Heathrow Airport

Environmental Noise Directive

For public consultation – June 2009
# Contents

**Heathrow Airport Environmental Noise Directive Draft Action Plan**

1. Foreword by Mike Brown .................................................. 2  
2. Executive summary ......................................................... 3  
3. Purpose and scope .......................................................... 8  
4. Heathrow Airport ............................................................ 9  
5. Background to aircraft noise and legal context ................. 10  
6. BAA’s framework for noise management ......................... 15  
7. Results of the 2006 noise mapping .................................. 26  
8. Evaluating the implementation and the results of the action plan 29  
9. Our approach to managing noise (the action plan) .......... 30  
10. Quantification of the draft noise action plan ................. 39  
11. Responding to this consultation .................................. 40  

**Annexes**

- Annex 1 Glossary of terms .................................................. 41  
- Annex 3 END noise maps ..................................................... 45  
- Annex 4 Complaint data ....................................................... 47  
- Annex 5 Summary of limit values in place ......................... 49  
- Annex 6 Noise preferential route map ............................... 50  
- Annex 7 Airfield map .......................................................... 51  
- Annex 8 Noise mitigation scheme boundary maps .......... 52  
- Annex 9 Financial information .............................................. 55  
- Annex 10 Consultation response form ............................. 57
1. Foreword

Noise from Heathrow is one of the biggest concerns for people living around the airport. While aircraft noise continues to reduce as better technology and design is applied, this has been offset to some extent by the increase in flights over the past 20 to 30 years.

At Heathrow, policy for issues such as noise levels and flight paths are set by the Department for Transport. However it is our responsibility - working with the airlines, NATS and the Government - to manage and mitigate the effects of aircraft noise at Heathrow. We have a good track record of doing this. In the 1990’s for example we introduced a voluntary agreement with airlines to stop the scheduling of the noisiest types of aircraft allowed at night, subsequently formalised by the Government. We also offer lower landing charges for airlines that use their quietest fleet at Heathrow. Nevertheless, there is still more to do.

This draft Noise Action Plan sets out how we plan to manage the impacts of aircraft noise over the next 5 years. It does not tackle the issue of aircraft noise associated with future development at Heathrow such as a third runway. Many of the actions contained within this document relate to measures we have already introduced as well as proposing some additional measures.

We would very much like to hear your feedback on these as part of this public consultation on our Noise Action Plan. Details of how you can respond can be found at the back of this document. We look forward to hearing your views.

Mike Brown
Chief Operating Officer
Heathrow Airport
2. Executive summary

In direct response to feedback from stakeholders consulted during the compilation of this draft noise action plan, the following executive summary is intended to provide a reasonably comprehensive synopsis and consequently runs for several pages.

Airports bring a range of economic, social and environmental impacts, both positive and negative. Airports are important economic generators, providing jobs, encouraging inward investment and boosting tourism. However, there are also some negative impacts for those communities that exist around airports. Noise remains a significant issue for people living or working close to airports or under flight paths.

Limiting and, where possible, reducing this noise is a long standing commitment within BAA’s corporate responsibility agenda and is critical to maintaining Heathrow Airport’s permission to grow.

The Environmental Noise (England) Regulations 2006 require airport operators to develop Action Plans designed to manage noise issues and effects arising from aircraft departing from and arriving at their airport, including reduction if necessary. This supports the Governments aim – as set out in the 2003 “Future of Air Transport White Paper” (ATWP) – to limit and where possible reduce the number of people in the UK significantly affected by aircraft noise.

Guidance notes and supporting correspondence issued by the Department for Environment, Food and Rural Affairs (DEFRA) in March 2009 set out a number of key requirements for the draft noise action plans and provided a timetable by which they should be completed. 
http://www.defra.gov.uk/environment/noise/mapping/action-plans.htm
The final draft noise action plan must be sent to the Secretary of State by 30 November 2009 having been subject to a minimum 16 week public consultation.

More specifically the guidance provides details on the general requirements for Action Plans, expected content (see Annex 2), considerations in determining actions and the process for public consultation, adoption and publication. In helping airports to determine what actions may be necessary the guidance points to two key pieces of information. These are:

- The current noise impact of their operations as shown by the results of the strategic noise mapping; and
- The current control measures they have in place.

In assessing this information airport operators are asked to consider whether the current noise impact is acceptable and if not what further action could be proposed. At Heathrow this information is supplemented by a series of benchmarking studies we undertook during 2007 and 2008.

The Department for Transport (DfT) has direct control over noise policy at Heathrow and has established over many years a range of operational controls and statutory objectives to manage and where possible reduce noise. BAA Heathrow has also had a detailed noise management strategy for a number of years which has further enhanced the approach set by the DfT. Consequently we believe we have a comprehensive and effective approach to aircraft noise management.

Indeed our independent benchmarking consultants identified that Heathrow is a world leader in terms of operational controls and amongst the leading airports with regard to mitigation and compensation measures. However it also revealed that there was scope for development in the area of stakeholder communication on noise issues. In response we have invested in our Webrtrak system, an online system that allows people to track flights using Heathrow Airport (action 2.3). We have also included further actions such as investigating new ways to describe noise impacts (action 5.7) and commissioning further benchmarking studies to review our progress (action 5.2).

In considering the strategic noise maps we noted that the areas identified were consistent with those we have identified in our experience of managing aircraft noise impacts over the past 20 years. The production of annual 57 dBA Leq [16 hour] summer contours has been a consistent feature during this period. Traditionally our approach to noise management has contained actions aimed at addressing areas beyond these contours and, additionally, ground noise. The actions contained within this plan continue to adopt this wider approach.
2. Executive summary

This consultation document seeks views on BAA Heathrow’s action plan to manage aircraft noise impacts over the five year period 2010–2015. It is important to note that this document seeks views on noise relating to the current 2 runway airport. It is not a consultation about future noise or an expanded airport.

This document aims to:

- Demonstrate our continuing commitment to managing aircraft noise impacts associated with Heathrow Airport’s operations. BAA has identified this issue as one of the key priorities for our corporate responsibility agenda.
- Allow us to engage with communities affected by aircraft noise and better understand their concerns and priorities, so that we can ensure our airport noise strategies and action plans are well informed.
- Enable us to make progress towards our long term statutory and voluntary aircraft noise objectives.

Over the following paragraphs we have set out the key aspects of sections 3 to 11 contained within this draft action plan. There are a series of Annexes also contained within this document.

Section 3 sets out the purpose and scope of the draft noise action plan. The purpose is to seek the views of all stakeholders on the proposed draft noise action plan. The scope of the draft noise action plan is extended beyond the areas identified by the strategic noise mapping to include ground noise issues and actions that impact on areas outside of the contours. The section also points out that responsibilities for noise management do not always fall to the airport operator and often fall to the DfT, NATS and/or the CAA. In such cases the airport operator can only recommend any proposed changes.

Section 4 provides a description of Heathrow Airport and comments briefly on future development of the airport.

Section 5 introduces the issue of aircraft noise and details the legal context in which Heathrow Airport operates.

Over the past 30 years aircraft have got progressively quieter whilst the number of movements has increased significantly. This is illustrated by the fact that between 1980 and 2006 the number of people living within the 57dBA Leq daytime noise contour (57 decibels averaged over 16 hours) has fallen from 2 million to around 252,000 during which time runway movements have increased from around 273,000 to 477,000.

Within the text it is also acknowledged that noise contours are not the only way to describe the community impacts of aircraft noise. This section introduces the ANASE study conducted on behalf of the DfT, some of the effects of noise and some of the early feedback we have received during our pre-consultation stakeholder meetings and from our complaint data. It is clear that the frequency of overflight, night flying and potential sleep disturbance, the value placed on periods of respite and more recently the potential implications of the removal of the Cranford Agreement are all key local concerns for community stakeholders.

