Night Flying Restrictions - Stansted Airport

1. Introduction

This paper is divided into two parts:

SECTION A - Background notes for those who may not be fully familiar with the regulatory framework for controlling night noise at Stansted Airport.

SECTION B - Response to the 70 questions listed in *'Night Flying Restrictions at Heathrow, Gatwick and Stansted Stage 1 Consultation'* as published by the Department for Transport ('DfT') in January 2013.[1]

SECTION A

1. Background to the current consultation

1.1 The Government regulates night flying at Stansted Airport (and Heathrow and Gatwick Airports) by setting annual limits on the number of flight movements and a formula known as a 'quota count' based on the noisiness of each aircraft. The current regime is based upon the Government's previous policy which supported and anticipated a second runway being operational at Stansted Airport around 2012 and had set night flying limits based upon the associated anticipated level of movements balanced against noise disturbance. Therefore the restrictions currently in force at Stansted have considerable headroom in that last year only about two thirds of the permitted night flights actually took place.

1.2 The DfT is now consulting on the next night flying regime due to start in October 2014. The consultation is in two stages; the first stage is essentially a call for evidence and views on a range of issues including the effectiveness of the current regime, environmental impacts, exploration of options and associated costs and benefits for the next regime. The closing date for this first stage is 22 April 2013.

1.3 The DfT expects to publish proposals for the next regime for consultation in Autumn 2013. They will be based on the results of the first stage and be consistent with the high level noise policy in the Government's Aviation Policy Framework, published in March 2013.

2. Night Flying Restrictions

2.1 Aircraft are certified by the International Civil Aviation Organisation ('ICAO') according to how noisy they are and then allocated a noise quota count rating. The night flying regime consists of a limit on the number of flight movements and a quota count ('QC') limit whereby QC points are allocated to different aircraft types. The noisier the aircraft type, the higher the number of QC points allocated. The current night flying regime sets limits on the number of movements and the number of QC points that can be used by the airport each year.

2.2 The movements and QC limits currently only apply to the 6½ hour period from 11.30pm to 6.00am (known as the night quota period). This means that there are no rules governing the night shoulder periods between 11.00pm and 11.30pm and between 6.00am and 7.00am, other than a ban on the scheduling of the very noisiest aircraft. This ban at Stansted was only breached once in 2012 when a scheduled passenger departure was delayed. These night shoulder periods are the very times when most people are trying to get to sleep or before they wake up. In the past, the movements limit has remained constant over the period of the regime whereas the QC points limit has been reduced by 5% each year.

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[1] https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/66837/consultation-document.pdf

2.3 The night flying restrictions are divided into summer and winter seasons and the yearly movements limit for Stansted is currently set at 12,000 flights (7,000 in the summer and 5,000 in the winter). Since 2000, Stansted has always had more night flights than Heathrow. Stansted's current night movements limit is 107% more than at Heathrow. And Heathrow currently handles four times more passengers than Stansted.

3. Noise at night

3.1 The area around Stansted Airport has relatively low background noise levels and the local communities generally enjoy a good environment in terms of ambient noise pollution. However, Stansted is a 24-hour flying operation airport. Noise disturbance by aircraft at night causes more nuisance to people because there is even less background noise from other sources and people will be trying to sleep. Night noise is worse in the summer because people tend to sleep with their windows open.

3.2 A modern jet aircraft is intrinsically noisy and emits 140 decibels of noise which is at the threshold of pain and would cause permanent hearing damage to humans if exposed to this level for any period. It is 8 times louder than a pneumatic drill and 250 times louder than normal conversation. Near Stansted Airport, each flight can be clearly heard above the low background noise levels and it is the number of flights as well as the noise of each flight that causes annoyance and sleep disturbance.

3.3 Additionally SSE believes that quantification of social and environmental costs needs to be undertaken in a systematic manner which reflects the true value of a proper night's sleep for individuals contributing to the wealth of the UK economy whose efficiency is impaired by interrupted sleep. A cost benefit analysis carried out for Heathrow night flights earlier last year by CE Delft economic consultancy showed that a ban on Heathrow night flights could benefit the economy by £860 million over 10 years. The biggest benefit by far in banning night flights is the economic cost of noise. The report concluded that a ban on night flights was likely to be beneficial to the UK economy *'as the economic costs of the ban will be outweighed by the savings made by the reduced health costs of the sleep disturbance and stress caused by the noise of the night flights'.*

3.4 The vast majority of Stansted's night flights do not need to take place during the night and so the economic conclusion reached by CE Delft in the case of Heathrow would – we believe – be just as applicable to Stansted. There is also a social cost associated with adverse health impacts and educational impairment associated with poor quality sleep which has a further detrimental impact on the economic cost of aviation on the nation.

3.5 Stansted is predominantly a leisure airport, and the number of UK passengers being flown out and the money they spend abroad greatly exceed the foreign passengers being flown in and the money they spend in the UK. In this context, it is arguable that the 'benefit' of one person's holiday flight (especially when that flight could well have been made during the day) should not take precedence over the disbenefit of impaired performance of another person at work, or of the loss of the sense of well-being of those who suffer the impacts of night flying by a reduced quality of life.

3.6 The problem of flights within the night shoulder periods (11.00pm-11.30pm and 6.00am-7.00am) is of particular concern around Stansted, resulting from an intensity of take-offs and landings designed around the low cost carriers' business model of using aircraft for four round trips per day, in spite of the considerable intrusion which this causes to those beginning or ending their sleep. Night should mean night and the core night period should be extended to include these night shoulder periods to make it a full eight hours.

3.7 Flights within the core 6½ hour night period (11.30pm-6am) at Stansted consist almost entirely of cargo flights (only a small proportion of which carry goods which are so time sensitive that they must be shipped overnight) and holiday charter flights by UK residents (which, again, very rarely need to take place at night). Night flights are a major source of local community annoyance at Stansted and this arises from both aircraft movements and ground noise. This should not be surprising in view of the low levels of background noise within this largely rural

environment. There is also a knock-on effect in terms of sleep disturbance caused by road traffic related to early morning and late night flights. Roads around Stansted Airport are busy from about 4.00am until midnight.

3.8 Finally, we question whether it is the role of the DfT to determine the number and type of night flights that should be allowed at Stansted Airport. Consistent with the Government's localism agenda, this matter could be devolved to the local planning authority, as is already the case with all UK airports except Heathrow, Gatwick and Stansted.

4. Our position

4.1 Stop Stansted Expansion's ('SSE') position on night flying is summarised as follows:

- 'Night' should mean night, that is from 11.00pm to 7.00am;
- There should be a commitment to the phased introduction of a total ban on night flights, except in emergencies;
- The annual QC limit should be sharply reduced so that it begins to have some practical effect;
- There should be an immediate ban on aircraft using reverse thrust when landing at night, except in emergencies.

5. General comments on the Night Flying Restrictions Stage 1 Consultation

5.1 The Executive Summary of the DfT Consultation Document states: '*Despite the significant improvements in aircraft technology and the associated noise reduction benefits, noise from aircraft operations at night remains widely regarded as the least acceptable aspect of aviation noise and the government has long recognised this'.* SSE agrees that night flights are a major source of community annoyance at Stansted and this arises from both aircraft movements and airport ground noise. Looking forward to the next regime, there should be a re-evaluation of the need for night flights based on clear evidence to establish whether there is a real need and to move them into the day wherever possible.

5.2 Most fleets currently operating at Stansted utilize modern aircraft. However, while it is true that significant improvements have been made in aircraft technology such that the current generation of aircraft are less noisy than the turbo-jet engines of the early 1970's, the scope for further improvements in airframe and engine technology to reduce noise is now becoming asymptotic to zero. And aircraft remain in service for up to 25 years. SSE's view is that emphasis must be placed on other measures to reduce aircraft noise nuisance and these are outlined in our response to the questions.

