

North West Essex & East Herts  
Preservation Association

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Stop Stansted Expansion

Joint Response to

Department for Transport Night Flying Restrictions at  
Heathrow, Gatwick and Stansted Airports  
Stage 2 Consultation



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## Introduction

This response to Stage 2 of the Department for Transport's (DfT) consultation on *Night Flying Restrictions at Heathrow Gatwick and Stansted Airports* is made jointly by the North West Essex and East Herts Preservation Association (NWEEHPA) and Stop Stansted Expansion (SSE). NWEEHPA was founded in 1964, with SSE being established in 2002 as a working group of NWEEHPA. Total individual membership is in the region of 6000 and NWEEHPA/SSE has the financial support of more than 100 organisations (councils, environmental organisations, residents' groups, and special interest groups).

This document contains our replies to the questions listed on page 47 of the Consultation Document<sup>1</sup>. These are shown in summary as boxed text, followed in most cases by a more detailed discussion. Our sections follow the numbering of the DfT's questions.

### Question 1: Do you have any comments on the proposals for environmental and noise abatement objectives set out in section 4?

We find the objectives unsatisfactory on a number of counts:

- There is no indication of any start being made on moving towards the World Health Organisation (WHO) recommended levels, in spite of the WHO recommendation for governments to introduce short and medium term action plans, and in spite of the Government's obligations under the *WHO Charter on Transport, Environment and Health*.
- The WHO recommendation that night noise monitoring should also use peak noise indicators is ignored.
- Several claimed reductions in proposed levels are not reductions at all, but depend on comparisons to theoretical limits that have rarely if ever been closely approached.
- Inadequate attention is given to the avoidance of sleep disturbance.
- The attempts to balance environmental and economic interests is unfairly tilted in favour of the latter.
- The environmental objectives for Stansted will not necessarily bring about a reduction in night noise at all, but are framed so as to allow an increase.
- The 48 dBA Leq contour chosen by the DfT is 3 decibels (dB) higher than the WHO recommended level – representing a doubling of noise energy.
- There are no Leq maps showing contours on the basis of the modal split.
- The proposed Leq 6.5 hour contour represents a faster rate of growth than even the airport operator is predicting.

## 1.1 WHO Guidelines

### 1.1.1 Government commitment

Although there is a somewhat vague reference in para 4.7 to 'taking into account the *WHO Guidelines for Community Noise*', there is no mention of how the DfT intends to fulfil the undertaking given in para 3.12 of the *Night Flying Restrictions Stage 1 Consultation*:

The recommendation was that the Guidelines for Community Noise should be adopted as long term targets for improving human health. ... The UK Government is committed to take account of this. In respect of aircraft noise at night, the 30 year time horizon of the White Paper, provides a suitable time parameter for 'longer term'.

Given the considerable disturbance to the community caused by night flying, we do not accept para 3.12's proposal of a 30 years timescale as 'a suitable time parameter for longer term'. Many of our members believe that 15 to 20 years is the very longest acceptable delay and that there is no explanation for selecting 30 years other than the Government's unwillingness to initiate any action.

Just as importantly, we contend that the DfT is committed to rather more than merely 'taking into account' the WHO's recommendations: on June 16 1999, the Parliamentary Under Secretary of State for the DETR (the DfT's predecessor department) signed the *WHO Charter on Transport, Environment and Health*.

Clause IV A 3 of this states:

[We will] adopt targets as listed in Annex 4, based on scientific knowledge and work and the guidelines of WHO and incorporate them into the relevant policies to reduce inter alia:  
...human exposure to noise.

<sup>1</sup> Unless otherwise stated or obvious from the context, 'Consultation Document' is used to refer to the current (Stage 2) consultation.

#### Annex 4 (Noise (c)) states:

To improve human health and wellbeing by reducing exposure to noise from transport, by:

(a) introducing targets that take into account recommendations contained in WHO guidelines on noise (1980, 1993, 1999) ...

(c) keeping night-time sound levels in residential areas within WHO recommended night-time values **and, where these values are currently exceeded, striving to reduce them to recommended sound levels;** [our emphasis].

Furthermore, in the context of night flying restrictions, neither Stage 1 nor Stage 2 of the consultation takes any account of the WHO recommendation that 'governments should consider implementing action plans with **short-term, medium-term** and long-term objectives for reducing noise levels'<sup>2</sup> [our emphasis]. Given the magnitude of the task, we submit that short and medium term objectives should imply pro rata steps towards the adoption of the long-term objective for maximum noise levels that the DfT detailed in para 3.10 of the Stage 1 Consultation Document, and committed to in para 3.12:

Inside bedrooms – 30 dB Leq (8 hour) and 45 LAMax,  
Outside bedrooms (window open) – 45 dB Leq (8 hour) and 60 LAMax.

Achievement of the WHO Guidelines will require detailed long term planning and firm, unambiguous commitments: it is in our view inappropriate to frame these in such loose wording as objectives being 'set with a view to the medium to longer term: to 2030 and somewhat beyond' (para 4.8 of the Consultation Document).

#### 1.1.2 The magnitude of the problem

As a consequence of the lack of planning noted above, the extent of the aircraft noise reductions required to satisfy the WHO guidelines has not been discussed in either of the consultation documents. We have therefore felt it necessary to make our own estimates of what might be required at Stansted. The results show just how far the current situation is from conformance with the WHO guidelines of 45 dBA Leq (8 hour) and 60 LAMax.

#### The Leq guideline

Figure 6 of the Stage 1 consultation shows the 2003 8 hour (night) average mode contours for Stansted in the 50 –70 dBA range. As expected, the contours are long and narrow and aligned with the runway. Providing no new housing were permitted, it would be fair to say that the WHO 45 dBA Leq guideline would be satisfied, or nearly so, if the 60 dBA contour were to be reduced to 45 dBA. The length of this contour is approximately 10 km extending about 5 km from the runway centre point in both directions along the extended centreline. With the contour reduced to 45 dBA it would possibly still encompass a small number of people exposed to noise higher than the guideline level.<sup>3</sup>

In aircraft noise terms the implication of this is clear; even with 2003 traffic levels, reducing the 60 dBA contour to 45 dBA would require an average 15 dBA reduction in the noise-power-distance functions of all aircraft.

#### The LAMax guideline

This is the more stringent of the two guidelines as it applies to all aircraft individually and not just the average level as is the case with the Leq guideline. What is required is that the land area over which the LAMax guideline is satisfied should be no larger than that for the Leq guideline, i.e., the area enclosed by the 2003 60 dBA contour.

The impact of conformance to the LAMax guideline can be estimated as follows: section 3.4 of the WHO Guidelines (quoted in Annex D of the Stage 1 consultation) states that the sound exposure level (SEL) of flyover events is 10-15 dBA higher than the LAMax level. Satisfaction of the 60 dB (outdoor) LAMax guideline would therefore require that no, or a very minimal number, of households were exposed to SEL levels of 75 dBA (or possibly even less).

<sup>2</sup> Berglund et al: *Guidelines for Community Noise*, WHO, 1999, para 6.1(b).

<sup>3</sup> When it comes to the actual implementation of the measures, we do not accept that **anyone** should be within the 45 dBA Leq night contour: for the sake of hypothesis, our argument above is based on the position of the 60 dBA Leq contour for 2003 as the nearest approximation readily available.

SEL levels are, by definition, associated with individual aircraft. We have selected three aircraft, representative of the current noise climate, to illustrate the scope of the task required to meet the 60 LAMax guideline:

- Canadair Regional Jet (CRJ), a very quiet 50+ seat airliner
- Boeing 737-800, a quiet medium range aircraft, extensively used at Stansted
- McDonnell Douglas MD11, a large, long range aircraft regularly used at Stansted.

Arrival and departure SEL contours have been computed for each of the three aircraft. The land areas associated with the 75 dBA contour along with the QC ratings are tabulated below.<sup>4</sup>

SEL Land Area & QC Ratings	Arrivals		Departures	
	QC Rating	75 dBA SEL Land Area (sq. km.)	QC Rating	75 dBA SEL Land Area (sq. km.)
CRJ 200 <sup>5</sup>	QC/0.125	8.56	QC/0.125	11.97
Boeing 737-800	QC/0.5	27.97	QC/0.5	75.04
MD11	QC/2	62.49	QC/2	91.27

The smallest 75 dBA SEL contour shown in the table is that for CRJ arrivals (8.56 sq km). Due to its long thin shape, the contour extends out to just under 8 km from touchdown. A noise reduction of about 9 dBA would be required to limit the contour to the 5 km length<sup>6</sup> of the 45 dBA Leq contour (ie to satisfy both the Leq and LAMax guidelines to approximately the same degree).

At the other extreme, it is clear that the MD11 is exceeding the LAMax guideline over a very large area of land. In particular, its 75 dBA SEL footprint extends to areas more than 30 km from the runway. Clearly, far greater noise reductions than that for the CRJ would be required if the two noisier aircraft were to satisfy the LAMax guideline to the same degree.

