



Department
for Transport

Night Flying Restrictions at Heathrow, Gatwick and Stansted Stage 2 Consultation

November 2013

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1. Executive Summary

- 1.1 Night noise from aircraft can impose significant adverse effects on local communities, including health effects and other next day effects associated with sleep disturbance (including fatigue and sleepiness). The Government has been restricting night flights for many years at Heathrow, Gatwick and Stansted, in order to limit the impact of night noise on local residents. At these airports it is considered appropriate for the Government to take decisions on the right balance between night noise controls and economic benefits, reconciling the local and national strategic interests.
- 1.2 The current night flying restrictions at the three airports (“the regime”) end in October 2014. A first stage consultation, gathering evidence on options for the next regime, was published on 22 January 2013¹ and closed on 22 April 2013. We received 828 responses to this, of which 128 came from organisations and the remainder from individual members of the public. We are grateful to all who took the time to respond to this. A high level summary of these responses is set out in Chapter 3. A more detailed summary, along with the Government’s response, is included at annex G.
- 1.3 This second consultation now sets out our proposals for the next regime.
- 1.4 Many respondents to our first stage consultation suggested that we should take account of the findings of the Airports Commission² before making changes to the night restrictions regime. The Commission’s final report is due to be published in summer 2015, preceded by an interim report at the end of this year.
- 1.5 We agree that it would be sensible not to make any significant changes to the current regime before the Commission has completed its work and the Government has had time to consider its recommendations. In line with this, we are proposing to set a three year regime to last until October 2017 which will retain the main features of the current regime, in particular the permitted numbers of movements and noise quota at each airport. However some minor changes will be made to restrict the noisiest aircraft.

¹ <https://www.gov.uk/government/consultations/night-flights-consultation>

² See paragraph 2.8 of the first stage consultation.

- 1.6 These proposals will maintain the current level of protection for local communities, provide stability until decisions have been made about any new airport capacity and ensure that operational capacity at these airports is not affected, thereby allowing sustainable growth at Gatwick and Stansted back to pre-recession levels.
- 1.7 Three years is shorter than recent regimes, but by this time, the Government of the day should be in a position to have reviewed the night flying restrictions in the light of these wider decisions. We will of course want to take into account the Commission's interim report before making our final decisions on the regime. In particular, should this report contain any recommendations relevant to night flights which the Government wished to consult on making permanent before 2017, we would need to consider whether three years was still appropriate.
- 1.8 However, although we note the need to maintain the flexibility to respond to proposals from the Airports Commission, we also recognise evidence of the potential health effects of aviation noise, as discussed in Chapter 2. This is one of the factors which the Airports Commission is considering when assessing the options for meeting the UK's connectivity needs, and we look forward to its conclusions. Whilst the conclusions of recent health studies are broadly consistent with previous studies, the results of these studies will be fully evaluated, and alongside other existing evidence will be used to help inform our policy development and a review of transport appraisal guidance in future. We will consult on this and all other relevant matters when we set out the Government's proposed response to the Commission's work.
- 1.9 We recognise that some people who responded to the first stage consultation wished to see an immediate or phased ban on night flights whilst others were content with the existing system. However, possible changes to night movement limits are something which we believe should be considered in the context of any recommendations from the Airports Commission and decisions on the future operational capacity of these airports. We therefore do not include changes to movement limits within the scope of this consultation. We know that the Commission has received proposals for short and long term options which include both increases and reductions in night flights. The Government will therefore want to consider this further in the context of the Commission's recommendations.

- 1.10 Similarly, whilst having regard to the freeze in noise quota limits since 2012, and recognising that there has been unused noise quota during this period, we do not propose to change the noise quota limits in the next three years, as we also wish to await the outcome of the Airports Commission's work before deciding on whether any changes are justified.
- 1.11 We are proposing to extend the operational ban on the noisiest types of aircraft to include the 23.00-23.30 period. Such aircraft are already banned in the rest of the night period (23.30 – 07.00). Whilst there are few such movements, this change would prevent sleep disturbance caused by movements of these noisier aircraft types at that time.
- 1.12 As required under EU legislation, we are also consulting on environmental objectives which set the context for the proposed restrictions.
- 1.13 We are also taking this opportunity to clarify and bring up to date the 1999 guidelines which explain the circumstances in which the airports or the Secretary of State might disregard movements from the restrictions. In particular we wish to ensure that the guidelines facilitate possible future trials of operational procedures relevant to night flights, subject to advance notification of these trials. This would allow, for example, relevant proposals submitted to the Airports Commission to be trialled if the Commission were to recommend them.
- 1.14 Finally, the consultation discusses possible changes to operational procedures which may be feasible in the period to 2017. As these would normally require a period of trialling, we are not proposing to make any changes mandatory in the next regime.
- 1.15 Though not only applicable to night flights, we also wish to use this consultation to consult on the location of new noise monitors at Heathrow Airport.

Impact Assessment (IA)

- 1.16 A draft IA is published alongside this consultation. Our assessment is that the limited policy changes proposed would not impose any significant costs, but we would nevertheless welcome comments on our analysis of the costs and benefits. In line with Better Regulation requirements, the IA presents an assessment of the costs and benefits of each of the options against a 'do-nothing'

scenario, which assumes no night flying restrictions beyond the end of the current regime. We consider that the 'do-nothing' scenario is not realistic and would not be compatible with the Government's aviation noise policy objectives, nor with the aim of maintaining a stable regulatory regime pending decisions on future airport capacity. Therefore this lies outside the scope of the consultation.

How to respond

This consultation document has been published on the Department's website and can be found at:

<https://www.gov.uk/government/publications>.

The document has been sent to all those who responded to the first stage consultation. **The deadline for responses to this consultation is 31 January 2014.** We want to give stakeholders the opportunity to consider the Airports Commission's interim report before responding. Response forms are available on the Department for Transport website.

Alternatively responses, as well as any related enquiries, may be sent to night.noise@dft.gsi.gov.uk or

Night noise consultation

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33 Horseferry Road

London SW1P 4DR

Please note that we will make every effort to ensure that late responses and responses that fall outside the scope of this consultation are read, but these responses may not be taken into account in the publication of any results and the publication of our decision.

Data protection and Freedom of Information

Information provided in response to this consultation, including personal information, may be subject to publication or disclosure in accordance with the access to information regimes (these are primarily the Freedom of Information Act 2000 (FOIA), the Data Protection Act 1998 (DPA) and the Environmental Information Regulations 2004).

If you want information that you provide to be treated as confidential, please be aware that, under the FOIA, there is a statutory Code of Practice with which public authorities must comply and which deals, amongst other things, with obligations of confidence.

In view of this, it would be helpful if you could explain to us why you regard the information you have provided as confidential. If we receive a request for disclosure of the information we will take full account of your explanation, but we cannot give an assurance that confidentiality can be maintained in all circumstances. An automatic confidentiality disclaimer generated by your IT system will not, of itself, be regarded as binding on the Department.

The Department will process your personal data in accordance with the DPA and in the majority of circumstances this will mean that your personal data will not be disclosed to third parties.

Consultation principles

The consultation is being conducted in line with the Government's key consultation principles which are that:

- departments will follow a range of timescales rather than defaulting to a 12-week period, particularly where extensive engagement has occurred before;
- departments will need to give more thought to how they engage with and consult with those who are affected;
- consultation should be 'digital by default', but other forms should be used where these are needed to reach the groups affected by a policy; and
- the principles of the Compact between government and the voluntary and community sector will continue to be respected.

Further information is available on the Better Regulation Executive website at <http://www.bis.gov.uk/files/file47158.pdf>

If you have any comments about the consultation process, contact:

Consultation Co-ordinator
Department for Transport
Zone 1/14 Great Minster House
London SW1P 4DR
Email consultation@dft.gsi.gov.uk

What happens next?

Following the end of this consultation period we will analyse the responses and take these into account when formulating our final decisions for the next regime. We intend to announce our decisions by spring 2014 in accordance with the timetable required to announce the new regime in time to inform the IATA slot conference for winter 2014-15³.

³ Due to be held 10-12 June 2014. In preparation for the conference, airport capacity parameters must be confirmed by 1 May.

2. Relevant Developments since the First Stage Consultation

Aviation Policy Framework

- 2.1 The Aviation Policy Framework (APF), published in March 2013⁴, is a high-level strategy that sets out the Government's overall objectives for aviation and the policies we will use to achieve those objectives. It replaced the 2003 Air Transport White Paper and associated guidance.
- 2.2 Chapter 3 of the APF sets out the Government's policy on noise and other local environmental impacts. Our overall objective on noise is to limit and, where possible, reduce the number of people in the UK significantly affected by aircraft noise. In adopting this policy we recognise the potential impacts that aviation noise can have on health, amenity and quality of life. Specifically on night noise, the APF recognises the costs on local communities are higher from aircraft noise at night.
- 2.3 However, in recognising these potential impacts, we also recognise the need to balance these with economic growth and connectivity. Aviation activity is a major contributor to the country's economic prosperity, and, with regard to night flights, we recognise the importance to the UK economy of certain types of flights, such as express freight services, which may only be viable if they operate at night. Paragraphs 3.34-3.35 of the APF set out further details.