The interdependencies between noise and emissions, and working with agglomerations to ensure compatibility between action plans are also briefly discussed.

The governance structure for noise within which Heathrow operates is complex. The role of ICAO in setting international noise certification standards is detailed and its role in setting International Standards, Recommended Practices and Procedures in relation to aircraft noise. Reference is also made to the requirement for Member States to adopt a “balanced approach” to noise management. At the European level some detail is provided on some key European Union Directives which relate to aircraft noise including the phase out of older Chapter 2 aircraft in 2002.

At a national level a number of significant Acts of Parliament and regulations exist. These include the Civil Aviation Acts 1982 and 2006 which grant the government powers to introduce noise control measures at designated airports (Heathrow, Stansted and Gatwick). The text also introduces the UK Aeronautical Information Package (UK AIP) which contains a range of noise controls relating directly to aircraft operations. Some specific noise abatement and
environmental objectives are also detailed, for example that the 48 dB(A) Leq 0.5 hour night contour is limited to 55km² in 2011-2012 and that if a third runway is built that the 57dBA daytime noise contour should not exceed 127km².

Section 5 also identifies the planning conditions in place relating to the use of Terminal 5 and Terminal 4. Section 6 outlines our strategic approach to aircraft noise management framed around our long term objective “To limit aircraft noise impacts and gain the trust of our stakeholders that we are using best practicable means to achieve this goal, and to continue this approach into the future, within the framework established by Government.” In discussing our strategy it invites comment and review of our goal to be amongst the leading airports for noise management activity at comparable airports. It also sets out the themes to our noise work program which are:

1. Reducing noise impacts wherever practicable. This includes:
   1.1 Quietest fleet practicable;
   1.2 Quietest practicable aircraft operations, balanced against NOx and CO2 emissions;
   1.3 Effective and credible noise mitigation schemes.
2. Engaging with communities affected by noise impacts to better understand their concerns and priorities, reflecting them as far as possible in airport noise strategies and communication plans;
3. Influencing planning policy to minimise the number of noise sensitive properties around our airports;
4. Organising ourselves to continue to manage noise efficiently and effectively;
5. Continuing to build on our understanding of aircraft noise to further inform our priorities, strategies and targets.

The text goes on to describe the current measures in place to manage noise at Heathrow Airport. This is a very detailed section of the draft noise action plan and is an indication of the wide range of the statutory and voluntary noise management controls already in place. In headline terms the measures include:

- Noise and Track Keeping Monitoring arrangements
- Operating Restrictions
  - Runway use
    - Westerly Preference
    - Runway Alternation
    - Cranford Agreement
  - Night Flight Restrictions
- Operational Procedures
  - Departure Procedures
    - Noise Preferential Routes
    - 1000ft rule
  - Arrival Procedures
    - Continuous Descent Approach (CDA)
    - Joining Point Rules
    - Reverse Thrust
- Noise Limits
  - Departures
- Ground Noise Controls
- Differential Landing Fees
- Local Planning Conditions
  - Terminal 4
  - Terminal 5
- Noise mitigation and compensation schemes
- Stakeholder Engagement

Section 7 summarises the results of the 2006 noise mapping and is supported by the maps in Annex 3. Whilst the mapping introduces a new metric in describing the noise impact, because of Heathrow’s history of noise management controls and frequent contour analysis it does not highlight any new geographical areas of concern with regard to noise impacts.
2. Executive summary

Section 8 sets out how we intend to monitor progress against the action plan using performance indicators for individual actions. Where these indicators show trends which are discouraging we intend to set annual targets from time to time (action 4.3). Additionally this section details the following Key Performance Indicators and the 2006 baseline performance:

<table>
<thead>
<tr>
<th>Reference number</th>
<th>Key performance indicator</th>
<th>2006 Baseline</th>
</tr>
</thead>
<tbody>
<tr>
<td>KP1</td>
<td>Percentage of Chapter 4 (or equivalent) Aircraft</td>
<td>N/A</td>
</tr>
<tr>
<td>KP2</td>
<td>Area inside the 55dBA L_{den} daytime contour (km$^2$)</td>
<td>152km$^2$</td>
</tr>
<tr>
<td>KP3</td>
<td>Area inside the 48dBA L_{Aeq,6.5 hour} nighttime (winter &amp; summer seasons combined) contour (km$^2$)</td>
<td>N/A</td>
</tr>
<tr>
<td>KP4</td>
<td>Area inside the 57dBA L_{Aeq,16 hour} daytime summer contour (km$^2$)</td>
<td>117.4km$^2$</td>
</tr>
<tr>
<td>KP5</td>
<td>Average Quota Count of aircraft scheduled to operate during the night quota</td>
<td>1.71</td>
</tr>
<tr>
<td>KP6</td>
<td>Number of infringements of the daytime departure noise limit</td>
<td>34</td>
</tr>
<tr>
<td>KP7</td>
<td>Percentage of aircraft achieving a CDA (24 hour period)</td>
<td>83.99%</td>
</tr>
<tr>
<td>KP8</td>
<td>Percentage of aircraft on track (all routes)</td>
<td>94.2%</td>
</tr>
<tr>
<td>KP9</td>
<td>Number of individual callers making noise related enquiries</td>
<td>2378</td>
</tr>
<tr>
<td>KP10</td>
<td>Percent of noise related enquiries responded to within 5 working days</td>
<td>N/A</td>
</tr>
</tbody>
</table>

As a way of measuring the success of this action plan we have identified a number of expected outcomes. These are also set out in this section and detailed below:

- No operations in 2015 by marginally compliant Chapter 3 aircraft (Chapter 3 high).
- At least 97% of aircraft movements by Chapter 4 or equivalent aircraft.
- The introduction of easterly alternation for arrivals.
- Performance against the noise abatement procedures in the UK AIP will be maintained and where practicable improved against the 2006 baseline.
- No daytime infringements against 94dBA daytime departure noise limit.
- We will be routinely reporting noise impacts using alternative metrics.
- The 57dBA L_{Aeq,16 hour} Leq summer daytime contour will be within 127km$^2$.
- The 48dBA L_{Aeq,6.5 hour} Leq night contour (winter/summer combined) will be within 55km$^2$.

Section 9 is the list of draft actions. There are in excess of 50 actions detailed within the document. Over 30 of these represent the continuation of current good practice. There are however a number of new actions which highlight our desire to further improve our noise management approach. Some of the new actions to note are the:

- voluntary phase out of marginally compliant Chapter 3 aircraft by 2015 (1.1.3)
- publication of a Departures Code of Practice by 2012 (1.2.1)
- aim to establish a noise control scheme (1.2.2)
- publication of a schedule for the removal of the Cranford Agreement and the introduction of easterly arrival alternation (1.2.3)
- commitment in 2010 to the review of our existing noise mitigation and compensation schemes (1.3.1)
2. Executive summary

- annual publication of Lden contours for the preceding year (3.4)
- annual publication of the 6.5 hour night time 48 dBA Leq contour (3.5)
- international benchmarking of our approach to noise communications (5.2)
- international benchmarking of our operational noise management controls (5.1)
- proposal to formulate a regime to track and describe our noise impact using a range of alternative metrics to help aid understanding (5.7)
- commitment to regularly review and publish progress against the actions and key performance indicators (2.2, 5.6)

Section 10 discusses the methodology we used to identify potential actions, assessing the financial costs of noise management and the number of individuals potentially benefiting from any new action.

Finally Section 11 details how to respond to this consultation and asks a number of questions. The deadline for response to the following questions is 5 October 2009.