**Noise reduction prospects**

The analysis points to two conclusions. Firstly, very large across-the-board noise reductions would be required to satisfy the Leq guideline. These reductions would be of the order of 15 dBA with 2003 traffic levels; even further reductions would be required if the traffic were allowed to increase above this level.

Secondly, the analysis suggests that a similar reduction would also allow the LAMax guideline to be satisfied to the same degree for quiet (by current standards) small, and possibly some medium sized aircraft, as well. For very large, long range aircraft the reductions needed to satisfy this guideline would be of the order of 25 dBA, and based only on evolutionary improvements to noise reduction, it is unlikely that reductions of this magnitude would be possible within the required timespan.

Predicting aircraft noise levels 30 years hence is well beyond our competence. Experience suggests that new aircraft models are typically 3-4 dBA quieter than their predecessors. Given the length of aircraft design cycles and the unknown outcome of current quiet aircraft research, it will probably be at least 2020-25 before the feasibility of new generation aircraft achieving the WHO guidelines by 2030+ will be known.

It seems fairly clear that evolutionary changes of the type seen over the last 25 years or so (since the introduction of the high-bypass ratio engine) will not in themselves be sufficient to solve the problem. We suspect that the current consultation's lack of any short or medium term plans (as recommended by the WHO) for attaining WHO conformance may indicate that the DfT is pinning its hopes on later 'step-change' technological solutions being found. However this is by no means certain to occur.

<sup>4</sup> The contours have been computed with the INM program using DfT-supplied 2003 data (for aircraft types CRJ, B738 and MD11 respectively) to produce two separate SEL plots on Runway 23: (1) a single Noise Preferential Route (CLNR) for departures; (2) R23 arrivals.

<sup>5</sup> Even although the QC bands do not (yet) go as far down as QC/0.125, we have, for greater clarity of perspective, shown the CRJ as appearing in this band rather than listing it as 'Exempt', based on the EPNdB figures in the FAA certification tables (TO: 79.8 SL:82.2 AP:92.1).

<sup>6</sup> ie half the **total** length of 10 km in the Leq contour, on the basis that this SEL footprint relates to arrivals only.

Two actions are therefore required from the Government:

- an unequivocal commitment to take whatever steps are required to meet the WHO guidelines on worst case assumptions of the level of advances in aircraft noise technology
- a detailed specification and timetable for compliance, with interim actions and milestones to assess progress.

It is simply not good enough to leave the WHO issue open for the next 20 years or so: a comprehensive strategy needs to be spelled out now for the clear understanding of, and acceptance by, all concerned (including future governments).

## 1.2 Benchmark for comparing proposed limits (paras 7.40 – 7.41; 7.48)

The Consultation Document in several places obscures the real proposals for Stansted by using the **theoretical** maximum allowances ('permitted levels'), rather than current **actual** levels, as the benchmark for comparing the new proposed limits. For movements, these permitted levels are the limits that have been in force over the last six years and which have never been more than 77% utilised (5,390 movements in summer 2004). In fact the DfT's Stansted proposals represent increases of 30% and 60% approximately over the previous highest total of summer and winter movements respectively.<sup>7</sup>

The decision to keep this extremely generous headroom in the existing movements quotas for the current 6.5 hour Night Quota Period<sup>8</sup> (NQP) is all the more unacceptable when compared to the proposals for Stansted's mooted 8 hour period in para 7.48. These show that, in the 8 hour case, the DfT is prepared to countenance an implied brake on growth in number of movements, as the proposed Stansted movements quota for the 8 hour period is set at virtually exactly the current actual (8 hour) usage. If this principle is considered a fair arrangement for the 8 hour period, why not for the 6.5 hour period?

We are adamant that it is perfectly appropriate to measure the impact of the DfT proposals by comparing them to the current actual levels. The latter are what matter to those living near the airports who will measure any deterioration in their night noise climate against this benchmark. In considering the DfT's proposals, we take the view that we have no option other than to treat the proposed maximum quotas as a realistic guide to perfectly possible future scenarios, and therefore a valid subject for comparison to current actuals. It is no argument to say that the proposals are maximum figures and therefore they will not necessarily be attained, as this would make a sham of the whole process of using maximum limits in order to reduce noise.

In short, if there is no real possibility of the quota limits being reached, then they have been set too high, with the demands of the aviation industry, rather than the well-being of local communities, in mind.

## 1.3 Proposed environmental objectives (paras 4.4 – 4.10)

### 1.3.1 Overall

The mixed messages inherent in the UK's implementation of Directive 2002/30/EC have, as feared, resulted in the chosen definition of 'environmental objective' proving to be unworkable. The principal objective – 'the promotion of the development of airport capacity in harmony with the environment' – attempts to yoke together two inherently incompatible objectives. Regrettably, as is becoming all too common with recent aviation policy, when the objectives conflict, it is the environment that ends up being the loser.

We suspect that this inherent tension has directly resulted in the lack of forthrightness in the environmental objectives in para 4.4 – a lack to which we strongly object. For instance we submit that any discussion of night flying restrictions **must** be predicated on the assumption of preventing sleep disturbance rather than 'reducing the number of people significantly affected by aircraft noise'. Again, with reference to para 4.7, it is totally inadequate to 'encourage' rather than 'require' the use of quieter aircraft.

### 1.3.2 Specific environmental objectives for Stansted (para 4.7)

It is proposed to contain Heathrow at the recent (maximum) permitted levels, and Gatwick at recent actual levels. The proposal for Stansted is to limit usage 'close to existing levels while permitting expansion of the airport's overall traffic in line with White Paper objectives'<sup>9</sup>. It is immediately clear therefore that the promise in para 3.12 of the 2003 White Paper, *The Future of Air Transport*, to bear down on night noise did not mean that this noise would be reduced – only that it might (possibly) be made to grow less slowly than if there were

<sup>7</sup> Summer 2004 actual movements: 5,390 (proposed limit: 7,000); Winter 2004-5 actuals: 3112 (proposed limit: 5,000).

<sup>8</sup> Currently 23:30 to 06:00.

<sup>9</sup> We are on record as objecting to this proposed expansion, and continue to fight it in other arenas. For the purpose of this consultation, we have hypothetically put the question of overall expansion on one side.

no restrictions at all. We fundamentally object to this interpretation of 'bearing down on night noise' and the resulting lack of any commitment in the environmental objectives to actually **reducing** the night noise nuisance at Stansted.

Turning to the specific objectives for Stansted itself, we note that although the detailed proposals for Heathrow and Gatwick in Section 7 of the Stage 2 Consultation Document do indeed broadly coincide with their respective stated objectives, this is far from the case with Stansted: the following table shows that the proposed figures could not in any way be described as 'close to existing levels'. (The detailed figures in the DfT proposals are discussed in more detail in reply to Q8.)

Stansted noise quota proposals	Actual usage <sup>10</sup> 2002-3 (winter) 2003 (summer)	Proposed quota (2005-6)	Comparison to 2002-3 actuals	Proposed quota (2011-12)	Comparison to 2002-3 actuals
Winter	2462	3550	<b>+44.2%</b>	3310	<b>+34.4%</b>
Summer	4042.5	4950	<b>+22.4%</b>	4650	<b>+15.0%</b>

In addition to this internal contradiction within the Consultation Document itself, the proposals also conflict with earlier DfT documents. The 2003 Consultation Document *The Future Development of Air Transport in the United Kingdom* specifically stated in para 16.45 that 'we have assumed no increase in night flights at any location other than at the possible new airports at Cliffe and Alconbury.'<sup>11</sup> This was not contradicted anywhere in the 2003 White Paper.

Finally we note that for both Heathrow and Gatwick, quieter aircraft are to be encouraged **by day** and by night. What is the reason for including 'by day' in a document devoted exclusively to night flying restrictions, and why is this reference to 'by day' conspicuous by its absence from the paragraphs dealing with Stansted?

## 1.4 Proposed noise abatement objectives (paras 4.10-4.25)

### 1.4.1 Balance

We are concerned that no evidence is produced to support the contention in para 4.11 that elimination of all disturbance would result in an unfair balance when compared to the economic costs. Indeed, there is scant evidence supplied to support the balance which the DfT **has** decided to strike in its proposed restrictions.

In Annex E, para 80 it is suggested that extending the Night Quota Period (NQP) to 8 hours would increase airlines' unit costs at Stansted because aircraft would be able to achieve only three rotations a day instead of four – ie a 25% reduction in aircraft utilisation. This, of course is an unrealistic worst case scenario, implying that no aircraft movements whatsoever would be permitted during the NQP and that no Stansted-based aircraft could achieve four rotations in a 16 hour operating day.

