they leave the first airport, once when they arrive at the hub airport; and finally when they leave the hub airport. Thus benefits are counted for them wherever they are a generated passenger, as they gain the benefits from being able to use an airport they were unable to use before.

C.23 As benefits to generated users are measured at every airport, some airports will experience a loss of benefits as generated passengers move to preferred airports where additional capacity is provided. Such reductions in generated benefits are measured as well as benefits to generated passengers at airports whose capacity and throughput rises.

C.24 To summarise, the magnitude of the benefits to generated users is driven by the difference in shadow costs in the package and the base and how many extra passengers travel.

Benefits to Existing Users

C.25 When capacity is added to an airport, a major benefit is the increase in frequency of flights on a route. This gives a benefit to those passengers who already use the airport who can make use of the additional services for example if their plans change at short notice. Existing users benefit from more choice of flight times and lower waiting times, thus increasing choice and flexibility. Passengers who benefit from these improvements will be those with a high value of time, particularly business travellers. Thus there is a resource saving to the economy as a whole.

Equation for Benefits to Existing Users

C.26 These benefits are measured using the following formula:

$$\sum_{p} \text{Existing Pax} \times \text{hours in day} \times \text{wait time factor} \times \text{VOT} \times \text{fare factor} \times \text{days in year} \times \text{difference routes/ATM} \div 1000000$$

Where:

- p = trip purpose (scheduled only)
- Existing Pax = minimum of base and option number of passengers
- Hours in day = 16
- VOT = value of time relative to the trip purpose
- Wait time factor = 0.5. This factor assumes that a passenger's arrival time at an airport is a random event. Thus if a passenger arrives at the airport when they wish to fly, on average they will have arrived half way between one flight and the next; so arrival at an airport is independent of the flight time. However, in practice arrival at an airport is not a completely random event. The extent to which passengers tailor their arrival times to reflect the departure time is measured by a value called 'little a'. This is included in the fare factor, which is explained below.
- Fare factor: this is the value of 'little a', an estimate of the extent to which arrival times are adjusted, multiplied by the proportion of passengers who have fully flexible tickets and thus can take advantage of increased service frequency. Therefore the factor takes a higher value for business users than for leisure travellers as there are more business travellers who purchase fully flexible tickets compared to leisure travellers, and the extent to which arrival times are adjusted in relation to the flight time varies depending on the type of passenger. The fare factor for business use is 0.16 and is 0.08 for leisure travel.
- $$\text{Difference routes/ATM} = \frac{\text{no of routes}}{\text{base scheduled ATMs}} - \frac{\text{no of routes}}{\text{Option Scheduled ATMs}}$$

Benefits to Freight Users

C.27 Benefits to generated freight users are calculated in the same way as benefits to generated passengers, except the change in freighter ATMs is used instead of the change in passengers. So the formula used for the calculation is:

Change in freighter ATMs*change in ATM shadow costs*0.5

Producer Benefits

C.28 Producers, i.e. airport companies, gain financially from the extra throughput due to increased capacity. These benefits can be measured using the following formula:

$$\text{Producer Benefits} = \text{Change in passengers} \times (\text{revenue per passenger} - \text{operating costs per pasenger})$$

Benefits to airlines are not scored, since they could always seek to gain similar profits by serving non-UK airports. Nonetheless, airlines serving an airport in high demand may enjoy a fare premium even before the airport forecasting model indicates a shadow cost at that airport and the addition of capacity at any airport could lead to a reduction in flight

delays to airlines which could feed through to surpluses. Any such benefits from reduced delays to airlines, or their passengers, are not currently quantified within the modelling of economic benefits.

Government Revenue

C.29The government revenue is generated by the air passenger duty (APD) charged to the incremental change in passengers.