Revised Air Navigation Guidance

- 2.4 On 25 June the Department issued for consultation⁵ revised guidance to the Civil Aviation Authority on environmental objectives relating to the exercise of its Air Navigation Functions.
- 2.5 The draft revised guidance builds on the statements around use of airspace in the Noise Chapter of the Aviation Policy Framework.

⁴ <https://www.gov.uk/government/publications/aviation-policy-framework>

⁵ <https://www.gov.uk/government/consultations/air-navigation-guidance-for-the-civil-aviation-authority>

The key points in the document, all of which have some bearing on noise management, are :

- The introduction of altitude-based priorities which give clarity on the altitude at which aircraft noise and emissions should be given priority over one another.
- Clarification of the definition and use of Noise Preferential Routes.
- Clarification of the role of the Secretary of State for Transport in the airspace change process.
- Confirmation of the Government's policy on the concentration of departure routes with the potential for respite through dispersion in certain cases.
- Reaffirmation of the guidance relating to flights over Areas of Outstanding Natural Beauty (AONB) and National Parks; and
- Clarification of what the Government considers to be the minimum standards for consultation.

2.6 The consultation closed on 17 September and it is expected that we will issue the new guidance shortly. The new guidance will be relevant to any future proposals for permanent changes to airspace, including any which may affect Heathrow, Gatwick or Stansted airports.

Airports Commission

2.7 The Government announced in September 2012 the establishment of the independent Airports Commission to examine the scale and timing of any requirement for additional capacity to maintain the UK's position as Europe's most important aviation hub⁶. The Commission's final report is due to be published in summer 2015. This will be preceded by an interim report at the end of this year which will meet three key objectives:

- To examine the evidence on the nature, scale and timing of the UK's future aviation capacity and connectivity needs to maintain the UK's position as Europe's most important aviation hub;

⁶ <https://www.gov.uk/government/organisations/airports-commission/about>

- To make recommendations for any immediate actions to improve the use of existing runway capacity in the next five years and to consider other short and medium term measures for making the best use of existing capacity that might be further developed before the Commission's final report;
- To consider long-term options – including major infrastructure and any surface transport needs they may entail – and identify a list of credible options, consistent with our conclusions on the assessment of need, to be further developed before the Commission's final report.

2.8 The Commission's own call for evidence or ideas for short term measures closed on 17 May and the Commission subsequently published on 7 August a summary of the proposals submitted, some of which explicitly mentioned night flights⁷. On the same day, the Commission also published a summary of proposals submitted for long term options. We have shared responses to our first stage consultation with the Commission on the basis that we expect that night flying restrictions, particularly aircraft movement limits, will be relevant to its work.

2.9 On 5 July the Commission published a noise discussion paper⁸, which explored current scientific understanding and existing policy on aviation and noise and sought responses to questions to develop the evidence base. The paper looked at specific issues including night noise. The deadline for responses to this was 6 September and the Commission has published the responses received⁹. The paper did not identify any relevant new research which was not already covered in the Civil Aviation Authority's (CAA) review 'Aircraft Noise, Sleep Disturbance and Health Effects'¹⁰, published in January alongside the first stage night noise consultation.

⁷ <https://www.gov.uk/government/publications/short-and-medium-term-options-proposals-for-making-the-best-use-of-existing-airport-capacity>

⁸ <https://www.gov.uk/government/news/airports-commission-considers-aviation-noise>

⁹ <https://www.gov.uk/government/publications/stakeholder-responses-to-airports-commission-discussion-papers>

¹⁰ ERCD Report 1208, January 2013

Airport operational trials

South East Airports Taskforce – Heathrow Airport Operational Freedoms Trial¹¹

2.10 On 18 October, we announced the publication of the CAA and HAL reports on the operational freedoms trial at Heathrow. At the same time, the Government announced that it had asked the Airports Commission to consider the findings from these reports. This was to enable us to take into account any views that the Commission might express on the freedoms in its December Interim Report in our next steps on the measures. This broadly aligns with the approach being proposed in this document for the night noise regime and would mean that any relevant evidence from the operational freedoms trial could be taken account of as part of the next consultation on night flying restrictions, but with the added benefit of also being able to have regard to the Commission's wider findings.

Night respite trials

2.11 During this year, all three airports have carried out trials relating to night time respite. Further details are contained in Chapter 5.

Other industry initiatives

Sustainable Aviation Noise Road-Map

2.12 Sustainable Aviation was launched in 2005 and brings together the main players from UK airlines, airports, manufacturers and air navigation service providers. The Government has welcomed the publication in April 2013 of Sustainable Aviation's Noise Road-Map¹². This sets out strategies on aircraft and engine technology, airspace operational opportunities and land use planning which show how the industry believes it can manage noise from aircraft operations between now and 2050 whilst maintaining sustainable growth. In particular, the Road-Map presents the industry's view that, even with air traffic movements nearly doubling in the next 40 years, noise from UK aviation will not increase, thanks to the development and operation of quieter aircraft.

¹¹ <http://www.heathrowairport.com/noise/noise-in-your-area/operational-freedoms-trial>

¹² <http://www.sustainableaviation.co.uk/>

A Quieter Heathrow

- 2.13 Published in May 2013, ‘A quieter Heathrow’¹³, sets out Heathrow’s commitments to reducing aircraft noise while safeguarding the UK’s connectivity.
- 2.14 The report brings together a range of measures to meet the Government’s aspiration ‘to strike a fair balance between the negative impacts of noise and the positive economic impacts of flights’. It focuses on five areas: quieter planes, quieter operating procedures, noise mitigation and land-use planning, operating restrictions and working with local communities.
- 2.15 The report shows that aircraft flying in and out of Heathrow are on average 15% quieter than fleets of the same airlines which land at other world airports.

The Regulatory Framework

- 2.16 Paragraphs 2.13-2.19 of the first stage consultation set out the regulatory framework relevant to night flying restrictions, notably Directive 2002/30/EC (the “2002 Directive”) which establishes rules and procedures with regard to the introduction of noise-related operating restrictions at the busiest EU airports and which gives effect to the International Civil Aviation Organisation (ICAO) Assembly’s “balanced approach to noise management”.
- 2.17 The Directive has been implemented into UK legislation by the Aerodromes (Noise Restrictions) (Rules and Procedures) Regulations 2003 (SI 2003/1742 – the “2003 Regulations”). Information that must be taken into account when making decisions on operating restrictions at an airport – in so far as it is appropriate and possible to do so – is set out in Schedule 2 to the 2003 Regulations. For ease of reference, we have reproduced this Schedule at annex A and indicated where the required information can be found.
- 2.18 Paragraph 4.1 of Schedule 2 to the 2003 Regulations states that when and where noise maps or action plans have been prepared under the terms of the Environmental Noise Directive, these will be used for providing the information required in this Schedule. Strategic noise maps for 2011, as required under the Directive, have been produced for the three airports and were published in

13

http://www.heathrowairport.com/static/Heathrow_Noise/Downloads/PDF/a_quieter_heathrow_2013.pdf

June on the CAA's website¹⁴. Adopted noise action plans were published by the airports in 2011. These plans are due to be reviewed and updated as necessary by the airports later this year.

2.19 On 1 December 2011 the European Commission launched the Better Airports Package which includes a proposal for an EU regulation on noise which would repeal the current Directive 2002/30 and further harmonise and strengthen EU rules on aircraft noise management and assessment. A general approach on the proposal was agreed by European Transport Ministers in June 2012 and the European Parliament adopted the proposal with further amendments on 12 December 2012. Due to matters not related to the noise proposal, further progress on the Airports Package has stalled and the process to put in place a new night flights regime after October 2014 will therefore remain subject to the 2002 Directive.

New or emerging evidence

2.20 One of the reasons for the Government's policy to review the night flying restrictions at least every five years is to ensure that each regime can take account of research into sleep disturbance and night flights and other developments in the previous period.

The health effects of night flights

2.21 In 2009, the World Health Organization's Regional Office for Europe published its Night Noise Guidelines for Europe. The document described the adverse effects of noise on sleep. They concluded that no adverse effects occurred at exposures below 40 dB, L_{night}¹⁵. Above 55 dB, L_{night} the document states that the situation is considered 'increasingly dangerous' for public health.

2.22 The CAA's review 'Aircraft Noise, Sleep Disturbance and Health Effects'¹⁶, published in January alongside the first stage consultation, provided an overview of the main findings within environmental noise and health research, and includes the effects of sleep disturbance due to aircraft noise. It stated that the findings were not conclusive and were often contradictory, highlighting the practical difficulties in designing studies of this nature. It acknowledged that, based on existing evidence, it is

¹⁴ ERCD Report 1204, 1205 and 1206, June 2013.

¹⁵ L_{night}, is the average noise over the 8 hour period between 2300 and 0700 expressed as LAeq,8h

¹⁶ ERCD Report 1208, January 2013

possible that exposure to aircraft noise may be a risk factor for cardiovascular disease.