1. To what extent do you think that BAA Heathrow’s noise strategies outlined in the draft noise action plan are targeting the most important problems in relation to aircraft noise?

2. To what extent do you think that the draft noise action plan provides a suitable framework to manage aircraft noise?

3. The draft noise action plan proposes a number of performance indicators to measure progress in implementing the action plan. To what extent do you think that these performance indicators are sufficient?

4. As part of its objective to limit and where possible reduce the impacts of aircraft noise, Heathrow has set a benchmark goal to be in the top fifth of airport companies for best practice in international airport noise management on comparable sites. To what extent do you think that this goal is sufficiently challenging?

5. Do you have any other comments on Heathrow Airport’s draft noise action plan?

Response forms are provided in Annex 10.

Responsibilities within the management of noise do not always fall to the airport operator. Often the responsibility may fall to the DfT, NATS and CAA. In these cases the airport will recommend only any proposed changes.

The Airport operator is the competent authority for drawing up the Action Plan. For Heathrow Airport, that is Heathrow Airport Limited. Government guidance states that Noise Action Plans are designed to manage noise issues and effects arising from aircraft departing from and arriving at the Airport, including noise reduction if necessary. (See “Legal Context” page 11).

This consultation document seeks your views on our proposed draft Noise Action Plan for Heathrow Airport. In accordance with the published guidance, the purpose of this draft Noise Action Plan is to manage and where possible reduce the impact of noise from aircraft at Heathrow Airport over the five year period of 2010-2015.

Heathrow Airport Limited recognises that noise from aircraft operations remains a real concern for our local communities, particularly with plans to grow and expand the airport in the coming years. Through this consultation document we hope to engage with communities affected by aircraft noise to better understand their concerns and priorities from the current two runway airport. By doing so, we can ensure effective action is taken in response.

Scope
In accordance with the requirements of the EU Noise Directive 2002/49/EU, this action plan makes reference to dB Lden noise contours published for Heathrow Airport in 2006 by the Environment Research Consultancy Department (ERCD). The ERCD form part of the Civil Aviation Authority. The contours are shown in Annex 3.

Through the methods set out in this action plan, we seek to manage aircraft noise from Heathrow's operation. Please note that this document only includes actions related to any developments for which the airport has been granted planning permission at the time of publication. For the avoidance of doubt the scope of this draft noise action plan does not include a mitigation strategy or specific actions to deal with any new infrastructure such as a third runway or significant airspace changes like those being considered as part of the Terminal Control North (TCN) consultation. Following the decisions from the 2009 TCN consultation we will informally review our noise action plan with the Heathrow Consultative Committee and if appropriate consult on any amendments publicly (actions 2.2 & 5.6).

The draft action plan considers noise created by aircraft approaching and taking off from the airport, as well as noise created by taxiing aircraft and engine testing carried out within the airport perimeter. The action plan does not, however, include noise from airport construction activities or noise from road and rail traffic associated with the airport. Action Plans for noise associated with major road and rail routes are dealt with separately under government legislation and do not fall within the responsibility of airport operators. For information, please see www.noisemapping.defra.gov.uk.

The legal requirement is for Heathrow Airport Limited to consider noise issues affecting the area shown by the dB Lden noise contours as being within the 55 dB(A), Lden or more and 50 dB(A), Lnight contours referred to above. It is understood that these contours take into account aircraft noise, being noise during the take-off and landing ground roll. Therefore by considering noise created by taxiing aircraft and engine testing carried out within the airport perimeter, our action plan goes further than the legal requirement. We have additionally extended the scope of this action plan by giving consideration to actions which seek to address the impacts of aircraft noise in areas beyond the specified contours.

The action plan also aligns with BAA's overall corporate responsibility and noise strategy. Our strategic approach to noise is described later in this document and for full details of our Corporate Responsibility strategy please refer to www.baa.com.
4. Description of Heathrow Airport

The airport has two runways, five passenger terminals and one cargo terminal with two aprons. The airport is located approximately 13 miles (21 km) west of the city of London and is surrounded by suburban housing, business premises and mixed use open land to the north and south, suburban housing and business premises to the east and three large reservoirs, mixed use open land, housing and business premises to the west. In 2006, there were just over 477,000 movements handling around 67.5 million passengers.

**Planned development between 2010 and 2015**
As we set out in our Capital Investment Plan (CIP) 2009 over the course of the next 5 years we will be further developing our airport infrastructure. As part of the eastern campus programme we will be refurbishing Terminal 1 and commencing the new Terminal 2 family of facilities. Also within this time frame is the refurbishment of Terminals 3 and 4 which is referred to as the western campus programme. Various other works including upgrading taxiways and stands are also detailed in the CIP.

**Beyond 2015**
On the 15th January 2009 the Secretary of State for Transport announced to Parliament his policy decision on the future development of Heathrow Airport. This confirmed policy support for adding a third runway at Heathrow providing the strict environmental conditions are met. This decision opens the door to Heathrow becoming a truly world class hub airport, and to the UK maintaining the direct connections to the rest of the world on which our prosperity depends.

One of the environmental conditions the Government placed upon us, is not to increase the size of the area significantly affected by aircraft noise, as measured by the 57 dB(A) Leq (16 hour) summer daytime contour in 2002. In effect this restricts the area to 127 square kilometres.

The Secretary of State intends to consult on the process to ensure that the strict local environmental conditions that have been set will not be exceeded. The CAA will have regulatory responsibilities with regard to noise conditions. This includes a process to ensure the noise limit is given legal force. Until the details of this are published we cannot fully develop our overall mitigation strategy to meet this target. We will review and publicly consult on our noise action plan in line with the requirements of the END relating to a major development at an airport (action 2.2).

In addition on 23rd February 2009 NATS announced that it is to conduct a new consultation on revised proposals for the Terminal Control North Airspace region. That consultation will be held later in 2009. The 2008 consultation proposed changes that affected some parts of the airspace around Heathrow. Following the decisions from the 2009 consultation we will informally review our noise action plan with the Heathrow Consultative Committee and if appropriate consult on any amendments publicly (action 5.6).
5. Background to noise and regulation

Aircraft noise
Noise is created by aircraft approaching or taking off from airports and by taxiing aircraft and engine testing within the airport perimeter.

Airframe noise results when air passes over the aircraft’s body (the fuselage) and its wings. This causes friction and turbulence, which make a noise. The amount of noise created varies according to the way the plane is flown, even for identical aircraft. Aircraft land with their flaps extended, this creates more friction (and produces more noise) than a plane with its flaps up.

Engine noise is created by the sound from the moving parts of the engine and also by the sound of the air being expelled at high speed once it has passed through the engine. Most of the engine noise comes from the exhaust or jet behind the engine as it mixes with the air around it, although fan noise from the front of the engine can also be audible on the ground.

Aircraft manufactured today are much quieter than they were 40, 30 or even 20 years ago and these will be replaced by even quieter aircraft in the future (action 1.2.16). But, even though each individual aircraft is quieter, there are more planes flying now than there were then. This means that the average level of noise is lower than before, but the frequency of aircraft movements and hence noise ‘events’ has increased.

In the UK, daytime aircraft noise is measured by calculating the average noise level in decibels (dB) over 16 hours, to give a single daily figure. The Government calls this average decibel measurement ‘LAeq’ (which is often shortened to Leq). It means ‘equivalent continuous noise level’ and is the most common international measure of aircraft noise. The UK Government says that communities become significantly annoyed by aircraft noise above 57dB LAeq. They use this as the starting point when setting policy on aircraft noise.

