

**Doc. No. SSE/4/a  
Case Ref. 2032278**

Appeal by BAA Ltd and Stansted Airport Ltd following the refusal by Uttlesford District Council of planning application UTT/0717/06/FUL

## **Proof of Evidence on behalf of Stop Stansted Expansion**

### **Air Traffic Data**

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## **1 INTRODUCTION**

### **1.1 Personal details**

- 1.1.1 My name is Brian Ross and I appear at the Public Inquiry on behalf of Stop Stansted Expansion ('SSE').

### **1.2 Qualifications and experience**

- 1.2.1 I have the degrees of Bachelor of Commerce (hons) and Master of Business Administration (distinction) and I am also a graduate of the Stanford Executive Programme. I have 25 years experience with a major UK plc in operational and corporate finance roles, interrupted by two and a half-years in the Prime Minister's Office advising on efficiency matters within Government. I am now semi-retired and spend most of my time assisting SSE. I also do some part-time consulting, providing economic and financial analysis and advice mostly to clients in the City, including on matters relating to the air transport industry.

## **2 SCOPE OF EVIDENCE**

### **2.1 Core evidence**

- 2.1.1 SSE's evidence on the air traffic forecasts relating to the proposed development was originally set out in Volume 1 of SSE's response to Uttlesford District Council ('UDC') in July 2006 [CD/201]. That evidence is now superseded by this submission which incorporates more recent data now available and further analysis carried out since July 2006.
- 2.1.2 In preparing the research and analysis underlying this evidence I have been assisted by other members of SSE, notably, Chris Bennett, Ken McDonald and Mike Young.

## **3 BAA AIR TRAFFIC PROJECTIONS**

### **3.1 Importance in the assessment of environmental impacts**

- 3.1.1 Volume 1 of the BAA Environmental Statement [CD/4] portrays minimal additional environmental impacts arising from the proposed increase in the number of permitted air transport movements ('ATMs') at Stansted to 264,000 a year.<sup>1</sup> However, BAA has presented misleading projections which understate the difference between the 25mppa scenario and the impacts that would arise if its application were to be approved.
- 3.1.2 The assumptions used by BAA are of fundamental importance because, if there is little difference between the environmental impacts under the two scenarios, BAA can argue that there is no justification for refusing its application on environmental grounds. This is of course precisely the argument that BAA uses.

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<sup>1</sup> plus a BAA estimate of a further 10,000 'non-ATMs'- which are not intended (by BAA) to be subject to a planning limit.

- 3.1.3 For most people the real 'status quo' is not a hypothetical 25mppa baseline for 2014 but the current level of impacts. That is what they can see and hear and relate to and that is the only yardstick they can really use to judge the impact of any future expansion proposals. On this basis, the real comparison is between the 190,000 ATMs and 23.7m passengers handled by Stansted in 2006<sup>2</sup> and BAA's proposal for 264,000 ATMs and an undefined number of passengers in the future which, as we shall demonstrate below, could be 50mppa.
- 3.1.4 However, BAA presents us with a baseline derived from exploiting its current planning consent for 241,000 ATMs and 25mppa to the full, wherever possible. BAA then presents projections for 264,000 ATMs which are calculated and presented in such a way as to understate the environmental impacts. BAA then feels justified in presenting the net impacts of its proposal as minimal.
- 3.1.5 The BAA air traffic forecasts provide the key input assumptions for arriving at the projected environmental impacts of its proposed development in every topic area, i.e. air noise, ground noise, air quality, surface access etc. The traffic forecasts are therefore critically important and so also are the underlying assumptions used to arrive at them. It is also important to note that the output analysis stemming from environmental impact assessment in every topic area (air noise, ground noise, air quality, surface access etc) forms the basis for the Health Impact Assessment ('HIA') and the Sustainability Appraisal ('SA') and so, if the original assumptions are unreliable, then the ES, HIA and SA are also unreliable. As we shall demonstrate below, BAA's assumptions are indeed unreliable.
- 3.1.6 CD/19 ('Air Traffic Data') contains the key input data upon which BAA's assumptions are based. This data is mostly relegated to the appendices (in very small print – or indeed no print at all in the case of the data tables for Appendix A3) and this belies their fundamental importance as the basis for BAA's comparisons between 'baseline' impacts and projected impacts for 274,000 aircraft movements, including 10,000 non-ATMs (explained later).

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<sup>2</sup> CAA Airport Statistics.