- 2.23 In October 2013, three studies were published which looked into the association between exposure to aircraft noise and cardiovascular disease. A study led by the Small Area Health Statistics Unit (SAHSU)¹⁷ compared data on day and night-time aircraft noise from Heathrow Airport in 2001 with hospital admissions and mortality rates across 12 London boroughs and nine districts west of London between 2001-2005. The data analysed predates the introduction of the current night noise regime in 2006.
- 2.24 Whilst the study states that alternative explanations should be considered, it also stated that the risks of hospital admissions and mortality were around 10 to 20 per cent higher in areas with the higher levels of aircraft noise compared with the areas with less noise. The area affected by night time noise was less extensive than that for daytime noise. However, the study was unable to differentiate the effects of day and night-time noise and it said that more research is needed to determine if night time noise that disrupts sleep may be a mechanism underlying the observed associations. Nevertheless, the association found by this study of increased risk with night noise exposure occurred at a noise exposure of more than 55 dB(A), L_{night}, which corresponds to the WHO conclusions.
- 2.25 The other studies published around the same time were international studies – one from the US¹⁸ and one from the EU¹⁹.
- 2.26 As acknowledged previously, the Government was already aware of research associating exposure to aircraft noise with certain health effects such as cardiovascular disease. The new studies do not prove causality between aircraft noise exposure and these health risks²⁰, though they do add further evidence that this may be possible.

¹⁷ <http://www.bmj.com/content/347/bmj.f5432>

¹⁸ <http://www.bmj.com/content/347/bmj.f5561>

The study found a 3.5% higher (95% confidence interval 0.2% to 7.0%) cardiovascular hospital admission rate of older people (≥65 years), after controlling for covariates, associated with a 10 dB increase in aircraft noise.

¹⁹ <http://www.ehjournal.net/content/pdf/1476-069X-12-89.pdf>

The study looked at exposure to aircraft and road traffic noise and associations with heart disease and stroke in six European countries, including the UK.

²⁰ For example, the SAHSU report states that “interpretation should consider not only causal associations but also possible alternative explanations such as residual confounding and ecological

- 2.27 As the SAHSU results for night noise exposure are broadly consistent with previously published work from the World Health Organization, we do not consider that there is a need to change the balance which we currently propose to strike between the costs and benefits of the current night flying restrictions. There are still a number of uncertainties in the studies which would need to be explored further. The results of the studies will be fully evaluated, and alongside other existing evidence will be used to help inform our policy development in the future.
- 2.28 DfT's appraisal guidance (webTAG) is kept under constant review and updated periodically to take into account relevant, robust new evidence. This involves evaluating any new evidence to form a view on its quality and relevance (which will be informed by responses to this consultation). We will review next year how best to reflect health effects from aviation noise in appraisal guidance. This will include both this latest evidence and research led by Defra and the Interdepartmental Group on Costs and Benefits of Noise (IGCB(N)).
- 2.29 The aim of this review will be, where evidence is sufficiently robust, to develop methods and values that allow the various impacts of aviation noise, including health effects, to be taken into account in economic appraisal alongside the other costs and benefits of interventions. Any changes to our WebTAG appraisal guidance resulting from this process will be consulted on before becoming 'definitive' guidance. Responses to the consultation on changes to the guidance will of course be taken into account so the final guidance is liable to change as a result of that consultation.

Q1: Do you agree with our preliminary view as to the new studies on health effects?

Benefits of night flights

- 2.30 As acknowledged in Chapter 6 of the first stage consultation, there is already a body of evidence which attempts to define the economic benefits of night flights²¹.

bias." The US study states that "further research should refine these associations and strengthen causal interpretation by investigating modifying factors at the airport or individual level." The EU study stated "the findings from this cross-sectional study, together with accumulating evidence for associations between noise and hypertension lend some support to the hypothesis that long-term exposure to aircraft noise may increase the risk of cardiovascular disease other than hypertension."

²¹ E.g. Oxford Economics – the Economic Value of Night Flights at Heathrow (2011)

(<http://www.oxfordeconomics.com/my-oxford/projects/245739>), Optimal Economics (Gatwick – 2011).

2.31 In addition to this existing evidence, several responses to the first stage consultation highlighted the benefits of night flights, citing specific studies and estimates of the value of overnight freight (of particular relevance to Stansted) and flights from emerging markets (which tend to arrive in the night quota period). In particular one industry representative noted a report by the Tourism Alliance²² arguing a significantly greater benefit to the UK from Chinese visitors to those coming from Europe. A CBI report²³ was also highlighted suggesting that each daily route to an emerging market is worth £128m in trade per year. The same respondent also provided detailed case studies of the importance of the express freight industry and passenger night flights to the UK.

2.32 We have taken account of all of the evidence submitted in response to the first stage consultation where appropriate in developing this second stage.

Q2: Do you have any further views on the costs and benefits, including health impacts, which we should take into account in our decision?

²² http://www.tourismalliance.com/downloads/TA_327_353.pdf

²³ CBI/Steer Davies Gleave,(2013) Trading Places: Unlocking export opportunities through better air links to new markets

3. Summary of First Stage Consultation Responses

- 3.1 The following is a high level summary of the main points made in response to the stage 1 consultation. A more detailed summary, alongside the Government's response, is included at annex G.
- 3.2 We received some 828 responses, of which 128 came from organisations and the remainder from individual members of the public. Most responses from the public argued for a ban on night flights. A limited number of these were generated in response to the Heathrow early morning respite trial taking place at the time of the consultation (see Chapter 5). Although not specifically answering the questions in the consultation, as these responses also argued for a ban on night flights we have counted them in the overall total.
- 3.3 There were polarised views on the future of night flights. Most environmental groups, community groups and local government organisations²⁴, along with the vast majority of individual residents, wanted a ban on night flights (varying between 6-8 hours), though many accepted that this may have to be phased. Among some of these groups and organisations there was an acceptance that a total ban was unlikely to be realistic, though they nevertheless argued for tighter restrictions (e.g. respite periods, fewer/quieter movements).
- 3.4 Many industry stakeholders said that movement and noise quotas should allow for future demand to be met and not be based on historic use. They pointed out that it would be possible to accommodate more flights without increasing overall average noise levels. However, none explicitly stated how many additional movements could be accommodated or asked for more movements. Heathrow Airport highlighted unmet demand for slots at night. Gatwick Airport asked for current limits to be maintained in the next regime and pointed to the importance of night flights for

²⁴ Local government organisations consist of local authorities (county, district, unitary or London Boroughs) along with parish or town councils.

services to emerging Far-East markets. Stansted Airport said that the new regime should take account of future growth.

- 3.5 There was little willingness among industry respondents to consider tighter restrictions on the more commonly used noisier aircraft types, respite periods, or trade offs²⁵. They argued that resilience would be affected (at Heathrow) and that there would be a particular impact on freight (at Stansted) and low cost carriers (at Stansted and Gatwick).
- 3.6 Most stakeholders agreed that operational procedures (such as higher angles of descent, runway preference or displaced thresholds) should be looked at in more detail and trialled. There were concerns, however, about the safety of such procedures (particularly in combination) versus the noise benefit that may be achieved.
- 3.7 London Boroughs wished to see landing charges raised to a level that resulted in the use of quieter aircraft at night and the revenues used to create a community fund. They also wished to see improved compensation schemes with better monitoring and further research on the costs of impacts on health, quality of life, children's education and also on climate change.
- 3.8 Of those who responded to the question regarding aligning the regime with the Airports Commission, the majority of the respondents suggested we should take the Commission's recommendations into account before setting the next regime. This was on the basis that night flights are part of the capacity debate. Some explicitly suggested waiting for the interim report, others said wait until after the final report and maintain the current regime until then. Only one organisation expressed the view that the Commission should align with the night flights regime rather than the other way around.

²⁵ See paragraphs 5.64-72 of the stage one consultation.

4. Proposals for Next Regime

- 4.1 In setting out our proposals for the next regime we explain the possible changes on which we are consulting and also confirm the elements of the regime which we are not proposing to change. For an explanation of the areas where we are not proposing to make changes, please see the summary of responses document (annex G).
- 4.2 As explained below (see section on length of regime), the Government does not propose to make significant changes to the night flying restrictions in the short term. Therefore, we are consulting on a relatively narrow range of policy options for the next regime. Our assessment of the costs and benefits of each policy option can be found in section 4 of the draft Impact Assessment (IA). We would welcome views on this assessment.

Environmental Objectives

- 4.3 To comply with the 2003 Regulations²⁶, we are required to formulate environmental objectives at the level of individual airports before adopting operating restrictions. “Environmental objective”, in relation to an airport, is defined in regulations as “an objective set by a competent authority in support of one or more of the following objectives – the promotion of the development of airport capacity in harmony with the environment, facilitating any specific noise abatement objectives at that airport, achieving maximum environment benefit in the most cost effective manner, limiting or reducing the number of people significantly affected by aircraft noise.”
- 4.4 The proposed new environmental objectives are set out below. We are not proposing to have separate noise abatement objectives. Aspects of some of the current noise and night noise abatement objectives²⁷ have been combined within the proposed environmental objectives.

²⁶ See paragraphs 2.13-19 and 3.15-3.19 of the stage 1 consultation for an explanation of the regulatory framework

²⁷ See Table 4 in the stage 1 consultation for a description of the current regime’s objectives

Environmental Objective	Airport	How it will be measured
1. Limit and where possible reduce the number of people significantly affected by aircraft noise at night.	Heathrow Gatwick Stansted	Area and number of people within the 6.5 hour night quota period contours, and in particular the 55dB contour.
2. Reduce sleep disturbance resulting from use of the noisiest types of aircraft.	Heathrow Gatwick Stansted	Number of movements of the noisiest types of aircraft (QC/4 and above) during the night quota period.
3. Maintain a stable regulatory regime pending decisions on future airport capacity and, at Gatwick and Stansted in particular, to allow growth in movements up to existing night movement limits and within noise quotas.	Heathrow Gatwick Stansted	Movements and noise quota used in night quota period.
4. Encourage the use of quieter aircraft during the night quota period so as to maintain the historic reduction in noise emitted per aircraft movement during the night quota period.	Heathrow Gatwick Stansted	Average QC points per movement.