This same paragraph also states that 'aircraft-related costs might be in the order of 25% of total operating costs'. If that were to be the case, then even under the worst case scenario described above, the cost penalty would be 25% of 25%, ie, about 6% and, if reflected in fares, would mean that the cost of an average Ryanair ticket would increase by about £2. If this is indeed the price of a total night time ban for 'No Frills Carriers' (NFCs), it is surely legitimate to wonder why DfT attaches so little weight to the environmental penalty for local residents and so much weight to the cost penalty for airline passengers: this is surely an example of where the polluter could and should pay.

The above numbers are of course only approximations. We believe it is a major shortcoming in this consultation that the DfT has failed to provide any proper data on the costs and benefits of night flights and appears to have decided to strike the so-called 'balance' at the levels required to satisfy the industry's requirements in full and without any attempt to quantify and then compare the pros and cons. This topic is explored further in Annex 2.

<sup>10</sup> We have used 2002-3 as the baseline for these comparisons, as this is the benchmark year used for Heathrow and Gatwick in para 4.7. Even using the most recent figure (for winter 2004-5) as a benchmark, the increase proposed for 2011-12 is 28.8%.

<sup>11</sup> We interpret this to have the common sense meaning 'no increase in night flights from current levels' as opposed to the interpretation 'no increase on the current permitted maximums' to be found in many parts of this Consultation Document .

### 1.4.2 Proposed common objectives (para 4.10 – 4.16)

We submit that the first objective in para 4.12 is inadequate: sleep disturbance should be eliminated, not minimized; and it is irrelevant whether one's sleep is disturbed by one of 'the noisiest types of aircraft' or not. The fact of the disturbance is what matters.

Nor can we accept the implication that sleep disturbance, and therefore the need for mitigation of noise effects, only occurs within the areas qualifying for the proposed noise insulation schemes (ie areas within a 90dBA SEL footprint). We know residents over a very much larger area than that of any noise contour shown for Stansted complain about aircraft noise disturbing their sleep; indeed we maintain that the framing of policies for night noise restrictions should pay far more heed to the complaints statistics available from the main airports.

### 1.4.3 Specific noise abatement objectives for Stansted (para 4.17)

The proposed specific noise abatement objective for Stansted is a 48 dBA Leq contour of a maximum of 38 sq km for the year 2011-12. We have a number of objections to this:

#### Metrics used for limit setting

We do not accept the use of dBA Leq in isolation as a suitable metric for assessing potential or actual sleep disturbance. Being an 'averaged' metric, it is unsuitable for indicating the number of noise events. Yet it is precisely the **number** of potential awakenings that is at issue when assessing potential sleep disturbance: the sleeper is awoken by individual noise events, not by a particular level of 6.5 hour 'average noise exposure'. This is recognised in the WHO's *Guidelines for Community Noise*, where para 4.2.3 states that

If the noise is not continuous, LAMax or SEL are used to indicate the probability of noise induced awakenings. Effects have been observed at individual LAMax exposures of 45 dB or less. Consequently, it is important to limit the number of noise events with a LAMax exceeding 45 dB. Therefore, the guidelines should be based on a combination of values of 30 dB LAeq,8h and 45 dB LAMax.

The latter are indoor measurements, and according to the WHO are equivalent respectively to 45 dB LAeq,8h and 60 dB LAeq,8h outdoors.

It is clear that even the DfT accepts that it is peak noise that is at issue: para 8.7 states that 'research has suggested that the incidence of sleep disturbance is especially associated with the loudest noise events'.

Lastly, we note that although there is a passing reference in para 4.20 to the implications of the modal split for Leq noise contour maps, there are no modal split maps in Annex C. If Leq based contour maps are to be included in future consultations (whether day or night related), we would urge that they be based on modal split maps so that noise-sensitive people can better judge where noise will occur for significant periods of time.

#### Benchmark for 2011-12 comparisons

We object to the sleight of hand used in describing the effects of the proposed objective: para 4.17 attempts to lull the casual reader by describing the objective (ie limiting the 48 dBA Leq noise contour) with the phrase 'keep within the present night quota period contour implied by the 2002-3 noise quota'. However there is no attempt to point out that the present night quotas are underused, and that therefore any feelings of reassurance engendered by the promise to keep within the 'present contour' would be totally misplaced: far from keeping within any actually occurring real contour, the result would be a **25% increase** when compared to the 2002-3 actual contour.<sup>12</sup> (Para 7.41 adds a further layer of unreality: it describes keeping the NQP 48 dBA Leq contour 'close to existing permitted levels' – that is, allowing possibly more than a 25% increase over existing **actual** levels – as a proposal 'to bear down on night noise'.)

On the same point, we note that for Heathrow and Gatwick, the text in para 4.17 clearly states the 2002/3 (actual) baseline figure for land area. For Stansted on the other hand, the figure is not included in para 4.17 but is buried in para 113 of Annex E. It is difficult to resist the conclusion that this is deliberate obfuscation, given that the result is that the reader can see at a glance the changes in the 48 dBA Leq land area for Heathrow (+2%) and Gatwick (-3%), but not for Stansted (+25%).

<sup>12</sup> 2002-3 contour: 30.4 sq km (source p54 of Stage 1 Consultation Document); proposed contour in para 4.17: 38 sq km.

### Size of proposed increase in 6.5 hour Leq land area

In fact it is abundantly clear from other evidence that the proposed 25% increase in the 48 dBA Leq contour land area is far too large, being totally out of proportion to even BAA's own predictions of growth. BAA's July 2005 publication, *Growing Stansted Airport on the Existing Runway*, predicts that the daytime (16 hour) 57 dBA Leq contour land area will grow from 33.5 square kilometres in 2003 to 35.9 square kilometres in 2015. So even although this represents a growth prediction for a period some 3-4 years longer than the timescale of the current night flight proposals, it is an increase of 7.2% compared to the DfT's proposed 25% night contour increase.<sup>13</sup>

### Noise abatement objectives for possible 8 hour Night Quota Period (NQP) (paras 4.23-4)

Once again the comparative figures for Heathrow (reduction of 0.3%, when comparing proposed 2012 to actual 2003) and Gatwick (reduction of about 4%) are clearly stated, but for Stansted we are told the figure will be 'somewhat above the actual area in 2003'. And again reference to an Annex (this time not even in the same document<sup>14</sup>) has to be made to discover the real meaning: 'somewhat above' actually means an increase of 25%. Again, on the basis of the reasoning in the preceding paragraph, this is a disproportionately excessive provision.

### Leq level chosen for objective

We estimate that the 2011-12 48 dBA Leq contour area would contain more than 4,100 people,<sup>15</sup> which is 700 people (approximately 20%) more than are currently affected.<sup>16</sup> Not only will these 4,100+ residents be suffering noise disturbance at 3 dB more (ie twice the noise energy) than the 45 dBA Leq level recommended by the WHO,<sup>17</sup> but there will be in addition a large number of people outside the 38 sq km who will suffer noise above the WHO recommended 45 dBA Leq level.

### 'Rural proofing'

With regard to whether an allowance in recommended Leq levels should be made for otherwise quieter areas, we emphatically reject the conclusions in the 'Rural Proofing' section of the Consultation Document (paras 124 to 127 of Annex E). Indeed we are frustrated at the continued dismissal by the DfT of an argument that seems to be so self-evident as to barely need pointing out: para 2.3.4 of the WHO Guidelines – on which the DfT conclusions are based – deals with variable responses (as between aircraft noise and noise from other sources) to the **degree** of exceedance of the ambient level. The far more relevant issue to the present discussion is that when the ambient levels are low there will be more **instances** of exceedance: in other words more instances of noise pollution.

Para 125 of Annex E sweepingly states that 'broadly, social attitude research does not support the proposition that aversion to aircraft noise is greater in rural than urban areas ...' but no evidence is produced for this claim, which is sharply at odds with the position of many international authorities. For instance:

- Para 4.2.3 of the WHO Guidelines, referring to its recommended night levels, states that 'to protect sensitive persons, a still lower guideline value would be preferred when the background level is low.'
- The Organization for Economic Co-operation and Development (OECD) has set recommendations for noise levels in rural areas at 5 decibels lower than for urban areas<sup>18</sup>.
- The International Standards Organisation (ISO) states<sup>19</sup>:  
Research has shown that there is a greater expectation for and value placed on 'peace and quiet' in quiet rural settings. In quiet rural areas, this greater expectation for 'peace and quiet' may be equivalent to up to 10 dB.
- The American Federal Aviation Authority's 1985 publication *Aviation Noise Effects*<sup>20</sup> states:  
Instances of annoyance, disturbances and complaint associated with a particular noise exposure will be greatest in rural areas, followed by suburban and urban residential areas, and then commercial and

<sup>13</sup> We accept that a 48 dBA Leq contour will grow at a proportionately higher rate than a 57 dBA Leq one for any particular increase in aircraft noise levels, but this factor is insufficient to explain this discrepancy.

