

Update of London Overspill Forecasts

Prepared for the British Air Transport Association

Working Note – (v 5.2)

Contents

February 2000

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1 Introduction

This working note, prepared by Alan Stratford and Associates (ASA), summarises the analysis carried out to update the forecast overspill of air passenger traffic from Gatwick and Heathrow airports over the period to 2030. The work has been carried out on behalf of the British Air Transport Association (BATA) during February 2000.

2 Relevant events since January 1997

A number of relevant events have occurred since the previous analysis was completed by ASA in January 1997. These include:

- Slippage of the original timetable for a ministerial decision on Terminal 5;
- British Airways' announcement of a change in strategy that will reduce the average seating capacity of its Heathrow fleet (see section 6.3 para 3);
- The significant increase in "no-frills" airline operations at London area airports;
- The transfer of a significant volume of British Airways' wide-bodied aircraft operations from Heathrow to Gatwick;
- BAA's announcement that annual terminal capacity at Gatwick will be increased to 40 million passenger movements; and
- Implementation of the first phase of new noise regulations at the London area airports.

3 Current position of key players

The current study has also been characterised by a greater reluctance on the part of key players to release information on their current demand projections and capacity assumptions.

In the case of DETR, this is largely a result of the Department's internal forecasting timetable. Updated national air traffic forecasts are due to be published in Summer 2000 and are only available for internal discussion at the present time. Similarly, updated runs of the CAA model used in the RUCATSE analysis that were produced by CAA at the request of DETR during 1998 remain confidential. These forecasts were produced for use in a series of regional air service studies, none of which have been released publicly yet. The DETR suggests that a consultation paper to be released during summer 2000 may contain some information on these updated forecasts¹.

BAA plc has provided detailed traffic data for its London Area airports up to the end of December 1999 but, feels unable to comment on its current assumptions concerning future terminal and runway capacities at these airports due to the 'current sensitivities' of the topics involved².

With the proposed public-private partnership in prospect, NATS has also been wary of commenting on the future capacity assumptions³.

Details of current peak hour and annual runway capacities have been discussed with Airports Co-ordination Limited, which is responsible for the allocation of take-off and landing slots at a number of UK airports including Heathrow, Gatwick, Stansted and Luton⁴.

The reluctance of key players to discuss future assumptions reflects the increased urgency surrounding any decision on new runway capacity in the south east of England. Lord Marshall, Chairman of British Airways for example, stated last month that a decision on this matter will be required during the life of the next parliament⁵.

¹ Telephone conversation ASA-DETR, 16th February 2000.

² E-mail BAA-ASA, 16th February 2000.

³ Telephone conversation ASA-NATS, 8th February 2000.

⁴ Telephone conversation and e-mail ASA-ACL, 14th February 2000.

⁵ 19th Annual Sholto Douglas Lecture, Heathrow Branch, Royal Aeronautical Society, 13th January 2000.

4 Methodology

The methodology adopted for the current analysis is the same as that used previously to analyse the projected overspill of traffic from Heathrow and Gatwick and most recently in January 1997.

As before, the aim of the analysis is to identify the number of passenger movements likely to spill over from Heathrow and Gatwick for a number of different runway capacity scenarios. At the request of BATA, the forecasting horizon has been extended from 2015 to 2030. The analysis is based on traffic statistics up to 31st December 1999 and where appropriate, updates the capacity assumptions of the previous analysis.

The original estimates of unconstrained demand at Heathrow and Gatwick originate from a series of studies carried out on behalf of a private client between 1992 and 1995⁶. They are essentially unpublished RUCATSE estimates of unconstrained demand which are in turn based on the national air traffic forecasts published by the Department of Transport in 1992.

These original demand forecasts have been escalated by the ratio of actual passenger movements recorded at the London area airports in 1999 to the corresponding throughput proposed by the DoT's 1992 forecasts.

The annual runway capacity of Heathrow and Gatwick over the period to 2030 has been defined as the product of:

- a peak hourly runway capacity;
- a given number of operating hours per day; and
- a percentage utilisation.

The annual passenger throughput that can be supported by the existing runways at Heathrow and Gatwick has been calculated as the product of annual runway capacity in Passenger Air Transport Movements (PATM) and the average number of passengers per PATM.

At five-year intervals from 2000, the unconstrained passenger demand at Heathrow and Gatwick has been compared with the available passenger handling capacity. If demand exceeds capacity, the excess demand has been assumed to spill over to other airports. However, whilst spare capacity exists at Gatwick, passengers have been assumed to spill over from Heathrow to Gatwick in preference to any other airport.

The main analysis assumes that the key constraint on passenger throughput at Heathrow and Gatwick is runway capacity. This was the case for the previous analyses and remains true until around 2015. However, between 2015 and 2030, a continuing increase in the average numbers of passengers per PATM

⁶ The terms of reference for the first analysis carried out on behalf of BATA in 1996 required the use of forecasts from this unpublished report.

means that runway capacity begins to exceed currently quoted terminal capacities. A secondary analysis examines the potential incremental effect of terminal capacity on the likely scale of overspill through to 2030.

5 Underlying demand

5.1 Overall trend

Between 1995 and 1998, terminal passenger traffic at the London area airports⁷ increased at an average annual rate of 7.1 percent. Based on CAA airport traffic statistics for the period up to 31st October 1999 and BAA's monthly traffic reports for the whole of 1999, passenger numbers are estimated to have increased by a further 6.7 percent in 1999⁸.

Total annual terminal passenger movements at the London area airports are therefore likely to have been of the order of 108.6 million in 1999. This total is 9.4 percent higher than the mid-point projection given in the Department of Transport's current (1997)⁹ passenger forecasts for the London area and 21.9 percent higher than the DOT's 1994 forecasts¹⁰ that underpinned the RUCATSE traffic projections.

5.2 Sources of growth

Operations by no-frills operators such as Easy Jet, Go, Ryanair and Virgin Express have been the fastest growing sector of the market during the past three years. No-frills airline operations¹¹ accounted for approximately 25 percent of total passenger movements at Stansted and Luton airports in 1995. This proportion is estimated to have increased to approximately 55 percent in 1999¹². No-frills passengers have increased by almost 50 percent a year between 1995 and 1999 compared with 7.0 percent for other traffic. No-frills operations accounted for an estimated 7.3 million passenger movements at Stansted and Luton combined in 1999. Corresponding annual growth rates are 45 percent and 32 percent respectively.

These new no-frills carriers would never have been able to viably use Heathrow or Gatwick, because of problems of slot availability. However, the traffic generated by no-frills operations represents an additional demand for airport capacity within the London area.

5.3 Extending the forecasts to 2030

National air traffic forecasts were last published by DETR in 1997 and have a forecasting horizon of 2015. Updated DETR forecasts may extend the horizon to 2020 but will not be published until summer 2000. Updated airport specific

⁷ Identified as Gatwick, Heathrow, London City, Luton and Stansted.

⁸ See Annex 1.

⁹ Table 7.1, Air Traffic Forecasts, Department of the Environment, Transport and the Regions, 1997.

¹⁰ Air Traffic Forecasts for the United Kingdom, Department of Transport, 1994.

¹¹ Go, Ryanair and Virgin Express at Stansted and EasyJet at Luton.