Rationale

4.5 The first objective is linked to the Government’s overall policy on aviation noise, set out in the Aviation Policy Framework, to limit and, where possible, reduce the number of people in the UK significantly affected by aircraft noise. The Government’s Noise Policy Statement for England²⁸ aims to avoid significant adverse impacts on health and quality of life. As mentioned above, the World Health Organization considers average night noise levels above 55dB to be increasingly dangerous for public health. In using the contour size to monitor this objective, we consider that the objective subsumes the night noise abatement objectives in the current regime. As well as using the 6.5 hour night contour for the purpose of monitoring the effect of the night quota period restrictions, we have also committed in the APF to produce 8 hour night noise contours (23.00-07.00) for the three airports.

4.6 The APF notes that despite reductions in the size of noise contours around these airports, the number of people within some noise contours has increased as a result of increases in population density. It also states that the Government will take into account

²⁸ Noise Policy Statement for England, Defra, March 2010

the trends in populations within the contours when monitoring the effectiveness of its overall policy on aviation noise.

- 4.7 The second objective is similar to one of the noise abatement objectives set under the current regime. As we are proposing to extend the operational ban on movements of QC/8 or QC/16 aircraft, it will be QC/4 aircraft types which will be the noisiest types of aircraft in operation.
- 4.8 The third objective is intended to maintain stability and to ensure operational capacity at these airports is not affected pending decisions on future capacity. It allows sustainable growth at Gatwick and Stansted back to pre-recession levels whilst ensuring that the average QC points per movement, assuming full use of movement and noise quota, will be below that permitted under the current regime. This is consistent with promotion of the development of airport capacity in harmony with the environment.
- 4.9 The fourth objective is adapted from two of the current objectives. We consider average QC points per movement to be a key indicator of the historic trends and of the contribution of noise reduction at source.
- 4.10 Other current environmental objectives, as set out in the first stage consultation, were related to 2003 Air Transport White Paper objectives and as such are no longer relevant as do not reflect current Government policy.

Q3: Do you agree with the proposed environmental objectives?

Structure of the Regime

Definition of night and night quota periods

- 4.11 We do not propose any change to these definitions – the night period will remain the 8 hour period from 23.00 to 07.00 local time, and the night quota period is the 6.5 hour period from 23.30 to 06.00 local time.

The Quota Count system

- 4.12 As noted in paragraphs 4.12 and 4.13 of our stage 1 consultation, some aircraft types are noisier than their classification, and some quieter. In particular, we noted that the A380 with Rolls-Royce Trent 900 engines is one of these new aircraft types which appear slightly noisier in operation than their QC classification. Rolls-

Royce is continuing investigation of A380/Trent 900 operational approach noise levels, with assistance from the CAA where necessary.

- 4.13 The legal requirement is to base performance-based operating restrictions on the noise performance of the aircraft as determined by the ICAO certification procedure²⁹. Taking account of consultation responses, previous legal judgements and technical work into the QC system, we see no case for changing the current system.
- 4.14 A summary of technical work carried out by the CAA (ERCD) in support of the QC system can be found in annex D.

Length of next regime

- 4.15 Chapters 1 and 2 explained the role of the Airports Commission and the inter-relationship between its work and the process to set a new night restrictions regime. As noted in Chapter 3, of those who responded to the question regarding aligning the regime with the Airports Commission, the majority of respondents suggested we should take the Commission's recommendations into account before setting the next regime.
- 4.16 The Commission's interim report at the end of this year will include recommendations for any immediate actions to improve the use of existing runway capacity in the next five years. The Government is committed to respond to the Commission's interim report by June 2014. It will not therefore be possible to take account of any relevant recommendations and consult on these in time for a new regime beginning in October 2014.
- 4.17 Furthermore, the Commission's recommendations in its final report, if adopted, (including any around the Heathrow Airport Operational Freedoms Trial) may potentially affect any or all of the three airports currently subject to night flying restrictions imposed by the Government. The Government does not propose to make significant changes to the night flying restrictions at these airports before the Commission publishes its final report in 2015 and therefore proposes to introduce a short regime (lasting three years rather than five or six years as has been the case in the past) with minimal changes relative to the current regime, including no

²⁹ Article 4(4) of Directive 2002/30/EC precludes the use of any system of noise classification other than that based on ICAO certification data

changes to the permitted number of movements or noise quotas at the three airports.

- 4.18 Establishing a three year regime will provide an opportunity to feed any recommendations from the Airports Commission into the design of the next full regime. In the meantime it will provide certainty to the industry and local communities around the use of night flights. Following decisions on future airport capacity after publication of the Airports Commission's final report in summer 2015, the Government expects that it will be possible to consult on a full range of options, including possible changes to the permitted number of air transport movements and noise quotas, for the next night noise regime. The earliest we expect to be able to introduce the next regime is in time for the winter season 2017. Therefore we would expect a review of the restrictions to begin in 2016, in preparation of a new regime commencing in autumn 2017.
- 4.19 As well as taking account of evidence available now, the review would be able to take account of all new evidence, including both the short term recommendations from the Commission, Government decisions on future airport capacity, evidence arising from trials which take place in the interim period and consideration of further studies into the health effects of exposure to aviation noise.
- 4.20 We will, of course, want to take account of the Commission's interim report when making our final decision on the length of the next regime. Should this report contain any recommendations relevant to night flights which the Government wished to consult on making permanent before 2017, we would need to consider whether three years was still appropriate.

Q4: Do you agree that the next regime should last until October 2017?

Dispensations from the night noise regime

- 4.21 The Government considers it needs to retain the power to issue dispensations in exceptional circumstances. It also considers that airports need to retain the power to issue dispensations in circumstances prescribed by the Government, such as long delays caused by disruption outside their control.
- 4.22 The revised guidelines on flights which may be given dispensations from the night restrictions are set out in annex C. As

well as clarifying the existing guidelines, we have included new text which provides further examples of dispensations given in exceptional circumstances such as closure of airspace due to volcanic ash, changes to airspace arrangements as a result of Government decisions which may impact on flight schedules, and to allow for possible future trials. These would include, for example, trials of proposals submitted to the Airports Commission. One such example is the redistribution of existing flights in the early morning arrival period permitting an increased number of arrivals in the 05:00 – 06:00 period in order to reduce the use of both runways for arrivals in the early morning period to mitigate community disturbance³⁰.

Q5: Do you have any views on the revised dispensations guidance?

Carry-over rules

4.23 We are not proposing any changes to the carry-over rules. The following provisions will therefore continue to apply:

- If required, a shortfall in use of the movements limits and/or noise quota in one season of up to 10% may be carried over to the next season;
- Conversely, up to 10% of an overrun in movements and/or noise quota usage in one season (not being covered by carry-over from the previous season) will be deducted from the corresponding allocation in the following season;
- An overrun of more than 10% will result in a deduction of 10% plus twice the amount of the excess over 10% from the corresponding allocation in the following season; and
- The absolute maximum overrun is 20% of the original limit in each case.

Movement limits

4.24 As explained previously, in order to maintain a stable regulatory regime pending decisions on future airport capacity we are not proposing to change movement limits at any of the three airports. No responses to the first stage consultation argued that there should no longer be any restrictions on movements and we consider that removing the current regime entirely would not be

³⁰ https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/226831/final-summary-short-medium-term-options.pdf

consistent with Government policy on aviation noise. The movement limits for the next regime would therefore be:

Heathrow

Winter 2014/15	Summer 2015	Winter 2015/16	Summer 2016	Winter 2016/17	Summer 2017
2,550	3,250	2,550	3,250	2,550	3,250

Gatwick

Winter 2014/15	Summer 2015	Winter 2015/16	Summer 2016	Winter 2016/17	Summer 2017
3,250	11,200	3,250	11,200	3,250	11,200

Stansted

Winter 2014/15	Summer 2015	Winter 2015/16	Summer 2016	Winter 2016/17	Summer 2017
5,000	7,000	5,000	7,000	5,000	7,000

4.25 Since the start of the current regime (winter 2006-07) the average use of the movements across the year (winter and summer seasons) has been over 96% at Heathrow, around 83% at Gatwick and 78% at Stansted.

4.26 We have noted the seasonal variations in use of the movements. Whilst there is some scope to adjust the limits between seasons to better reflect operational needs, we consider that the carry-over provisions would continue to provide the necessary flexibility to address these seasonal variations.

Noise Quota Limits

4.27 Noise quotas cap the amount of noise energy which may be emitted at night over the course of the regime. This takes account of the noise emitted by aircraft type as classified under the Quota Count system³¹ – the noisier the aircraft, the fewer that may be operated within the cap, thereby also providing a built-in incentive for airlines to use less noisy aircraft where practicable. There has been no consistent trend in noise quota caps. Noise quotas reduced at all three airports between 2006-2012 but have been

³¹ See paragraphs 4.5 -4.11 of the first stage consultation for details

frozen since 2012. However, in the previous regime (1999/2000 - 2005) quotas were frozen at Heathrow, increased at Stansted, and reduced at Gatwick.