<sup>14</sup> Annex C of the **Stage 1** Consultation Document, P53. Even on tracking down the table on p 53, the researcher's work is not complete: the figures in the table have to be summed to arrive at the 2003 total of 36 square kilometres.

<sup>15</sup> Based on the table on p62 in the Stage 1 Consultation Document, where a comparable contour enclosing a very slightly smaller area (37.7 sq km) is stated to include a population of 4,100.

<sup>16</sup> See table on p54 of the Stage 1 Consultation Document which shows that in 2003 approximately 3,400 people were within the 48 dBA Leq contour, which covered just over 30 sq km.

<sup>17</sup> Although leq contours are based on a complex series of calculations, a simple illustration of the above point is that if the residents in say a 45 dBA Leq contour were to suffer a doubling of overflights (by the same mix of aircraft as before), the noise level within their contour would rise to 48 dBA Leq.

<sup>18</sup> OECD, *Pollution Prevention and Control Environmental Criteria for Sustainable Transport* (1996)

<sup>19</sup> ISO, *Acoustics—Description, measurement and assessment of environmental sound*, Geneva, December 2000. Rural areas are defined as those with less than 500 people per km<sup>2</sup>.

<sup>20</sup> FAA, *Aviation Noise Effects*, US Department of Transportation, Federal Aviation Administration, 1985

industrial areas in decreasing order...Consequently, a given noise exposure may produce greater negative reaction in a rural area.

Finally on this topic we object to the implication in para 125 that the treatment of rural and urban areas in this respect is an either/or situation. The attitude of any reasonable person would be, surely, that **both** densely urban and highly rural areas deserve special treatment: the one because of the vast numbers of people affected, and the other because any one level of aircraft noise is more noticeable than in an urban area.

### Omission of LAMax controls

As we pointed out earlier in this sub-section the WHO guideline is for a maximum level of 60 dBA (outdoors) for any single event. The absolute importance of this supplementary criterion is illustrated by a sample calculation: assuming full use of the 12,000 annual movements proposed in para 7.41, we calculate that those residents inside the 48 dBA Leq area would, on average, suffer a noise event above the WHO maximum recommendation of 60 dB LAMax, every 12 minutes throughout the night.<sup>21</sup> Although of course this should not be taken as a literal portrayal of the likely situation, because of the many variables involved in the calculations, it does give an indication of the magnitude of the proposals. We are totally at a loss to see how these can be described as 'bearing down on night noise'.

## 1.5 Environmental and noise abatement objectives: conclusions

In the Air Transport White Paper, the Government promised a 'balanced approach' whereby it would 'bear down on night noise' and apply 'stringent environmental conditions' in return for supporting a doubling in the volume of air travel over the next 20 years. We are simply not seeing any evidence of a 'balanced approach' in the DfT's proposals and we believe that the DfT is failing in its duty to ensure that the commitments contained in the White Paper are honoured. Once again local communities around airports are to receive no benefit from any improvements in engine technology and fleet improvements, as these will be utilised to 'allow for growth in the average size of aircraft flying at night' (para 4.17 of the Consultation Document).

We submit that allowing levels to rise (ie from current actual levels) cannot in any way be described as moving towards the target of 'striving to reduce to recommended levels', as promised in the Government's adoption of the *WHO Charter on Transport, Environment and Health*, even in the context of an airport which has been designated for growth. Quite simply, if the growth cannot take place without jeopardising the target of striving to reduce the night time noise levels, then that growth should not be allowed to take place.

We would also argue that the very fact that Stansted has been designated for major overall growth places a much stronger obligation upon the Government to mitigate the impacts upon the local community including the use of tighter restrictions on night flights to offset the expansion of daytime operations and thereby provide some compensatory relief – and some evidence to the local community of the much-vaunted 'balanced approach'.

*Question 2: Do you agree that the QC/4 scheduling ban should continue to apply only between 2330 and 0600 as set out in paragraphs 5.32-5.37?*

We do not agree.

## 2.1 QC/4 scheduling ban to have limited hours

If the Noise Quota Period (NQP) is extended to a full 8 hours it would presumably be for the reason that the Government has finally accepted that this should be the minimum period for protecting the general public from sleep disturbance. It follows that it would be illogical to then proceed to allow the scheduling of noisy aircraft in the newly extended period.

## 2.2 QC/4 operating ban

Furthermore, we also disagree with the operation (as well as scheduling) of QC/4 aircraft in the NQP, whether extended to 8 hours or not, as to the would-be sleeper it is immaterial whether the disturbance is from a scheduled or a non-scheduled aircraft. We believe that this outweighs any economic arguments (see next sub-section).

We believe that there should be no need for this contingency arrangement if schedules were adjusted to avoid the possibility of delayed departures/early arrivals straying into the NQP. In this context, we note with some concern a tendency amongst certain airlines to publish timetables which show shorter than normal

<sup>21</sup> Assumptions: 12,000 night flights pa = 5.058 flights per hour, for a 6.5 hour night period.

durations for flights which are scheduled to arrive very close to the start of the NQP. We call on the DfT to ensure that this is monitored in future, and corrective action taken where necessary.

## 2.3 Economic arguments for QC/4 operations in the NQP

2.3.1 A rudimentary economic justification for permitting NQP operations by QC/4 aircraft is attempted in para 46 of Annex E of the Consultation Document but is flawed on at least two counts:

- para 42 states that the 225 aircraft in the example would be 'delayed departures, early arrivals or emergencies', but the calculation in para 46 assumes that **all** the instances were delayed late evening departures and therefore that hotel bills etc would be incurred for all 225 flights if they were not allowed to take off;
- no attempt has been made to show the costs resulting from chronic sleep disturbance (accidents, reduced performance at work the following day etc) which should be set against the claimed £10 million costs of delaying departures.

2.3.2 Even if full and fair cost/benefits had been shown, we would still query the full applicability of the arguments, given the Government's policy that the polluter should pay.

## 2.4 Timing of any change

Paras 5.35 to 5.37 claim that the current status quo for QC/4 bans should be maintained in order to protect operators from 'financially premature fleet adjustments', and that any possible review should take place at the time of considering the regime relating to the period 2012 onwards. We believe that this is a recipe for a never-ending series of prevarications, as 'financially premature fleet adjustments' can always be cited in the absence of the Government giving the relevant firm and definitive notice of its intentions **well in advance**. That notice should be given now, rather than waiting for another five or six years.

*Question 3: Do you have any views on the definition of the night period and night quota period?*

- The Noise Quota Period (NQP) should be extended from the core 6.5 hours to 8 in order to protect against sleep disturbance over a period that equates more widely with most people's hours of sleep.
- The former 'core period' should be protected against a deterioration in the noise climate following the admission of the 1.5 hours of 'shoulder period' movements.
- There should be an interim period while the two periods' quotas are merged towards the same level of stringency as would have been applied to the former 6.5 hour period had the 8 hour extension not taken place.
- After the interim period, the entire new 8 hour period should be subject to the same demanding (proportional) levels of reduction as the old 6.5 NQP would have been: there should be no special treatment on the basis of the new period being deemed to require less stringent protection.
- Measures should be taken to prevent bunching in the periods just outside this new extended NQP.

## 3.1 Movements in night period/night quota period (paras 6.1- 6.7)

Our reply to Question 3 is based on three premises:

### 3.1.1 Sleep disturbance period

We are in principle strongly in favour of extending the NQP to a full 8 hours. Indeed our first premise is that the entire period from 2300 to 0700 should not have been split in the first place, given that the intention of the restrictions, insofar as they relate to the environmental side of the balanced approach, is to protect the public from sleep disturbance. Eight hours is the most commonly accepted (and medically recommended) period for sleep and 2300 to 0700 is arguably the best fitting 8 hour period for the habits of the majority of the adult population.

In addition, one of the most basic reasons why those living in the vicinity of airports want the NQP to be extended to include the 2300-2330 and 0600-0700 'shoulder periods' is that it is precisely during these 'going to sleep' and 'preparing to wake up' periods that sleep is shallower and more easily disturbed, and getting back to sleep is more difficult. This is recognised in para 4.2.3 of the WHO Guidelines:

Measures reducing disturbance during the first part of the night are believed to be the most effective for reducing problems in falling asleep.

It is also important to bear in mind the particular need of children and other vulnerable groups for a longer period of sleep. In addition there are many whose core sleep period may not exactly fit the chosen NQP 6.5 hours. It is therefore our opinion that the NQP should have been set at a **minimum** of 8 hours from the outset, and that **each of these hours needs the same high level of sleep protection**.