Example of an Economic Appraisal of a Runway Option

C.30 The modelling suggests that a cost-reflective airport charge increase to fund an additional runway at Stansted - which is passed onto fares from that airport - would have little impact in terms of suppressing or diverting passenger demand to alternative airports. Passengers' decisions on which airport to fly from are based on minimising their generalised costs, of which fare from a particular airport is only part. . As an example, the generalised cost of a charter passenger might be £300, including the ' fare'. The likely increase in airport charges is not a large enough proportion of the generalised cost to make the passenger change his behaviour. Business travellers have much higher generalised costs, because of their higher value of time, and hence are less sensitive to higher fares.

C.31 Passengers ultimately pay the increase in airport charges through higher fares than otherwise would apply. It should therefore be possible to fund an additional runway by raising airport charges.

C.32 Fare premia (shadow costs) are part of generalised costs. Generalised costs - with no capacity constraints at an airport and hence no shadow costs – will tend to be lower for leisure passengers because of their generally lower value of time (VoT). Shadow costs are applied at the same rate to business and to leisure passengers with a given shadow being a larger proportion of generalised cost for a leisure passenger. This should not however imply that lower valued overspill passengers are unwanted. The 'new route algorithm ' assumes that, once a sufficient quantity of this traffic is reached, this overspill demand is worth having. In practice NFC airlines must regard relatively low VoT-low fare traffic as potentially attractive once it is in sufficient quantity to provide sufficient frequencies to sustain the route's growth in the face of competition.

C.33 A series of new runway options were appraised for economic benefits. An example is given below, along with the assumptions made for the appraisal. The net economic benefits for the case of one new runway at Stansted, appraised under the latest version of DLL25 forecasts, assumes the following:

- no seeding of air traffic at Stansted (which increases the benefits)
- 44 per cent increase in costs accounting for optimism bias in the costs of the new runway (which decreases the benefits)
- a real discount rate of 3.5 per cent.
- appraisal carried out to from 2000 to 2060
- no change to the DfT forecast volume projections
- capital expenditure not reduced by 10 per cent to reflect NFC requirements
- 3 year benefit delay
- The new runway opens in 2011/12 and caters for an additional 47 mppa and 254 K ATMs per annum
- Unconstrained demand in the regions

Appraisal condition for one new runway at Stansted opening in 2011/12	Benefits (£ B)	Costs (£ B) Capital Expenditure	Net Benefit (£ B)	Cost Benefit Ratio
6 per cent discount rate	£5.314	£1.933	£3.381	2.75
3.5 per cent discount rate	£13.269	£2.697	£10.572	4.92
3.5 per cent discount rate with +44 per cent costs	£13.269	£3.884	£9.385	3.42
3.5 per cent discount rate with +44 per cent costs with three year benefit delay	£12.873	£3.884	£8.989	3.31

The benefits under the test of 3.5 per cent with +44 per cent increase in costs and three year benefit delay are made up in the following way:

£5.8 B ("generated user" benefits)
£0.6 B ("existing user" benefits)
£1.6 B ("producer benefit")
£4.8 B (increase in APD revenue)
£12.8 B

Notes:

- virtually all of the £5.8 B of "generated user" benefit is revenue recovered from passengers (and airlines) using Stansted.
- "producer benefit" is total income less operating expenditure, using 2000 figures for airport charges , non-aeronautical charges and opex
- including the increase in APD revenue from passengers in the base case is designed to ensure aviation is assessed on the same basis as other modes of transport.
- the NPV is highly sensitive to changes in the discount rate

Economic Benefits

C.34 The economic benefits of various packages of development in the South East above the benefits from maximum use of existing capacity there, as derived from the latest forecasts from DLL25 and appraised from 2000 to 2060, and assuming a 3.5 per cent discount rate, and correction for optimism bias ie a three year benefit delay and a 44 per cent capital cost uplift are shown in **Table C.1** below:

Table C.1: Economic Benefits of Development Packages

Option	Benefits (billions of £)	Costs (billions of £)	NPV of net benefits (billions of £)	Benefit Cost Ratio
Maximum use of existing capacity	£16.824	£3.143	£13.681	5.35
LHR+1 (2012) s05b	£9.766	£4.311	£5.455	2.27
LGW +1 w-s (2012) s06ws	£10.291	£3.541	£6.750	2.91
STN+1 (2011/12) s07	£12.873	£3.884	£8.989	3.31
STN+2, (2011/12 and 2024) s10	£17.092	£5.330	£11.763	3.21
LHR+1 (2012), STN+1 (2018) s12h	£24.797	£8.359	£16.438	2.97
STN+1 (2011/12), LHR+1 (2020) s12s1	£24.216	£7.174	£17.042	3.38
STN+1 (2011/12), LHR+1 (2016) s12s2	£29.507	£8.406	£21.101	3.51
STN+1 (2011/12), LHR+1 (2020) s12s3	£28.811	£7.621	£21.190	3.78
STN+1 (2011/12), LGW+1 w-s (2024) s13	£23.636	£6.204	£17.432	3.81
STN+1 (2011/12), LHR+1 (2020), LGW+1 (2024) s15s1	£34.889	£9.494	£25.395	3.67
STN+1 (2011/12), LHR+1 (2020), LGW w-s (2024) s15s3	£37.620	£9.941	£27.678	3.78
STN+2 (2011/12, 2024), LHR+1 (2020) s16s1	£27.762	£8.620	£19.142	3.22
STN+2, (2011/12, 2024) LHR+1 (2020) s16s3	£32.622	£9.067	£23.555	3.60
Cliffe + 4 s21	£22,894	-£13,409	£9,485	1.71

C.32 ***Table C2*** below gives the associated airport capacities for the throughput of passengers and air traffic movements for each of the given development options:

Table C2: Description of Various Development Packages

Code	Option	Description
s02	Maximum use of existing capacity	LTN +21 mppa, STN +20 mppa, LGW +6 mppa.
s05b	LHR+1 (2012)	LHR + 1 (655 K ATMs per annum / 112 mppa) in 2011/12.
s06ws	LGW +1 w-s (2012)	LGW W-S (486 K ATMs per annum / 83 mppa) in 2011/12
s07	STN+1 (2011/12)	STN + 1 (513 K ATMs per annum / 82 mppa) in 2011/12.
s10	STN+2, (2011/12 and 2024)	STN + 2 (513 K ATMs per annum / 82 mppa) in 2011/12 (673 K ATMs per annum / 102 mppa) in 2024
s12h	LHR+1 (2012), STN+1 (2018)	LHR + 1 (600 K ATMs per annum / 112 mppa) in 2011/12, 650 K ATMs / 125 mppa) in 2018, STN + 1 (513 K ATMs per annum / 82 mppa) in 2018.
s12s1	STN+1 (2011/12), LHR+1 (2020)	STN + 1 (513 K ATMs per annum / 82 mppa) in 2011/12, LHR + 1 (550 K ATMs per annum / 112 mppa) in 2020, (600 K ATMs per annum / 120 mppa) in 2025.
s12s2	STN+1 (2011/12), LHR+1 (2016)	STN + 1 (513 K ATMs per annum / 82 mppa) in 2011/12, LHR + 1 (550 K ATMs per annum / 112 mppa) in 2016 +10 K ATM increments to 2030.
s12s3	STN+1 (2011/12), LHR+1 (2020)	STN + 1 (513 K ATMs per annum / 82 mppa) in 2011/12, LHR + 1 (655 K ATMs per annum / 135 mppa in 2020 rising to 700 K ATMS per annum in 2025)
s13	STN+1 (2011/12), LGW+1 w-s (2024)	STN + 1 (513 K ATMs per annum / 82 mppa) in 2011/12, LGW W-S (486 K ATMs per annum / 83 mppa) in 2024.
s15s1	STN+1 (2011/12), LHR+1 (2020), LGW+1 (2024)	STN + 1 (513 K ATMs per annum / 82 mppa) in 2011/12, LHR + 1 (550 K ATMs per annum / 112 mppa) in 2020, (600 K ATMs per annum / 120 mppa) in 2025, LGW W-S (486 K ATMs per annum / 83 mppa) in 2024.
s15s3	STN+1 (2011/12), LHR+1 (2020), LGW w-s (2024)	STN + 1 (513 K ATMs per annum / 82 mppa) in 2011/12, LHR + 1 (655 K ATMs per annum / 135 mppa in 2020, rising to 700 K ATMs per annum in 2025), LGW w-s (486 K ATMs per annum / 83 mppa) in 2024.
s16s1	STN+2 (2011/12, 2024), LHR+1 (2020)	STN + 2 (513 K ATMs per annum / 82 mppa) in 2011/12 (673 K ATMs per annum / 102 mppa) in 2024, LHR + 1 (550 K ATMs per annum / 112 mppa) in 2020, rising to 600 K ATMs per annum / 120 mppa) in 2025
s16s3	STN+2, (2011/12, 2024) LHR+1 (2020)	STN + 2 (513 K ATMs per annum / 82,mppa) in 2011/12 (673 K ATMs per annum / 102mppa) in 2024, LHR + 1 (655 K ATMs per annum / 135 mppa in 2020 rising to 700 K ATMs per annum in 2025).
s21	Cliffe + 4	Cliffe + 4 (530,000 / 77,m) in 2012 (781,000,113m) in 2021