¹² ASA analysis of CAA traffic data for 1999.

forecasts generated by the CAA at the request of DETR have a forecasting horizon of 2030¹³ but remain confidential for the time being.

In the absence of official traffic forecasts up to 2030 therefore, we have extrapolated future growth of London area airports traffic at the rates shown in Table 5.1. These rates continue the characteristic gradual decrease in average annual growth rates.

Average annual growth rates are projected to range from 3.25 percent between 2010 and 2015 to 1.75 percent over the five years to 2030. Over the period 2015 – 2030 this equates to an annualised rate of 2.5% which is more conservative than the recently published London Chamber of Commerce Air Traffic Forecasts, which are projecting an annual growth rate of 3.2 percent between 2015 and 2030.

Unconstrained demand at the London area airports is projected to increase from 108.5 million in 1999 to 205 million by 2015 and 296 million by 2030. The resulting forecasts are summarised in Table 5.2 and illustrated in Figure 5.1.

Table 5.1: Projected Unconstrained growth of terminal air passenger movements at the London Area Airports

Period	2000-2005	2005-2010	2010-2015	2015-2020	2020-2025	2025-2030
	DETR			ASA		
Low	2.52%	3.21%	2.49%	2.25%	1.50%	0.75%
Medium	3.58%	4.29%	3.76%	3.25%	2.50%	1.75%
High	4.41%	5.12%	4.27%	3.75%	3.00%	2.25%

Source: 1997 Air Traffic Forecasts, Department of the Environment, Transport and the Regions, 1997 (2000-2015) and ASA projections (2015-2030).

¹³ Terms of Reference for Regional Air Service Studies, DETR, 1998.

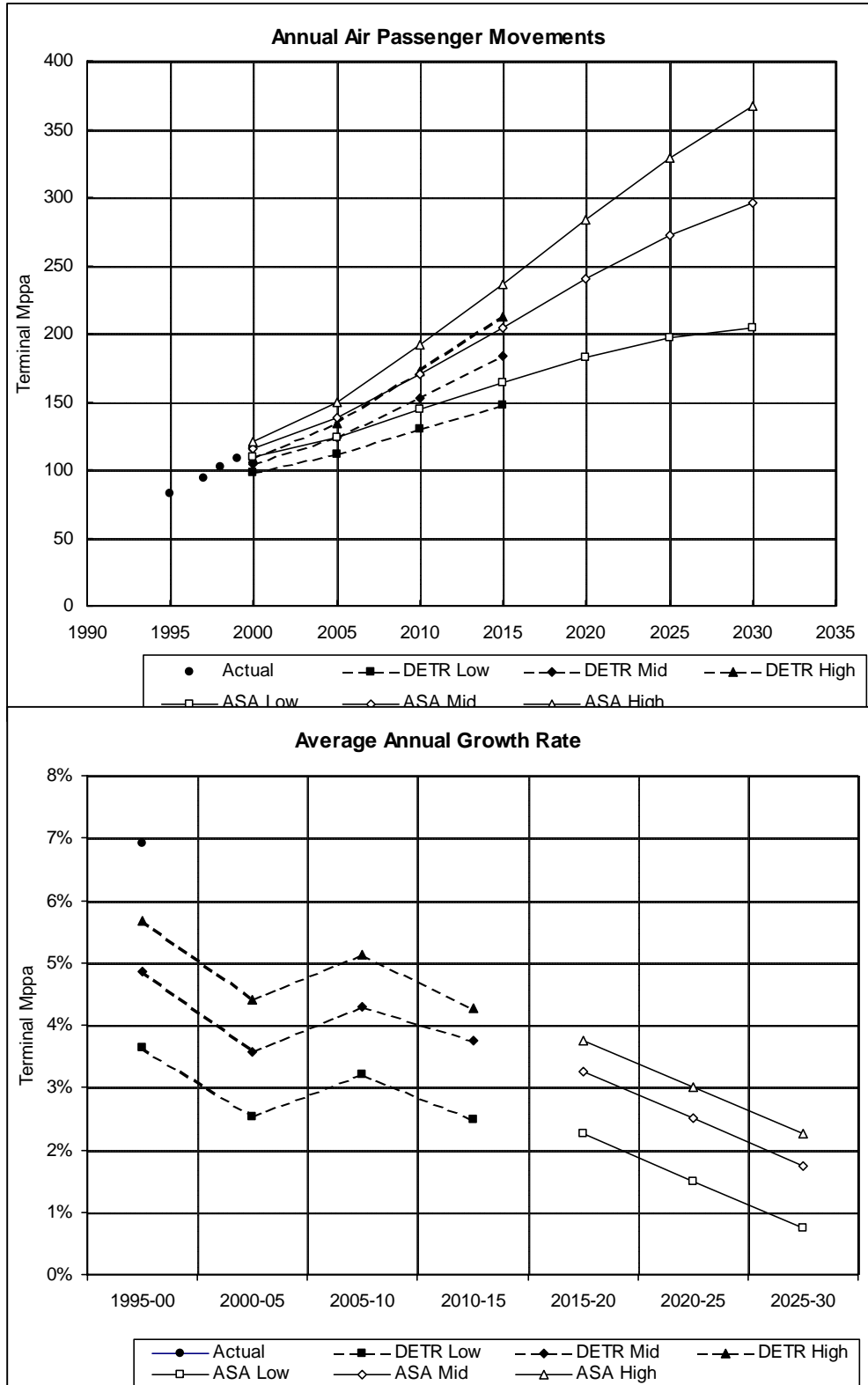
Table 5.2 FORECASTS OF POTENTIAL DEMAND AT MAJOR LONDON AREA AIRPORTS TO 2015 IN MPPA

Source	Forecast	1999	2005	2010	2015	2020	2025	2030
	Low	81.5	84.3	100.0	116.7	-	-	-
DOT 94	Average	89.0	92.9	116.1	138.2	-	-	-
	High	96.5	101.4	132.1	159.7	-	-	-
	Low	95	111	130	147	-	-	-
DETR 97	Mid-point	99	124	153	184	-	-	-
	High	102	134	172	212	-	-	-
	Low	108	123	145	163	183	197	204
BATA 2000	Mid-point	108	138	170	205	240	272	296
	High	108	149	191	236	283	329	367

Note: BATA forecasts assume that traffic increases at the rates proposed by the DETR forecasts from 1999 to 2015 and at the average annual rates proposed in the text from 2015 to 2030. Major London airports defined as Heathrow, Gatwick, London City, Luton and Stansted.

Source: ASA analysis of DoT forecasts set out in Air Traffic Forecasts for the United Kingdom 1994, Department of Transport, February 1994, Air Traffic Forecasts for the United Kingdom, Department of Transport Environment and the Regions, February 1997, CAA airport traffic statistics to October 1999, and BAA traffic statistics to December 1999.

Figure 5.1
Comparison of Actual Trends and DETR (1997) Forecasts
Terminal Air Passenger Movements at London Area Airports



6 Airport capacity

The previous analysis assumed that Terminal 5 would be approved, and identified the key constraint on air traffic growth at Heathrow and Gatwick during the period to 2015 to be runway capacity. Extending the forecasting horizon to 2030 however, reintroduces the possibility that terminal or apron capacity will re-emerge as the key constraint. This is particularly true in the case of Heathrow which for the purposes of the Terminal 5 Inquiry; BAA identified as having an ultimate capacity of 80 million annual passenger movements. This remains BAA's public estimate of Heathrow's ultimate capacity. Other witnesses at the T5 Inquiry sought to show it would be possible to expand terminal and apron facilities at Heathrow to accommodate 100+ mppa.