### 3.1.2 Shoulder period volumes

The second premise is that the current situation with regard to levels of traffic in the shoulder periods is already unacceptable. The average hourly traffic figures are grossly disproportionate when comparing shoulder periods to the remainder of the night period:

Average hourly movements	A: Total night period (2300-0700)	B: Current NQP (2330-0600)	C: Shoulder periods (2300-2330 + 0600-0700)	Ratio of C to B
Heathrow	8.6	2.5	35.0	14 to 1
Gatwick	8.9	5.5	23.3	4.2 to 1
Stansted	7.3	3.8	22.4	5.9 to 1

Based on figures for 2003 in Annex E para 75 in the Consultation Document

For the reasons explored in 3.1.1 above, the shoulder periods are sensitive times for potential sleep disturbance. We believe that this current comparative overloading of the shoulder periods needs to be remedied, but not at the expense of redistributing the excess into other parts of the night period.-

### 3.1.3 6.5 hour NQP volumes

The third premise is that even the present levels of operation in the 'core' 6.5 hour NQP itself are already excessive: in the case of Stansted, one flight every 16 minutes on average throughout the 6.5 hour period. Thus although we favour extending the extent of the current NQP period, we would not wish to see a dilution of the protection given to these core 6.5 hours.

We therefore see the need for a short interim period while the two periods are merged. At the end of this period, the quotas set for the new extended 8 hour period will need to have achieved the same level of stringency as the old core period would have done had it continued as a 6.5 hour period. Thereafter the entirety of the new period should be subject to progressive reductions as outlined in 8.4.1 below.<sup>22</sup>

An additional protective measure would be required to counteract the pressure generated by the higher hourly movements of the current shoulder periods tending to 'leak' into the core 6.5 period. Ideally this would be controlled by means of separate hourly quotas within the 8 hour period, which we still favour, in spite of the DfT's apparent dismissal of the concept. An alternative but rough and ready method would be by means of setting and monitoring two separate 48 (or preferably 45) dBA Leq land area caps: one for each of the former shoulder and core periods.

### 3.1.4 'Bunching' problems just outside the NQP

In the light of experience of the creeping tendency to fill up the periods immediately preceding and following an NQP, measures will also be required to prevent bunching just outside either end of an extended (8 hour) NQP: even the periods between 2200 or 2230-2300 and 0700-0800 are important ones for many people's sleep patterns.

## 3.2 Conclusion

The adoption of the arrangements that we outline would require a reduction in the number of movements in the current shoulder hours, but we insist that this is perfectly justifiable in the light of

- the number of movements in the shoulder periods already being higher than is consistent with a 'fair balance' between the environment and the economics of the aviation industry
- the need for an immediate start to a staged programme to meet the WHO recommendations
- the fact that hitherto any improvements in engine technology or fleet loadings have been used more to increase throughput than to reduce airport noise
- the Government's policy that the polluter should pay
- the simplicity and transparency gained from aligning the Night Quota Period and the Night Period.

<sup>22</sup> Our table in 8.4.1 is based on a 6.5 hour period, so after the interim merging period, the figures in this table would need to be multiplied by 1.23 (approximately equal to 8 divided by 6.5).

*Question 4: Supposing, hypothetically, that the movement and noise quotas would be set precisely to accommodate current levels of night flying in either case, are you in favour of extending the night quota period to 2300-0700 or would you prefer to retain the current definition?*

See answers to Question 3 and Question 8.

*Question 5: Are you content to continue with the arrangements for disregarding movements? (paragraph 6.12)*

No.

5.1 We accept of course that there can be delays for reasons outside the airport's control, and in many cases the hardships involved with refusing these delayed aircraft would be unacceptable. However we see no reason why that somehow makes these movements any the less sleep-disturbing and we believe that therefore they should count towards the quotas in the normal way. Should this problem turn out to occur frequently, then the remedy would clearly be to adjust schedules so that sufficient contingency room is left for 'the disregards'.

*Question 6: Do you agree with proposals to remove the rule on movements scheduled after 0630 but arriving before 0600? (paragraph 6.14-6.15)*

Yes.

*Question 7: Are you content with the carry and overrun arrangements proposed? (paragraphs 7.8-7.18)*

No.

7.1 Para 7.13 of the Consultation Document rejects a suggested amendment to the rules for the length of each quota season on the grounds of over-complication and lack of transparency to the general public. We maintain that the carryover and overrun arrangements are themselves subject to the same objections.

For instance para 7.9 states that a 31 week summer season attracts a carryover flexibility of 10%. Taking a summer season at Gatwick as an example (10,000 movements proposed for summers from 2006 onwards), there could be a potential carryover of 1,000 to the following winter period. The basic winter period cap is proposed to be 3,000, so this carryover would in fact result in a potential boost to the winter cap of 33.3%. In the words of para 7.13, this is surely 'difficult for the public to understand and interpret'.

Furthermore the carryover provisions are infrequently used (7 instances out of the possible 48 contained in pages 58-60 of the Stage 1 Consultation Document) and in the interests of simplicity they should be abolished. If the DfT nevertheless insists on maintaining them, the flexibility should be set at 5% rather than the proposed 10%: in the 7 instances cited, in only one case was a carryover of more than 5% taken up in the following season, and this was for 6.2%.<sup>23</sup> In fact the (unweighted) average of all 7 carryovers was 3%.

<sup>23</sup> In summer 2000, at Stansted. We cannot find (ie on pp57-59 of the Stage 1 Consultation Document) the winter 2001-02 overrun of more than 5% quoted in para 7.15 of the Consultation Document: Heathrow was the only airport to use flexibility in this period and the percentages were 4.1% for movements and 2.1% for noise quota.

**Question 8: Do you have any comments on the proposed movements limits and noise quotas for Heathrow, Gatwick and Stansted? (paragraphs 7.19-7.52)**

Our summary comments on the DfT proposed quotas, in so far as they relate to Stansted, are as follows::

- They fall short of what is required for even a modest start on achieving the long term WHO targets.
- They do not represent a reduction in actual levels as the DfT has used maximum **permitted** levels as the criterion for establishing a reduction.
- Insufficient information has been provided for consultees to assess the effect of the new QC/0.25 band.
- We suspect that the new QC/0.25 rules mean that even the DfT's modest reductions in proposed QC totals across the seven year period would be achieved by virtue of this technical adjustment alone – ie the proposals do not represent an improvement in the actual noise climate.
- The proposed movement limits allow for a rate of growth that is 50% greater than even the airport operator's own predictions.
- The proposed figures in various parts of the Consultation Document for the three interlinked components of the QC system – movements, QC, and average QC per movement – do not appear to have much consistency within themselves or with each other.

Our membership wishes to move towards a ban on night flights as soon as is practicable. In the meantime, while a consultation on this topic is conducted, we suggest a temporary night flights regime with quotas frozen at the current actual levels until say 2008 or, at the latest 2009.

In the event of the need for a postponement of this timescale, and therefore for the preparation of quotas for the full period to 2011-12, we propose, in 8.4.1 below, reduced limits for the entire period. These are considerably lower than the DfT's proposals: for instance for 2011-12 we propose limits of 5,750 movements and QC total of 3,163, compared to the DfT's 12,000 and 7,960 respectively.

**8.1 Projected 6.5 hours movements limits (paras 7.39 – 7.41)**

The DfT is projecting a compound annual growth rate (CAGR) of 5% in NQP movements at Stansted (ie starting from the actual, not maximum permitted, figures) between 2004-5 and 2011-12, which is only a little below the CAGR of 6% for the last four years. However as all concerned acknowledge, the recent rate of growth at Stansted has been exceptional and is unsustainable. Indeed it is clear from BAA's own projections that it expects the future overall CAGR to be not only lower than the recent 6%, but considerably lower even than the DfT's projected 5%, as can be seen from the following table of ATMs (Air Transport Movements)<sup>24</sup>:

Proposed Stansted Growth	2004 /2004-5	Proposed 2011-2012	Increase	CAGR
(BAA) overall ATMs	192,249 <sup>25</sup>	244,817 <sup>26</sup>	27.3%	3.3%
(DfT) night ATMs	8502 <sup>27</sup>	12000	41.1%	5.0%

Even in the context of a growing airport, we do not see how, in the light of the airport operator's own substantially lower growth projections, the DfT's proposals can in any way be described as 'bearing down on night noise'.

We also wish to stress the importance of reducing the movements per se: it is the individual movement itself that wakens the sleeper, not the QC quota on any one night. This is particularly so when the ambient levels are low, as is the case in the great majority of the Stansted area.

<sup>24</sup> The BAA figures do of course refer to the full 24 hours, whereas the DfT figures relate to the 6.5 hour NQP. Therefore strictly speaking like is not being compared with like, and we accept that night movements may grow at a different rate from day movements. However we have assumed that even the most generous interpretation of the phrase 'bearing down on night noise' could not be stretched to describe a situation where night noise grows at a **faster** rate than day noise.

<sup>25</sup> Source: Total ATMs for 2004 from Table 4 (p10) BAA: *Growing Stansted Airport on the Existing Runway*. July 2005.