In the last 20 years at Heathrow, the number of people who live within the 57 decibel contour has fallen considerably as older aircraft are replaced by newer quieter models. In 1980, there were 2,000,000 people living in the 57 decibel noise contour around Heathrow. By 2006, this had fallen to around 252,000 people. This is even though there was a rapid growth in air travel at the same time, from around 273,000 flights a year in 1980 to 477,000 flights in 2006.

Effects of noise
Noise can be described as unwanted sound. There are many different effects and sources of noise, and individuals experience each of them to different degrees. The effects can include general distraction, speech interference and sleep disturbance. Sometimes these effects can lead to annoyance and possibly more overt reactions, like complaints. Research into the potential health effects of noise is still unclear. Nevertheless the possibility that severe annoyance might induce stress cannot be ignored. The Air Transport White Paper acknowledged the potential health effects of aviation and noted the Government’s intention to continue with research on the effects of noise on human health. BAA will continue to monitor government research in this area (action 5.8).

Pre-consultation and complaint data
In preparing this draft action plan we held a series of pre-consultation events with representatives from airlines, NATS, local authorities, local residents groups and members of the Heathrow Airport Consultative Committee (HACC). A number of key themes emerged from these sessions such as the need for wider understanding over the impact of removing the Cranford Agreement, concern from residents over night flights and sleep disturbance, application of noise mitigation and compensation schemes, the frequency of overflight, the value placed on of predicted periods of respite provided by alternation and a desire for recognition of the impact beyond the areas within the strategic noise maps. Our analysis of complaint data received also highlighted similar concerns (Annex 4).

ANASE
ANASE (Attitudes to Noise from Aviation Sources in England) is a social study commissioned by the DfT in 2002 aimed at reassessing people’s attitudes to aircraft noise, reassessing LAeq as a measure of annoyance and to determine the financial value of noise. The final report was published in 2007, together with the comments of peer reviewers and is available at www.dft.gov.uk
5. Background to noise and regulation

The expert peer reviewers advised the DfT that reliance on the detailed outcome of the ANASE study would be misplaced and specifically counselled against using the detailed results and conclusions in the development of Government policy. The Government stated that they did not propose to use the detailed results from ANASE in the development of Government policy.

Government policy on the expansion of Heathrow set down a number of criteria that needed to be met before agreement to the expansion of existing capacity. One of these was that the 57dBA 16 hour Leq summer daytime contour would not expand beyond its size in summer 2002 (i.e. 127sq km). The Government has stated that the findings of the ANASE study did not affect that policy, nor did it provide any basis for changing the 57dBA 16 hour Leq summer daytime contour.

BAA supports the Government’s view of ANASE being an important step forward in understanding people’s attitudes towards aviation noise. The report’s findings will continue to be reflected on and considered by BAA when formulating noise strategies, objectives and plans.

Interdependencies

Noise & emissions
There are interdependencies between the emissions of local air pollutants and carbon dioxide (CO₂) from aircraft engines, which affect aircraft noise management strategies. Most of the technological advances in aircraft design in the last twenty years have led to both a reduction in noise and CO₂ emissions but in some cases have resulted in an increase in emissions of local air pollutants such as oxides of nitrogen (NOₓ). The challenge for the aviation industry is to address these three issues simultaneously.

Operational controls also need to be balanced. For example, the adoption of a reduced thrust setting for an aircraft during take-off, can reduce NOₓ emissions by up to 30% or more in some cases compared to a full thrust setting. Many airlines already employ ‘reduced thrust’ as their standard operating procedure. Whilst this is beneficial in the immediate vicinity of the airport, there can be a small increase in the noise experienced by those further away from the airport under the departure flight path as the aircraft decreases its angle of ascent.

BAA has long been aware of the interdependencies between noise, local air quality and CO₂ emissions and has undertaken a number of studies to help quantify the exact balance that needs to be struck for specific situations. The level of scientific understanding of interdependencies is however incomplete, and BAA continues to promote further research.

Working with agglomerations
In compiling this action plan we will need to establish a relationship with the ‘competent authority’ for producing the first round agglomeration draft noise action plan. In the case of Heathrow the agglomeration is London and the competent authority DEFRA. Of particular note is the need to identify quiet areas in the first round agglomerations in order to ensure that both our action plans are compatible. At present the draft noise action plan for London has not been produced, nor the quiet areas identified. Within our current draft we have committed to working with DEFRA to ensure compatibility (action 3.6).

The Legal Context – Regulation of aircraft noise in the UK
There are three main tiers of regulation which govern aircraft noise in the UK: International; European and national.

International regulation
The International Civil Aviation Organisation (ICAO) is an inter-governmental organization. It aims to develop the principles and techniques of international civil air navigation and foster the planning and development of international air transport. One of ICAO’s chief activities is the establishment of International Standards, Recommended Practices and Procedures regarding the technical fields of aviation, including aircraft noise. After a Standard is adopted it is put into effect by each ICAO member state in its own territories.

ICAO has set progressively tighter certification standards for noise emissions from civil aircraft. Aircraft operating in member states must conform to these standards, which are known as Chapters. The Chapters set maximum
acceptable noise levels for different aircraft during landing and take-off. Aircraft falling within Chapter 2 have been banned from operating within the EU since 1st April 2002, unless they are granted specific exemptions. The vast majority of civil aircraft now operating therefore fall within Chapters 3 and 4, i.e. they are quieter than the previous Chapter 2 aircraft. All new aircraft manufactured from 2006 onwards must meet the requirements of Chapter 4. The standard for Chapter 4 has been set at 10dB below that of Chapter 3. This is based on an aggregate of reductions in noise measured at three standardised locations close to an airport. During the process of agreeing the Chapter 4 standard, BAA sought a stricter level at 18dB below the current Chapter 3, which would have reflected best available technology. As yet, there is no agreed date for the phase out of Chapter 3 aircraft. Further details regarding these standards can be found at www.dft.gov.uk and www.caa.co.uk

ICAO also requires Member States to adopt a “balanced approach” to noise management. The balanced approach goes beyond individual aircraft to consider:

- Reducing aircraft at source;
- Land planning use;
- Changes to operational procedures;
- Restrictions on the use of the noisiest aircraft.

This approach has been adopted through the various strategies in this Action Plan.

European Regulation
The EU works to define the approach towards a common aviation policy in Europe. The main driving force for this has been the European Civil Aviation Conference (ECAC), which has been set up under the auspices of the EU and ICAO. The EU has issued various directives relating to the management and control of environmental issues and is increasingly assuming responsibility for the regulation of aircraft noise standards. Member States are obliged to comply with the requirements of the directives and incorporate them into national legislation.

The directives of most relevance to aircraft noise are:

**EC Directive 92/14/EEC** – This directive banned Chapter 2 aircraft from landing in the EU from 1st April 2002.

**EC Directive 2002/30** – This directive has various elements:

- It introduced discretionary powers to restrict the operation of marginally compliant Chapter 3 aircraft, where circumstances support this measure;
- It requires the publication of environmental noise objectives for the airport;
- It requires the adoption of a balanced approach to noise management, including the four elements agreed by ICAO (see above).

**EC Directive 2002/49 (“Environment Noise Directive”)** – This directive requires Member States to create noise maps from all transport sources in urban areas by 2007 and to adopt action plans to manage noise by 2008. The directive also aims to harmonise methods for measuring noise across the EU. It is pursuant to the requirement under this directive that we have produced this draft noise action plan.