5.3 The next night flying restrictions regime should be tailored to suit each individual airport – Heathrow, Gatwick and Stansted. Furthermore the objectives for Stansted need to be revised to more adequately represent the current operation of the airport and the adverse impacts of noise upon the local community. The current regime is based upon the Government's previous policy which supported and anticipated a second runway being operational at Stansted by 2012 and had set night flying limits based upon the associated anticipated level of movements balanced against noise disturbance. Therefore the restrictions currently in force at Stansted have considerable headroom in that last year only about two thirds of the permitted night flights actually took place.

5.4 SSE believes that the current method of limiting movements and quota points is a well-established and practical system, particularly since this closely reflects what people actually hear. It is the number of events and sound energy of each event that causes annoyance, not an average LAeq measurement. Hence SSE wishes to see the introduction of an improved noise assessment methodology which is not solely based upon levels of average LAeq values and contours.

GLOSSARY AND ABBREVIATIONS

AIP	Aeronautical Information Publication
ANASE	Attitudes to Noise from Aviation Sources in England (a DfT study)
ANE	Aircraft Noise Event
ANIS	Aircraft Noise Index Study
ANMAC	Aircraft Noise Management Advisory Committee (a DfT committee)
A-weighted dB(A)	is used to denote levels of noise measured on a decibel scale using a frequency weighting that approximates to the characteristics of human hearing. These are referred to as A-weighted sound levels; they are widely used for noise assessment purposes.
CAA	Civil Aviation Authority
CCD	Continuous Climb Departures. A technique used to make the most efficient use of fuel but which also has the benefit of reducing aircraft emissions and can, potentially, alleviate departure noise.
CDA	Continuous Descent Approach. A technique used to alleviate approach noise by maintaining the aircraft higher for longer and then maintaining a constant approach profile.
dB	Decibel, a logarithmic measure of the sound pressure level
Defra	Department of the Environment, Food and Rural Affairs
DfT	Department for Transport
EPNLdB	Effective Perceived Noise Level in decibels
ICAO	International Civil Aviation Organisation
LAeq.T	This represents the 'average' equivalent sound level over a measurement period. It corresponds to the A-weighted steady continuous level of sound, over the time period (T), which is equivalent to all the fluctuating sound levels during this period. The 16-hour LAeq is the equivalent level for the 16 hour period 0700 to 2300 and for an average summer day. It is used as the UK index of exposure to aircraft noise.
Lden	As for LAeq, except that it is defined over an annual average 24-hr period with sub-periods defined as day (0700-1900), evening (1900-2300) and night (2300-0700). Lden applies a 5 dB penalty to the noise levels in the evening and a 10 dB penalty in the night to allow for the increased noise exposure impacts. A 10 dB increase equates to a doubling of loudness.
Lnight	As for LAeq, but defined for the annual average 8-hour night period between 2300-0700.
LAmax	The maximum A-weighted sound pressure level in decibels recorded during a single aircraft flyover.
NADP	Noise Abatement Departure Procedures
NAP	Noise Action Plan
NATS	National Air Traffic Services Ltd
NFR	Night Flying Restrictions
NPR	Noise Preferential Route (for departures)
QC	Quota Count
SEL	Sound Exposure Level, which is another method of measuring the noise of a single aircraft flyover by accounting for both the duration and intensity of the noise. It is the A-weighted sound pressure level which, if occurring over a period of one second, would contain the same amount of A-weighted sound energy as the whole flyover.
SID	Standard Instrument Departure, which is the designated instrument flight rule ('IFR') departure route linking the aerodrome or a specified runway of the aerodrome with a specified significant point, normally on a designated ATS route, at which the en-route phase of a flight commences.
SSE	Stop Stansted Expansion
STAL	Stansted Airport Limited
WHO	World Health Organisation

SECTION B

Response to Department for Transport

Night Flying Restrictions

Stage 1 Consultation

Stop Stansted Expansion ('SSE') was established in 2002 in response to Government proposals for major expansion at Stansted Airport. We have some 7,500 members and registered online supporters including 150 parish and town councils and local residents' groups and national and local environmental organisations. Our objective is to contain the development of Stansted Airport within tight limits that are truly sustainable and, in this way, to protect the quality of life of residents over wide areas of Cambridgeshire, Essex, Hertfordshire and Suffolk, to preserve our heritage and to protect the natural environment.

Stop Stansted Expansion
April 2013
www.stopstanstedexpansion.com

SSE's response to the 70 questions in the Night Flying Restrictions ('NFR')
Stage 1 Consultation

Q1: Are there any other matters that you think we should cover in the second stage consultation?

A1: There is no discussion or proposals in the Stage 1 Consultation for a review of, and improvement in, the method of noise assessment which is still fundamentally based upon levels of average LAeq values. SSE believes that the Government must introduce an improved measurement system for aircraft noise, particularly at night, such as that described in the ANASE report. Moreover the evidence gathered in the course of the ANASE study clearly showed that the DfT is relying upon an out-of-date system for assessing aircraft noise impacts, based as it is on dose/response surveys in the early 1980's when the volume of air traffic movements was much less than today.

A doubling of like-for-like aircraft movements will increase the LAeq by only 3dB which is not reflected in those surveys. The DfT should take forward the work of ANASE and develop a new framework for the measurement and control of aircraft noise impacts. The new framework should also take full account of the recommendations set down in the World Health Organisation ('WHO') *Guidelines for Community Noise* and the WHO *Night Noise Guidelines for Europe.*

While the Aviation Policy Framework dated March 2013 paragraph 3.19 recognises that *"people do not experience noise in an averaged manner….*[and] *encourages airport operators to use alternative measures which better reflect how aircraft noise is experienced in different localities",* there are no limiting values provided by the Government for any alternative measures.

SSE requests that these matters are addressed in the second stage of the consultation.

Q2: Do you have any comments on our assessment of the extent to which the current objectives have been met?

A2: Stansted Airport has a greater proportion of departures at night than Heathrow and Gatwick, mainly comprising short-haul passenger services (42%) and cargo movements (45%). The only departing passenger flights at Stansted during the night period are holiday charter flights for UK residents, flying them – in the main – to leisure resorts in Europe. There is no reason why such flights could not take place during the day, although the cost may be a little higher. However a relatively small cost saving to the holiday-maker does not seem to be a good reason to disturb the sleep of local residents and impair their work performance or their attentiveness at school – as the case may be – or, more generally, to undermine local residents' quality of life.

The passenger fleet is modern, the cargo fleet less modern. It should be noted that Stansted - unlike Heathrow and Gatwick - has dedicated cargo services operating during the night period. In both summer and winter, approximately two thirds of scheduled movements take place between 11.00pm and 1.00am with a fairly even spread of movements between 1.00am and 6.00am. The largest user of night movements has been Ryanair (which operates a modern fleet of Boeing 737-800s) with approximately one third of movements

Cost benefit analysis carried out for Heathrow night flights by CE Delft in 2011 reached the overall conclusion *'… that a ban on night flights at Heathrow is likely to be beneficial to the economy as the economic costs of the ban will be outweighed by the savings made by the reduced health costs of the sleep disturbance and stress caused by the noise of the night flights'.* The vast majority of Stansted's night flights do not need to take place during the night and so the economic conclusion reached by CE Delft in the case of Heathrow would – we believe – be just as applicable to Stansted. There is also a social cost associated with adverse health impacts and educational impairment associated with poor quality sleep which has a further detrimental impact on the economic cost of aviation on the nation. The current NFR regime at Stansted is based upon the Government's previous policy which supported and anticipated a second runway being operational at Stansted by 2012 and had set night flying

limits based upon the associated anticipated level of movements balanced against noise disturbance. Therefore the restrictions currently in force at Stansted have considerable headroom in that last year only about two thirds of the permitted night flights actually took place.