6.1 Runway capacity

On this occasion, neither BAA nor, on a formal basis, have NATS been willing to assist in updating the previous study's assumptions regarding the future capacity of the existing runways at Heathrow and Gatwick. However, ACL, which is responsible for allocating runway slots on a day to day basis, has provided information on the existing capacities at all of the main London area airports. On the basis of this information and informal discussions with NATS, it has been concluded that the two main capacity hypotheses agreed with BATA for the previous forecasts therefore remain valid. i.e.:

- 1) Heathrow at 92 movements per hour and Gatwick at 55 movements per hour;
- 2) Heathrow at 82 movements per hour and Gatwick at 50 movements per hour.

During the previous analysis, BATA identified two additional considerations, namely:

- the impact of proposed noise limits at Heathrow and Gatwick
- concerns that the wake vortex separation requirements may reduce potential runway capacity at Gatwick.

Questions posed to interested parties during the course of the study have yielded no new information on either of these matters. In view of the limited impact they are likely to have on runway capacity, their potential effect on the scale of overspill traffic has been excluded from the current analysis.

The RUCATSE assumptions on future annual runway capacity at Heathrow and Gatwick are now significantly below the number of movements currently being achieved. Overspill projections based on these assumptions have therefore been excluded from the current analysis.

6.2 Terminal capacity

The CAA provided terminal capacity assumptions for use in the previous BATA analysis. With minor amendments, these assumptions have been retained for the current study. The amendments affect the balance of capacity between Heathrow and Gatwick in 2005 and 2010. The CAA originally assumed that terminal capacity at Heathrow would be 78.3 mppa in 2005 and 87.3 mppa in 2010. The corresponding figures for Gatwick were 33.7 mppa and 36.2 mppa. Forecasts published by BAA plc in November 1999 indicate that the company expects passenger throughput to be slightly higher than these figures at Gatwick and slightly lower at Heathrow. This assumption is consistent with a delayed decision on Terminal 5 and recently announced plans to expand terminal capacity at Gatwick¹⁴.

For the purposes of the current analysis the CAA's original assumption of terminal capacity at Heathrow has been reduced by 10 mppa to 68.3 mppa in 2005. The CAA's figures for terminal capacity at Gatwick have been increased by 5 mppa in both years to give annual capacity of 38.7 mppa in 2005 and 41.2 mppa in 2010. This effectively advances the CAA's original 2015 capacity assumption for Gatwick by five years. The original CAA capacity assumptions envisaged terminal capacity at Heathrow increasing to 92.9 mppa by 2015. This figure has been retained for the current study.

Since the purpose of this report is to project the likely overspill from Heathrow and Gatwick with their present runway configuration, the analysis assumes no new runways nor any attendant increase in terminal capacity at either of these airports.

6.3 Passengers per air transport movement

The volume of annual passenger movements that can be accommodated by any given runway capacity depends upon the average number of passengers per passenger air transport movement (PATM). The previous overspill forecasts were based on the projected growth in passengers per PATM assumed by RUCATSE.

Table 6.1 summarises the average number of passengers per PATM recorded at Heathrow and Gatwick between 1995 and 1999. The same information is illustrated in Figure 6.1. It is clear from the information presented that the trend at Heathrow has generally been in line with the RUCATSE projections.

Although British Airways has announced a change in strategy that will reduce the average seating capacity of its Heathrow fleet, no formal assessment of the implications of this strategy for the future growth in the average numbers of passengers per air transport movement at Heathrow has yet been published.

The previous analysis highlighted the 1.8 percent fall in average passengers per PATM recorded at Gatwick in 1996 and attributed this to the relative decrease in the proportion of short haul charter capacity. This trend was reversed over

¹⁴ BAA announced on 6th October 1999 that it is in consultation with neighbours and local authorities to maximise the use of the airport's one runway and two terminal capacity, with a separate development strategy to grow to around 40 million passengers a year.

the next two years and during 1998 the average number of passengers per ATM returned almost to the 1995 level. A significant proportion of this recovery is likely to have been due to the transfer of a number of wide-bodied British Airways' aircraft from Heathrow to Gatwick. Average passengers per PATM at Gatwick increased sharply during the first 10 months of 1999 and are expected to have averaged 128.3 for the year as a whole.

The temporary nature of the decline in passengers per PATM at Gatwick has reduced the danger identified in the previous analysis; that runway capacity rather than terminal capacity may limit Gatwick's passenger throughput. If anything, the average number of passengers per PATM at Gatwick may now begin to increase more quickly than the RUCATSE projections envisaged. (see Annex 2 Table A2.2 for projected Passengers per PATM)

Table 6.1: Passenger per passenger ATM at major London Area Airports

Airport	RUCATSE			Observed					
	1995	2000	AAGR	1995	1996	1997	1998	1999	AAGR
Heathrow	131	144	1.91%	129.6	131.2	135.4	137.5	140.6	2.05%
Gatwick	121	130	1.45%	122.8	117.0	119.0	121.6	128.3	1.10%
Overall	128	139	1.74%	127.5	126.6	129.8	131.9	136.2	1.66%