<sup>26</sup> The 244,817 ATMs are extrapolated from BAA's predicted growth in total ATMs to 2015 in Table 4 (p10) of *Growing Stansted Airport on the Existing Runway*. The implied CAGR in the table is 3.27%; 244,817 is an interpolation between the figures for 2011 and 2012, using this CAGR. Our assumptions are of course open to the criticism that the growth rate may not be constant across the years, and in particular that the rate up to 2011/12 may be different from the rate after that date. However, given that the arguments for and against faster or slower rates across the period are finely balanced, we believe that a working assumption of a constant CAGR is reasonable.

<sup>27</sup> Actual movements for the period. Source: Stansted Airport Movements and Quota Summary Reports for 31 weeks to 30/10/04 (5390 movements) and 21 weeks to 26/3/05 (3112 movements). Figures exclude movements not officially counting against the movements quota.

In addition, increasing the numbers of movements means, in general, an increase in two ancillary problems:

- the number of road traffic movements around the airport, whether of passengers' and employees' cars, or goods vehicles dealing with night cargo
- noise from aircraft ground movements, which is not of course reflected in the Leq noise contours.

Both of these are particular issues in a predominantly rural area, and in the case of the motor vehicle traffic, the noise and disturbance can continue for at least two hours after the relevant aircraft has landed.

## 8.2 Projected 6.5 hours QC limits (paras 5.7 – 5.17; 7.39 – 7.41)

### 8.2.1 Comparison of DfT proposals to actual levels

When considering the DfT's proposals for QC limits we again come up against the problem that the true effect is obscured by comparing the proposals to permitted maximum, rather than actual, levels. So once again despite claims to the contrary, there is no bearing down on noise: the lowest QC limits proposed by the DfT (for 2011-12) are 7,960 which compares to the latest actual figures (for y/e 26 March 2005) of 7,167 – an **increase** of 11%.

### 8.2.2 Effect of new QC/0.25 band

Leaving aside the fact that they start from artificially high figures (ie the current permitted maximums), the DfT's proposals in para 7.41 do show a gradual reduction in the proposed QC limits from year to year. These reductions are from 3,550 to 3,310 (-6.8%) for winter, and from 4,950 to 4,650 (-6.1%) for summer, as measured over the entire 7 year period of the regime.

However it seems that most if not all of this 'improvement' can be attributed to a technical adjustment in the QC classifications, ie the introduction of a new QC/0.25 band as described in paras 5.7 to 5.17 of the Consultation Document. This adjustment will allow many hitherto QC/0.5 rated aircraft to be reassigned downwards into the new QC/0.25 category and thus only account for half the QC points that they did before the change. To put it another way, after their reclassification they will be able to make twice as many flights as before for the same QC total.

There is admittedly an offsetting adjustment to this reduction (ie some aircraft previously classified as zero QC ('exempt') will now move up into the new QC/0.25 category), as explained by para 5.15 of the Consultation Document. Para 5.16 goes on to rather vaguely estimate the net effect of the two adjustments as a reduction in quota usage 'by less than 10%'. We understand that the DfT has not in fact performed any precise calculations to establish the effects of this change<sup>28</sup> – an omission which we believe to be unfair on those attempting to respond to this consultation. Furthermore it throws open to doubt the whole process of reducing noise nuisance via the QC totals: if it is not known whether or not the proposed QC figures would result in a real reduction in noise, then clearly little or no reliance can be placed on any claims to be bearing down on noise.

In the absence of any firm facts from the DfT, we must draw our own conclusions from the material available. This leads us to surmise that para 7.41's winter/summer reductions in QC limits of 6.8% and 6.1% respectively are not a real reduction at all, but are more than covered by para 5.16's reduction 'by less than 10%': that is to say the reductions in QC limits would be achieved by means of a technical adjustment that results in a reduction in quota usage, but makes no improvement whatsoever to the actual noise climate.

The absence of detailed workings by the DfT also means that we have no means of telling what the QC figures for even the **current** levels of movements would be, if they were to be worked out on the basis of the changes resulting from the introduction of the new QC/0.25 band. This obviously presents problems in trying to assess the fairness and feasibility of any future projections for QC limits, and we are extremely surprised that the DfT has felt entitled to omit this information from the Regulatory Impact Assessment in Annex E.

## 8.3 Projected average QCs per movement (paras 7.40 – 7.42; E 111-113)

The relationship between the movement limits and the QC limits is the average QC per movement, and the inter-relationship of these three factors is what gives the QC system its relative flexibility. With regard to Stansted, para 7.42 appears to rule out any variability in one of these three factors (the movements limit of 12,000 p.a.), and although we do not agree with this figure, we accept it for the sake of argument, for the purposes of this sub-section.

<sup>28</sup> Replies given by DfT representative to written questions at Stansted NTKWG meeting on 14 July 2005.

Even with one of the three variables 'nailed down', there appears to be a considerable confusion in the Consultation Document as to exactly what figure is being put forward as the likely average QC per movement. The range appears to be from 0.5 to 0.86 (see Annex 1 for detailed discussion). Regrettably this picture is muddled even further by the lack of an adjusted current figure for the average QC per movement – adjusted, that is, for the technical change resulting from the proposed new QC/0.25 category.

Given that 63% of night movements in y/e 26 March 2005 were by QC/0.5 aircraft, and that a proportion of these will soon be reclassified as QC/0.25, we would argue that an average in the region of 0.5 is likely to be moderately easily attainable. One obvious measure to help with this would be the timely introduction of quieter aircraft. Replacing the MD11F's with 757/767 freighters is an example of a step that, technically, could be taken now. Others could no doubt be identified.

## 8.4 DfT proposed quotas: conclusions

### 8.4.1 Quotas for 6.5 hour NQP

We start from the position that the majority of our membership wishes to see an end to night flights as soon as practicable, and this indeed remains SSE's medium term aim. The DfT on the other hand seems prepared to establish a regime that allows noise to increase in absolute terms from its present levels. This is unacceptable, especially in view of the Government's commitment to 'bear down on night noise'. The overriding aim should be to end night flights as soon as this can practically be done. In the interim we submit our preferred solution:

The current regime should be treated as a stopgap and last until say the end of the 2008, or at the latest, the 2009 summer season, with QC and movements limits frozen at their current actual levels (ie the levels for Summer 2004 and Winter 2004-5). Meanwhile a new consultation, informed by the findings of the current ANASE aircraft noise annoyance study, should take place addressing the following issues and the inter-relationships between them:

- the feasibility and desirability of a night flights ban
- detailed and unambiguous short, medium and long term plans for achieving the WHO targets
- the introduction of at least a QC/0.125 band (as suggested in the 2003 Review of the QC System).

Clearly this would imply a wider consultation audience than the current one. Indeed because of the obvious danger of knock-on effects of restrictions at the three BAA 'London' airports, we maintain that other airports should in any case be consulted when **any** restrictions at these three are being consulted upon. We maintain in addition that the consultation papers should include the entire set of economic data for a full and fair consideration of the possible consequences.

Although this represents a shorter than normal regime period, we view this as entirely legitimate in the light of

- the two year delay in implementing the current consultation
- the fact that the suggested stopgap freeze at current levels would **still** not address the Government's obligation to be 'striving' to reduce night noise levels to WHO recommended levels (see 1.1.1 above).

Should the first alternative be unacceptable on the basis of the abbreviated regime period, we submit that the full period for Stansted should have limits as follows:

SSE proposed quotas for 6.5 NQP	2004-5 existing (rounded)	2005-6 (rollover)	2006-7	2007-8	2008-9	2009-10	2010-11	2011-12
Summer Movements	5390	5390	5390	5168	4946	4724	4502	3646
Winter Movements	3110	3110	3110	2982	2854	2726	2598	2104
<b>Total Movements</b>	<b>8500</b>	<b>8500</b>	<b>8500</b>	<b>8150</b>	<b>7800</b>	<b>7450</b>	<b>7100</b>	<b>5750</b>
Summer QC	4600	4600	4600	3921	3503	3107	2733	2029
Winter QC	2570	2570	2570	2191	1957	1736	1527	1134
<b>Total QC</b>	<b>7150</b>	<b>7150</b>	<b>7150</b>	<b>6112</b>	<b>5460</b>	<b>4843</b>	<b>4260</b>	<b>3163</b>
QC per movement	0.84	0.84	0.84	0.75	0.7	0.65	0.6	0.55

In keeping with a policy of 'bearing down on night noise', these figures are based on:

- a two year freeze to allow the industry time to adjust before starting a programme of reductions
- an annual reduction in movements of 350, equating to approximately one per night
- a gradual reduction in the average QC per movement to 0.55, based on the arguments we have put forward above, and the DfT's suggested alternative option put forward in Annex E, para 113.