4.28 When the 2006-2012 regime was extended until October 2014, the Government stated in March 2012 that it would take into account the freeze in quota limits during this extension period when setting the next regime.

4.29 The tables below show quota usage over the course of the current regime.

HEATHROW			
Season	Noise Quota (points)	Noise quota used	% of noise quota used
Winter 2006/07	4,140	4,266	103.0%
Summer 2007	5,610	5,236	93.3%
Winter 2007/08	4,140	4,100	99.0%
Summer 2008	5,460	4,634	84.9%
Winter 2008/09	4,110	3,948	96.0%
Summer 2009	5,460	4,429	81.1%
Winter 2009/10	4,110	3,863	94.0%
Summer 2010	5,340	4,505	84.4%
Winter 2010/11	4,110	3,735	90.9%
Summer 2011	5,220	4,491	86.0%
Winter 2011/12	4,080	3,377	82.8%
Summer 2012	5,100	3,946	77.4%
Winter 2012/13	4,080	3,305	81.0%
Summer 2013	5,100	3,917	76.8%

GATWICK			
Season	Noise Quota (points)	Noise quota used	% of noise quota used
Winter 2006/07	2,300	1,355	58.9%
Summer 2007	6,700	5,329	79.5%
Winter 2007/08	2,240	1,542	68.9%
Summer 2008	6,600	5,660	85.8%
Winter 2008/09	2,180	1,169	53.6%
Summer 2009	6,500	4,787	73.6%
Winter 2009/10	2,120	1,237	58.3%
Summer 2010	6,400	4,824	75.4%
Winter 2010/11	2,060	1,281	62.2%
Summer 2011	6,300	4,999	79.3%
Winter 2011/12	2,000	920	46.0%
Summer 2012	6,200	4,994	80.5%
Winter 2012/13	2,000	1,044	52.2%
Summer 2013	6,200	4,818	77.7%

STANSTED			
Season	Noise Quota (points)	Noise quota used	% of noise quota used
Winter 2006/07	3,510	2,514	71.6%
Summer 2007	4,900	4,400	89.8%
Winter 2007/08	3,470	2,428	70.0%
Summer 2008	4,850	3,931	81.1%
Winter 2008/09	3,430	2,137	62.3%
Summer 2009	4,800	3,538	73.7%
Winter 2009/10	3,390	2,343	69.1%
Summer 2010	4,750	3,454	72.7%
Winter 2010/11	3,350	1,766	52.7%

Summer 2011	4,700	3,552	75.6%
Winter 2011/12	3,310	1,632	49.3%
Summer 2012	4,650	3,604	77.5%
Winter 2012/13	3,310	2,023	61.1%
Summer 2013	4,650	3,513	75.5%

4.30 It is clear from current quota usage that there is some unused noise quota, though this varies by airport and by season. We have had regard to this under-usage of noise quota limits and to the recent freeze in noise quota limits from 2012 onwards. However, we do not propose to change the noise quota limits in the next three years, as we wish to await the outcome of the Airports Commission’s work before deciding on whether any further quota limit reductions are justified. We propose to adopt this approach in light of the objective of maintaining a stable regulatory regime while the Airport Commission report is awaited, and to ensure that decisions about noise management are taken in the light of the Commission’s views on the need for, and location of, new capacity.

4.31 Maintaining the existing noise quotas would ensure that the total noise which can be emitted in 2017 is no higher than what could have been emitted in 2011-12. However, we consider that maintaining the status quo until 2017 would have no adverse effects in practice.

4.32 At Heathrow, we fully expect the trend in quieter aircraft to continue during this period. The aircraft that airlines use at Heathrow are already on average around 15% quieter than the total global fleets of those airlines and there are more A380 services at Heathrow than at any other European hub³². Notably, British Airways has recently started using A380s on its Heathrow-Hong Kong service, replacing the noisier B747-400³³, and has said publicly that it will put A380s on the Heathrow-Johannesburg service in 2014. Both these routes include flights which currently land in the night quota period. Therefore, unless the aircraft types currently used in the night quota period were replaced with noisier ones, which we consider unlikely, in the case of Heathrow we expect noise to reduce further regardless of permitted quota limits.

³² Source: A Quieter Heathrow

³³ The A380 is QC 0.5 on arrival vs QC2 for the B747-400

4.33 The Airport has publicly said it wants airlines to do still more to modernise their fleets and fly quieter planes at Heathrow and we will want to review what further progress has been made when the regime is next reviewed in 2016.

4.34 The scope for noise reduction in the short term at Gatwick and Stansted is less certain as there is unused movement capacity, especially in the winter season, and the majority of movements are already short haul quieter aircraft. Responses to the first stage consultation questioned the scope to reduce the noise quota given the fact that historically traffic levels were low.

4.35 The extent to which the unused noise quota might be used in future would therefore depend on the nature of demand for the unused movements at these airports and any change in traffic from short haul to long haul services. However, despite these uncertainties we consider it unlikely that the full noise quota would be reached during this period. Given the improvements in the noise environment at these airports and the relatively low numbers of people affected³⁴, even with expected growth projections to 2017, maintaining the current noise quota limits would mean the permitted noise impact would not be increased over that permitted in 2011-12.

4.36 We propose therefore that the noise quota limits for the next regime would be:

Heathrow

Winter 2014/15	Summer 2015	Winter 2015/16	Summer 2016	Winter 2016/17	Summer 2017
4,080	5,100	4,080	5,100	4,080	5,100

Gatwick

Winter 2014/15	Summer 2015	Winter 2015/16	Summer 2016	Winter 2016/17	Summer 2017
2,000	6,200	2,000	6,200	2,000	6,200

Stansted

Winter 2014/15	Summer 2015	Winter 2015/16	Summer 2016	Winter 2016/17	Summer 2017
3,310	4,650	3,310	4,650	3,310	4,650

³⁴ See results for 6.5 hour Lnight contours in Table 3 of the first stage consultation.

- 4.37 Annex B sets out our estimated forecast noise contours and population affected for the three airports, for the beginning and end of the proposed three year regime period. The 2011-12 maximum usage contours provided previously at Annex B of the stage 1 consultation indicate the theoretical worst-case noise exposure at each airport, though we do not expect this to occur. We will review our forecast about movements and use of noise quotas before any decision is taken on the new regime.
- 4.38 As Gatwick and Stansted airports both have capacity for increased night movements within the existing movements limit, we have provided forecasts based on central and high demand assumptions, which are explained in the draft Impact Assessment (IA). Even under the high demand scenarios, we do not expect demand to exceed the existing movement limits at Gatwick or Stansted, taking account of the ability to carry over or bring forward unused quota from season to season.
- 4.39 Noise quota limits after 2017 will be considered in the context of all relevant developments when the regime as a whole is next reviewed. This would include the conclusions of the Airports Commission and noise reduction benefits from improved aircraft technology which have occurred at that time and are expected to occur in the future. We will be able to track these changes and reflect on them when we consult on the next regime.
- 4.40 In the meantime, we would be interested in any further evidence about levels of disturbance, and also how this can be balanced with the need to share the benefits of quieter aircraft between the community and the aviation industry (for example by trading off quieter flights for increased capacity, or more predictable periods of respite with higher total numbers of flights). Individuals and groups are also encouraged to engage with the Airports Commission when it consults on proposals that are likely to include night noise impacts.

Q6: Do you agree that we should maintain the existing movement and noise quota limits until October 2017? If not, please set out your preferred options and reasons – this could include the noise and economic impact of any alternatives.

Q7: Do you have any comments on our forecasts to October 2017?

Q8: Do you have any views on how the benefits of quieter aircraft can be shared in future between communities living close to the airport and the aviation industry?

Ban of noisiest aircraft (QC/8/16)

4.41 Any aircraft which is rated as QC/8 or QC/16³⁵ may not take off in the night period, except in the period 23:00-23:30 in circumstances where;

- it was scheduled to take off prior to 23:00;
- the take-off was delayed for reasons beyond the control of the aircraft operator; and
- the airport authority has not given notice to the aircraft operator precluding take-off.

4.42 The table below shows the number of QC/8 departures between 23.00 and 23.30 at Heathrow, Gatwick and Stansted in the last three years. There were no QC/16 movements³⁶.

	2010		2011		2012	
	Cargo	Passenger	Cargo	Passenger	Cargo	Passenger
Heathrow	3	0	1	3	1	1
Gatwick	0	0	0	0	0	0
Stansted	0	0	1	0	0	1

4.43 In 2013, up to the end of October there were a further two movements of QC/8 passenger aircraft at Stansted. There were none at Heathrow or Gatwick and no QC/16 movements.

4.44 In all cases, the passenger flights were not operated by airlines but were privately operated flights by state owned aircraft.