National regulation
The UK government has an important role in setting and developing the policy framework for aircraft noise control at UK airports and achieves this in various ways:

**The Future of Air Transport White Paper**
In December 2003 The Future of Air Transport White Paper (ATWP) set out a strategic framework for the development of UK airport capacity over the next 30 years. It also outlined several new policies for airports which control, mitigate and compensate for aircraft noise with the aim of reducing and limiting the number of people significantly affected by aircraft noise. These policies are reflected in this action plan.
5. Background to noise and regulation

Aeronautical Information Package
A range of noise controls relating directly to aircraft operations are set out in statutory notices and are published in the UK Aeronautical Information Package (UK AIP) and elsewhere as appropriate. These controls cover aspects such as Continuous Descent Approaches (CDAs), noise abatement procedures and night flight restrictions (see below). The full range of Noise Abatement procedures in the UK AIP can be accessed by visiting www.ais.org.uk and follow the link to the London Heathrow - EGLL.

Planning policy
Government policy for aircraft noise also includes land use and planning policies. These are set out in planning policy guidance (PPG) note 24\(^1\), which gives advice to local authorities on how the planning system can be used to minimise the adverse effects of aircraft noise. It outlines the main considerations which local authorities should take into account when determining planning applications. For more information, please refer to PPG 24.

Acts of Parliament and regulations
The UK government also enacts Acts of Parliament and regulations which deal with aircraft noise. The relevant legislation is detailed below:

The Civil Aviation Acts 1982 and 2006 – these Acts grant the government powers to introduce noise control measures to limit or mitigate the effect of noise and vibration connected with taking off or landing aircraft at designated airports (the Secretary of State has currently designated Heathrow, Gatwick and Stansted). These powers are widened by the Civil Aviation Act 2006. The Act also permits an airport authority to charge aircraft operators for use of the airport based on noise and emissions. Airport operators can thereby introduce differential charges to incentivise the use of quieter and cleaner aircraft. Information regarding Heathrow Airport’s financial incentives is available at www.baa.com.

The Act also permits airport operators to levy financial penalties on aircraft operators who breach noise abatement requirements imposed by the Secretary of State. A sum equal to the penalties received must then be paid for the benefit of people who live in the vicinity of the airport.

At Heathrow Airport, we enforce this power to fine airlines and did so long before 2006. This money has been used for projects in the local community including environmental and noise mitigation projects for local schools and community groups. In 2009 we are launching a new large grants scheme for schools, charities and other local groups to bid for funds of up to £50,000 for community and environmental projects.

The Aerodromes (Noise Restrictions) (Rules and Procedures) Regulations 2003 – The Civil Aviation Act 2006 also confirms that the Secretary of State and airport operators remain subject to these regulations. These regulations transposed the EC Directive 2002/30/EC into UK law. (See above) They apply to major airport operators (i.e. above 50,000 aircraft movements of civil sub-sonic jet aeroplanes per year) and reflect the adoption of the ICAO balanced approach to achieving noise objectives. The regulations also set out the procedures which airports should follow when considering noise related operating restrictions. These include:

- taking into account costs and benefits of measures,
- being non-discriminatory on grounds of nationality or identity of air carrier or aircraft manufacturer and
- being no more restrictive than necessary in order to achieve the environmental objectives for a specific airport.
- Ensuring any performance-based operating restrictions are based on the noise performance of the aircraft as determined by ICAO certification procedures.

\(^1\) Planning Policy Guidance 24: Planning and Noise published September 1994
5. Background to noise and regulation

The Environmental Noise (England) Regulations 2006 – These regulations transpose the requirements of EC directive 2002/49/EC (Environment Noise Directive – see above) into UK law. They place a duty on the Secretary of State to produce strategic noise maps and, under regulation 18, airport operators are obliged to produce noise action plans based on the strategic noise maps. Once prepared and adopted, the noise action plans must be reviewed and, if necessary, revised, at least every five years and whenever a major development occurs affecting the noise situation. The regulations have been amended by 2008 regulations and there are proposals to amend again by 2009 regulations.

Airports Act 1986 – This Act gives power to the Secretary of State to make orders if it appears to him that the existing runway capacity of the airport is not fully utilised for a substantial proportion of the time during which it is available. It includes powers to limit the number of occasions on which aircraft may land or take off at an airport and schemes to allocate airport capacity.

Aeroplane Noise Regulations 1999 – These regulations set out the noise certificate requirements for both propeller and jet aeroplanes registered in the UK. It makes provision to ensure that no aircraft can land or take off in the UK without a noise certificate issued by its competent authority which meets at least equal requirements to those for UK registered aircraft. The regulations make reference to noise certification standards and noise limits issued by ICAO and also provides a list of aircraft that are exempt from the ICAO noise certification.

Pursuant to its powers under the Civil Aviation Acts, the Department for Transport (DfT) has direct control over noise at Heathrow, Gatwick and Stansted airports and, following a lengthy consultation, the DfT has also implemented the following specific noise abatement objectives for the course of the current night flight regime which runs from 2006 to 2012:

- Minimise sleep disturbance resulting from overflight of the noisiest types of aircraft;
- Mitigate the effects of noise, in particular sleep disturbance. This will be done by encouraging the airport to adopt night noise related criteria in order to determine which residents of domestic or noise sensitive premises should be offered insulation schemes;
- Limit the 6.5 hr, 48 dB(A) Leq contour (for the winter and summer seasons combined) to 55km² by 2011 – 2012.

Environmental noise objectives
Additionally, in June 2006, the Secretary of State published long term statutory environmental noise objectives for the Heathrow, Gatwick and Stansted airports.

The long term statutory noise objectives for Heathrow Airport are:

- Progressively to encourage the use of quieter aircraft by day and by night;
- To avoid allowing the overall noise from aircraft during the night quota period to increase above what was permitted in 2002-2003;
- To support the principal daytime noise abatement objective as set out in the The Future of Air Transport White Paper, namely that if a third runway is built, the 57dBA daytime summer noise contour should not exceed its area in 2002 (127km²); and
- To meet noise-abatement objectives as adopted from time to time.

Local authorities
As well as government legislation, additional noise-related controls are introduced by local planning authorities as part of the planning system. This is often done by way of planning obligations contained in section 106 agreements made between the airport operator and the planning authority. At Heathrow Airport there are a series of planning conditions that relate both to the planning permission for Terminal 4 and Terminal 5. These conditions restrict various modes of an aircraft operation at different times of the day relative to the location of the activity on the airfield. A more detailed explanation of these is provided on page 22 under “Local Planning Conditions.”
6. BAA’s framework for noise management

Airports bring a range of economic, social and environmental impacts, both positive and negative. Airports are important economic generators, providing jobs, encouraging inward investment and boosting local tourism.

However, there are also some negative impacts for those communities that exist around airports. Noise remains a significant issue for people living or working close to airports or under flight paths.

Managing and, where possible, reducing this noise is a long standing commitment within BAA’s corporate responsibility agenda and is critical to maintaining Heathrow Airport’s permission to grow.

Some of the noise results from Heathrow Airport’s own operations, noise which we have the ability to directly control. However, noise is also generated from sources outside our direct control but in most circumstances we can exert influence to bring about change.

Noise strategy

Our approach
As outlined in Section 5 as a designated airport, the Government set the policy framework which influences how Heathrow Airport Limited responds to aircraft noise issues. The 2003 Air Transport White Paper outlined several ways to control, mitigate and compensate for noise. We also work with airlines, air traffic controllers and local authorities towards achieving our noise objectives.

The Department for Transport (DfT) has direct control over noise at Heathrow, Gatwick and Stansted and, as detailed above, in June 2006 the Secretary of State published long term statutory environmental noise objectives for these airports. This includes setting the night flight movement and noise quota limits and restrictions at these airports.

Our plans
Alongside the statutory noise objectives, BAA has set the following long term objective for the management of aircraft noise:

To limit aircraft noise impacts and gain the trust of our stakeholders that we are using best practicable means to achieve this goal, and to continue this approach into the future, within the framework established by Government.