We appreciate that the para 113 alternative was based on the assumption of 12,000 movements a year (which we have stated above is not an acceptable proposition to our members) and our submission does therefore represent an overall decrease compared to the apparent intention of the DfT's para 113 alternative option. However, as argued in 8.1 above, we submit that it is essential that the number of night movements is gradually but significantly reduced from present levels.

At the end of the regime, there should be a consultation, as with our preferred solution above.

#### 8.4.2 Quotas for extended 8 hour NQP

These have been discussed in 3.1.3 above, and in particular in footnote 22.

*Question 9: In relation to a noise insulation scheme, do you have any comments on*

##### *9.1 Q9a whether or not policy should be implemented through statutory regulations?*

In the light of the lack of confidence in the airport operator felt by many in the local community, we support a statutory scheme.

##### *9.2 Q9b whether to use a noise footprint or other criterion?*

We support the use of an SEL based noise footprint as the most practical means of assessing eligibility. We do not accept Leq as a suitable measure of sleep disturbance.

##### *9.3 Q9c if a noise footprint criterion is used, how to define it for each airport?*

The criterion should be based on:

- 75 dBA SEL which is approximately equivalent to the WHO recommended 60 dB LAMax
- actual measurements rather than certificated, adjusted annually if necessary
- the combined footprint of loudest arrival and loudest departure.

##### *9.4 Q9d whether the scheme should relate to the whole night or the current night quota period? (paragraphs 8.8-8.21)*

The scheme should be based on the noisiest aircraft likely to operate for any reason – scheduled or unscheduled – between 2300 and 0700, regardless of any decisions taken on the other connected issues raised in this consultation.

## 9.5 Insulation scheme: DfT principles and objectives (paras 8.1 – 8.7)

We have a fundamental disagreement with the principle outlined in para 8.2 (assuming that it is night nuisance that is being referred to):

The underlying principle is grounded on the fact that the total elimination of noise nuisance from aviation would not be compatible with striking a fair balance between environmental, social and economic interests.

We cannot see how this statement can be reconciled with the concept of the 'polluter must pay' principle (claimed as a guiding principle in para 8.3), given that sleep disturbance from noise is a form of noise nuisance and noise pollution.

The insulation solution is very much one of last resort, as it is obviously an inferior solution compared to the elimination of the noise nuisance at source. It has little or no effect in summer when bedroom windows are open, and is of seriously questionable efficacy when applied only to windows in historic buildings or those of poor construction standards. In addition it does not of course have any mitigating effects for those outdoors or otherwise outside the insulated rooms.

## **9.6 Aircraft criteria used (para 8.11)**

The definition of 'noisiest aircraft' should be based on those '**likely** to operate' not just those **scheduled** to operate. The DfT proposal in para 8.11 of the Consultation Document for using only the latter as a criterion is presumably based on an assumed imbalance between the extra costs and the comparatively small possibility of the event occurring. We submit that the extra costs should be accepted in accordance with the Government's adopted policy of the 'polluter must pay'.

As already stated in 3.1.1 above, we do not accept the 6.5 hour NQP as being the limit for the vulnerable hours to sleep disturbance, so it follows that we cannot agree with the suggestion in para 8.5 that the noise criteria should be based on the noisiest aircraft operating in the 6.5 NQP period.

## **9.7 Administrative details (paras 8.18 – 8.19)**

We have three comments on the questions posed:

- Roof insulation must be included for bedrooms, and general insulation for at least one living room (for those who seek night time peace and quiet but who are not actually in bed).
- Publicly used buildings (eg hotels, hospitals, boarding schools) should be included if they are used for sleeping.
- Properties which have benefited from earlier schemes should be brought up to current standards as part of the scheme.

## Annex 1: Average QCs per movement at Stansted

We are unable to reconcile the text of para 111 of Annex E with paras 7.40 and 7.41 of the main body of the document. Para 111 implies that the intention is to '[retain] the existing movements limits while maintaining the low average QC score'. It is not clear what exact value the DfT attributes to this 'low average QC score': para 111 mentions the value in summer 2003 was 0.84 and states that this has since decreased. In fact in the succeeding three seasons the value has been 0.94, 0.85 and 0.82; treating these three seasons as a single period, the average QC per movement was 0.86. Taking this latter figure as the 'low average QC figure' to be maintained, this would imply an annual QC total of 10,320 (proposed movement limit of 12,000 x 0.86). This is considerably more than the 7,960 annual total for 2011-12 proposed in para 7.41.

Para 7.40 also appears to be in conflict with para 7.41. The former implies that the intention is to set annual QC totals 'in the vicinity of 6,800-7,000'; however para 7.41, which contains the table of the proposed numbers for the entire period, shows that the range of the proposed QC totals is from 7,960 to 8,500.

Confusingly, a further contradiction occurs later in para 7.40 where it is suggested that the average QC per movement will need to be reduced 'into the vicinity of 0.5 to 0.6' and para 113 of Annex E repeats this suggestion (but using only the 0.5 figure). An average QC figure of 0.5 would mean that the annual quota count totals, based on 12,000 movements would be 6,000 which is different again to any of the suggested QC figures in para 7.40 and 7.41. (Para 7.42 implies strongly that the 12,000 figure for total movements is not to be reduced and although we do not agree with this, for the purposes of this part of the discussion we have assumed that in Annex E para 113 the DfT intends the average of 0.5 is to be achieved by adjusting the QC totals, not the movements totals.)

## Annex 2: The Economics of Night Flights

### Introduction

This Annex has been prepared in response to the DfT request (in para 6.8 of the Consultation) for more information on the economics of night flights; and more specifically in response to para 4.9 of the Consultation Document which states: "On the basis of the evidence available to us, including the responses to Stage 1, we believe these [environmental] objectives are consistent with, and proportionate to, the economic benefits (including benefits to passengers) which night flights produce."

It very much appears that the environmental objectives have been formulated in such a way as to ensure that the needs of airport users can be fully accommodated. The starting point for determining the environmental objectives for any airport should not, of course, be the operational needs of its customers but the need to protect community health and minimise pollution, as well as other adverse environmental impacts and, in line with government policy, the polluter must be made to pay for any residual adverse impacts, including noise pollution.

Importantly, the 'polluter must pay' principle, enshrined in the Treaty of Amsterdam and binding upon all EU member states, requires the polluter to pay the full external costs, including environmental costs. It is noteworthy that the Consultation makes no attempt to assess the full external costs of night flights and contains no proposals for requiring the polluter to pay these costs, not even over the 30-year time horizon which is discussed elsewhere in the Consultation in relation to long term Government objectives.

Instead, the DfT turns the 'polluter must pay' principle on its head, using the doctrine of 'proportionality' to argue that if the cost to the airline industry of reducing noise pollution at night is very high, then it will not be required to reduce noise pollution at night. Indeed, in the case of Stansted, the DfT proposes that the industry should be allowed to pollute more and still not be required to pay for any of this.

It is incumbent upon the DfT to publish the evidence referred to in para 4.9 of the Consultation Document so that we can all see the basis upon which the balance between environmental objectives and the economic benefits of night flights has been determined and how the DfT formed its judgement about 'proportionality'. It will be particularly important for the DfT to publish the quantitative analysis that it relied upon and to explain how it dealt with independent leading expert advice including, for example, the WHO *Guidelines for Community Noise*.

As matters stand, it is not even clear which economic benefits have been considered by the DfT and nor is it clear whether the economic disbenefits of night flights have been considered. We note also that the industry has failed to put forward any proper assessment of the economic benefits of night flights. We ourselves attempt to fill at least some parts of this vacuum below.

### Economic costs and benefits

The economic costs and benefits of night flights can be viewed as falling into four categories:

- (i) Commercial benefits for the airlines (and their users)
- (ii) Economic benefits to the UK economy
- (iii) Economic disbenefits to the UK economy
- (iv) Other third party economic costs and benefits

Taking these in turn:

- (i) Commercial benefits for the airlines (and their users);

As noted in para 1.4.1 above, Annex E of the Consultation Document (para 80), in discussing the option of extending the length of the night quota period, states that an 8 hour NQP would push up airlines' unit costs at Stansted because aircraft would be able to achieve only three rotations a day instead of four – ie, there would be a 25% reduction in aircraft utilisation. This, of course, is based on an assumption of no landings or take-offs being permitted between the hours of 2300 and 0700, in other words, a total ban on night flights. This same paragraph goes on to state that "aircraft-related costs might be in the order of 25% of total operating costs". Combining the two points, a complete ban on night flights would result in a maximum cost penalty of 25% of 25%, ie, about 6%.

If reflected in fares, a 6% increase in costs would mean that the average Ryanair ticket price would increase by about £2. And this is the worst-case scenario since it assumes that it would never be possible to achieve four rotations in a 16-hour day whereas we know from current scheduling at Stansted that on many routes it is indeed possible to do just that. But even if the average impact on a ticket price were to be about £2, this seems a very small price to pay to achieve the recommendations set down in the WHO *Guidelines for Community Noise* and thereby provide local residents with an adequate level of protection from sleep deprivation.