4.45 Although unscheduled arrivals of QC/8 or QC/16 aircraft in the night are not currently prohibited, an aircraft noisy enough on arrival such that it could only meet QC/8 or QC/16 would in

³⁵ See paragraphs 4.5-4.7 of the first stage consultation for an explanation of QC bands

³⁶ See footnote 24 in first stage consultation for a description of how numbers of QC/8 and QC/16 movements have been calculated and the degree of certainty in the estimate

practice usually mean that it was an older Chapter 2 aircraft³⁷. Such aircraft were phased out in 2002³⁸ and it is now very unlikely that there are any aircraft in operation that do not meet at least the QC/4 standard on arrival.

4.46 Responses from the first stage consultation were generally supportive or ambivalent to the possibility of an extension of the operational ban to include the 23.00-23.30 period. As noted above we expect the likelihood of these flights being delayed to be very low given the small number of QC/8 or QC/16 flights seen in recent years. The costs are therefore likely to be negligible. The operational ban will, however, have the benefit of giving greater certainty that no such noise events may occur and so should prevent any awakenings caused by movements (albeit rare) of these noisier aircraft types³⁹.

4.47 In the table below we have indicated the area, population and number of households included within the 90dBA SEL (Sound Exposure Level) footprint from a generic QC/8 aircraft along a single departure route at Heathrow and Stansted⁴⁰. This is a theoretical aircraft which would be classified towards the top of the QC/8 band. SEL is measured in dBA and takes account of both the duration and intensity of the noise event. 90 dBA SEL corresponds to the threshold of sleep disturbance based on large scale studies in the UK. For noise events in the range 90-100 dBA SEL the likelihood of the average person being awakened by an aircraft noise event is about 1 in 75⁴¹. If this finding is applied directly to the population exposed, it is possible to estimate the approximate number of people along each departure route likely to be awakened⁴². The results provide an illustration of the numbers of people that could benefit from an operational ban of QC/8 and QC/16 aircraft. The extent of the footprints is illustrated at Annex E.

³⁷ Chapter 2 aircraft are “characterised by the noisier, low bypass turbofan aircraft and early high bypass turbofan aircraft”

(<http://www.caa.co.uk/default.aspx?catid=68&pagetype=70&gid=69&faqid=33>)

³⁸ Ibid.

³⁹ Movements by these aircraft types would, however, still be possible during the night if they qualified for a dispensation

⁴⁰ Results have not been provided for Gatwick on the basis that there were no QC/8 movements at that airport between 2010 and 2012

⁴¹ Report of a Field Study of Aircraft Noise and Sleep Disturbance, Department of Transport, December 1992

⁴² It is acknowledged that this analysis is a simplistic one. For example, the 1 in 75 relates to awakenings from sleep and not to sleep prevention at the beginning of the night or following an awakening during the night, and it is known that some people are more likely to be awakened than others. However the figures are presented to provide an illustration of the numbers of people that could benefit from an operational ban of the noisiest aircraft classified QC/8 and QC/16

	Footprint Area	Population	Households	Estimated nos. of
Airport/Route	(sq km)	(1000s)	(1000s)	awakenings (1 in 75)
Heathrow/09R BPK	24.9	94.0	33.4	1,250
Stansted/22 BUZ	23.7	1.8	0.6	25

4.48 We therefore propose to make this change in the next regime. This is not dependent on any other option.

4.49 We are not proposing any changes to the rules around QC/4 aircraft, as we consider that the costs of an operational ban would outweigh the benefits in the next regime. The scheduling ban of QC/4 aircraft during the night quota period (23.30 to 06.00) will therefore be maintained in the next regime.

Q9(a): Do you agree with extending the operational ban of QC/8 and QC/16 aircraft to the entire night period (23:00 – 07:00)?

Q9(b): Do you agree with our assessment of the costs and benefits in the draft IA?

Q10: Are there any other changes to the regime which we should consider?

5. Other matters which we have considered

5.1 In accordance with the ICAO balanced approach and the 2003 Regulations, this Chapter sets out relevant information which we have considered in addition to the policy proposals set out in Chapter 4. This includes other policy options discussed in the stage 1 consultation. More detail on these and the Government's response can be found in the summary of responses document (annex G).

Noise at source

5.2 As explained in the section on new objectives, the historic trend in average QC points per movement in the night quota period is a key indicator which demonstrates the extent to which aircraft have become quieter over time in line with fleet turnover. We have taken account of all publicly available evidence on fleet turnover, along with responses to the first stage consultation, when assessing the noise quota options (see Chapter 4).

5.3 Earlier this year, a tougher international noise standard was agreed in the ICAO Committee on Aviation Environmental Protection (CAEP)⁴³. This requires new types of large civil aircraft, from 2017, to be at least 7dB quieter in total, across the three test points, than the current standard. Standards for smaller aircraft will be similarly reduced in 2020.

Land use planning

5.4 The first stage consultation explained the Government's national policies on noise and land use planning as set out in the National Planning Policy Framework. To supplement this, the Government published on 28 August 2013 new national planning practice guidance as an online resource⁴⁴. This included guidance on noise. The guidance was open for informal comment until 14 October. Final guidance will be published later in the autumn.

⁴³ <http://www.icao.int/Newsroom/News%20Doc%202013/COM.4.13.EN.pdf>

⁴⁴ <https://www.gov.uk/government/news/new-streamlined-planning-guide-launched-online>

Though it does not mention aviation or any other specific sources of noise, the draft guidance states that noise needs to be considered when new developments may create additional noise and when new developments would be sensitive to the prevailing acoustic environment. It gives guidance on how to recognise when noise could be a concern, the factors to consider and how to mitigate the adverse effects of noise.

- 5.5 The previous consultation also included contour maps and population exposure figures comparing 2002-03 and 2011-12 for Lnight (6.5 hours). Whilst contour area had reduced at all three airports⁴⁵ at Heathrow population had increased in all contours below 57dB and at Gatwick it had increased in just the 48 dB contour. At Stansted there were no increases. Increases are likely to be the result of higher population densities in these areas reflected in the 2011 Census data.
- 5.6 In their responses to the consultation, local authorities in the immediate vicinity of the airports predicted no increase or only slight increases in numbers of residential units in some areas within the current night noise contours.
- 5.7 We note that all three airports have indicated that they are engaged with their local authorities in the local planning process to ensure noise-sensitive development is managed appropriately. In doing so, they will wish to note the forecast contour and population data for 2016-17 in annex B. We have also included maps for the 2016-17 central forecasts. Maps for the other scenarios are available in electronic format (or hard copies) on request.

Operational procedures

Recent / current night trials

- 5.8 Heathrow Airport carried out a trial of early morning respite earlier this year, which aimed to give residents in specific areas relief from early morning aircraft noise by introducing zones which would be avoided by aircraft at the most sensitive time of the day. An independent report on the outcome of the trial was published in August⁴⁶. The report concluded that the trials brought noise respite to approximately 100,000 people living under the Heathrow flight paths in South-East and East London as well as many residents of Berkshire. However, the trial also had some unforeseen

⁴⁵ Except in the 60dB and 63dB contours at Stansted

⁴⁶ <http://www.heathrowairport.com/noise/noise-in-your-area/early-morning-trial>

consequences. Some areas, such as Brockley in South East London saw an increase in night flights. Also during the trial aircraft joined the approach paths further from touchdown in order to avoid overflying the exclusion zones. This in turn resulted in the areas between the zones being overflown more during the trial.

- 5.9 Gatwick Airport has recently carried out a trial to provide respite to reduce the impact of night noise from arriving flights. The aim of the trial was to remove overflight (below 6,000 feet) from pre-agreed noise impacted areas, on a pre-determined date/time basis.
- 5.10 Stansted carried out a trial earlier this year to reduce noise disturbance from aircraft arriving at night into Stansted from the west, by reducing the likelihood that they fly over the urban areas of Ware, Hertford and Hoddesdon. The trial highlighted some areas where significant benefit can be achieved both for both local the community and aircraft operators alike.
- 5.11 The Government welcomes these trials and airports' efforts to explore options for respite from night noise. We also note that there are a number of expected changes to operating procedures and to London airspace which could mitigate the impact of night noise over the coming years, though accept that these are unlikely to be fully deployed in the proposed regime period. We support the trialling of such initiatives to test the costs and benefits and will want to monitor these trials.

Increased angle of descent

- 5.12 We have noted the willingness of the aviation industry to explore steeper approaches up to 3.25 degrees⁴⁷. Given the possible noise benefits this would bring, we would encourage these efforts and would like to see trials to assess fully the operational implications and changes in noise. We believe it is realistic to implement such trials over the course of the next regime but recognise that this would require regulatory support and would have to be carefully developed. Looking beyond the next regime, we encourage the industry to explore the operational and technical feasibility of greater angles of approach along with their environmental costs and benefits.

⁴⁷ See for example the Sustainable Aviation Noise Road-Map and 'A Quieter Heathrow'

Night-time easterly preference at Heathrow

- 5.13 We understand that Heathrow Airport Limited (HAL) and NATS are carrying out further analysis on the feasibility and likely benefits of this procedure. HAL has said it would be supportive of exploring opportunities in this area but has pointed out that a policy of providing a fairer distribution of noise and/or minimising the number of people exposed to noise might lead to different operational solutions. Its preferred approach would be to seek to trial a number of approaches during the next regime in order to test their effectiveness in achieving the policy objective rather than adopting a single approach for the duration of the regime only to find that it is ineffective in achieving the desired outcome.
- 5.14 The Department will therefore engage further with HAL on this topic both on a bilateral basis and through its Aircraft Noise Management Advisory Committee (ANMAC).
- 5.15 The first stage consultation said we do not consider that a night-time runway preference scheme at Gatwick or Stansted is likely to have any great noise benefits. We have received no evidence to change this position.