ANNEX D: THE COMPOSITION OF TRAFFIC UNDER ALTERNATIVE DEVELOPMENT SCENARIOS

D.1 The table below shows the mix of domestic and foreign business and leisure passengers passing through South East airports in 2030 for various packages (in mppa). In particular, more UK leisure passengers originating in the South East are able to travel from South East airports if there is more airport capacity there.

2030					
(Millions of Terminal Passengers)		Foreign Business	UK Business	Foreign Leisure	UK Leisure
SE Airports Total	*2000 Actual*	*11*	*12*	*17*	*41*
	2 Max Use of Existing Runways	35	26	41	47
	7 STN + 1	38	29	49	56
	12s1 STN+1, LHR+1 (2020, 550/600)	40	32	54	64
	12s2 STN+1, LHR +1 (2016, 550-690)	41	34	56	67
	12s3 STN+1, LHR +1 (2020, 655/700)	41	34	56	67
	13 STN+1, LGW+1 (w-s)	40	33	55	65
	15s1 STN+1, LHR+1 (2020), LGW(ws)	42	35	57	69

LEISURE

D.2 In 2000, Heathrow accounted for almost two-thirds of Foreign Leisure passengers through the four major London airports. This proportion is projected to fall at Heathrow over the long term. Also, in 2000, Heathrow accounted for over one-third of UK Leisure passengers on international trips through the major London airports. This share is also expected to fall; absolute numbers of such passengers at Heathrow are expected to be less in 2030 than in 2000 under all scenarios bar one, where it is equal in number.

D.3 Forecasts suggest that there is little material room for accommodating many more UK Leisure passengers at Gatwick by 2030 unless a new runway is built there in due course. Gatwick accounts for a lower proportion of the national charter market.

D.4 The greatest potential for expanding UK Leisure traffic is at Stansted (particularly if a new runway is built there) and at Luton.

D.5 Overall, with 'maximum use of existing runways', a lot of UK Leisure passengers particularly those on charter and NFCs divert to regional airports - and some do not travel by air at all.

BUSINESS TRAFFIC

D.6 All London airports serve the business sector to some extent. But Heathrow is the premium business airport; Heathrow also has the lion's share of the premium business market (i.e. business and first class travel). Heathrow is the airport of choice by Foreign Business passengers; the overall business share of traffic at Heathrow grows relative to the leisure share under all scenarios. The business share is far less at the other airports; an additional runway at one of the other airports does however increase its Business traffic share.