The environmental and night objectives of the current NFR regime at Stansted provide far too much headroom and have been easily met with no concomitant benefits to the wellbeing of the local residents.

Q3: Do you have any views on how these objectives should change in the next night noise regime?

A3: The next NFR regime must have tighter objectives tailored to the current level of air transport movements and the rural area around Stansted where the background noise levels are low. The next NFR regime must also provide incentives to airlines and the airport operator to reduce noise impacts. As mentioned above, the scope for reduction of limits is considerable due to the headroom currently afforded to the airlines in the present NFR regime.

The timing of night flights should be thoroughly investigated to establish what flexibility exists for flights to be adjusted to allow for periods of respite. Stansted Airport is currently operating at half capacity and there is large spare capacity during the day. There is no reason why flights could not be moved into the day wherever possible, although the cost may be a little higher.

Additionally changes must be introduced to improve the metrics used to measure night noise. Total reliance on LAeqs is inadequate. The current system of restrictions is based upon the number of events (movements) and the noisiness of each aircraft (QC points) but the system is then compromised when LAeqs are used. While it will be important at Stansted to measure noise impacts against background noise levels in the next regime, the sole reliance on 6½ hour or 8 hour LAeqs should be reviewed and improved.

SSE wishes to see environmental objectives set for the next NFR regime that do not solely rely on sizes of LAeq contours and population counts.

Q4: Do you have any views on whether noise quotas and movement limits should apply only to the existing night quota period or to a different time period?

A4: SSE firmly believes that 'night' should mean night, that is to say a full 8 hour period between 11.00pm and 7.00am for the night quota period. This is the definition of the night period in the WHO *Guidelines for Community Noise*.

Q5: Do you have any new evidence to suggest we should amend or move away from the current QC classification system?

A5: The current QC classification is a well-established and robust system and SSE believes it is still fit for purpose and should be retained. The 3dB bands are appropriate in that a 3dB change is one that is the minimum perceptible under normal conditions.

The regime system of annual reduction of QC points should be retained and the limit should be more aggressively reduced and more adequately reflect the fleet mix at Stansted Airport.

Equally the limit on movements is a robust system and should be retained.

Q6: Do you have any views on the optimum length of the next regime and how this should align with the work of the Airports Commission?

A6: SSE believes the optimum length of the next regime should be five years. This is the periodicity of airport Noise Action Plans ('NAPs') and is sufficiently long for improvements in noise reduction to be realised. Any longer time period would set too long a timeframe and not provide sufficient incentive to realise NAP objectives, targets and timescales.

Q7: Do you have any views on how dispensations have been used?

A7: No comment.

Q8: Do the dispensation guidelines still adequately reflect current operational issues?

A8: No comment.

Q9: Would you favour adding greater contingency to the seasonal movement limits (within any overall movement cap for the airport) in order to avoid large numbers of dispensations?

A9: No comment.

Q10: Do you consider there is still a need to retain the principles of carry-over and overrun? If so, please give reasons why.

A10: SSE believes the carry-over arrangements are sensible in principle. However in the case of Stansted, the headroom allowed in the current regime is huge and gave no incentive for airlines and the airport operator to reduce or mitigate night noise nuisance. The next regime should have tighter limits and be the first step in the phased introduction of a total ban on night flights, except in emergencies.

Q11: If we retain the principles do you think we should change the percentage of movements and noise quota which can be carried over or overrun?

A11: No.

Q12: Do you have any comments on our analysis of fleet and operational trends?

A12: No

Q13: In the absence of any new restrictions, what changes in operations and fleet mix do you expect in the period between now and 2020 (and beyond 2020 if possible)?

A13: No comment

Q14: Please set out how you expect local land use planning policies to impact upon the numbers of people exposed to night noise in the next regime. Please give details of any housing developments planned to take place within the current night noise contours (see Annex B).

A14: No comment

Q15: Please provide any information on the feasibility of increasing the angle of descent into Heathrow, Gatwick or Stansted, particularly within the next seven years.

A15: SSE would welcome the introduction of steeper descent angles and in particular the introduction of Continuous Descent Approach ('CDA') to runway 04 at Stansted airport. It is noted that the glide slope angle at London City Airport is 5.5 degrees.

Q16: What are your views on the analysis and conclusions in annex H? Would you favour changing the current pattern of alternation in favour of an easterly preference during the night quota period?

A16: No comment.

Q17: Do you have any views on the costs and benefits of a night-time runway direction preference scheme at Gatwick or Stansted?

A17: SSE agrees that a night-time runway direction preference scheme at Stansted is unlikely to have any significant noise benefits.

Q18: Please provide any information about the feasibility of using displaced landing thresholds in the next seven years for arrivals from the east at Heathrow and from the north east at Stansted.

A18: The shape of the noise exposure contours for Stansted Airport is not symmetrical about the axis perpendicular to the runway. They are shorter and fatter to the south-west and longer

and thinner to the north-east. This has effect that when the area contained within the contours grows, more of Thaxted enters the contours (a market town with a population of about 3,500 to the north-east of Stansted). This has the result that the increase in the total number of properties and population contained within these contours is disproportionately larger as more of Thaxted enters the contours.

It could therefore be a benefit to residents to the north-east of Stansted Airport and Thaxted in particular if a displaced landing threshold was introduced for arrivals to runway 22.

Q19: Please provide any information about airspace changes or other operational procedures which could mitigate the impact of night noise in the next regime period

A19: The Consultation Document (paragraph 5.15) states that *'Operational procedures can make a significant difference to the way in which noise is distributed, including at night'.*

This is true during the day and particularly true during the night around Stansted in view of the low levels of background noise within this largely rural environment. SSE believes that since the scope for technical improvements to aircraft engines and airframes is now limited, improvements to the noise climate will be achieved through better flight paths and other operational improvements.

At Stansted, SSE believes that early introduction of the following improved procedures will bring benefits to local residents and users alike:

1. Airspace changes
   The most important airspace change needed for Stansted Airport is the implementation of CDA for runway 04. This will reduce noise exposure from arriving aircraft over Hertfordshire and particularly in the vicinity of Ware. Stansted is the only designated airport without the benefit of CDA on all runway directions. The intention to retain Noise Preferential Routes (NPRs) and improve them where necessary is welcomed. This should include ensuring all NPRs are to 4,000ft minimum but preferably cleared for fast climb to above 5,000ft. Reducing the swathe size of NPRs should also be considered. The accurate track keeping capability of modern aircraft means that the current 3km wide swathe could be reduced with aircraft keeping to the centre line, or to a line which is tailored to avoid settlements. However the impact of concentrating all traffic on one line rather than dispersing it across an NPR may make this unacceptable (the 'concentration' versus 'dispersion' argument) unless a clear benefit can be realized with fewer people being exposed to noise under the route. Informal trials at Stansted have already demonstrated this potential for accurate station keeping and formal CAA trials are due to start in April 2013. Alternatively, respite is valuable for communities close to the airport and the potential for more than one concentrated route within an NPR should be considered on an individual basis

2. Noise after take-off
   Different noise limits could be set for different types of aircraft on take-off. It would be sensible not to have a proliferation of different limits, but perhaps two or three depending on the traffic mix at each airport. At Stansted the vast majority of aircraft are B737/A319 for which the departure QC is 0.5 (87 – 89.9 EPNLdB) so it should be possible to introduce two sets of three limits, one for each of the day, night and night quota periods. That is to say a lower set for aircraft of QC 0.5 and below and a higher set for aircraft of QC 1 and above. The new sets of limits could be scaled from the existing limits.