## 3.2 Analysis of BAA's assumptions and projections

3.2.1 The following table shows Stansted's key traffic statistics for recent years:

**Table 1 Actual traffic data – Stansted 1996-2006**

Year	Passenger ATMs	Cargo ATMs	Total ATMs	Passengers ('000)	Passengers per ATM
1998	91,857	13,036	104,893	6,863	74.7
1999	122,268	13,407	135,675	9,447	77.3
2000	132,445	11,189	143,634	11,860	89.5
2001	138,681	11,884	150,565	13,654	98.5
2002	141,873	10,562	152,435	16,049	113.1
2003	158,910	10,309	169,219	18,716	117.8
2004	165,722	11,047	176,769	20,911	126.2
2005	166,755	11,257	178,012	21,992	131.9
2006	179,031	10,964	189,995	23,687	132.3
<b>Growth since 1998</b>	<b>95%</b>	<b>-16%</b>	<b>81%</b>	<b>245%</b>	<b>77%</b>

Source: CAA Airport Statistics

3.2.2 It can be seen from the above table that the average number of passengers per passenger aircraft at Stansted has increased by 77% since 1998 (from 74.7 to 132.3). This is a trend which is not only apparent at Stansted but also at all major airports around the world because aircraft are becoming ever-larger and airlines are becoming ever more efficient at filling the available seats.

3.2.3 The projections submitted by BAA in support of its application are shown in the table below and are fundamental to assessment of the environmental impacts. It is therefore vital to test these underlying assumptions for reasonableness and, in doing so, a number of apparent inconsistencies arise. One can get a flavour of this just by examining and comparing Table 1 above with Table 2 below.

**Table 2 BAA's projected traffic data – Stansted 2014**

Year	Passenger ATMs	Cargo ATMs	Total ATMs	Passengers ('000)	Passengers per ATM
BAA's 2004 baseline	165,722	11,047	176,769	20,911	126.2
Latest year (2006)	179,031	10,964	189,995	23,687	132.3
25mppa in 2014	180,000	22,500	202,500	25,000	138.9
35mppa in 2014	242,750	20,500	263,250	35,000	144.2
BAA 37.5mppa 'sensitivity'	243,500	20,459	263,959	37,500	154.0

### **BAA passenger projections**

3.2.4 BAA assumes that the average number of passengers per aircraft will increase by only 9% over the eight years to 2014 compared to a 77% increase over the past eight years. By assuming a dramatic slowdown in the growth in the average number of passengers per aircraft, BAA can argue that its application for 243,500 passenger ATMs ('PATMs) results only in 35mppa in 2014.

3.2.5 Even BAA's sensitivity test allows only for a 1.9% per annum increase in the number of passengers per PATM over the next eight years compared to the 7.4% per annum increase seen over the past eight years.

- 3.2.6 For comparative purposes, the following table shows the number of passengers per PATM at Heathrow, Gatwick, Luton and Stansted in 2006 and the projections for 2014.

**Table 3 Comparison of passengers per PATM**

Year	Heathrow	Gatwick	Luton	Stansted
2006	144.3	135.1	122.2	132.3
2014	180.3	148.5	145.4	144.2
Increase 2014 vs 2006	25%	10%	19%	9%

Sources: 2006 data from official CAA Airport statistics; 2014 Stansted data from BAA ES; 2014 data from Heathrow, Gatwick and (draft) Luton interim master plans. In the case of Gatwick the 2015 projections have been adjusted for 2014 by reducing mppa and PATM numbers in line with the average annual growth rate.

- 3.2.7 From the above table, it is immediately apparent that the projected 9% increase in passengers per PATM at Stansted over the next eight years is very low compared to Heathrow and Luton and even lower than Gatwick, a more mature airport which already has a substantial proportion of long haul traffic (i.e. larger aircraft) and therefore less scope for increasing the number of passengers per PATM.
- 3.2.8 Historically BAA's projections for passenger numbers at its London airports have tended to be conservative because of the nature of the regulatory price control process which applies to BAA's London airports. It is in BAA's interests to under-project the average number of passengers per PATM in order to secure a more favourable regulatory settlement (which is based on a yield per passenger). This has led to complaints from airlines to the CAA (the economic regulator) to the effect that BAA's practice of producing conservative passenger projections leads to higher airport charges than would otherwise be the case.<sup>3</sup>
- 3.2.9 Before leaving the above table, it should be pointed out that the passenger projections used to compile the table are 86mppa in the case of Heathrow and 40mppa in the case of Gatwick. Heathrow believes that its two runways will be able to handle 90mppa-95mppa<sup>4</sup> with T5 (i.e. 45mppa - 47.5mppa per runway) and, on top of this, a further 10%-12% capacity is estimated if mixed mode is permitted.<sup>5</sup> Gatwick believes that it can handle 45mppa<sup>6</sup> at maximum use of its runway. BAA's projections for maximum use of Stansted look implausible by comparison and BAA envisages a significant increase in long-haul services at Stansted (with their typically higher passenger loads) to 15,100 PATMs in 2014 from just 300 in 2004.<sup>7</sup>
- 3.2.10 The reliability of BAA's projections can also be assessed with reference to the projections made for Stansted at the time of the last planning application. In 2003, when UDC granted permission for Stansted to expand from 15mppa to 25mppa, BAA projected that 25mppa would not be reached until 2010/11. BAA now forecasts that Stansted will handle 29mppa in 2010/11, i.e. 16% above the forecast it provided at the time of its last planning application.