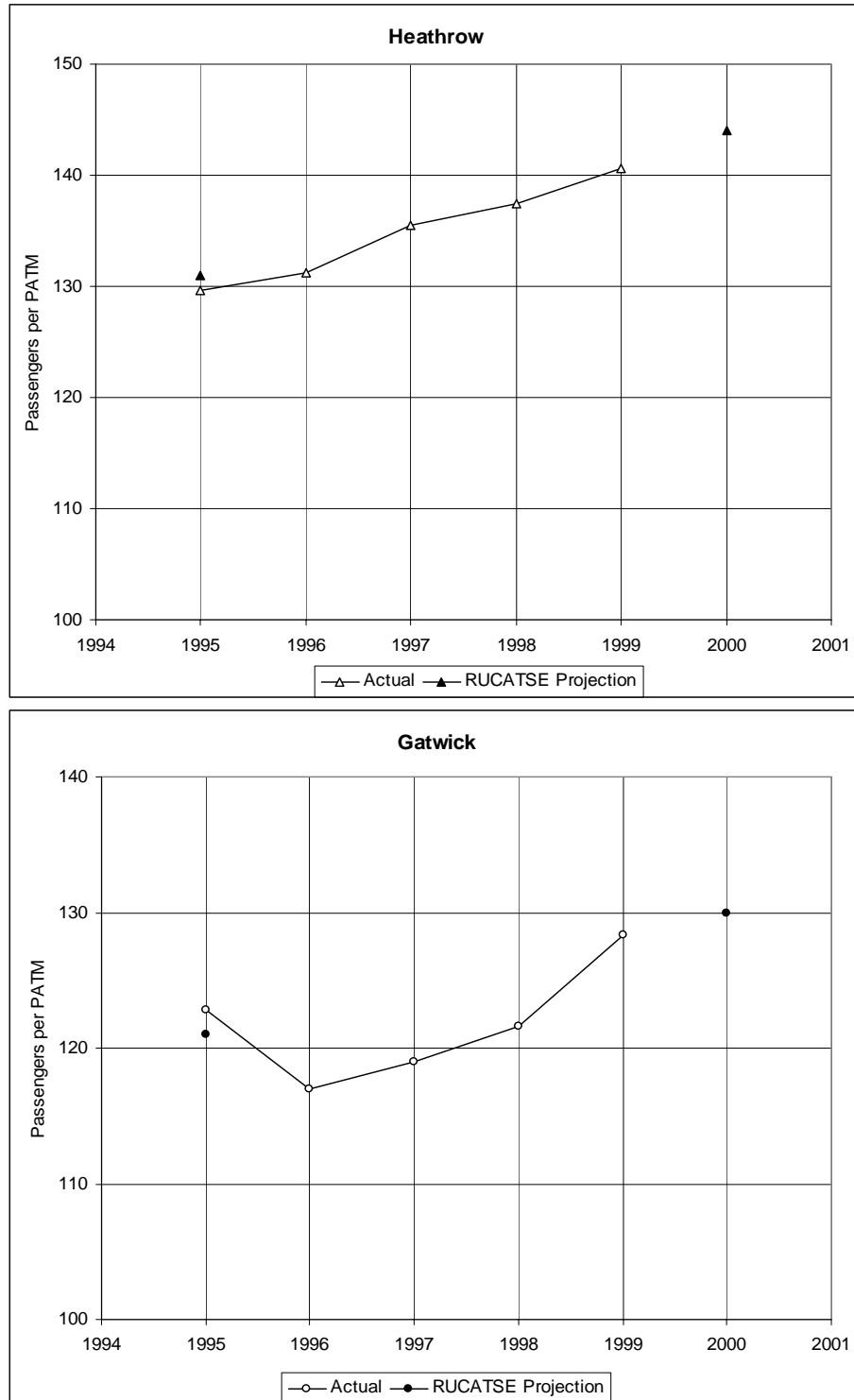
Note 1. Observed figures for 1999 are based on data for the period January to October 1999

2. The observed average annual growth rate (AAGR) is given for the four-year period to 31st December 1999. Source: ASA analysis of CAA annual airport traffic statistics for 1995 - 1998 and corresponding monthly traffic statements for the period January to October 1999.

For Heathrow and Gatwick combined, the average number of passengers per PATM in 1999 was very close to the corresponding RUCATSE figure. The RUCATSE assumptions on average passengers per PATM have therefore been retained for the current analysis.

Examining the impact of the recent growth of passengers per PATM at Heathrow and Gatwick separately, it is clear that the higher rate of growth recorded at Heathrow will increase the passenger handling capacity of the airport's runway system and reinforce the demand for additional terminal, apron and access capacity, thereby emphasising the demand case for BAA's Terminal 5 proposals.

Figure 6.1
Comparison of Projected and Actual Passengers per Passenger Air Transport Movement



7 Revised overspill passenger forecasts

As before, the number of annual air passenger movements likely to spill over from Heathrow and Gatwick has been calculated as the difference between the unconstrained demand and available capacity at each of the airports. Projections have prepared at five-year intervals over the period 2000 to 2030.

However, the situation is now more complex than it was at the end of 1996 for two main reasons:

- demand has increased substantially in the past three years and significant overspill of potential traffic is likely to have already occurred at Heathrow;
- low-cost airline operations have increased substantially.

The first point makes it difficult to derive an accurate estimate of the unconstrained demand for the London area airports. This arises because the analysis compares the unconstrained demand projected by DOT/DETR forecasts with the actual passenger throughput of the London area airports. This comparison is accurate when there is spare capacity at each of the airports involved in the analysis and hence where throughput represents unconstrained demand. However, when traffic is already beginning to spill over from Heathrow and/or Gatwick, actual throughput will understate demand. Unless this overspill traffic decants to Stansted or Luton, it will be lost to the London area airports system.

Passenger movements across the London area airports as a whole in 1999 were 21.9 percent higher than the DOT's 1992 national air traffic forecasts projected. A multiplier of 1.219 has been applied to both Heathrow and Gatwick in order to estimate the total demand at each airport that would have arisen in the absence of capacity constraints. *i.e.* if the level of demand at each airport in 1992 had been allowed to grow unhindered. Actual passenger numbers for Heathrow and Gatwick in recent years have been affected by capacity constraints at Heathrow, which has led to a transfer of traffic from Heathrow to Gatwick. Since the DOT and more recent DETR forecasts provide passenger projections for the London area as a whole rather than for individual airports, the aggregate multiplier of 1.219 represents the best available estimate of the potential demand at each airport relative to the DOT's original 1992 projections.

It is recognised that the nature of the London area market has changed since the 1992 DOT/DETR forecasts were prepared. These changes have included:

- EU liberalisation, leading to the emergence of no-frills scheduled service carriers at fares which effectively compete against charter operations, and generate new traffic;
- a greater range of destinations and more attractive frequencies at provincial airports; and
- improved surface access to Heathrow and Stansted.

In total, therefore, it may be postulated that the overall factoring up of Heathrow and Gatwick overspill by the full 21.9% excess of actual London area traffic over that forecast may be optimistic rather than conservative. Having said that, total exclusion of all traffic carried by the new low-cost carriers would be overly pessimistic.

It may confidently be assumed that some of this low-fare traffic has certainly been won from charters, which never had access to Heathrow. This might indicate that the degree of *de facto* overspill has been higher at Gatwick than at Heathrow. On the other hand, the traditional preference of scheduled carriers for Heathrow rather than Gatwick possibly indicates that Heathrow's overspill rate should be higher, particularly since Gatwick's rail access advantage has been eroded. Thus, at a first approximation, we see no significant case to differentiate the application of the estimated overspill percentage between Heathrow and Gatwick.

Escalating the original (RUCATSE based) demand forecasts for Heathrow and Gatwick by 21.9 percent to account for the higher than forecast rate of traffic growth achieved within the London area in recent years gives an estimated unconstrained demand in 1999 of 72.2 million for Heathrow and 27.1 million for Gatwick. Comparing this level of demand with the actual throughput recorded in 1999 (62.1 million at Heathrow and 30.6 million at Gatwick) suggests that traffic has already spilled over from Heathrow, some 3.5 million to Gatwick and 6.6 million to other airports. The calculations are summarised in Table 7.1.

Table 7.1: Estimated Overspill from Heathrow & Gatwick 1999

Airport	Heathrow	Gatwick	Net Total
Original Demand (RUCATSE based)	59.2	22.2	81.4
Multiplier	1.219	1.219	1.219
Revised Unconstrained Demand	72.2	27.1	99.3
Recorded Throughput	62.1	30.6	92.7
Estimated Overspill	10.1	-3.5	6.6

Note 1. Observed figures for 1999 are based on data for the period January to October 1999

2. The observed average annual growth rate (AAGR) is given for the four-year period to 31st December 1999. Source: ASA analysis of CAA annual airport traffic statistics for 1995 - 1998 and corresponding monthly traffic statements for the period January to October 1999.

Some 3.5 million passengers are thought to have been decanted to Gatwick. The remaining 6.6 million represent incremental passengers carried by no-frills scheduled airlines such as EasyJet, Go and Ryanair, flying out of Stansted and Luton.