Historically this has been supported by a long-term goal to be in the top fifth of companies for best practice in international airport noise management on comparable sites. In reality this means consistently being in the top six or seven airports globally across the key aspects of aircraft noise management (operational procedures, mitigation and compensation, and communication). We believe this consultation and the draft noise action planning process provide us with an opportunity to test whether this goal is appropriate. We would welcome the thoughts and suggestions from a range of stakeholders to help us ensure we focus on the right long term goal(s).

Heathrow Airport sets noise targets each year and these are published in our corporate responsibility reports together with performance information against key noise indicators.

In our approach to noise management we have set five key themes for our work program over the next five years. These themes establish a framework for the airport’s noise action plan and help inform our priorities. They are:

1. Reducing noise impacts wherever practicable.
   This includes:
   1.1. Quietest fleet practicable;
   1.2. Quietest practicable aircraft operations, balanced against NO\(_x\) and CO\(_2\) emissions;
   1.3. Effective and credible noise mitigation schemes.
2. Engaging with communities affected by noise impacts to better understand their concerns and priorities, reflecting them as far as possible in airport noise strategies and communication plans;
3. Influencing planning policy to minimise the number of noise sensitive properties around our airports;
4. Organising ourselves to continue to manage noise efficiently and effectively;
6. BAA’s framework for noise management

5. Continuing to build on our understanding of aircraft noise to further inform our priorities, strategies and targets.

We recognise that following the publication of this noise action plan, it will be important to keep communities and other stakeholders informed as to the progress made. We are committed to reporting publicly on our performance against the action plan and the effectiveness of our actions to address community concerns. We therefore plan to annually report on our progress against the action plan (action 2.4).

Measures to manage aircraft noise currently in place at Heathrow Airport

At Heathrow we believe, based on the evidence of our benchmarking studies and long standing status as a designated airport that we have a full and comprehensive range of noise management measures already in place when compared with other similar airports. These measures cover operational procedures, stakeholder communication and engagement as well as mitigation and compensation schemes. A summary table detailing the current key limit values in place at Heathrow is provided in Annex 6.

We have provided a brief explanation of the current measures in place at Heathrow over the following pages. For further information or clarification on any of these measures please contact the Flight Evaluation Unit on 0800 344 844. We have also included where applicable, the reference and selective text from the UK AIP in relation to each measure. Full details are set out in statutory notices and published in the UK AIP (Aeronautical Information Package) and elsewhere as appropriate.

Noise and track monitoring

Most large airports have noise and track-keeping (NTK) systems, which take radar data from air traffic control radars and combine it with flight information such as callsign, tail number, type and destination. At Heathrow airport the noise and track-keeping (NTK) system captures data from both fixed and mobile noise monitors around the airport, to be matched to operational data.

This information ensures that the ANCON 2 noise model database is kept up to date which in turn is used as an input to the annual noise contours for each of the three designated London airports.

Operating restrictions

The following operating restrictions form part of the noise policy framework set by the DfT.

Runway use

For safety and aeronautical technical reasons aircraft normally take-off and land into the wind. In the UK the prevailing winds are south - westerly, so at Heathrow aircraft land from the east and depart to the west (‘westerly operations’) about 70-80% of the time, during a typical year.

Westerly preference

A westerly preference is operated at Heathrow. This means that during periods of light easterly winds, aircraft will often continue to land in a westerly direction making their final approach over London. The westerly preference was introduced in the 1960s to reduce numbers of aircraft taking off in an easterly direction over London i.e. over the most heavily populated side of the airport.

Runway alternation

A system of runway alternation was introduced in 1972-73 for aircraft landing during westerly operations (i.e. when arriving aircraft make their final approach over London) to provide predictable periods of relief from the noise of landing aircraft for communities under the final approach tracks to the east of the airport.

The pattern of alternation has been modified several times since the 1970s and in 1999 was extended to the night period. The present pattern provides for one runway to be used by landing aircraft from 0600 hours until 1500 hours and the other runway to be used from 1500 hours until after the last departure (therefore normally starting with the midnight hour), after which landing aircraft use the first runway again until 0600 hours. However, on Sunday each week the runway used before midnight continues to be used for landings until 0600 hours. This means early morning arrivals before 0600 hours use a different runway on successive weeks and that
6. BAA’s framework for noise management

the runways used by landing aircraft before and after 1500 hours also alternate on a weekly basis. Aircraft taking off during westerly operations can use either runway, but most use the runway that is not in use for arrivals.

Runway alternation does not operate in the daytime during easterly operations due to the Cranford Agreement (see below).

The 0600 to 0700 hour was specifically excluded when runway alternation was introduced at night because concerns were raised that the use of one runway only in this hour for arrivals could lead to delays. These delays could lead to the suspension of runway alternation for a time in order to avoid the problems of delays persisting through the day. However, soon afterwards a trial of alternation in the 0600 to 0700 period was introduced and is still in place.

The overall pattern of alternation results in a four week schedule which provides for one runway to be used for arrivals on westerly operations during the day with the rotation of the use of an easterly/westerly preference at night.

The pattern of runway alternation may be suspended by Air Traffic Control if there are sound operational or safety reasons for doing so. One of the exemptions is to accommodate peak traffic build-up. This temporary suspension of alternation is known as Tactically Enhanced Arrival Measures (TEAM). Runway alternation may also be suspended to allow essential maintenance of the runways, lighting and the instrument landing systems, although most maintenance carried out at night is synchronised with the alternation pattern.

Night-time rotation
When the runway alternation scheme was extended to the night period in 1999 it was also introduced – at night only – for easterly operations; i.e. when arriving aircraft make their final approach over Windsor in an easterly direction. These changes to the night-time use of Heathrow’s runways allow a more equitable distribution of aircraft noise across local communities. Under the system there is a weekly rotation of westerly and easterly arrivals after the last departure until 06:00 local, subject to weather conditions on any particular night. This has resulted in a more even split between westerly and easterly operations, than the previous figure of nearly 90% of early morning arrivals over flying London in an average year at Heathrow.

Cranford agreement
The Cranford Agreement is a verbal undertaking dating from the 1950s to avoid use of the northern runway for take-offs in an easterly direction over Cranford unless necessary (e.g. when the southern runway is closed). In order to observe the Cranford Agreement aircraft depart to the east using the southern runway and arrive using the northern runway.

Following public consultation the Secretary for State for Transport (SoS) announced in January 2009 that the Cranford Agreement will end (action 1.2.3) The SoS said “I have also decided to extend the benefits of runway alternation to those affected by aircraft taking off and landing when the wind is blowing from the east. I will therefore end the Cranford agreement, which generally prohibits easterly take-offs on the northern runway. This will benefit the residents of Windsor and others to the west of the airport, and Hatton and north Feltham to the east.”

Night flight restrictions

Current night restrictions regime
The current night restrictions regime was introduced in 2006/7 following extensive consultation. The restrictions are set by the DfT and detailed in a statutory notice, published each season in the supplement to the UK AIP.