<sup>3</sup> Submissions to the CAA in relation to the Q4 quinquennial review (2003-2008). Details of the evidence submitted by airlines is available on the ERG section of the CAA website.

<sup>4</sup> Heathrow Airport Interim Master Plan, Executive Summary [CD/225].

<sup>5</sup> Environmental restrictions currently apply to the use of Heathrow's two runways whereby alternating runway use applies to take-offs and landings so as to allow local residents a respite period every day.

<sup>6</sup> Gatwick Airport Masterplan, para 5.17 [CD/224].

<sup>7</sup> CD/9, Table 3.

**BAA cargo projections**

- 3.2.11 BAA assumes that the number of cargo ATM's ('CATMs') would more than double over the next eight years, from 10,964 CATMs in 2006 to 22,500 CATMs in 2014, if its application were refused, taking Stansted to the maximum CATMs permitted under its current planning consent. However, as can be seen from Table 1 the number of CATMs handled by Stansted has reduced by 16% since 1998 (i.e. the past eight years).
- 3.2.12 BAA assumes that cargo tonnage would increase over the next eight years from 224,300 tonnes in 2006 to 600,000 tonnes in 2014. In order to achieve this, cargo tonnage at Stansted would need to grow by more than 13% a year for the next eight years. This compares to average annual cargo tonnage growth of less than 3% over the past eight years.

**Table 4 Cargo tonnage 1998-2006**

	Stansted '000	South East '000	UK '000	Stansted Market Share	
				South East	UK
1998	179.0	1688.1	2080.5	10.6%	8.6%
1999	173.8	1756.8	2189.0	9.9%	7.9%
2000	166.1	1825.0	2313.9	9.1%	7.2%
2001	165.7	1649.4	2145.5	10.0%	7.7%
2002	184.4	1682.7	2195.4	11.0%	8.4%
2003	198.6	1667.8	2208.2	11.9%	9.0%
2004	225.8	1795.3	2371.0	12.6%	9.5%
2005	237.0	1788.7	2363.3	13.2%	10.0%
2006	224.3	1717.4	2315.4	13.1%	9.7%
<b>Growth since 1998</b>	<b>25.3%</b>	<b>1.7%</b>	<b>11.3%</b>	<b>+2.5%</b>	<b>+1.1%</b>

Source: CAA Airport Statistics

- 3.2.13 We note BAA's assertion<sup>8</sup> that, in the absence of planning consent to expand beyond 25mppa, Stansted would increase its focus on cargo business. However, it is reasonable to assume that the maximisation of cargo revenues has long been an important part of Stansted's business strategy and indeed it has achieved some success. Stansted's cargo tonnage has increased by 25.3% in the past eight years and during this time Stansted has increased its share of the cargo market both in the South East and in the UK despite the reduction in CATMs.
- 3.2.14 However, to reach 600,000 tonnes per annum, Stansted would need to increase its share of the UK air cargo market from the present 9.7% to about 23% over the next eight years, assuming the market continues to grow at about 1.1% a year (see also 3.2.15 below). Over the past eight years Stansted has grown its UK market share from 8.6% to 9.7%. There is intense competition amongst airports for cargo business and we therefore consider BAA's cargo projections for 2014 to be extremely ambitious whether for 35mppa or even just within the context of the changes of business mix which might be adopted by BAA if passenger growth were to be capped at 25mppa (i.e. the current planning limit).
- 3.2.15 We also contest BAA's prediction<sup>9</sup> that the growth in the air cargo market will outstrip UK economic growth. The above table shows that total UK air cargo tonnage has grown by only 11.3% since 1998 whereas UK GDP has risen 20.6%

<sup>8</sup> CD/4, para 6.3.3.

<sup>9</sup> CD/19, para 4.1.5.

over the same period.<sup>10</sup> BAA's prediction that the market will grow by 4% a year over the next decade is predicated upon the assumption that the air cargo market will outstrip UK economic growth but the evidence shows that it lags behind economic growth at least in volume terms (although perhaps not in value terms) and it is volume (i.e. tonnage) that is the issue here.