These no-frills scheduled airlines would never have been able to operate viably at Heathrow, because of problems of slot availability. However, the traffic generated by no-frills air passenger operations represents an additional demand for airport capacity within the London area.

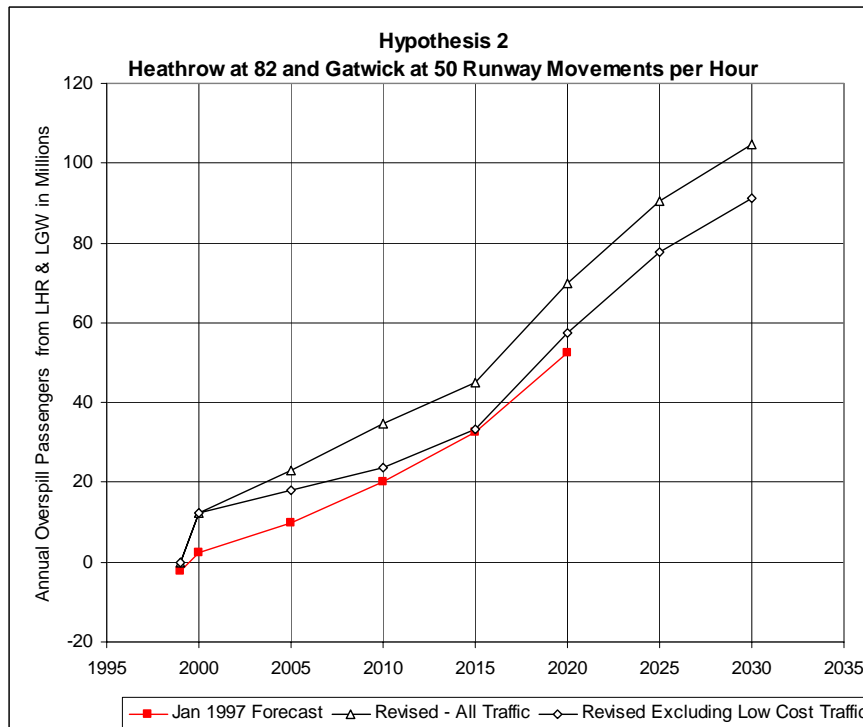
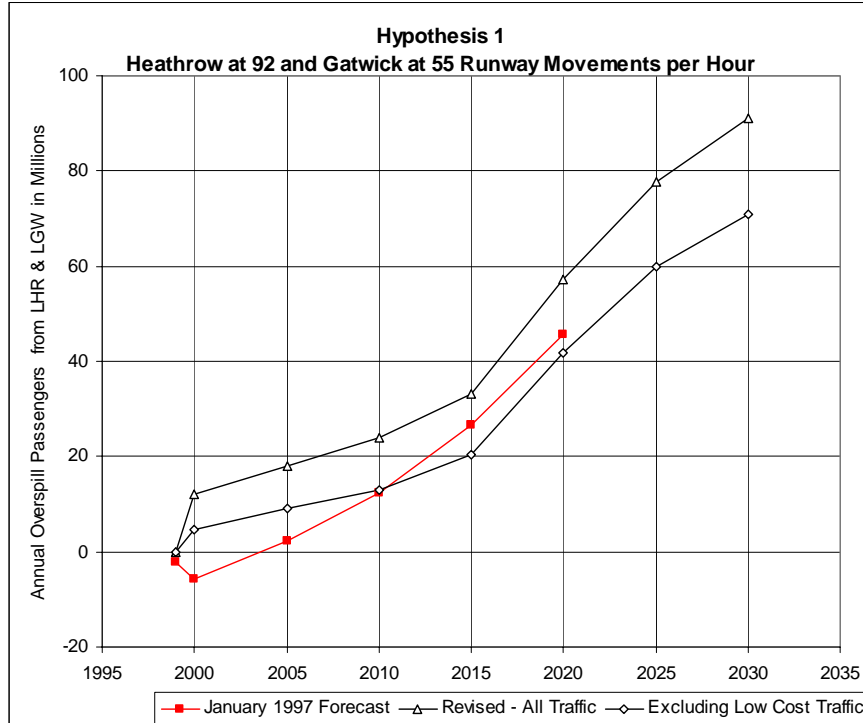
Two estimates of overspill traffic have therefore been prepared:

- the total difference between unconstrained demand (original demand x 1.219) and capacity at Heathrow and Gatwick; and
- the total difference between unconstrained demand less no-frills traffic, and capacity at Heathrow and Gatwick.

The forecasts are summarised in Table 7.2, which compares the projected overspill for BATA's two preferred capacity hypotheses.

Under the more optimistic assumptions of capacity Hypothesis 1 (LHR 92 / LGW 55), the volume of annual air passenger movements spilling over from Heathrow and Gatwick would increase from 18.2 million in 2005 to 91.2 million by 2030. If the volume attributable to the new no-frills scheduled carriers is excluded from the analysis, the overspill would be 9.0 million in 2005 rising to 71.0 million in 2030. The trend is illustrated in Figure 7.1.

Figure 7.1
Projected Growth in Air Passenger Movements Spilling Over from Heathrow and Gatwick



The lower capacity assumptions of Hypothesis 2 (LHR 82 / LGW 50) imply that some 22.8 million passenger movements will have spilled over from Heathrow and Gatwick by 2005 and that this figure will rise to 104.8 million by 2030. Excluding no-frills traffic from the analysis reduces the overspill to 13.7 million in 2005 rising to 84.7 million in 2030. This trend is also illustrated in Figure 7.1.

Table 7.2: Forecast overspill traffic at Heathrow and Gatwick Airports - MPPA - Runway Constrained.

Year		2005	2010	2015	2020	2025	2030
Total Overspill							
Hypothesis 1	LHR 92/LGW 55	18.2	23.9	33.3	57.4	77.6	91.2
Hypothesis 2	LHR 82/LGW 50	22.8	34.6	45.1	69.7	90.6	104.8
Total Overspill net of No-frills Traffic							
Hypothesis 1	LHR 92/LGW 55	9.0	13.0	20.3	41.7	59.9	71.0
Hypothesis 2	LHR 82/LGW 50	13.7	23.7	32.1	54.1	72.9	84.7

Source: ASA analysis.

The overspill figures in Table 7.2 are determined by the passenger carrying capacity of the existing runways at Heathrow and Gatwick over the period to 2030. i.e the product of annual PATM capacity and average passengers per PATM. They therefore assume that terminal capacity will be expanded in line with runway capacity.

Table 7.3 summarises the projected balance between runway and terminal capacity at Heathrow and Gatwick over the period to 2030. The same information is illustrated in Figure 7.2.

Although demand at Heathrow is expected to exceed runway capacity throughout the forecast period, the lack of terminal capacity would represent an additional constraint preventing the full use of the potential runway capacity from 2011 onwards. The effect of this additional constraint would be to increase the number of passengers spilling over from Heathrow between 2011 and 2030. By 2030, annual passengers spilling over from Heathrow would increase by 27.1 million from 69.8 million if runway and terminal capacity were to be matched, to 96.9 million.