ANNEX E : NFC TRAFFIC

E.1 ***Table E.1*** below shows the recent demand for international NFC traffic at UK airports which had greater than 0.5 mppa in 2003.

Table E.1: Recent Demand for International NFC Traffic at Selected UK Airports (mppa)[10]

	1998	1999	2000	2001	2002	2003
Birmingham	0.34	0.29	0.26	0.24	0.31	1.08
Bristol	0.13	0.15	0.17	0.43	0.81	1.15
East Midlands	0	0	0	0.01	0.84	2.22
Edinburgh	0	0	0	0.33	0.48	0.53
Gatwick	0.30	0.32	0.39	0.66	1.86	2.58
Leeds Bradford	0.13	0.15	0.16	0.11	0.17	0.59
Liverpool	0.31	0.65	1.06	1.33	1.68	2.25
Luton	1.55	2.14	2.64	2.90	3.14	3.76
Stansted	2.13	4.28	6.90	8.56	11.47	13.63
Prestwick	0.22	0.28	0.36	0.45	0.62	0.96
All UK airports	**5.67**	**8.66**	**12.45**	**15.77**	**22.51**	**30.37**

[10] CAA statistical returns (2003). The total at 'all UK airports' includes the demand for NFCs for a number of UK airports not shown in the table.

E.2 ***Table E.2*** below shows the total passenger throughput and the passenger throughput on NFCs, at each of the modelled UK airports under the standard modelling assumptions and the assumptions used in the NFC sensitivity test. In both the standard and the test cases, the option under appraisal is a single new runway at Stansted in 2011/12. The standard results are compatible with those for STN+1 in 2030 in **Annex B.10.**

Table E.2: 2030 Passenger Throughput Airport by Airport (mppa)

2030	Terminal Pax			NFC Pax		
	Standard	Sen Test	Change	Standard	Sen Test	Change
Aberdeen	4.5	4.2	-0.3	0.4	0.6	0.2
Belfast International	8.5	9.8	1.3	4.5	6.4	2.0
Belfast City	4.2	3.2	-1.0	0.0	0.0	0.0
Birmingham	36.7	34.3	-2.4	4.6	5.3	0.7
Bournemouth	4.5	4.3	-0.2	2.0	2.5	0.4
Bristol	11.8	12.3	0.5	4.6	6.0	1.4
Cardiff	5.2	5.4	0.2	1.4	2.0	0.6
East Midlands	13.2	14.5	1.3	6.1	8.7	2.6
Edinburgh	20.1	20.4	0.2	4.9	7.0	2.1
Exeter	2.2	1.9	-0.2	0.0	0.0	0.0
Gatwick	39.7	39.4	-0.3	1.1	2.2	1.1
Glasgow	15.5	15.1	-0.5	2.5	3.6	1.1
Heathrow	88.9	88.9	0.0	0.0	0.0	0.0
Humberside	0.7	0.6	-0.1	0.0	0.0	0.0
Inverness	0.5	0.6	0.1	0.2	0.4	0.1
Leeds/Bradford	6.8	6.9	0.1	2.1	3.1	1.0
Liverpool	7.6	9.0	1.4	5.8	7.5	1.6
London City	3.4	3.8	0.4	0.0	0.0	0.0
Luton	25.9	30.5	4.7	13.6	22.0	8.5
Manchester	51.2	48.5	-2.7	2.3	3.2	0.9
Newcastle	9.5	9.2	-0.3	2.0	2.4	0.4
Newquay	0.4	0.4	0.1	0.3	0.4	0.1
Norwich	1.3	0.9	-0.3	0.0	0.0	0.0
Plymouth	0.3	0.2	0.0	0.0	0.0	0.0
Southampton	5.5	6.0	0.5	0.0	0.0	0.0
Stansted	73.2	71.0	-2.2	28.9	33.6	4.6
Teesside	1.5	1.2	-0.2	0.0	0.0	0.0
Prestwick	5.3	6.5	1.2	5.2	6.4	1.2
Total	447.9	449.1	1.2	92.6	123.2	30.7

E.3 ***Table E.3*** below shows the share of passengers using NFCs at UK airports under the standard modelling assumptions and the NFC sensitivity test.