- 3.2.16 Under the 35mppa scenario, BAA then reduces the number of CATMs by 2,000 although maintaining cargo tonnage at the same level of 600,000 tonnes. The explanation for this is presumably that there would be more 'bellyhold' cargo in passenger aircraft. The principle of this is quite plausible given that there would be more long haul flights but it is important to note that bellyhold cargo accounted for less than 1% of Stansted total cargo tonnage in 2006<sup>11</sup>.
- 3.2.17 BAA emphasises the wider economic importance of Stansted's cargo activities to the UK economy.<sup>12</sup> However, from an economic standpoint, the cargo implications of the proposed development are not a material consideration because the same volume of cargo is predicted by BAA regardless of whether the application is approved or refused.
- 3.2.18 From an environmental standpoint however the implications are highly significant because of the narrowing of the gap between BAA's hypothetical baseline for 25mppa and its 35mppa scenario. BAA's artificially high CATM projections for its 25mppa 'baseline' enable it to model significantly worse environmental impacts for this scenario (which it disregards on the grounds that its current planning consent allows this) and then to use the overstated 25mppa scenario as the baseline for presenting the incremental impacts of its 35mppa scenario.
- 3.2.19 Finally, on cargo ATMs, it is important to point out that these tend to have high noise and emissions impacts compared to other aircraft types. Many are four-engined long haul aircraft and cargo airlines have a tendency to use older aircraft models and to operate during the sensitive shoulder periods in the late evening and early morning as well as during the night. By feeding twice their present impact into its 25mppa baseline and then trimming this for its 35mppa baseline, we cannot avoid the conclusion that BAA is presenting a false picture.

#### ***BAA projections for 'non-ATMs'***

- 3.2.20 BAA adopts a similar approach to its projections in the case of 'non-ATMs' which are aircraft movements of the type shown below which relate to 2006. Historically, there has never been a planning limit on the number of non-ATMs at Stansted.

<sup>10</sup> 'United Kingdom National Accounts: The Blue Book 2006', ONS, 2007 [CD/229].

<sup>11</sup> CAA Airport Statistics, 2006, Table 15 [CD/209].

<sup>12</sup> CD/2, para 2.15; CD/4, para 6.4.10 and CD/8, paras 4.1.6, 6.2.11 and 6.4.6.

Air taxis	1,881
Aircraft repositioning	6,536
Local movements	2
Testing & training	154
Other flights	97
Aero club	1
Private flights	874
Official flights	83
Military flights	53
Business aviation	7,017
<b>Total</b>	<b>16,698</b>

- 3.2.21 In 2006 there were 16,698 'non-ATMs', which was 8% higher than the 15,499 in 2005.<sup>13</sup> According to CD/19, Table 25, BAA projects that non-ATMs will fall to 13,500 in the 25mppa scenario and to 11,000 in the 35mppa scenario although according to CD/4, Table 4, BAA projects 14,000 and 10,000 respectively. Either way, it is convenient for BAA to assume reductions in relation to non-ATMs because these are not subject to a numerical cap but do feed into the noise, air quality etc projections.
- 3.2.22 Three categories, namely aircraft repositioning, business aviation and air taxis accounted for 92.4% of the non-ATMs in 2006. The first category consists of aircraft which are empty of passengers but this does not make them any quieter; the second category consists primarily of business jets many of which are noisier than modern short haul commercial passenger aircraft; and the third category includes helicopters which have their own particular noise problems. By predicting reductions in non-ATMs BAA reduces the apparent environmental impacts of its expansion proposals. However, the actual numbers of non-ATMs could be much higher than BAA has allowed for but there would be no recourse, despite their obvious additional contribution to the environmental impact of the airport, because they do not form part of BAA's proposed 264,000 ATM limit.
- 3.2.23 BAA's July 2005 consultation document<sup>14</sup> relating to expanded use of the existing Stansted runway states that 274,000 movements would represent 87% of the theoretical annual capacity of the existing runway. BAA puts this at 314,000 movements, which it calculates on the basis of 48 movements an hour during the day (17.5 hours) and no change in the current 12,000 limit on the number of night flights. By our calculations this leads to a figure of 318,600 but in any event it is clear that there would be scope to accommodate significantly more non-ATMs than the 10,000, which BAA allows for in its 35mppa scenario and, as we have said, the noise impacts of these aircraft types can be extremely significant.
- 3.2.24 Finally, on runway movements capacity, it should also be noted that the two constraints to BAA's theoretical annual capacity are both movable. First, the number of hourly movements that the runway can handle (currently 48 per hour) has progressively increased over the years as a result of better technology and improved operational planning; and second, the number of movements permitted at night (currently 5 per hour, on average) should be seen in the context of the

<sup>13</sup> CAA Airport Statistics [CD/209 and CD/208].