Night period and Night Quota period
The ‘night period’ is 2300 – 0700 hours (local time) during which period the noisiest types of aircraft classified QC/8 and QC/16 may not be scheduled to land or take-off. From 2330 to 0600, the ‘night quota period’, aircraft movements are restricted by movements limits with noise quotas as a supplementary measure. These are set for each season.
6. BAA’s framework for noise management

The Quota count system
Aircraft are assigned quota count (QC) classifications as follows:

<table>
<thead>
<tr>
<th>Certified noise level (EPNdB)</th>
<th>Quota count</th>
</tr>
</thead>
<tbody>
<tr>
<td>More than 101.9</td>
<td>QC/16</td>
</tr>
<tr>
<td>99 - 101.9</td>
<td>QC/8</td>
</tr>
<tr>
<td>96 - 98.9</td>
<td>QC/4</td>
</tr>
<tr>
<td>93 - 95.9</td>
<td>QC/2</td>
</tr>
<tr>
<td>90 - 92.9</td>
<td>QC/1</td>
</tr>
<tr>
<td>87 - 89.9</td>
<td>QC/0.5</td>
</tr>
<tr>
<td>84 - 86.9</td>
<td>QC/0.25</td>
</tr>
</tbody>
</table>

and are classified separately for take-off and landing. Schedules showing the QC classification of individual aircraft are published as part of the statutory notice.

Exempt aircraft
Jet aircraft and propeller aircraft are exempt from the movements limits and noise quotas if their noise certification data are less than 84 EPNdB.

Movements limits and noise quotas at Heathrow
The movements limits and noise quotas for current and future years/seasons are:

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Winter</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Movement Limit</td>
<td>2550</td>
<td>2550</td>
<td>2550</td>
<td>2550</td>
<td>2550</td>
<td>2550</td>
<td>2550</td>
</tr>
<tr>
<td>Noise Quota</td>
<td>4140</td>
<td>4140</td>
<td>4140</td>
<td>4140</td>
<td>4140</td>
<td>4140</td>
<td>4080</td>
</tr>
<tr>
<td>Summer</td>
<td>2006</td>
<td>2007</td>
<td>2008</td>
<td>2009</td>
<td>2010</td>
<td>2011</td>
<td>2012</td>
</tr>
<tr>
<td>Movement Limit</td>
<td>3250</td>
<td>3250</td>
<td>3250</td>
<td>3250</td>
<td>3250</td>
<td>3250</td>
<td>3250</td>
</tr>
<tr>
<td>Noise Quota</td>
<td>5610</td>
<td>5610</td>
<td>5460</td>
<td>5460</td>
<td>5340</td>
<td>5220</td>
<td>5100</td>
</tr>
</tbody>
</table>

The summer season is the period of British Summer Time in any one year as fixed by or under the Summer Time Act 1972 as amended by S.I. 2002/262; the winter season is the period between the end of British Summer Time in one year and the start of British Summer Time in the next. The change to British Summer Time occurs at 0100 Greenwich Mean Time (Universal Co-ordinated Time).

End of season flexibility
The flexibility margin is 10%; i.e. up to 10% of the current season’s movements limit may be carried over if sufficient amount of the limit is unused, and up to 10% of the next season’s movements limit may be anticipated in the event of an overrun. Any excess overrun is penalised in the following season at double the amount of the excess. The same arrangements apply to the noise quotas.

Permitted operations
1. any aircraft which has a quota count of 4, 8, or 16 may not be scheduled to take off or land during the night quota period;
2. any aircraft which has a quota count of 8 or 16 may not be scheduled to take off or land during the night
6. BAA’s framework for noise management

period;
3. any aircraft which has a quota count of 8 or 16 may not take off in the night period, except in the period
2300 hours to 2330 hours in circumstances where:
   (a) it was scheduled to take off prior to 2300 hours;
   (b) the take-off was delayed for reasons beyond the control of the aircraft operator; and
   (c) the airport authority has not given notice to the aircraft operator precluding take-off.

Dispensations
The Secretary of State has the power to specify circumstances in which movements may be disregarded from the
night restrictions by the airport managers and the power to authorise that specific flights should be disregarded.
The airport companies may disregard night movements in the following exceptional circumstances:

- delays to aircraft which are likely to lead to serious congestion at the aerodrome or serious hardship or
  suffering to passengers or animals
- delays to aircraft resulting from widespread and prolonged disruption of air traffic.

Monitoring
BAA Heathrow provide the Heathrow Airport Consultative Committee (HACC), and the DfT, with regular reports
in a format advised by The Aircraft Noise Monitoring Advisory Committee (ANMAC) on usage of the movements
limits and the noise quotas, details of any dispensations or exemptions granted, and reports on any movements
by QC/8 and QC/16 aircraft during the night period. In addition, under section 78(4) of the Civil Aviation Act
1982 all dispensations granted by the airports have to be reported to the Department in writing within a
maximum of one week from when the dispensed flight took place.

Operational procedures
The following procedures and techniques are set out in full in the UK AIP and form part of the noise policy
framework set by the DfT.

Departure procedures

Noise preferential routing ‘Track Keeping’
Aircraft departing Heathrow are required to follow specific paths called noise preferential routes (NPRs) up to an
altitude of 4000 ft, unless directed otherwise by air traffic control (ATC). NPRs were designed to avoid overflight
of built-up areas where possible. They lead from the take-off runway to the main UK air traffic routes, and form
the first part of the Standard Instrument Departure routes (SIDs). Associated with each NPR is a swathe extending
1.5 km each side of the nominal NPR centre line, within which aircraft are considered to be flying on track. This
takes account of various factors that affect track-keeping including tolerances in navigational equipment, type
and weight of aircraft, and weather conditions – particularly winds that may cause drifting when aircraft are
turning. Aircraft reaching 4000 ft at any point along an NPR may be turned off the route by ATC onto more
direct headings to their destinations – a practice known as ‘vectoring’. ATC may also vector aircraft from NPRs
below 4000 ft for safety reasons, including in certain weather conditions, for example to avoid storms.

Changes in the NPR structure are rare and stability is regarded as important, so that people may know where
aircraft noise will be experienced. Indeed any significant changes to the NPRs would be subject to public
consultation by the Government. The frequency with which any particular NPR is used will vary, and is an
operational decision for ATC, taking account of the final destination of individual flights, together with other
considerations such as overall air traffic and weather conditions, both locally and along intended routes.
A map illustrating the current NPRs is provided in Annex 6.

‘1000 ft rule’
After take-off the aircraft shall be operated in such a way that it is at a height of not less than 1000 ft aal (above
aerodrome level) at 6.5 km from the start of roll as measured along the departure track of that aircraft. This
encourages aircraft operators to gain height as quickly as possible and then reduce engine power and noise at
the earliest opportunity. This point was also chosen as few residential areas lay closer to major airports than that
and this would result in a noise benefit for residents who live further out from the airport.
6. BAA’s framework for noise management

Arrival Procedures

Continuous descent approach (CDA)
The following is an extract from the UK AIP instructing pilots to use CDA wherever possible. “Where the aircraft is approaching the aerodrome to land it shall commensurate with its ATC clearance minimise noise disturbance by the use of continuous descent and low power, low drag operating procedures (referred to in Detailed Procedures for descent clearance in AD 2-EGSS-1-13 of the UK AIP). Where the use of the procedures is not practicable, the aircraft shall maintain as high an altitude as possible.”

Heathrow, along with Gatwick and Stansted airports have developed a common working definition for monitoring CDAs as follows:

‘For monitoring purposes, a descent will be deemed to have been continuous provided that no segment of level flight longer than 2.5 nm occurs below 6000 ft QNH and ‘level flight’ is interpreted as any segment of flight having a height change of not more than 50 ft over a track distance of 2 nm or more, as recorded in the airport Noise and Track-keeping system.’

The CDA compliance levels are regularly reported back to our Noise and Track Keeping Working Group and the Heathrow Airport Consultative Committee as well as the Flight Operations Performance Committee (FLOPC), which includes airline and ATC representatives.

A voluntary code of practice is in place which was compiled by a group representing airlines, NATS, Civil Aviation Authority, airports and the Department for Transport, Local Government and the Regions (DTLR) (now DfT), and is primarily concerned with Heathrow, Gatwick and Stansted airports. The code encourages air traffic controllers and pilots to seek to facilitate a continuous descent approach in the descent from 6000 ft. The code was originally produced in 2002 and later revised in November 2006.