The situation at Gatwick would be similar with demand again exceeding runway capacity throughout the forecast period and a lack of terminal capacity inhibiting the full use of potential runway capacity from 2011 onwards. By 2030, annual passengers spilling over from Gatwick would increase by 12.3 million from 21.3 million if runway and terminal capacity were to be matched, to 33.6 million.

The effect of the projected mismatch between runway and terminal capacity would be to increase the total passenger movements spilling over from Heathrow and Gatwick by 2030 from 91.1 million to 130.5 million

Figure 7.2
Projected Growth in Annual Passenger Handling Capacity at Heathrow and Gatwick

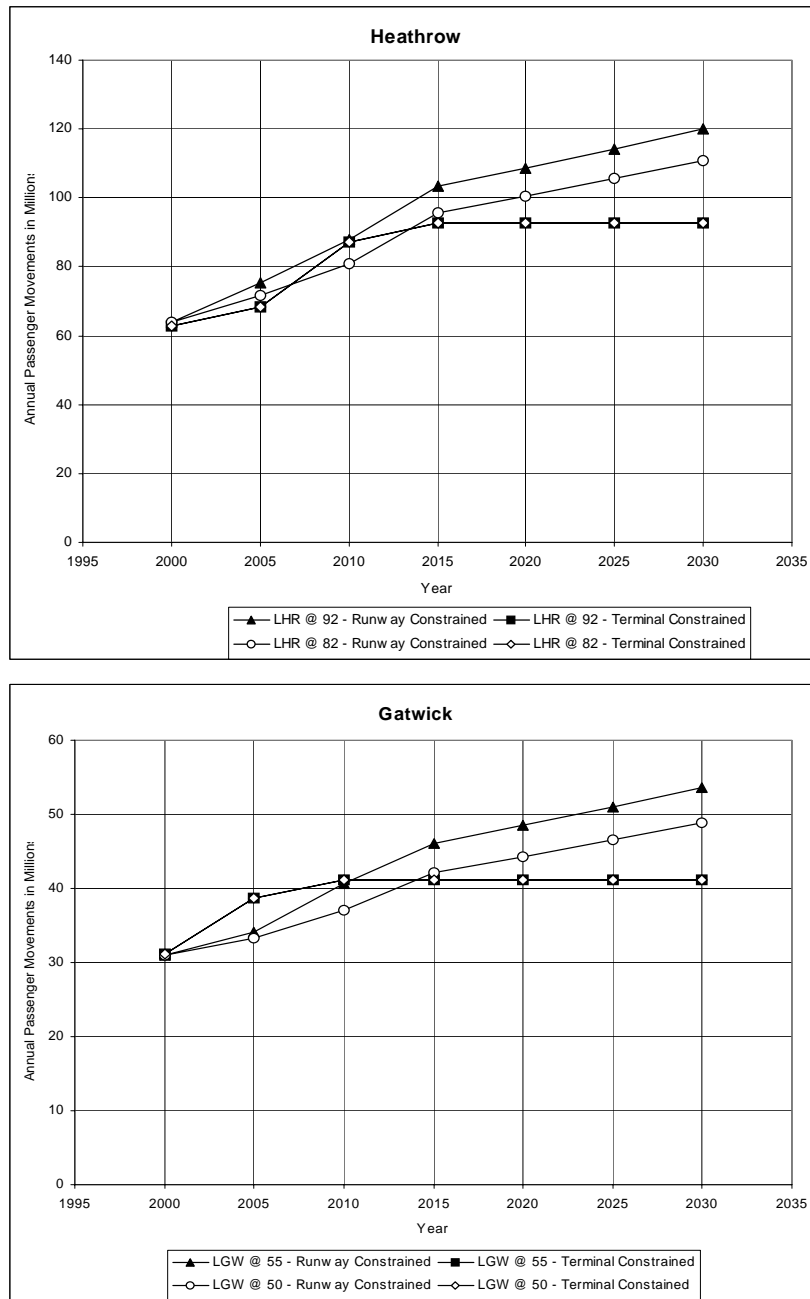


Table 7.3: PROJECTED IMBALANCE BETWEEN RUNWAY AND TERMINAL CAPACITY AT HEATHROW AND GATWICK TO 2030

Year	2000	2005	2010	2015	2020	2025	2030
Heathrow at 92 Runway Movements per Hour							
Runway Capacity	64.1	75.5	88.0	103.4	108.6	114.2	120.0
Terminal Capacity	62.8	68.3	87.3	92.9	92.9	92.9	92.9
Excess of Runway over Terminal capacity	1.3	3.3	0.7	10.5	15.7	21.3	27.1
Heathrow at 82 Runway Movements per Hour							
Runway Capacity	64.1	71.6	81.0	95.6	100.4	105.5	110.9
Terminal Capacity	62.8	68.3	87.3	92.9	92.9	92.9	92.9
Excess of Runway over Terminal capacity	1.3	3.3	-6.3	2.6	7.5	12.6	18.0
Gatwick at 55 Runway Movements per Hour							
Runway Capacity	30.9	34.1	40.7	46.1	48.5	50.9	53.5
Terminal Capacity	31.2	38.7	41.2	41.2	41.2	41.2	41.2
Excess of Runway over Terminal capacity	-.3	-4.6	-0.5	4.9	7.3	9.7	12.3
Gatwick at 50 Runway Movements per Hour							
Runway Capacity	30.9	33.4	37.0	42.1	44.3	46.5	48.9
Terminal Capacity	31.2	38.7	41.2	41.2	41.2	41.2	41.2
Excess of Runway over Terminal capacity	-0.3	-5.3	-4.2	0.9	3.1	5.3	7.7

Source: Runway capacity, ASA estimates for this study. Terminal capacity, CAA estimates for previous BATA study, modified as described in the text for 2005 and 2010.

8 Summary of conclusions

The main conclusions arising from the current analysis are as follows.

8.1 Underlying Demand

- a) Between 1996 and the end of 1999, air passenger demand at the main London area airports increased more rapidly than envisaged by the Department of Transport's 1994 and 1997 forecasts.
- b) Air passenger movements at the London area airports in 1999 are estimated to have been 108.6 million, compared to the 99.2 million (+ 9.4 percent) obtained from the DETR's 1997 air traffic forecasts and 89.0 million (+ 21.9 percent) from the corresponding 1994 forecast that underpinned the conclusions of the RUCATSE report.
- c) Operations by no-frills scheduled airlines such as EasyJet, Go and Ryanair, have been the fastest growing sector of the London area air passenger market during the past four years with an average annual growth rate of 50 percent compared with 7 percent for the market as a whole. At an estimated 7.3 million annual passengers, they now account for more than half of all air passenger traffic at Luton and Stansted airports.
- d) These new no-frills carriers would never have been able to viably use Heathrow or Gatwick, because of problems of slot availability. However, the traffic generated by no-frills operations represents an additional demand for airport capacity within the London area.
- e) In the absence of official traffic forecasts for the period to 2030, the current analysis has extrapolated the future growth of air passenger traffic at the London area airports at a rate that continues the characteristic decrease in average annual growth rates over time. Average annual growth rates are projected to range from 3.25 percent between 2010 and 2015 to 1.75 percent over the five years to 2030.
- f) Unconstrained demand at the London area airports is projected to increase from 108.5 million in 1999 to 205 million by 2015 and 296 million by 2030.