<sup>14</sup> 'Growing Stansted Airport on the Existing Runway', BAA Stansted, July 2005, page 9 [CD/25].



Government's stated commitment to remove night movements limits, as set down in para 3.14 of the ATWP [CD/87]:

*'The Government intends that new legislation should be introduced ... [including] an amendment to section 78 of the Civil Aviation Act 1982 so that controls such as night restrictions could, subject to public consultation, be set on the basis of noise quotas alone, without a separate movements limit'.*

## 4 SSE PROJECTIONS

### 4.1 2014

#### *Passenger throughput*

- 4.1.1 Our modelling has been informed by BAA data provided (in very small print) in the appendices to ES Vol 16 [CD/19] as well as other BAA forecast data provided in CD/19, Tables 2, 3 and 4 (which are reproduced in Annex 1 at the end of this proof of evidence). The information in the CD/19 appendices on the number of ATMs by aircraft type was provided by BAA to show the inputs used for its noise impact projections. We would point out, in passing, that we have found it very difficult to reconcile this information with BAA's traffic forecasts for long and short haul operations. BAA does not seem to allow for sufficient long haul aircraft to deliver even its own long haul passenger forecasts. This does not directly cause a problem for our modelling but raises potential questions about the reliability of the noise and air quality projections. These matters are considered elsewhere in our evidence.
- 4.1.2 Our own modelling suggests a passenger throughput of 39.8mppa in 2014, which is 14% higher than the 35mppa projected by BAA. This should be seen in the context of BAA currently projecting 29mppa for 2010/11, 16% higher than projected in its last application, consent for which was granted by UDC in 2003.

**Table 5 Stansted passenger traffic mix: 2004 actual and SSE projection for 2014**

Traffic Mix	----- 2004 -----			----- 2014 -----		
	Average pax per PATM	Number of PATMs	Total Pax '000	Average pax per PATM	Number of PATMs	Total Pax '000
Long haul	238.9	1,380	337	331.5	17,800	5,900
Short haul (Inter'l)	129.5	137,749	17,832	153.2	203,700	31,200
Domestic	103.2	26,523	2,737	122.7	22,000	2,700
<b>Total</b>	<b>126.2</b>	<b>165,652</b>	<b>20,905</b>	<b>163.4</b>	<b>243,500</b>	<b>39,800</b>
Passengers:	Share of Total		BAA Average (S.E. 2005)	Share of Total		BAA Average (S.E. 2005)
	ATMs	Pax		ATMs	Pax	
% Long haul	0.8%	1.6%	32%	7.3%	14.8%	32%
% Short haul (Inter'l)	83.2%	85.3%	68%	83.7%	78.4%	68%
% Domestic	16.0%	13.1%		9.0%	6.8%	
<b>Total</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>

Source: SSE modelling

- 4.1.3 For Stansted to reach 39.8mppa in 2014 would require 6.7% annual growth in total number of passengers handled and 2.6% annual growth in the average number of passengers per PATM over the next eight years. This is by no means unrealistic given the continued rapid growth in low cost air travel and it appears conservative compared to average annual growth of 16.7% in passengers and 7.4% in the average number of passengers per PATM, respectively, over the past eight years.
- 4.1.4 By comparison, BAA's 35mppa scenario equates to just 5.0% annual growth in the number of passengers and 1.9% annual growth in the average number of passengers per PATM over the eight year period to 2014. These numbers are low, not just in comparison to recent history but also in the context of growth being 'stifled' by a lack of capacity in the South East, according to the Department for Transport ('DfT') and, in similar terms, the Chief Executive of BAA:
- 'Because we expect there to be an increasingly severe shortage of runway capacity at the major South East airports over the remainder of this decade, making full use of the available capacity at Stansted will be essential to avoid stifling growth.'*<sup>15</sup>
- 'Our analysis is that the fundamental problem for passengers is lack of capacity, not the structure of BAA. Putting BAA in the dock for a complex set of problems - with deep legacy causes - will not help solve them.'*<sup>16</sup>
- 4.1.5 In addition BAA states that there will be a significant increase in transatlantic and other long haul traffic from Stansted under the 35mppa scenario and, with larger aircraft, this should increase the average number of passengers per PATM. In 2006 long haul (including transatlantic) accounted for only about 2% of Stansted passengers but BAA projects this will rise to about 15% of passengers under the 35mppa scenario.<sup>17</sup> This would be expected to assist in increasing the average number of passengers per PATM<sup>18</sup>.
- 4.1.6 Finally, on this point, if the 25mppa planning constraint were lifted at Stansted, BAA could recommence an active marketing strategy to attract new airline customers and, in the market for low cost air travel, it is not so much demand that creates supply as the reverse. Once airlines have secured airport slots they actively market to fill the maximum number of available seats.