(ii) Economic benefits

Para 14 of Annex E provides an estimate of £700m (which the DfT admits to be crude) for the economic value of night flights at Heathrow, Gatwick and Stansted. This is based on aviation as a whole contributing 2% to UK GDP, night flights accounting for about 10% of passengers at Heathrow, Gatwick and Stansted and these same airports accounting for over half of all passengers at UK airports in 2003.

It is not clear where the estimate of 2% stems from. The Oxford Economic Forecasting report on "The Contribution of the Aviation Industry to the UK Economy" estimated 1.4% and this was widely believed to be on the high side, arising from a report which was commissioned and paid for by a consortium of the UK's major airport operators and airlines and supported by the then DETR, forerunner of the DfT.

In addition, night flights at Heathrow, Gatwick and Stansted airports accounted for about 7%, not 10%, of total flights at these airports in 2003 (using the DfT's own figures).

If these two values are corrected, the £700m estimate becomes about £350m.

However, a more appropriate way of examining the contribution of aviation to the UK economy is with reference to GVA (Gross Value Added) and the latest available ONS data show that air travel contributed £5.2bn to the UK economy in 2002 – equivalent to 0.57%. Adjusting this for night flights at Heathrow, Gatwick and Stansted airports on the same basis as above produces an estimate of about £200m.

If, ad extremis, all night flights were to be banned, it does not of course follow that the full economic value would be lost because, in practice, much of the traffic would be rescheduled. In addition, other economic activity would evolve (and, in the South East, this evolution is likely to be quite rapid) to fill the vacuums created by the elimination of night flights at Heathrow, Gatwick and Stansted.

(iii) Economic disbenefits

The most easily quantifiable of the significant economic disbenefits is the impact of the aviation industry on the UK Balance of Payments which consists of two main elements, namely:

(a) Tourism Deficit:

- UK residents made 50.4m overseas trips by air in 2004 compared to 20m inward trips by air to the UK by overseas visitors.
- The total UK tourism deficit has risen from £3.6bn in 1995 to £17.3bn in 2004, of which £15.3bn was attributable to air travel.

*Source: ONS Travel & Tourism MQ6 series data*

(b) Deficit on Air Transport Services

- The UK has recorded a balance of payments deficit on air transport services in every year since the mid 1980s. Over the past ten years, the UK deficit in air transport services has increased from £700 million (1995) to £3.3 billion (2004).<sup>29</sup>

*Source: Pink Book 2005, ONS*

The combined 2004 air travel deficit on current account (ie (a) +(b) above) was £18.6bn, equivalent to almost 2% of UK GDP and sufficient to influence the Sterling foreign exchange rate (downwards) and UK interest rates (upwards) and thereby create economic costs for other parts of the UK economy.

<sup>29</sup> Exports of air transport services comprise sales of UK airline tickets and air freight services to foreign residents whereas imports comprise purchases of foreign airline tickets and foreign air freight services by UK residents

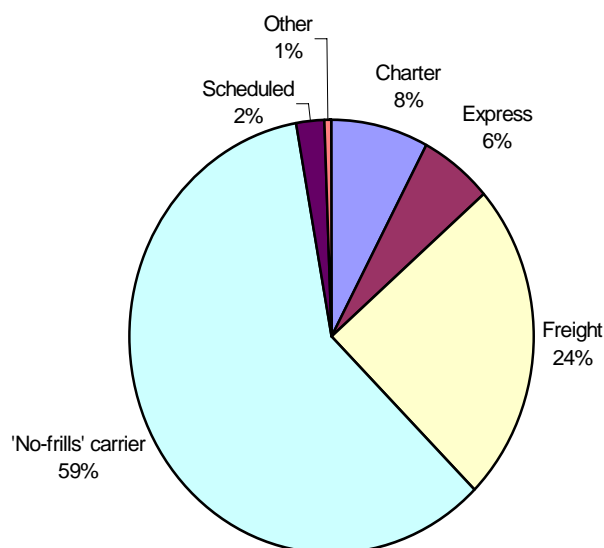
In addition to the £18.6bn deficit arising directly from air travel, other adverse impacts on the UK Balance of Payments which are more difficult to quantify include:

- current account impact arising from increasing oil imports as UK self sufficiency comes to an end
- current account impact on manufactures of aircraft, avionics and other aeronautical manufactures
- capital and current account impact arising from increased ownership by UK residents of second homes overseas, encouraged at least to some extent by the availability of low cost flights.

As well as considering the economic arguments from a macroeconomic perspective, one could also look at the issue of night flights on a case by case basis, where, for example, it would seem difficult to see the net benefit to the UK economy for a Stansted night flight operated by a foreign-owned airline using foreign-built aircraft to transport British holidaymakers to spend their money overseas.

There may of course be important social benefits for UK residents arising from night flights to the Costa Brava or 'stag night specials' returning from Prague but it seems extremely difficult to point to an overall net economic benefit for the UK economy.

### Breakdown of Stansted Night Flights



Source: DfT, August 2005 - Based on 4-month sample taken April –July 2003, covering the full 8 hour night period.

The above pie-chart shows that 'No Frills' Carriers (NFCs) account for the lion's share of (8 hour period) night flights at Stansted and almost 80% of these take place during the current shoulder periods of 2300-2330 hours and 0600-0700 hours, arguably the most sensitive parts of the night in terms of sleep disturbance but also the periods which NFCs consider vital in order to achieve four rotations a day. However, as shown earlier, lower aircraft utilisation based on three rotations a day, is equivalent to only about £2 on an average Ryanair fare.

It is also interesting in the above pie-chart to note that the Express sector accounts for only 6%, thus accounting for only three or four flights out of the sixty or so nightly flights at Stansted.<sup>30</sup> The enormous emphasis that is placed upon meeting the needs of the Express sector, by BAA and others, when arguing the importance of night flights, is out of all proportion to the actual number of Express flights at night.

The DfT is arguing that the overall number of night flights at Stansted must be allowed not only to continue, but to expand, notwithstanding the impact in terms of sleep deprivation for local residents. The DfT claims to have struck the balance based on 'proportionality', having regard to the economic benefits of night flights. It

<sup>30</sup> The figure is 11% when considering the current core 6.5 hour NQP.

is difficult to understand what evidence the DfT could have used to determine the right balance to be struck and to arrive at its judgement on proportionality. We shall expect the DfT to publish this evidence and to explain fully the basis for its final conclusions.

(iv) Other third party economic costs and benefits

One significant economic cost for local residents is the adverse impact of airports upon local house prices and we know from the official Land Registry house price statistics that the threat of major expansion at Stansted Airport has resulted in a relative loss of £635 million for local homeowners over three years since the announcement of the proposals in July 2002.

One cannot necessarily attribute all of this to the impact of aircraft noise and, even if one were to do so, it would be difficult to separate out the specific impact of night noise. It is however reasonable to assume that a ban on night flights at Stansted would have a favourable impact on local house prices and if introduced also at Heathrow and Gatwick, the combined impact on house prices would be substantial – perhaps in the region of several hundred million pounds.

Night noise is clearly a form of pollution and, in order to implement the policy of making the polluter pay, the DfT must commission a study aimed at quantifying the cost of night flights upon the housing market in the vicinity of airports.

Other economic disbenefits are even more difficult to quantify, for example, the cost to the UK economy of aircraft-induced sleep deprivation and disturbance. There is a wealth of academic evidence to show that sleep deprivation reduces human efficiency and this will affect those in education as well as those in employment. The total number of people vulnerable to sleep deprivation as a result of night noise from operations at Heathrow, Gatwick and Stansted airports will amount to several hundred thousand.

Even if the net economic benefits of night flights at Heathrow Gatwick and Stansted were to be as high as £200m–£350m per annum, this would only amount to a pound or two per night for each person adversely affected. It is not difficult to envisage that the loss to the UK economy arising from aircraft induced sleep deprivation could easily be far greater than this.

## Conclusion

Whilst we have carried out the above economic assessment in good faith we fully acknowledge that it is neither comprehensive nor rigorous enough to be treated as a definitive assessment. Nevertheless, we believe that our analysis highlights significant shortcomings in the industry's case for maintaining and indeed increasing the number of night flights. The analytical shortcomings on the part of the DfT are even more serious and we are extremely sceptical concerning the absence of any proper evidence-based analysis of the economic benefits of the type referred to in para 4.9 of the Consultation Document.

The DfT must publish its assessment of the economic costs and benefits of night flights, quantified and monetized wherever possible and where such data are not presently available, the DfT should commission studies aimed at filling the gaps and providing the information necessary for a comprehensive assessment of the pros and cons of night flights. The results of such studies will inform the judgements to be made about 'proportionality', 'balance' and the implementation of the 'polluter must pay' principle.