Displaced landing threshold

- 5.16 Evidence from the first stage consultation confirms that implementing a displaced landing threshold⁴⁸ at Heathrow would not be feasible within the next regime. However, we welcome HAL's commitment to exploring operational opportunities to reduce noise impacts and the inclusion of displaced thresholds in its document 'A Quieter Heathrow'. At Stansted, on the evidence provided, we accept that the costs appear likely to outweigh the benefits.

Q11: Do you have any further comments on the scope for trialling new operational procedures which have potential noise reduction benefits in the period up to 2017?

⁴⁸ A displaced landing threshold moves the point of touchdown further along the runway

Economic incentives – noise insulation schemes

- 5.17 Economic incentives may be considered as a noise management measure under the 2003 Regulations⁴⁹.
- 5.18 The first stage consultation described the night noise insulation scheme as defined in the 2006 decision document and which the Government expected airports to implement on a voluntary basis, and asked for evidence on the extent to which the criteria had been met. We have received no evidence from the first stage consultation to suggest that the airports have not complied with the scheme.
- 5.19 The boundary of the scheme was based on a noise footprint of the noisiest aircraft regularly operating at the airport. Since numbers of these noisiest aircraft have decreased, the scheme's boundary now covers areas which experience less noise than in 2006.
- 5.20 Heathrow have been piloting new approaches to noise insulation during 2013, seeking to understand the local community views on these. From 2014, they plan to launch a 'Quieter Homes' programme incorporating the lessons from the pilot. Under the pilot, residents are offered customised noise insulation plans based on an assessment by an independent noise appraisal expert. A wider range of products and suppliers than before has been offered, which may improve uptake.
- 5.21 Gatwick's noise insulation scheme is similarly under evaluation and the airport is developing plans for a new scheme relating to both day and night noise, on which it will be consulting local residents.
- 5.22 In line with the policy on noise insulation in the Aviation Policy Framework, we continue to expect airports to offer compensation schemes but do not presently propose to exercise regulatory powers in this area. Noting the developments which are already in train, the Government will continue to monitor the voluntary schemes being offered.
- 5.23 We also note that Heathrow has commissioned recent research into house price and sales data around Heathrow to compare this to the London-wide picture. As reported in its recent document 'A Quieter Heathrow', the research argues that there is little evidence

⁴⁹ Regulation 5.(1)(b) of SI 2003 No.1742

that aircraft noise has a negative impact on the property market around Heathrow⁵⁰.

Economic incentives – landing charges, departure noise limits and fines

- 5.24 The CAA has recently published a review of the impact of noise and NOx landing charges⁵¹. The review found that differential environmental landing charges have some incentive effects but they are unlikely to be the main financial driver for using quieter and less-polluting aircraft. More effective charging schemes could be developed which drive improvements through the setting of more appropriate charge differentials, and by earlier introduction of the higher charges for categories of aircraft that exhibit poor noise and NOx performance relative to emerging standards.
- 5.25 The study concludes by highlighting a number of principles which CAA considers to constitute good practice in the setting of airport noise and emissions charges. These include the principle that noise charges for operations occurring at night should be greater than those that occur during the day. The study notes that some airports offer disincentives for night-time operations, reflecting a general heightened sensitivity to aircraft noise occurring during the night as oppose to day, while others disincentivise operations at other times for other reasons such as demand. In some cases of the latter, an incentive to operate at night is inadvertently provided. CAA therefore recommends that there should be a clear distinction between demand-related and noise-related differential landing charges.
- 5.26 The Government welcome this study and encourages airports to consider its recommendations.
- 5.27 Heathrow Airport has committed to continue to provide a strong financial incentive for airlines to use the quietest planes currently available, including in the early morning period, through the use of variable landing charges. Its charging system was updated in 2011 to further differentiate between aircraft within the quietest noise category. This introduced a differential of ten times between the noisiest and quietest aircraft.

⁵⁰

http://www.heathrowairport.com/static/Heathrow_Noise/Downloads/PDF/a_quieter_heathrow_2013.pdf

⁵¹ <http://www.caa.co.uk/application.aspx?catid=33&pagetype=65&appid=11&mode=detail&id=5803>

5.28 The Aviation Policy Framework states that airports should regularly review noise controls and the levels of penalties (at least as often as the Noise Action Plan where applicable) in consultation with local communities and consultative committees, to ensure they remain effective. The Department's Aircraft Noise Management Advisory Committee is reviewing the departure and arrivals noise abatement procedures, including noise limits and use of penalties, to ensure that these remain appropriately balanced and effective.

Other operational restrictions

5.29 As explained above, we have considered the evidence on further extending the ban of the noisiest types of aircraft but are not proposing to make any further changes to the rules on QC/4 rated aircraft.

5.30 The first stage consultation also sought evidence on the scope for respite options, including mandating Heathrow's existing voluntary agreement and introducing a respite period at Gatwick or Stansted. We note the evidence that Heathrow's agreement appears to be working well. Mandating respite periods, particularly new ones, would be a substantial change and the Government does not wish to make significant changes to the night flying restrictions in the short term. It is clear that there would be a number of costs and benefits which would have to be explored further in taking forward respite options in the future.

Conclusion

5.31 In putting forward our proposals for future night flying restrictions, the Government has considered carefully the responses received to the first stage consultation. As well as these responses, the Government's proposals reflect in particular the following factors:

- Recent policy statements, notably the Aviation Policy Framework and the Noise Statement Policy for England.
- The ongoing work of the Airports Commission, its relevance to the three designated airports and our wish to create regulatory stability in this period.
- The likely worsening of the noise climate if the existing restrictions are not maintained – in the short term at Heathrow and in the longer term at the other airports as demand for slots increases (see draft impact assessment).

- The contribution of the aviation industry to the UK's economic recovery⁵².
- The improving noise climate due to the use of quieter aircraft.
- Industry's willingness to trial new operational procedures to reduce noise and airports' review of economic measures such as noise insulation schemes and departure noise fines. The benefits from such operational procedures are something which we are required to consider under the ICAO balanced approach before applying operating restrictions.
- The Airports Commission will take into account emerging evidence of the effects of night noise on health and sleep disturbance, and we look forward to its views. The Government will take into account this evidence in its response to the Airports Commission.

5.32 In line with the ICAO balanced approach, we believe that continuing the current restrictions is justified in order to maintain the protections which local communities have come to expect and to deliver our overall policy of limiting and where possible reducing the number of people significantly affected by aircraft noise. Removing the regime would almost certainly lead to a worsening of the noise climate and exposing more people to night noise.

5.33 Our assessment of the noise problem at all three airports, based on forecast noise exposure and current evidence on health impacts, does not lead us to believe that there is any urgent need to consider significant new operating restrictions at this time.

5.34 We consider that the proposed changes to the regime would give reassurance to local communities about noise reduction without imposing any significant additional costs on the industry.

Q12: Are there any other matters you think this consultation should cover?

⁵² See Chapter 1 of the Aviation Policy Framework for the Government's position on the economic benefits of aviation

6. Location of New Noise Monitors at Heathrow

- 6.1 The departure noise limits at Heathrow, Gatwick and Stansted are related to a fixed reference distance in relation to the runways and aircraft departure tracks; the distance being 6.5 km from start of roll⁵³. At each airport, the noise monitors are sited in an arc as near as practicable to 6.5 km from start of roll at each end of the runway. The spacing of the monitors takes account of the location of the departure routes and the tracks actually flown. To ensure consistency in the noise monitoring arrangements, the limits at individual monitors are adjusted in accordance with the published formula⁵⁴ to account for the effects of any displacement from the reference point.
- 6.2 The departure noise monitors located to the east of Heathrow are positioned to monitor departures from the southern runway (09R). There are no dedicated departure noise monitors for easterly departures from the northern runway (09L) due to the “Cranford Agreement” – the arrangement under which easterly departures from the northern runway are avoided as far as possible⁵⁵.
- 6.3 As part of the decision announced on 15 January 2009 regarding the future development of Heathrow, the Secretary of State for Transport stated that the operating practice which implements the Cranford Agreement should end as soon as practicably possible. To operate the northern runway efficiently for easterly departures, changes are first required to some of Heathrow's taxiways. The building of these taxiways requires planning approval from the London Borough of Hillingdon and the airport submitted its planning application in May 2013. Whilst aircraft turning south

⁵³ Start of roll is where aircraft (using the full runway length) typically begin their take-off run. It is approximately 150 metres in from the “start” end of the runway

⁵⁴ DETR Decision of 18 December 2000. The formula is: an increase in the noise limits of 1 dB for each 100 metres (or fractions thereof pro rata) that the monitor is short of the 6.5 km reference distance; a decrease in the noise limits of 1 dB for each 1,000 metres (1 km) that the monitor lies beyond the 6.5 km reference distance; and an increase of 0.4 dB for each 10 m of monitor site elevation above airfield level (or a decrease of -0.4 dB for each 10 m below airfield level) (again, or fractions thereof pro rata). The resulting positional adjustments are published in the UK AIP (Aeronautical Information Publication).