3. Gradient of climb on departure (jet aircraft)

   Currently a minimum gradient of 4 degrees is required up to 3,000 or 4,000ft. It is considered that with the ability to perform Continuous Climb Departures ('CCD') and the improved climb capability of more than 5 degrees of modern aircraft, this gradient angle should be increased.

4. Reverse thrust
   Paragraph 4 of the Notes to the Stansted UK AIP states *'To minimize disturbance in*

areas adjacent to the aerodrome, commanders of aircraft are requested to avoid the use of reverse thrust after landing, consistent with the safe operation of the aircraft, from 2330 hours to 0600 hours (local time).' This is considered inadequate wording to discourage the use of reverse thrust except when safety dictates. At other European international airports, the guidance is more prohibitive, for example:

- Frankfurt: *'Reverse thrust may not be used on the entire runway system of Frankfurt/Main Airport except for safety reasons in unavoidable cases. This does not apply to idle reverse thrust.'*
- Schiphol: *'During night-time 2200-0600 (2100-0500): After landing, reverse thrust above idle shall not be used on any runway, safety permitting.'*
- Copenhagen: *'Use of more than idle reverse thrust is allowed only for safety reasons.'*

To further encourage avoidance of unnecessary reverse thrust particularly at night, the UK AIP guidance notes should be strengthened to state*: 'reverse thrust above idle shall not be used except for safety reasons'*.

5. Noise Abatement Departure Procedures ('NADP')
   There are two types of procedure, one that minimizes noise close to an airport and the other which minimizes noise further away. Depending upon which type of NADP is used, there is a small difference in fuel burn and a large change in the location of noise exposure on the ground. Close to the airport, noise reduction should take precedence over any fuel burn economies which are of marginal benefit in terms of fuel savings and emissions over the total duration of the flight.
6. Joining point
   Under current rules, the joining point criteria for Stansted runway 04 vary between daytime and night-time. Daytime arrival rules reduce the likelihood that aircraft fly over the urban areas of Ware, Hertford and Hoddesdon. Trials are currently being conducted at Stansted, whereby the night-time joining point is moved closer to the airport, to investigate whether the resultant night noise exposure is reduced.

Q20: Do you have any comments to make on the figures relating to movement limits and usage?

A20: The current night flights regime at Stansted was set in 2006 and was based upon the Government's previous policy which supported a second Stansted runway and expected this to be built '*by 2011 or 2012'*. Thus, the night flights limits at Stansted were set in anticipation of a far higher level of aircraft movements whereas, in fact, Stansted handled 31% fewer flights last year, compared to 2006. The result is that the 'restrictions' currently in force at Stansted have considerable headroom in that last year only about two thirds of the permitted night flights actually took place (8,135 out of the 12,000 limit).

Noise quota (QC) limits and movements limits should be brought below current usage at the start of the next regime and then subject to annual reductions.

Q21. In the absence of any new restrictions, how do you expect demand for movements in the night quota period over the course of the next regime to change?

A21: There should be a re-evaluation of the need for night flights based on clear evidence to establish whether there is a real need and to move flights into the day wherever possible. At Stansted, there is ample capacity during the day for additional flights that are currently operated at night.

Q22: Do you have any comments to make on the figures relating to noise quota limits and usage?

A22: See our response to Q20. Noise quota (QC) limits and movements limits should be brought below current usage at the start of the next regime and then subject to annual reductions.

Q23: Do you agree with our initial assessment of the scope for reducing the noise quota in the next regime without imposing additional costs?

A23: The Consultation Document (paragraph 5.46) states *'our initial assessment is that the greatest scope for reducing the noise quota at minimum cost to airlines is where the percentage of noise quota used is already much lower than the percentage of movements limits used and where this trend has been over the longer term, irrespective of temporary economic circumstances. Largely, there has been a consistent pattern in recent years of lower noise quota usage than movement limits. The exception is Stansted's most recent winter seasons…'*

This statement is not wholly borne out for Stansted with the data given in Tables 9 and 12 of the Consultation Document which show the following comparative percentage usage:

Stansted	% movements usage	% noise quota usage
Winter 200607	75.0	71.6
Summer 2007	104.4	89.8
Winter 2007/08	72.2	70.0
Summer 2008	92.8	81.1
Winter 2008/09	63.9	62.3
Summer 2009	85.4	73.7
Winter 2009/10	68.5	69.1
Summer 2010	86.9	72.7
Winter 2010/11	51.9	52.7
Summer 2011	85.8	75.6
Winter 2011/12	46.0	49.3
Summer 2012	83.4	77.5

The percentage of noise quota usage at Stansted is more closely tied to the percentage of movements used in the last six years. It is of the same order and is certainly not '*much lower'.*

However, it is the number of movements that has the most effect on noise nuisance at night. So while SSE agrees that the noise quota in the next regime should be reduced by a considerable amount, particularly in the winter, the scope for reducing movement limits in the winter is now also considerable.

Q24: Do you have any views on the relative disturbance caused by the noise of an individual aircraft movement against the overall number of movements in the night quota *period?*

A24: A modern jet aircraft is intrinsically noisy and emits 140 decibels of noise which is at the threshold of pain and would cause permanent hearing damage to humans if exposed to this level for any period. It is eight times louder than a pneumatic drill and 250 times louder than normal conversation. Near Stansted Airport, each flight can be clearly heard above the low background noise levels and it is the number of flights as well as the noise of each flight that causes annoyance and sleep disturbance.

This is not surprising given the rural nature, low population density and associated lower levels of activity. Each noisy event such as an aircraft can be distinctly audible against the low background noise levels. It is SSE's experience that it only requires one aircraft noise event ('ANE') to cause sleep disturbance when compared to the low ambient noise levels inside bedrooms around Stansted Airport. This also appears to be the case for flights within the night shoulder periods (11.00pm-11.30pm and 6.00am-7.00am). This is of particular concern around Stansted, where an intensity of take-offs and landings designed around the low cost carriers' business model using aircraft for four round trips per day. This causes considerable intrusion to those local residents beginning or ending their sleep. The link between the number of ANEs and sleep disturbance does not seem to be well documented. It is noted that the WHO *Night Noise Guidelines for Europe 2009* used an assumption in its methodology of an average air traffic exposure of 8 flights a night. The Consultation Document (paragraph 5.66) states that the actual average number of movements at Stansted for a 6½ night is 24.2 flights – three times as many. It only requires one ANE to cause sleep disturbance around Stansted Airport and the larger the number of ANE's, the larger the effect on sleep disturbance.

The 1992 findings of field studies into sleep disturbance and aircraft noise were that below outdoor levels of 90 dBA SEL (about 80 dBA Lmax), ANE's '*are most unlikely to cause any increase in measured sleep disturbance from that which occurs naturally during normal sleep*'. However, it was also clear that the louder the ANE, the greater the likelihood of an effect on sleep.

The fundamental purpose of the night flying restrictions should be to restrict movements and QC points. This should mean what it says. It is the noisiness of each flight compared with the low background noise levels around Stansted that causes disturbance. Axiomatically, fewer flights result in less disturbance.

The WHO *Night Noise Guidelines for Europe 2009* gives a value of 40 dB Lnight.8hour.outside with an interim target of 55 dB Lnight,outside recommended in the situations where the achievement of 40 dB is not feasible in the short run. There should be a firm commitment by DfT to a programme to achieve this WHO value of 40 dB Lnight.8hour.outside.