### **Cargo throughput**

- 4.1.7 We believe that BAA has overstated the projected number of CATMs in its 25mppa scenario for 2014 by assuming that it could fully utilise its present planning consent for 22,500 CATMs. As stated above, we cannot avoid the conclusion that BAA has arrived at this projection in order to maximise the environmental impacts of its 25mppa 'baseline'.
- 4.1.8 The lower projected CATM throughput for the 35mppa scenario compared to the 25mppa scenario (although still 87% higher than today) makes it more plausible although, as explained in para 3.2.14 above, the cargo tonnage figure appears ambitious.

<sup>15</sup> Air Transport White Paper [CD/87, Para 11.26].

<sup>16</sup> Chief Executive of BAA, in response to the OFT decision to refer BAA to the Competition Commission, 31 March 2007.

<sup>17</sup> CD/19, Table 3.

<sup>18</sup> There is an exception to this. The advent of 'all business class' transatlantic services such as those operated by Eos and Maxjet is actually having the opposite effect.

## **Non-ATMs**

- 4.1.9 We believe that BAA has understated the projected number of non-ATMs both in its 25mppa scenario and its 35mppa scenario. We agree that airports which are at, or near to, the limit of their runway capacities with ATMs tend to accommodate fewer non-ATMs. However we do not accept that, if permission was granted for 264,000, ATMs, Stansted would be unable to handle a similar number of non-ATMs to the present number of about 16,000 per annum – i.e. a total of about 280,000 aircraft movements.
- 4.1.10 Gatwick projects 282,000 aircraft movements in 2015 and both airports plan on the basis of 48 movements an hour over a 17.5 hour day. One difference is that 14,450 annual night flights are permitted at Gatwick compared to 12,000 at Stansted but the Stansted figure of 280,000 annual movements being 2,000 less than Gatwick, broadly equates to the difference in the night flights quota.
- 4.1.11 Thus, the assumption for non-ATMs used in the environmental impact projections should be 16,000 per annum and not 10,000 per annum. For the avoidance of doubt this applies to the period beyond 2014 as well as to 2014 and so we shall not repeat this point below.

## **4.2 Beyond 2014**

- 4.2.1 BAA has not provided any forecasts beyond 2014 although may argue that its 37.5mppa sensitivity test is, in effect, a longer term forecast. BAA should be required to provide forecasts for Stansted for 2021 and 2030 using the DfT forecasts<sup>19</sup> as the basis for demand. These two dates are appropriate because 2021 is the planning horizon for the East of England Plan and 2030 is the planning horizon for the ATWP and for the airport master plans that it recommends.
- 4.2.2 Importantly however, the DfT considers that even if all of the additional capacity envisaged in the ATWP were provided in the South East, the demand for air travel would still be constrained over the period to 2030 by a shortage of capacity. In other words, the DfT believes there would be a market for whatever capacity is available at Stansted.
- 4.2.3 Thus the only limiting factor is the number of passengers that can be handled by 243,500 PATMs. This will depend, quite simply, on the average number of passengers per PATM – and the average number of passengers per PATM will depend upon:
- their average size (seating capacity);
  - the load factor (percentage of seats filled).
- 4.2.4 We have modelled Stansted for 2021 and 2030. In each case we assumed that long haul will continue to grow as a proportion of Stansted's traffic mix and that airlines will continue to achieve (modest) improvements in the average load factor.

<sup>19</sup> 'Air Traffic Forecasts for the United Kingdom', DfT, May 2000 [CD/233] and 'Passenger Forecasts, Additional Analysis', DfT, Dec 2003 [CD/232].

**Table 6 Stansted passenger traffic mix: SSE projections for 2021 and 2030**

Traffic Mix	----- 2021 -----			----- 2030 -----		
	Average pax per PATM	Number of PATMs	Total Pax '000	Average pax per PATM	Number of PATMs	Total Pax '000
Long haul	356.0	30,200	10,750	393.6	40,400	15,900
Short haul (Inter'l)	161.4	193,300	31,200	168.6	185,100	31,200
Domestic	132.5	20,000	2,650	144.4	18,000	2,600
<b>Total</b>	<b>183.2</b>	<b>243,500</b>	<b>44,600</b>	<b>204.1</b>	<b>243,500</b>	<b>49,700</b>
Passengers:	Share of Total		BAA Average	Share of Total		BAA Average
	ATMs	Pax	(S.E. 2005)	ATMs	Pax	(S.E. 2005)
% Long haul	12.4%	24.1%	32%	16.6%	32.0%	32%
% Short haul (Inter'l)	79.4%	70.0%	68%	76.0%	62.8%	68%
% Domestic	8.2%	5.9%		7.4%	5.2%	
<b>Total</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>