8.2 Airport Capacity

- g) The previous analysis assumed that Terminal 5 would be approved and identified the key constraint on air traffic growth at Heathrow and Gatwick during the period to 2015 to be runway capacity. Extending the forecasting horizon to 2030 however, reintroduces the possibility that terminal or apron capacity will re-emerge as the key constraint.
- h) BAA plc, CAA, NATS and DETR have all been more reluctant to discuss their current assumptions in respect of airport capacity than they were three years ago. None of these bodies would provide any firm guidance but, informal discussions suggest that the two capacity hypotheses agreed with BATA in

January 1997 continue to represent a reasonable estimate of the range of hourly runway capacities for Heathrow and a single runway Gatwick. These hypothesis are summarised in Table 8.1 below:

Table 8.1 ALTERNATIVE RUNWAY CAPACITY HYPOTHESES

Hypothesis	Peak Hour Runway Movements	
	Heathrow	Gatwick
1	92	55
2	82	50

- i) Terminal capacity assumptions provided by the CAA for use in the previous BATA analysis have been retained for the current study. These assumptions envisaged terminal capacity at Heathrow and Gatwick increasing to 92.9 mppa and 41.2 mppa¹⁶ respectively by 2015. The analysis also assesses the impact of potential terminal capacity constraints on the scale of overspill traffic.
- j) Although the average number of passengers per Passenger Air Transport Movement at Gatwick fell by 1.8 percent during 1996, it has since recovered and is likely to equal or slightly exceed the figure projected by RUCATSE for the year 2000. The observed trend of passengers per PATM at Heathrow is essentially in line with the RUCATSE projections.
- k) The RUCATSE projections continue to represent a reasonable estimate of the future trend of passengers per PATM at Heathrow and a single runway Gatwick and have therefore been retained for the current analysis.

8.3 Projected Overspill From Heathrow and Gatwick

- l) Escalating the original (RUCATSE based) demand forecasts for Heathrow and Gatwick by 21.9 percent to account for the higher than forecast rate of traffic growth achieved within the London area in recent years give unconstrained demand of 72.2 million for Heathrow and 27.1 million for Gatwick.
- m) Comparing this level of demand with the actual throughput recorded in 1999 (62.1 million at Heathrow and 30.6 million at Gatwick) suggests that traffic has already spilled over from Heathrow, some 3.5 million to Gatwick and 6.6 million (mainly no-frills airline passengers) to Stansted and Luton.

¹⁶ BAA announced on 6th October 1999 that it is in consultation with neighbours and local authorities to maximise the use of the airport's one runway and two terminal capacity, with a separate development strategy to grow to around 40 million passengers a year.

- n) The estimated scale of passenger traffic spilling over from Heathrow and Gatwick including and excluding low-cost traffic¹⁷ is summarised in Table 8.2 below:

Table 8.2: FORECAST OVERSPILL TRAFFIC AT HEATHROW AND GATWICK AIRPORTS – MPPA – RUNWAY CONSTRAINED

Year		2005	2010	2015	2020	2025	2030
Total Overspill							
Hypothesis 1	LHR 92/LGW 55	18.2	23.9	33.3	57.4	77.6	91.2
Hypothesis 2	LHR 82/LGW 50	22.8	34.6	45.1	69.7	90.6	104.8
Total Overspill net of No-frills Traffic							
Hypothesis 1	LHR 92/LGW 55	9.0	13.0	20.3	41.7	59.9	71.0
Hypothesis 2	LHR 82/LGW 50	13.7	23.7	32.1	54.1	72.9	84.7

Source: ASA analysis.

- o) The overspill figures in Table 8.2 are determined by the passenger carrying capacity of the existing runways at Heathrow and Gatwick over the period to 2030. They therefore assume that terminal capacity will be expanded in line with runway capacity. This assumption is reasonable up to 2015.

¹⁷ Projections assume common growth rates for no-frills and total traffic.

ANNEX 1

GROWTH IN LONDON AREA PASSENGER TRAFFIC 1998 - 1999

The estimated increase in traffic in 1999 is based on the following information.

- a) Annualised passenger growth of 5.82 percent recorded at the three BAA London area airports in the 12 months to 31st December 1999.
- b) Estimated passenger traffic growth of 7.11 percent across all the main London area airports¹⁸ over the 12 months to 31st December 1999 based on CAA monthly traffic statistics to 31st October 1999 and estimates based on monthly BAA traffic statistics for November and December 1999 factored by the observed ratio of total to BAA London area passenger traffic in the same months of 1998.

Based on points a) and b) a rounded estimate of the likely annual growth of air passenger traffic at the main London area airports in 1999 has been taken to be 6.7 percent.

¹⁸ The main London area airports have been defined as Gatwick, Heathrow, London City, Luton and Stansted.

ANNEX 2:

CAPACITY AND PASSENGERS PER PATM ASSUMPTIONS

Table A2.1 : ACTUAL AND PROJECTED RUNWAY CAPACITIES AT HEATHROW AND GATWICK

Year	1990	1995	1996	1997	1998	1999	2000	2005	2010	2015	2020	2025	2030
Actual Thousand Passenger Air Transport Movements							Projected Thousand Passenger Air Transport Movements						
Heathrow													
Actual	361.5	417.7	424.7	427.1	439.1								
92 per hr	-	-	-	-	-		445	450	460	490	490	490	490
92 per hr	-	-	-	-	-		445	475	500	530	530	530	530
Gatwick													
Actual	186.2	187.3	206	225.2	238.8								
50per hr	-	-	-	-	-		238	240	250	265	265	265	265
55 per hr	-	-	-	-	-		238	245	275	290	290	290	290

Source: Analysis of CAA airport traffic statistics and RUCATSE projections.

Table A2.2 : ACTUAL AND PROJECTED PASSENGERS PER PATM AT HEATHROW AND GATWICK

Year	1990	1995	1996	1997	1998	1999	2000	2005	2010	2015	2020	2025	2030
Actual							Projected						

Heathrow	118	130	131	135	137	141	144	159	176	195	205	215	226
Gatwick	113	120	117	119	122	128	130	139	148	159	167	176	185

Source: Analysis of CAA airport traffic statistics and RUCATSE projections .

Figure A2.1
Actual and Projected Runway Capacity Assumptions at Heathrow and Gatwick