When consulting on the last NFR regime, which began in 2006, the DfT gave the following commitment in respect of the WHO Guidelines for Community Noise:

> *'The recommendation was that the Guidelines for Community Noise should be adopted as long term targets for improving human health. This is also consistent with the advice above. The UK Government is committed to take account of this. In respect of aircraft noise at night, the 30 year time horizon of the [2003 Air Transport] White Paper, provides a suitable time parameter for 'longer term'.'*

The time horizon for the 2003 Air Transport White Paper was 2030 and the next NFR regime will last until at least 2019 and so it should include solid progress on implementing the WHO Guidelines. Long suffering local communities around airports whose health continues to be damaged by sleep disturbance caused by night flights are entitled to expect Government action and this is already long overdue. The Stage 2 NFR Consultation should therefore include a draft timetable, with milestones, for fully achieving the WHO guideline values by 2030.

Q25: What are your views on the feasibility of a QC/8 and QC/16 operational ban in the night period? Please set out the likely implications of such a ban and the associated costs and benefits.

A25: In 2012, there was only one QC/8 aircraft movement and no QC/16 aircraft movements during the night quota period at Stansted, as older aircraft have been replaced. SSE wishes to see a complete ban on these flights and regularise the de facto situation of these noisy QC/8 and QC/16 aircraft not only during the night quota period but also throughout the night period from 11.00pm to 7.00am. See also A2 above for CE Delft cost benefit analysis results.

Q26: How many QC/4 aircraft do you expect to be in operation over the next seven years during the night quota period? Is the downward trend at Heathrow expected to continue?

A26: No comment.

Q27: What are your views on the feasibility of a QC/4 operational ban in the night quota period at any or all of the three airports? Please set out the likely implications of such a ban and, where possible, the associated costs and benefits.

A27: SSE wishes to see a continuation of the downward trend that has been evident at Stansted in the last three years, leading to a complete ban on flights of QC/4 aircraft not only during the night quota period but also throughout the night period from 11.00pm to 7.00am. The cost to airlines of transferring such a small number of night flights at Stansted is considered to be outweighed by the benefit of the true value of a proper night's sleep to individuals contributing to the wealth of the UK economy whose efficiency is impaired by interrupted sleep. See also A2 above for CE Delft cost benefit analysis results.

Q28: Are there more cost-effective alternative measures (such as penalties) to reduce the number of unscheduled QC/4 operations during the night quota period?

A28: As well as penalties for noisy aircraft operating at night, SSE believes that airlines should be incentivised to fly less noisy aircraft by introducing differential and less expensive landing charges for daytime operation.

Q29: What are your views on the feasibility of an operational ban of QC/4 aircraft at any or all of the three airports during the shoulder periods? Please set out the likely implications of such a ban and the associated costs and benefits.

A29: As earlier stated in A27 above, SSE wishes to see a complete ban on flights of QC/4 aircraft not only during the night quota period but also throughout the night period from 11.00pm to 7.00am. See also A2 above for CE Delft cost benefit analysis results.

Q30: What is the rationale for operating services at precise times during the night quota period (as they do now)?

A30: As stated in A24, the night shoulder periods (11.00pm-11.30pm and 6.00am-7.00am) are of particular concern at Stansted, resulting from an intensity of take-offs and landings designed around the low cost carriers' business model of using aircraft for four round trips per day. The night shoulder periods at Stansted are every bit as much of a noise nuisance as the night quota period because these are the very times when most people are trying to get to sleep or just before they would like to wake up.

Q31: What is the scope for introducing a respite period at Gatwick or Stansted? Please set out the associated costs and benefits.

A31: As stated in A30 above, SSE would wish to see a respite period introduced initially in the shoulder periods at Stansted leading to a phased programme for a complete ban.

Q32: What is the feasibility of making Heathrow's voluntary curfew mandatory?

A32: No comment.

Q33: If you favour a guaranteed respite period, what would be the minimum period which you would consider to be worthwhile?

A33: As explained above, the night shoulder periods are a particular concern at Stansted due to the intensity of take-offs and landings in these periods. Some form of guaranteed respite during these periods would be very welcome. In addition, guaranteed respite in the early hours of the night quota period (i.e. 11.00pm-1.00am) would also be very welcome. SSE's overall position is that there should be a commitment to a phased introduction of a total ban on night flights, except in emergencies. A modest starting point would be to introduce Saturday night/Sunday morning curfews.

Q34: What are your views on the principle of trading off a complete restriction on movements in one part of the current night quota period against an increase in flights in another part of the night quota period?

A34: Trade-offs are a compromise in principle. However, before a total ban on night flying is introduced at Stansted, and as part of a phased programme to achieve this, it would be preferable to reduce movements in the night shoulder periods and the early hours of the night quota period as outlined in A33 above.

Q35: What are your views on the possibility of fewer unscheduled night flights arising from an increase in daytime arrivals 'out of alternation' or vice versa?

A35: No comment.

Q36: What value do you place on day time respite compared with relief from noise in the night quota period?

A36: SSE wishes to see all night-time flights moved into the day time.

Q37: Do you have any views on the extent to which landing fees can be used to incentivise the use of quieter aircraft during the night period?

A37: SSE fully supports the use of differential landing fees to incentivise the use of aircraft that are best in class and to reflect the cost of noise disturbance, particularly at night. We note that the initial findings from the CAA study into this matter indicate that *'the monetary incentives designed to encourage airlines to use the quietest aircraft are not strong.'* This clearly needs to be rectified. There is currently no differentiation between day time and night landing charges at Stansted and this should not be allowed to continue. A differential scheme can be easily structured by a sliding scale of the noise related element of fees to the QC ratings.

Q38: Please provide comments and evidence on the extent to which the noise insulation scheme criteria have been met. Where possible please include figures for numbers of properties insulated under the scheme and numbers which are still potentially eligible.

A38: The noise insulation scheme is solely based on LAeq contours and SSE's comments concerning the adequacy of sole reliance on LAeq contours are given in A3 above. The noise insulation scheme must be brought up to date with more reliance placed upon the low background noise levels which exist around Stansted Airport.

Q39. Do you have any suggestions for changes to current compensation schemes or for new compensation schemes that might be introduced to help offset the impact of night noise on those exposed to it? For new schemes, please explain the parameters that you would suggest for the scheme and the rationale for choosing those parameters.

A39: The qualification thresholds at Stansted for acoustic insulation – to require the airport operator to meet either the full cost of secondary glazing, or half the cost of double glazed replacement windows – are (i) the daytime 66 dBA Leq.16-hour noise contour (7.00am-11.00pm); (ii) the night 90 dBA SEL noise footprint (11.00pm-7.00pm hours); and (iii) within 600 metres of sources of airport ground noise but excluding properties south of the A120 and east of the M11.

For the reasons we have explained earlier, the Government should introduce an improved measurement system for aircraft noise such as that described in the ANASE report and this should be used as the basis for compensation schemes. As an interim measure, however, the Leq.16-hour qualification threshold should be reduced from 66 dBA to 55 dBA, the threshold specified in the WHO Guidelines for Community Noise, as marking the onset of 'serious annoyance daytime and evening'.

Turning specifically to night noise, any household exposed to aircraft noise at night above threshold of 60 dB LAmax.fast set down in the WHO Guidelines for Community Noise should also qualify for acoustic insulation.

Regarding ground noise, the current qualification boundary is clearly arbitrary. We do not have any firm view on what the boundary should be, but it should be based on a proper assessment of the actual impacts of ground noise upon residents who live in close proximity to the airport, especially the impacts at night.

Q40. Do you have any proposals for new or improved economic incentives that could be deployed to incentivise the use of quieter aircraft during the night period?