Source: SSE modelling

- 4.2.5 For 2021, we arrived at a projection of 44.6mppa by modelling two adjustments to the assumptions made by BAA in its sensitivity test:
- Transatlantic and other long haul traffic increases as a percentage of Stansted PATMs from 7.3% in 2014 to 12.4% in 2021;<sup>20</sup>
  - The load factor (percentage of seats filled) increases to 81%.
- 4.2.6 For 2030, we arrived at a projection of 49.7mppa by modelling two further adjustments to reflect long-term market trends:
- Transatlantic and other long haul traffic increases as a percentage of Stansted PATMs from 12.4% in 2021 to 16.6% in 2030;
  - The load factor increases to 82%.
- 4.2.7 We assumed a load factor of 82% in 2030 compared to 81% in 2021. We believe this is a conservative uplift over the period from 2021 to 2030, given the upward pressure on load factors as explained earlier. Our modelling shows that the number of passengers per PATM increases to 204 in 2030 which, although high by current UK standards, represents only a 1.7% annualised increase over the 25 year period from 2005 to 2030.

<sup>20</sup> CD/19, Table 3 states that long haul would account for 15.1% of Stansted PATMs under the 35mppa scenario. We cannot reconcile this with the aircraft types and numbers of movements provided in the noise data tables appended to ES Vol 16.

### 4.3 Summary

The comparison between BAA's projections and SSE's projections is as follows:

**Table 7 BAA projections**

	Memo only	If application approved		
	Actual 2006	2014 Base Case	2014 Sensitivity	BAA has not provided projections beyond 2014
PATMs	179,031	242,750	243,500	
Load factor	78%	79%	79%	
Passengers per PATM	132.3	144	154	
<b>MPPA</b>	<b>23.7</b>	<b>35.0</b>	<b>37.5</b>	

**Table 8 SSE projections**

	Memo only	If application approved		
	Actual 2006	2014 Base Case	2021	2030
PATMs	179,031	243,500	243,500	243,500
Load factor	78%	80%	81%	82%
Passengers per PATM	132.3	163	183	204
<b>MPPA</b>	<b>23.7</b>	<b>39.8</b>	<b>44.6</b>	<b>49.7</b>

### 4.4 Additional comments on our modelling

- 4.4.1 We have not taken specific account of 'all business class' services such as those operated by Eos and Maxjet. These are a relatively recent development at Stansted and at present do not have a significant impact upon the average number of passengers per PATM. We accept that if there is substantial growth in this sector, there will be less potential to increase average passengers per PATM. There are however a number of reasons for believing that, at most, this will continue to be only a small niche sector of the market.
- 4.4.2 Nor have we taken specific account of the prospect of Ryanair commencing transatlantic services. This is still speculative but if it were to materialise it would inevitably increase the average number of passengers per PATM at Stansted. Indicatively, Ryanair could be expected to fill 250 seats in a 300-seat aircraft.
- 4.4.3 The average number of passengers per PATM has increased by 77% over the past eight years. Our modelling assumes a 54% increase over the next 24 years. Over that period, although less so in the early years, new, larger aircraft types coming into service will progressively replace smaller aircraft on both short haul and long haul routes.
- 4.4.4 Heathrow is presently achieving 144 passengers per PATM and BAA expects this to increase to 180 by 2014. If the trend continues, Heathrow will be achieving about 204 passengers per PATM by 2021, the payload which our modelling produces for Stansted in 2030.
- 4.4.5 Tokyo's Haneda Airport achieved 229 passengers per PATM last year, handling 65.2m passengers with 285,000 ATMs and, importantly, Haneda caters only for domestic flights and a few short haul international flights. (Tokyo's Narita Airport caters for long haul international flights.) If Stansted were to achieve, by 2030, the same number of passengers per PATM that Haneda achieves today, this would

amount to 55.8mppa on 243,500 PATMs. Our projection of 49.7mppa may therefore be conservative.