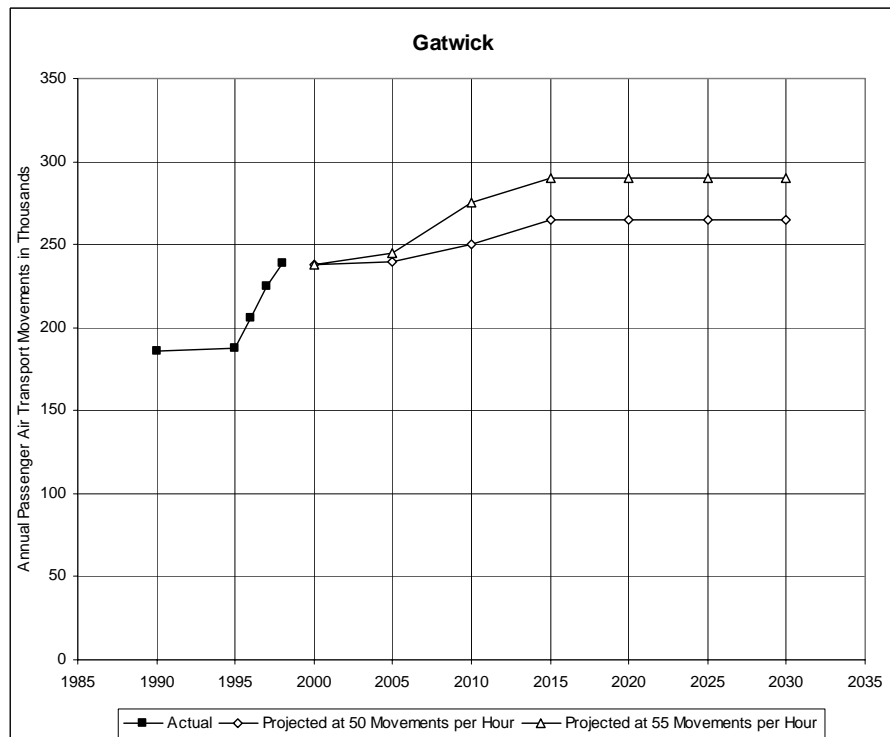
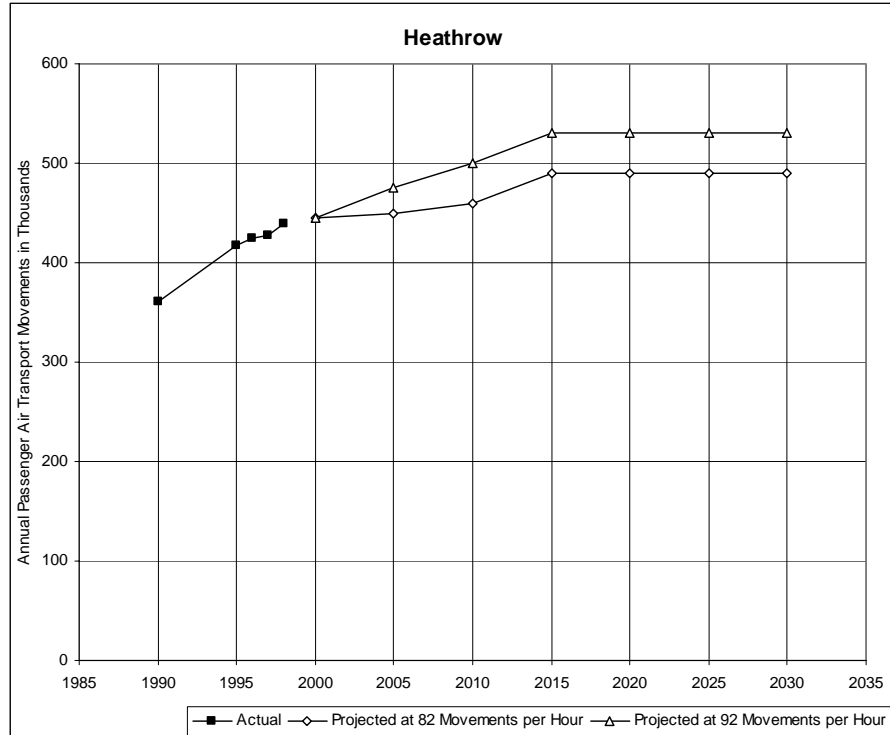


Figure A2.2
Actual and Projected Terminal Capacity Assumptions at Heathrow and Gatwick

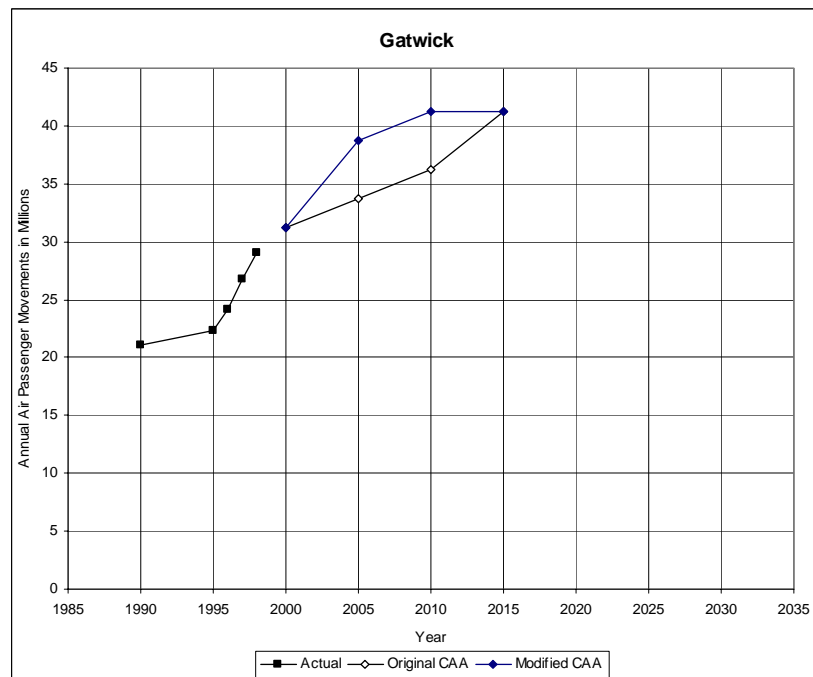
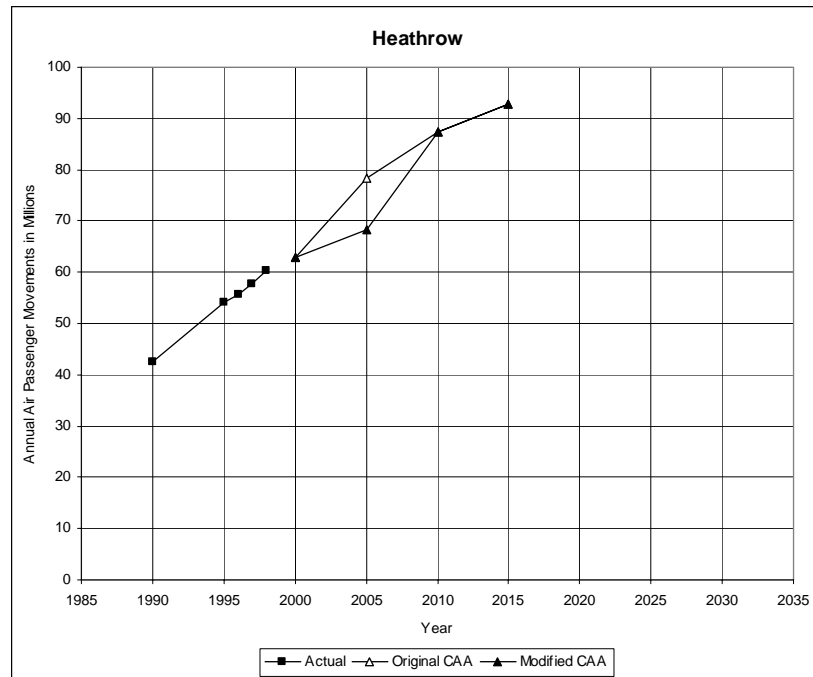


Figure A2.3
Actual and Projected Passengers per PATM at Heathrow and Gatwick