A40: Since all aircraft are inherently noisy, especially when they disturb the peace and calm of the night, the main focus should be on reducing the number of aircraft movements at night, rather than on quieter aircraft. Especially since the scope for further improvements in airframe and engine technology to reduce noise is now becoming asymptotic to zero. Meanwhile, as a means of discouraging night flights, significantly higher rates of Air Passenger Duty ('APD') should be charged for passengers whose flights depart during the night period and a new APD rate should be introduced for passengers whose flights arrive during the night period. We do of course recognize that the DfT would need to refer this proposal to HM Treasury, which has sole responsibility for tax matters but there is ample time to do this prior to the Stage 2 NFR Consultation. We look forward to reading the outcome of that consideration.

Whatever the outcome, there should be no doubt that there is a pressing need to reduce the impact of aircraft noise at night. The WHO *Guidelines for Community Noise* state that to avoid sleep disturbance, and the adverse health impacts thereof, noise levels should not exceed:

- Inside bedrooms – 30dB LAeq (8-hour) or 45dB LAmax.fast
- Outside bedrooms (window open) – 45 dB LAeq (8 hour) and 60 LAmax.fast.[2]

Furthermore the The WHO *Night Noise Guidelines for Europe 2009* gives:

- 40 dB Lnight.8hour.outside with an interim target of 55 dB Lnight.outside recommended in the situations where the achievement of 40 dB is not feasible in the short run

As stated in our response to Q24, when consulting on the last NFR regime, the DfT gave the following commitment in respect of the WHO *Guidelines for Community Noise*:

> *'The recommendation was that the Guidelines for Community Noise should be adopted as long term targets for improving human health. This is also consistent with*

[2] These values assume 15dB noise attenuation from open windows.

> *the advice above. The UK Government is committed to take account of this. In respect of aircraft noise at night, the 30 year time horizon of the [2003 Air Transport] White Paper, provides a suitable time parameter for 'longer term'.'* [3]

The time horizon for the 2003 Air Transport White Paper was 2030 and the next NFR regime will last until at least 2019 and so it should include solid progress on implementing the WHO *Guidelines*. Long suffering local communities around airports whose health continues to be damaged by sleep disturbance caused by night flights are entitled to expect Government action and this is already long overdue. The Stage 2 NFR Consultation should therefore include a draft timetable, with milestones, for fully achieving the WHO guideline values by 2030.

Q41: Is there any other evidence we should consider in assessing the response of airlines and air transport users to changes in the night flights regime?

A41: Historically, cargo aircraft and holiday charter flights have been the dominant categories of night flights at Stansted, and indeed many other airports, and the industry has argued that the particular nature of these sectors necessitated night flights for economic and practical reasons. However since the last NFR regime was set in 2006, the three designated airports have experienced a 37% reduction in charter flights and a 19% reduction in cargo flights. This reflects what is happening in the market as a whole and so suggests that the industry's 'need' for night flights is significantly less than was the case in 2006.

Q42: Is there any reason why we should not seek to ensure consistency with the Aviation Appraisal Guidance approach to assessing air passenger impacts?

A42: Notwithstanding the commentary at paragraph 6.43 of the Consultation Document, we will expect the DfT to follow the procedure set down in the HMT Green Book, which applies to appraisal and evaluation across all government departments and states: *'All impacts (including costs and benefits, both direct and indirect) on non-UK residents and firms should be identified and quantified separately where it is reasonable to do so, and if such impacts might affect the conclusions of the appraisal. Generally, proposals should not proceed if, despite a net benefit overall, there is a net cost to the UK (for instance, after taking into account environmental costs).'*

It is entirely feasible to distinguish between UK and foreign air passenger benefits and so these should be separately identified and the cost benefit analysis should be carried out only in respect of the costs and benefits to UK air passengers.

Q43: What are your views on how we should assess the impacts on air passengers associated with a change in night flights regime, if we are unable to use the Department's aviation models?

A43: The Consultation Document accepts that the DfT's aviation models are unsuitable for assessing the impacts on passengers associated with a change in the night flights regime, saying (at paragraph 6.29): *'Unfortunately, the Department's aviation models are likely to be of limited use in assessing the impact of changes to the night flights regime. This is because the models do not differentiate between night and day flights.'*

The Consultation Document (paragraph 6.26) also states *'Assessing this* [passenger] *behavioural response is therefore a critical step in assessing the impacts of any changes to the night flights regime'.* We fully agree with this and so, instead of the DfT making its own assumptions about passenger behaviour and their preferred arrival and departure times, it should commission opinion survey research to try to establish how passengers would respond if the availability of night flights at Heathrow, Gatwick and Stansted was more restricted, or fiscally discouraged: what percentage would switch to a day flight? what percentage would switch to another airport? what percentage would simply decide not to fly? The opinion survey research should also seek to establish what value passengers attach to night flights: how would

[3] *'Night Flying Restrictions at Heathrow, Gatwick and Stansted: Stage 1 of Consultation on Restrictions to apply from 30 October 2005'*, DfT, July 2004, paragraph 3.12.

passengers respond to more expensive night flights at these three airports if, for example, APD was doubled on departing night flights and became payable on arriving night flights? The results should be shown separately business and leisure passengers, as well as for UK and foreign residents.

Q44: Do you think there is merit in applying the approach employed by CE Delft? If so, do you agree that it is reasonable to assume that business passengers and transfer passengers prefer to arrive on a night flight, if they would choose to do so if one were available? What are your views on what we should assume about terminating passengers' preferred arrival times and about passengers' preferred departure times?

A44: The DfT should commission a passenger opinion survey research – as set out in our response to Q43 above – in order to obtain evidence-based answers to these questions, rather than asking consultees to guess passengers' preferences.

Q45: Do you agree that the impacts on passengers who decide not to travel (or become able to travel) as a result of the change in night flights regime could be critical to the balance of costs and benefits?

A45: It is not possible to give a sensible answer to this question without first gathering evidence to enable the likely impacts to be estimated. The first task is therefore to establish what value passengers attach to night flights (overall this may be positive or negative) and how passengers would respond to reduced availability of night flights and to fiscal disincentives. Again, this highlights the need for the DfT to commission research based on a passenger opinion survey.

Passenger charter flights which operate during the night at Stansted are entirely focused on flying UK residents to and from their overseas holiday destinations. This is also, very largely, the case with scheduled passenger flights (almost entirely Ryanair and easyJet) which operate during the night period.

Whilst there may be economic benefits for passengers in terms of lower fares for travelling during unsocial hours, it is far less clear that such outbound leisure tourism delivers net economic benefits for the UK; indeed there are obvious economic disbenefits for the UK economy, and these also need to be properly assessed. For example, to what extent are domestic and overseas tourism in competition and how important is the overall cost of the air fare in influencing consumer choice and switching decisions? These issues need to be explored as part of the passenger opinion survey referred to above.

It will also be important to consider the types of passengers (UK/ Foreign, Business/Leisure) and include a qualitative assessment when assessing the costs and benefits of night flights. As an illustration, there is clearly more justification for disturbing the sleep of the local community in the case of a night charter flight carrying UK business leaders on an overseas trade mission, compared to a night flight carrying UK revellers to/from a stag weekend in Prague. Any cost benefit analysis which the DfT undertakes on night flights should be able to reflect these realities.

Q46: Are you aware of any evidence that we could use to value the impacts on passengers who decide not to travel or (become able to travel) as a result of the change in night flights regime?

A46: See our response to Q45 above (first paragraph).

Q47: Do you think that the method used by Oxford Economics (2011) to assess the impacts on productivity of changes in business usage of aviation (the approach is described in paragraphs J22-23 of Annex J) would adequately take account of the impact on air freight service users of changes in the current night flights regime?