- 4.4.6 The most significant change in our forward projections, compared to today, is that there would be a steady increase in transatlantic and other long haul flights. By 2030, this results in long haul (including transatlantic) accounting for 16.6% of Stansted PATMs and 32.0% of Stansted passengers. According to BAA, this is precisely the 2005 average for its south east airports. We do not consider it unreasonable to project that Stansted will reach the 2005 south east average 23 years hence, especially since long haul (including transatlantic) is growing faster than the market as a whole.
- 4.4.7 Our projections – either for 2021 or 2030 – do not assume any radical innovations in air travel from Stansted in the event of the planning application being approved. However, the planning horizon for the ATWP is 2030. By then, Airbus A380s, which can seat 855 passengers in single class configuration may be operating (in Ryanair colours) on short haul and domestic routes. If that sort of innovation were to take place, others may look back in 2030 – in much the same way as we now look back on the 1981-83 Planning Inquiry – and wonder why it could not be foreseen that Stansted's existing runway was capable of handling 100mppa.

## 5 CONCLUSIONS

- 5.1 BAA has understated the environmental impacts of its proposed development by presenting scenarios for 25mppa and 35mppa which appear to have been designed to be as close together as possible.
- 5.2 The 25mppa scenario represents a far higher scale of impacts than the scale of impacts today, at (almost) 24mppa, and the 35mppa scenario does not reflect the planning approval sought by BAA which is for unlimited passenger numbers.
- 5.3 We estimate that, if the application were approved, Stansted's passenger throughput would increase to about 40mppa in 2014, about 45mppa in 2021 and about 50mppa in 2030.
- 5.4 The higher passenger numbers have obvious implications in such areas as surface access, water and energy consumption, economic effects, employment and housing. They also have less obvious implications in such areas as air noise, ground noise, air quality and the climate change impacts because of the larger aircraft which would be used to accommodate more long haul traffic, including more four-engined aircraft.
- 5.5 Because BAA has significantly understated the likely scale of its proposed development and the resultant environmental impacts, the ES is incomplete and unreliable. The HIA and SA are also unreliable because they have been based upon the results of the ES.
- 5.6 It is essential to have a full and proper assessment of the environmental (and health) impacts of the proposed development because only then can a judgement be made as to whether these are acceptable.
- 5.7 However, it is clear from the evidence submitted by SSE and others that, even on the basis of 35mppa, there would be very significant adverse impacts if the proposed development were approved and overall these impacts would be wholly unacceptable.

**ANNEX 1: BAA data tables from CD/19**

<b>Table 2: Passenger Mix %</b>			<b>Stansted</b>		<b>BAA SE</b>
			<b>25 mppa</b>	<b>35 mppa</b>	<b>airports</b>
			<b>case</b>	<b>case</b>	<b>2005</b>
Domestic & Short-Haul Scheduled (Low			88	83	22
Domestic & Short-Haul Scheduled (Other			6	4	39
Short-Haul Charter			2	2	7
Long-Haul			4	10	32
<b>TOTAL</b>			<b>100</b>	<b>100</b>	<b>100</b>

<b>Table 3: Stansted PATMs (000s)</b>			<b>2004</b>	<b>25 mppa</b>	<b>35 mppa</b>
			<b>Act</b>	<b>case</b>	<b>case</b>
Domestic & Short-Haul Scheduled (Low			148.9	153.6	203.1
Domestic & Short-Haul Scheduled (Other			9.9	23.6	19.8
Short-Haul Charter	6.6	2.8	4.7	6.6	2.8
Long-Haul			0.3	4.5	15.1
<b>TOTAL</b>			<b>165.7</b>	<b>184.5</b>	<b>242.7</b>

<b>Table 4: BAA South East Airports, 2004</b>			<b>Average</b>
			<b>Pax Load</b>
Domestic & Short-Haul Scheduled (Low-Cost)			126
Domestic & Short-Haul Scheduled (Other)			104
Short-Haul Charter			192
Long-Haul Scheduled			223
Long-Haul Charter			276

**ANNEX 2: BAA Stansted Passenger Traffic Data 2004-06**

<b>BAA Passenger Stats 2004-2006</b>					
		<i>Long</i>	<i>Short</i>		
<b>Number of Passengers</b>		<i>haul</i>	<i>haul (Int)</i>	<i>Domestic</i>	<i>Total</i>
		'000	'000	'000	'000
2004		337	17,832	2,737	20,905
2005		344	18,999	2,671	22,014
2006 est		427	20,565	2,690	23,682
<b>Passenger Mix %</b>					
2004		1.6%	85.3%	13.1%	100.0%
2005		1.6%	86.3%	12.1%	100.0%
2006 est		1.8%	86.8%	11.4%	100.0%

<b>BAA PATM Stats 2004-06</b>					
	<b>PATMs</b>	<b>Domestic</b>	<b>Internat</b>	<b>Pax '000</b>	<b>Loading</b>
2004	165,652	26,523	139,129	21,008	126.8
2005	166,767	24,829	141,938	22,113	132.6
2006	178,923	25,128	153,795	23,744	132.7