⁵⁵ <http://www.heathrowairport.com/noise/what-we-do-about-it/measures-already-in-place/runway-use/cranford-agreement>

from runway 09L can be monitored by the existing 09R monitor array, departures turning north (on BPK/BUZ routes) are not currently covered. There is therefore a requirement to deploy additional monitors to monitor north-turning departures from runway 09L following the ending of the Cranford Agreement.

6.4 Proposals for additional monitors require appropriate consultation, either separately or as part of an appropriate package of measures. Although the majority of departures from Heathrow take place during the daytime (0700-2300), the majority of infringements of the noise limits occur in the night period. We are therefore publishing proposals for three additional monitors at Heathrow in this consultation, although strictly speaking this is not a night restrictions issue and the intention is that the monitors would be for use on a full 24 hour basis. The three new sites, which were identified by the CAA's Environmental Research and Consultancy Department (ERCD) with assistance from Heathrow Airport, are shown on the map at Annex F. We understand that the airport will utilise existing (spare) noise monitoring equipment at these locations and so the additional cost imposed on the airport is negligible. The proposed locations for these sites and the positional adjustments that would apply (calculated in accordance with the existing formula) are shown in the table below:

Locations of proposed new noise monitors at Heathrow

	Grid Reference (OS)	Track Distance (km)	Elevation (m)	Latitude	Longitude	Positional Adjustment (dB)
Site L	TQ 1194 7740	7.04	4	512904 N	0002321W	minus 0.4
Site M	TQ 1145 7806	6.85	13	512926 N	0002346W	plus 0.2
Site N	TQ 1119 7853	6.86	7	512941 N	0002359W	minus 0.1

6.5 As mentioned above, aircraft turning south from runway 09L can be monitored by the existing 09R monitor array as illustrated at Annex F. However, the positional adjustments that apply to the existing 09R monitors are based on the distances relative to the start of roll position on runway 09R. If the existing 09R monitor array is to be used for 09L departures, separate adjustment values are required depending on the runway being used (due to the

different track distances involved)⁵⁶. We are therefore proposing additional positional adjustments for 09L departures that would apply to the existing noise monitors, which are shown below.

Proposed positional adjustments to apply at existing noise monitors for 09L departures

	Elevation (m)	Track Distance (km)	Positional Adjustment (dB)
Site F	-3	6.52	minus 0.1
Site J	-3	6.81	minus 0.4
Site G	-3	6.82	minus 0.4
Site H	-3	7.12	minus 0.7
Site K	-4	7.01	minus 0.7
Site I	-4	7.82	minus 1.5

6.6 For day-to-day monitoring of departure limit infringements, the Noise and Track Keeping (NTK) system software at each airport automatically applies the required adjustment to the noise limit at each noise monitor. At this moment we are aware that Heathrow Airport’s NTK software may require modification (possibly at some cost to the airport) to accommodate runway-specific limit adjustments for easterly departures.

Q13(a): Do you agree with the locations of the proposed new noise monitors at Heathrow? If not, are there alternative locations you would favour and why?

Q13(b): Do you agree with the proposal to apply runway-specific limit adjustments for easterly departures at Heathrow? If not, please give reasons.

⁵⁶ No such distinction is necessary for westerly departures on runways 27L and 27R due to the layout of the noise monitor array relative to the departure routes

7. List of Questions

Consultation document questions

Q1: Do you agree with our preliminary view as to the new studies on health effects?

Q2: Do you have any further views on the costs and benefits, including health impacts, which we should take into account in our decision?

Q3: Do you agree with the proposed environmental objectives?

Q4: Do you agree that the next regime should last until October 2017?

Q5: Do you have any views on the revised dispensations guidance?

Q6: Do you agree that we should maintain the existing movement and noise quota limits until October 2017? If not, please set out your preferred options and reasons – this could include the noise and economic impact of any alternatives.

Q7: Do you have any comments on our forecasts to October 2017?

Q8: Do you have any views on how the benefits of quieter aircraft can be shared in future between communities living close to the airport and the aviation industry?

Q9(a): Do you agree with extending the operational ban of QC/8 and QC/16 aircraft to the entire night period (23:00 – 07:00)?

Q9(b): Do you agree with our assessment of the costs and benefits in the draft IA?

Q10: Are there any other changes to the regime which we should consider?

Q11: Do you have any further comments on the scope for trialling new operational procedures which have potential noise reduction benefits in the period up to 2017?

Q12: Are there any other matters you think this consultation should cover?

Q13(a): Do you agree with the locations of the proposed new noise monitors at Heathrow? If not, are there alternative locations you would favour and why?

Q13(b): Do you agree with the proposal to apply runway-specific limit adjustments for easterly departures at Heathrow? If not, please give reasons.

Impact Assessment questions

Question 1: Do you agree with our assessment of how movements and quota usage are likely to change over the period to the end of the summer season 2017 at Heathrow, Gatwick and Stansted?

Question 2: Do you agree with our assessment of the costs and benefits of option 1 at Heathrow, Gatwick and Stansted? Would you expect there to be any additional costs and benefits?

Question 3: Do you agree with our assessment of the costs and benefits of option 2 at Heathrow, Gatwick and Stansted? Would you expect there to be any additional costs and benefits?

8. Glossary and Abbreviations

Airports Commission	An independent commission set up in 2012 to examine the need for additional UK airport capacity and recommend to government how this can be met in the short, medium and long term.
ANMAC	Aircraft Noise Management Advisory Committee set up to advise the Department on technical and policy aspects of aircraft noise mitigation and track keeping policies at Heathrow, Gatwick and Stansted Airports.
Balanced Approach	Guidance developed by ICAO to address aircraft noise problems at individual airports in an environmentally responsive and economically responsible way.
CAA	Civil Aviation Authority.
Carry Over	Carry-over and overrun arrangements give the airport flexibility to defer or bring forward movements and quota allowance from one season to the next.
Certifi(cat)ed Noise Levels	The ICAO aircraft noise certification procedure for subsonic aircraft over 5,700kg requires three separate noise measurements to be made at approach, lateral and flyover locations. The three certificated noise levels (measured in EPNdB) are determined within tight tolerances and normalised to standard atmospheric conditions.
dB	Unit of relative sound level or changes in sound level.
dBA	Unit of sound pressure level measured on the A weighted scale, i.e. as measured on an instrument that applies a weighting to the electrical signal as a way of simulating the way a typical human ear responds to a range of acoustic frequencies.
Environmental Objective	A longer term objective for an airport within the definition at Regulation 2 of The Aerodromes (Noise Restrictions) (Rules and Procedures) Regulations 2003 (SI 2003/1742).
EPNdB	Effective Perceived Noise Decibels.

ERCD	Environmental Research and Consultancy Department (of the Civil Aviation Authority).
IATA Slot Conference	International Air Transport Association conference held in June and November each year to provide a forum for the allocation of slots at fully coordinated airports and for reaching a consensus on the schedule adjustments necessary to conform to airport capacity limitations.
ICAO	International Civil Aviation Organisation.
Leq	A measure of long term average noise exposure. For aircraft it is the level of a steady sound which, if heard continuously over the same period of time, would contain the same total sound energy as all the aircraft noise events.
Lnight	Usually, the eight hour Leq average noise level from a specified source or sources as defined in Directive 2002/49/EC, in the UK defined to cover 2300-0700 local time; sometimes defined over other periods at night.
Movements Limit	The number of movements allowed during a season between 2330 and 0600 (the Night Quota Period).
Noise Contour	Aircraft noise maps which show lines joining points of equal noise to illustrate the impact of aircraft noise around airports.
Night Period	Defined as 2300-0700 local time.
Night Quota Period	Defined as 2330-0600 local time unless the context indicates otherwise.
Noise Abatement Objective	A subsidiary objective, referred to in the definition of an environmental objective in SI 2003/1742.
Noise Footprint	The area within which the noise level, normally defined using the SEL metric (q.v.), from a noise event is equal to or greater than the specified level. The footprint may relate separately to an arrival or a departure, or may be defined as an 'envelope' encompassing both.
Noise Quota	An aggregation of quota count for individual aircraft, used to define a seasonal limit or usage by comparison with the applicable limit.

NTK	Noise and Track Keeping monitoring system. The NTK system associates radar data from air traffic control radar with related data from both fixed (permanent) and mobile noise monitors at prescribed positions on the ground.
Operational Freedoms Trial	A trial run by Heathrow Airport in two phases from November 2011 to February 2013 to explore whether new procedures could be used to bring benefits to passengers, by providing a more punctual service; the local community through less late-running flights; and to the environment, by reducing aircraft stacking times and reducing emissions.
Quota Count (QC)	The weighting attributed to the arrival or departure of a specified aircraft type by reference to its certificated noise performance, divided into 3EPNdB bands.
SEL	Sound Exposure Level. The level generated by a single aircraft at the measurement point. Accounts for the duration of the sound as well as its intensity.
SI	Statutory Instrument. A form of legislation which allows the provisions of an Act of Parliament to be subsequently brought in to force or altered without Parliament having to pass a new act. They are also referred to as secondary, delegated or subordinate legislation.
UK AIP	UK Integrated Aeronautical Information Publication. A manual containing thorough details of regulations, procedures and other information pertinent to flying aircraft in the UK.
WHO	World Health Organization