A47: It would be fundamentally wrong for the DfT to adopt the methodology used by Oxford Economics, a consultancy firm which has for many years – including under its former name Oxford Economic Forecasting (OEF) – carried out extensive (and doubtless highly lucrative)

work on behalf of the aviation industry lobby. There would inevitably be a powerful incentive for this consultancy firm to provide the type of evidence and analysis which its clients would want to see.

Q48: Do you think that, were we to employ the method used by Oxford Economics (2011) to assess the impacts of changes in business usage of aviation on UK productivity (the approach is described in paragraphs J22-23 of Annex J), we would need to isolate the impact on business air passengers in our assessment of air passenger impacts in order to avoid double-counting of business air passenger impacts*?***

A48: See our response to Q47 above.

Q49: Is there any other evidence or information that we should consider in assessing the impact on air freight service users of a change in the night flights regime?

A49: Just as it is important to consider the types of air passengers (UK/Foreign, Business/Leisure) when assessing the costs and benefits of night flights, so also it is important to look at the types of freight and include a qualitative assessment. There will be stronger justification for the community disturbance and sleep deprivation caused by night flights in the case of a CATM carrying express parcels or fresh produce as compared to a CATM carrying non-urgent or non-perishable goods. An illustrative example is a noisy Boeing 747-200 CATM which arrived at Stansted around 4.30am one morning from Guangzhou giving rise to numerous noise complaints. It was learned later that same day that its cargo had been 22 pallets of sex toys and lingerie destined for the Ann Summers central warehouse in Surrey.

It is, in our view, not possible to justify extensive community disturbance and sleep deprivation for this type of non-perishable, non-urgent imported cargo and it is difficult to demonstrate that it has such economic value to the UK as to merit its arrival at night rather than during the day. It is also worth reflecting that many of those whose sleep was disturbed by this aircraft would have been up early the next morning to travel to high value jobs in the City of London or may have had equally high-pressure jobs in teaching or healthcare services. Any cost benefit analysis which the DfT undertakes on night flights should be able to reflect these realities.

Q50: Is there any reason why we should not seek to ensure consistency with the Aviation Appraisal Guidance approach to assessing airline and airport impacts?

A50: Our response here is consistent with the response we gave to Q42, above, i.e. we will expect the DfT to follow the procedure set down in the HMT Green Book, which applies to appraisal and evaluation across all government departments. It is entirely feasible to distinguish between UK and foreign producer benefits and so the benefits to foreign airlines and other foreign service providers at Heathrow, Gatwick and Stansted should be separately identified, as should also the benefit to the foreign shareholders of these airports.

Q51: What are your views on how we should assess the impacts on profits, if we are unable to use the Department's aviation models?

A51: Since all three airports are subject to economic regulation and all price up to the cap, there should be no impact on airport profits. We doubt that there would be any significant impact on airline profits, even if higher operating costs did arise, because we would expect these to pass through to the users of air transport services. Any impact on profits of foreign airlines should be separately identified so that this can be excluded from the cost benefit analysis. Clearly, it will be important to avoid double counting, and the simplest way to avoid this risk is to assume that any cost impacts pass through to the end users of air transport services at cost, and so there is no impact on producer profits.

Q52: Do you agree that there is merit in our applying a similar approach to that employed by Oxford Economics to estimate the economic value of night flights at Heathrow? If so, are you able to provide any evidence of how much freight is carried on night flights at the designated airports? What factors should we consider in assessing the applicability of the available profits data to night flights at the designated airports?

A52: See our response to Q47 above.

Q53: Is there any other evidence we should consider in assessing the impacts of a change in the night flights regime on airlines and airports?

A53*:* Bringing an end to night flights, and even a significant reduction in the number of night flights, could be expected to lead to a much improved relationship between the airport operator and the local community. This obviously has a value otherwise why would airport operators spend quite considerable sums of money on supporting local community activities, local charities and other local good causes? This value should be assessed and included in any cost benefit analysis.

Q54: Do you agree that the approach proposed by the Civil Aviation Authority (CAA) for estimating the cost of sleep disturbance from aircraft noise reflects the available evidence? If not, how do you think it should be changed?

A54: The CAA report states that additional research is needed in order to develop a workable methodology for monetising the effects of cognitive impairment in children and in the meantime, this effect is excluded. This is a significant exclusion because (as the report states) cognitive impairment in children results in loss in long-term productivity.

It is not clear that the CAA report gives proper consideration to the cost of reduced employee productivity caused by aircraft noise at night, for example, where an employee - perhaps a City trader - turns up for work having had a disturbed night sleep due to aircraft noise and under-performs as a result. This would clearly be to the detriment of his firm and quite possibly also to the UK economy. How does DfT intend to put a value on that?

Q55: Is there any other evidence, not considered by the CAA in their literature review, which we should consider in assessing the noise impacts of a change in the night flights regime?

A55: In the CAA literature review in ERCD Report 1208, it appears that the PARTNER Project 19 Final Report[4] has not been included. This PARTNER report is both recent and well docu,ented. However, the accumulated data from both the PARTNER and the ERCD 1208 reports suggests that sleep disturbance may well have an effect on cardiovascular health in relation to such conditions as hypertension and ischaemic heart disease. A meta-analysis carried out by Babisch, as well as the HYENA study[5], found an increased odds ratio for hypertension following exposure to night time noise. The ERCD 1208 report stresses the WHO recommendation that the adverse effects of noise on sleep occurs at an aircraft noise level of 32 dB LAmax, indoors.

Furthermore the effect of noise on endocrine disturbances resulting in obesity and diabetes does not seem to have been included. Studies have shown an increased risk of obesity in those having shorter and fragmented sleep[6].

[4] A Review of the Literature Related to Potential Health effects of Aircraft Noise , Hales Swift, July 2010 for FAA/NASA/Transport Canada

[5] Hypertension and Exposure to Noise near Airports, Larup et al, 2007

[6] Impact of insufficient sleep on total day energy expenditure, food intake and weight gain. Markwald RR,Smith MR, Melenson EL,Higgins J, Perrrault L and Eckel RH. Proceeding of the National Academy of Sciences 2013 IIO 5695-5700

As outlined in A1 above, there is no discussion or proposals in the Stage1 Consultation for review of and improvements to the method of noise assessment which is still fundamentally based upon levels of average LAeq values. This is a major omission in our view, since many of the noise impacts are assessed on LAeq metrics. This is a seeming contradiction to the fundamental operation of the NFR regime which is solely based on movements and QC ratings. In other words the regime operates as closely as possible to what people actually hear – the number of noise events and the noise level of each event. Not to average levels of LAeqs.

SSE believes that the Government must introduce an improved measurement system for aircraft noise, particularly at night, such as that described in the ANASE report. Moreover the evidence gathered in the course of the ANASE study clearly showed that the DfT is relying upon an out-of-date system for assessing aircraft noise impacts, based as it is on dose/response surveys in the early 1980's when the volume of air traffic movements was much less than today. A doubling of like-for-like aircraft movements will increase the LAeq by only 3dB which is not reflected in those surveys. The DfT should take forward the work of ANASE and develop a new framework for the measurement and control of aircraft noise impacts. This should also take full account of the recommendations set down in the WHO *Guidelines for Community Noise* and the WHO *Night Noise Guidelines for Europe.*

SSE wish to see this work taken forward when assessing the noise impacts of a change in the night flights regime

Q56: Do you agree that we should ensure that the method used to assess air quality impacts should be proportionate to the proposals under consideration?

A56: Each airport has different circumstances that will influence its ability to reschedule night flights and to assess the cost and other implications for passenger/cargo airlines. The proportionality should also relate to the possible changes in fleet make-up since the differing emissions of the planes concerned make a significant difference.