Table E.3: NFC Share Airport by Airport

2030	NFC Share Standard Modelling	NFC Sensitivity Test
Aberdeen	9%	14%
Belfast International	53%	66%
Belfast City	0%	0%
Birmingham	13%	16%
Bournemouth	45%	57%
Bristol	39%	49%
Cardiff	28%	37%
East Midlands	46%	60%
Edinburgh	25%	34%
Exeter	0%	0%
Gatwick	3%	5%
Glasgow	16%	24%
Heathrow	0%	0%
Humberside	0%	0%
Inverness	46%	59%
Leeds/Bradford	31%	45%
Liverpool	77%	83%
London City	0%	0%
Luton	53%	72%
Manchester	4%	7%
Newcastle	21%	26%
Newquay	86%	91%
Norwich	0%	0%
Plymouth	0%	0%
Southampton	0%	0%
Stansted	40%	47%
Teesside	0%	0%
Prestwick	98%	99%
Total	21%	27%

E.4 ***Table E.4*** below shows the split of total passenger demand and NFC demand between the South East and the regions under the standard modelling assumptions and the NFC sensitivity test assumptions.

Table E.4: Regional Split of Passenger Demand under Sensitivity Test

2030	All Passengers (mppa)			NFC Passengers (mppa)		
	Standard	Sensitivity test	Change	Standard	Sensitivity test	Change
South East	237.8	240.4	2.6	43.6	57.8	14.2
				18%	*24%*	
Regions	210.1	208.7	-1.5	49.0	65.5	16.4
				23%	*31%*	
Total	447.9	449.1	1.2	92.6	123.2	30.7

Classification of No-Frills Carriers

E.5 The DfT modelling and the CAA's statistical returns classify easyJet, Ryanair, bmibaby, Jet2 (at Leeds-Bradford) and Globespan (in Central Scotland) as NFCs. Prior to 2002, go and buzz were also classified as NFCs. All of these airlines are independently owned or wholly independent cost centres within their parent airlines.

E.6 There is a case for classifying Flybe as a NFC, although presently they are not. Flybe illustrate the difficulties of classifying the sectors. They have only been consistently marketing themselves as a low cost airline since the spring of 2003, when new services to such typical No Frills destinations as Alicante, Bergamo, Belfast, Geneva, Malaga, Murcia, Ibiza and Toulouse, were launched from Southampton. However Flybe are not exclusively a low cost airline. Pricing of fares during the spring and summer of 2003 was not consistently low cost point-to-point e.g. business tariff fares via European hubs were also offered. Furthermore, a large number of Flybe's new routes in 2003 have been to their traditional market of the Channel Islands (e.g. Belfast City-Jersey, Edinburgh-Jersey, Glasgow-Jersey, Newcastle-Jersey). Flybe flights continue to be sold from airports such as Heathrow, London City, Isle of Man and Aberdeen at full service tariffs and some connecting flights are still offered. The average Flybe aircraft size is also much smaller than the Boeing-737 – a further inconsistency with the NFC low cost model.

E.7 In Scotland, Globespan has been considered a NFC because they offered a daily scheduled service between Prestwick and Palma Mallorca in 2003. However their cessation of this service, lack of a winter timetable and offers of inclusive tours confirms that Globespan might henceforth reasonably be considered, like Air Scotland, to be a charter carrier.

E.8 With the exception of Ryanair, overseas scheduled carriers are not classified as NFCs, however, there is a case for the services of Air Berlin and EuroWings at Stansted being considered NFCs. Such carriers may be a significant development over the next few years.

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