With regard to the monetisation of the changes in NOx levels, the Consultation Document (paragraph 6.70) suggests the use of abatement cost values rather than damage cost values. Present annual levels are already mapped and where statutory levels are exceeded they are the subject of local air quality action plans where appropriate. This suggested assessment would clearly be simpler and less costly.

However, the chosen method, the webTAG methodology, does not allow for the inclusion of associated road traffic and airside traffic emissions which should also be included.

Q57: Is there any other evidence we should consider in assessing the air quality impacts of changes in the night flights regime?

A57: In addition, the webTAG assessment needs to estimate NO_2 separately, and not just NOx since NO_2 is the pollutant of immediate local concern with regard to human health, whereas NOx is appropriate for regional assessment since it is known to be harmful to vegetation.

Also, as stated in A56 above, a significant part of the pollutants associated with air travel comes from the associated road traffic to and from the airport and from the airside operations and traffic associated with the movement and servicing of the aircraft on the ground. This needs to be included in the assessment.

Q58: Do you agree with our proposed approach? Is there any evidence on nonCO2 climate change impacts we should consider?

A58: The proposed method outlined in paragraphs 6.73 and 6.74 of the Consultation Document would be appropriate for CO_2 and should include non-CO_2 impacts as a quantitative assessment using the latest research in the area of CO_2 emission equivalence.

Again, as stated in A56 and A57 above, it will be important to include emissions from associated road traffic to and from the airport and from airside operations.

Q59: Is there any reason why we should not seek to ensure consistency with the Aviation Appraisal Guidance approach to assessing public accounts impacts?

Q60: What are your views on how we should assess the impacts on the public accounts, if we are unable to use the Department's aviation models?

Q61: Do you agree that there is merit in our applying a similar approach to that employed by Oxford Economics to estimate the impact on APD revenues?

A59, A60 and A61: Taking these three questions together, any direct impact on the Public Accounts would be limited to APD receipts. As stated in our response to Q43, above, if night flights were to become more restricted or fiscally discouraged at Heathrow, Gatwick and Stansted, some passengers would switch to a daytime flight; some would switch to another airport and some would simply decide not to fly. Only in the case of those deciding not to fly would there be any negative impact on APD receipts.

In our response to Q43 we called upon the DfT to commission opinion survey research to try to establish what proportion of passengers would fall into each of these categories. The results of that research will inform the assessment of the direct impact on the Public Accounts. That assessment should also include an estimate of the additional receipts which would be generated by an APD surcharge on night flights as suggested in our response to Q43.

In considering the indirect and wider impacts on the Public Accounts, consideration needs to be given to the potential benefits to UK businesses, UK employment and other parts of the UK economy in the event of a more restrictive night flights regime resulting in fewer UK residents taking overseas leisure trips.

Q62: Do you agree that the impact of any change in the night flights regime is unlikely to have a significant impact on employment, and therefore any impact on employment taxes will be minimal?

A62: It is not possible to give a sensible answer to this question without first gathering evidence to enable the likely impacts to be estimated. The first task is therefore to establish what value passengers attach to night flights (overall this may be positive or negative) and how passengers would respond to reduced availability of night flights and to fiscal disincentives. We repeat our view that the DfT must commission research based on a passenger opinion survey. It will also be important for the DfT to assess the economic benefits arising from fewer night flights if this resulted in fewer overseas leisure trips by UK residents. For example, there should be economic and employment benefits for UK businesses in the domestic tourism sector with multiplier benefits for the wider UK economy.

Q63: Is there any further evidence we should consider in attempting to assess the indirect impact of a change in the night flights regime on indirect taxation revenue across the rest of the economy?

A63: Fewer night flights would mean less sleep disturbance which would mean higher productivity from those living near airports. This would deliver economic benefits to the UK economy and thereby benefit the Public Accounts.

Q64: What are your views on our employing a similar approach to that employed by Oxford Economics and Optimal Economics in assessing the impact of a change in the regime on UK productivity? Do you agree that if we were to employ this approach there would need to make adjustments to avoid double counting the benefits to business passengers and freight service users?

A64: We repeat that we would regard it as fundamentally wrong for the DfT to be guided in its approach by Oxford Economics, a firm which has been a central part of the aviation industry's

lobbying machine since the late 1990s. The DfT should take its own independent advice on assessing the claimed productivity benefits of night flights.

We would also urge the DfT to be careful in distinguishing between cause and effect. For example there is a remarkably strong correlation, country by country, between per capita levels of alcohol consumption and per capita GDP. A company working for the drinks industry would no doubt conclude from this that increasing per capita alcohol consumption would deliver higher productivity.

Q65: Is there any further evidence we should consider in attempting to assess the impact of a change in the night flights regime on UK productivity?

A65: See our response to Q63 above

Q66: Do you agree with our proposal to assess the impact on tourism of a change in the night flights regime qualitatively? If not, why not, and what would you suggest as an alternative?

A66: We strongly disagree. The assessment should not simply be about economic welfare in the economist's pure meaning of the term. Impacts on the real economy also need to be considered. Thus, the trade deficit on international tourism and travel must be a material consideration. The impact of an ongoing trade deficit is to transfer economic wealth out of the country. There are of course certain adjustment mechanisms, for example, the exchange rate. However, the price to be paid for a weaker exchange rate is higher prices for imported goods and lower prices for exports – i.e. a lower standard of living for UK residents. The other main adjustment mechanism is interest rates but here the price to be paid is higher borrowing costs (including mortgage costs), lower levels of investment, reduced domestic economic activity and reduced employment. The DfT cannot simply ignore the fundamental macroeconomics, which affect the economic wellbeing of every UK resident and UK business.

Q67: Is there any further evidence we should consider in attempting to assess the impact of a change in the night flights regime on UK productivity?

A67: See our response to Q63 above

Q68: Do you agree with our proposed approach to considering the potential impact of a change in the night flights regime on UK employment? If not, why not, and what would you suggest as an alternative?

A68: We agree that in a well-functioning labour market (and the UK is a well-functioning labour market) changes in employment in one sector of the economy tend to be offset by changes in employment in other sectors of the economy. There can be time lags during transitions and, as we have identified above, there are areas where we believe there would be direct employment benefits from fewer night flights; we accept that there may also be some disbenefits. Overall however we would be content with an assumption that there would be no material change in employment.

Q69: Is there any further evidence we should consider in attempting to assess the impact of a change in the night flights regime on UK employment?

A69: Since all EU citizens have freedom of movement and equal employment rights across all EU member states, it is perhaps time for the DfT to make clear that it is fundamentally misleading to talk in narrow terms about UK airports creating UK jobs, or of losing jobs to our European 'competitors' at Schiphol, Frankfurt and Paris. It would also be useful for the DfT to explain what has happened to cause employment in the UK aviation sector to fall from the 200,000 direct jobs quoted in the 2003 Air Transport White Paper (paragraph 2.6) to the 120,000 direct jobs quoted in the 2012 Aviation Policy Framework (paragraph 1.4), despite an increase of 17% in the number of passengers handled over that period.

Q70: Are there any other impacts, not considered above, that we should consider in assessing the impacts of a change in the night flights regime (e.g. impacts related to the way people travel to and from the airport)? If so, what evidence should we consider in assessing these impacts?

A70: At Stansted, the low cost airlines account for over 94% of all passengers handled (Ryanair alone for over 70%) and their operating timetable extends into the night shoulder periods. There is a knock-on effect in terms of sleep disturbance caused by road traffic related to early morning and late night flights. Roads around Stansted can be busy from about 4.00 am until midnight. Looking forward to the next regime, there should be a re-evaluation of the need for night flights based on clear evidence to establish whether there is a real need and to move them into the day wherever possible.

Stop Stansted Expansion
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