‘Joining Point Rules’
Between 0600 and 2330 hours (local time) where the aircraft is approaching runway 27L or 27R (0700 and 2300 hours when approaching runway 09L or 09R) and is using the Instrument Landing System (ILS) it shall not descend on the glidepath below an altitude of 2500 ft before being established on the localiser, nor thereafter fly below the glidepath. Between 2330 and 0600 hours (local time) where the aircraft is approaching runway 27L or 27R (0700 and 2300 hours when approaching runway 09L or 09R) and is using the ILS it shall not descend below an altitude of 3000 ft before being established on the localiser, nor thereafter fly below the glidepath.

Limiting the use of reverse thrust
To minimise disturbance in areas adjacent to the aerodrome, commanders of aircraft are requested to avoid the use of reverse thrust after landing, consistent with the safe operation of the aircraft, between 2330 and 0600 (local time).

Noise limits

Departure noise limits
Fixed noise monitors at the airport are located at approximately 6.5km from start-of-roll (SOR). This corresponds to the flyover measurement point in the ICAO Annex 16 noise certification procedure. There are 10 fixed monitors around Heathrow. The location of the monitors takes account of the noise preferential routes.

There are noise limits applied at these fixed noise monitors for departing aircraft. During the night quota period (2330-0600) the departure noise limit is 87 dBA Lmax. During the remainder of the night period (2300-2330 and 0600-0700) the noise limit is 89 dBA Lmax. These night time limits are consistent with the night restrictions regime. There is also a daytime noise limit of 94 dBA Lmax.

The location and distance of the fixed noise monitors were decided in the early 1990’s after consultation. Relating the noise limits to a reference distance 6.5 km from start-of-roll encourages aircraft operators to gain
6. BAA’s framework for noise management

height as quickly as possible and then reduce engine power and noise at the earliest opportunity. There is also a requirement for departing aircraft to attain at least a 1000 feet (see “1000ft rule”) altitude when passing the fixed noise monitors.

We fine Airlines whose aircraft breach the noise limits, with the money donated to local community projects through the Noise Fines Fund.

**Arrivals noise limits**

There are no arrivals noise limits. A report which considered the feasibility of setting noise limits for arriving aircraft, 'Noise from Arriving Aircraft: Final Report of the ANMAC Technical Working Group', was published in 1999. In light of the findings, the then Aviation Minister, decided against imposing operational noise limits for arriving aircraft. A code of practice has been developed (described above) for arrivals.

**Additional noise management measures**

The following measures have been established by BAA Heathrow to supplement those established by the DfT.

**Ground noise controls**

APUs are noisy jet engines in the tail of an aircraft that are used to deliver electrical power and cabin conditioning while on the ground. Through our Operational Safety Instructions (OSI) we specify conditions for APU usage in airport procedures to limit their use and supply alternative systems for use whilst on the ground including Fixed Electrical Ground Power and Pre Conditioned Air (PCA). The procedures seek to optimize the use of other services in order to limit the need to use the APU, this directly leads to a reduction in ground noise.

Pre-conditioned air is provided for all pier served aircraft in Terminal 5 and on Pier 6 Terminal 3 and mains electricity through the provision of FEGP on most stands. Currently at Heathrow, 90% of stands are fitted with electricity connections and 21% provide pre-conditioned air. In the eventuality of FEGP not being available airlines use Ground Power Units to supply electrical power, as part of the OSI on Ground Noise we also set a noise limit for these diesel generation units.

In order to monitor and ensure compliance to the OSI on Ground Noise we carry out turn around and APU audits, these are carried out on a weekly basis covering the whole airport each month. The timings and locations change for each audit in order to ensure we get as true a picture of usage as possible, any non-compliance is dealt with directly with the airline.

**Differential noise charges**

Each year we publish our Conditions of Use and Airport Charges which include a differential charging structure for aircraft operating at Heathrow. The charges promote the use of quieter aircraft by charging more for the noisiest aircraft and less for the quietest. A summary of the charging structure as of April 2009 is set out below.

**Base charge on landing – Chapter 3 and non-jet aircraft**

The base charges on landing as set out in the Schedule of Charges, will apply to jet aircraft over 16 metric tonnes which meet the noise certification standards of ICAO Annex 16 Chapter 3. When applying for these base charges, documents attesting that the aircraft complies with Chapter 3 noise certification standards must be produced. If they are not, the aircraft may be treated as a Chapter 2 aircraft for charging purposes. Non-jet aircraft and all aircraft not exceeding 16 metric tonnes will automatically qualify for the base charges and therefore no application need be made under paragraph 3.1.3(of the Conditions of Use document).

**Non-chapter 3 aircraft**

The Chapter 3 base charge on landing, calculated in accordance with the Schedule of Charges, will be increased to three times for aircraft failing to meet Chapter 3 noise certification standards as a minimum or any non certificated aircraft.

**Chapter 3 high charge**

Aircraft deemed to be Chapter 3 high aircraft in accordance with the provisions of Condition 3.1.18 (of the Conditions of Use document) will be subject to a weight charge on landing of 150% of the Chapter 3 base
6. BAA’s framework for noise management

charge, unless the operator of the aircraft can provide to the airport company satisfactory noise certification data which demonstrates that the aircraft noise performance is 5 or more EPNdB below Chapter 3 certification limits prescribed in Volume 1, Part II, Chapter 3 of Annex 16 to the Convention on International Civil Aviation based on the arithmetic sum of the differences between certificated levels and the Chapter 3 noise limits at the approach, lateral and flyover points.

Chapter 3 minus
This charge will apply to those jet and non-jet aircraft in excess of 16 metric tonnes which on BOTH ARRIVAL AND DEPARTURE, have a Quota Count of 0.25, 0.5 or 1, or are exempt, as described under Section 3 of the London/Heathrow Noise Restriction Notice, currently published as a supplement to the UK AIP by the Civil Aviation Authority on behalf of the Department for Transport.

Chapter 4 charge
This charge will apply to those jet and non-jet aircraft in excess of 16 metric tonnes which:

- were first put into service on or after 1 January 2006 and meet the noise certification standards of ICAO Annex 16 Chapter 4. Documents attesting that the aircraft complies with Chapter 4 noise certification standards must be provided to the airport company, or
- can demonstrate that they meet the noise certification standards of ICAO Annex 16 Chapter 4. Documents showing the noise certification values for sideline, flyover and approach, attesting that the aircraft complies with Chapter 4 noise certification standards, must be provided to the airport company.

Local planning conditions
As part of the planning process for Terminal 4 and Terminal 5 a number of special conditions were attached to the planning permission which relate to airport noise management. These include:

Terminal 4
- Except in an emergency, no live aircraft movements or activities involving the running of aircraft engines to be permitted to, from or onto stands 401-403, 429-432 and 463, between the hours of 23:30hrs and 06:00hrs local.
- Access to or egress from the Terminal site by taxiing aircraft between 23:30hrs and 06:00hrs is prohibited on the taxiway route “S” west of “V” apron or though “Link 41” to SB1 and reverse, except in an emergency or as a consequence of essential maintenance work on the alternative access routes. This restriction does not apply to aircraft taxiing to or from Terminal 4.
- Except in an emergency, no Auxiliary Power Units (APUs) may be operated on stands 401-403, 429-432 and 463 between the hours of 23:30hrs and 06:00hrs local.
- Other than the routine servicing of aircraft on turnaround, no aircraft maintenance work which involves the running of aircraft engines is permitted on the Terminal 4 site at anytime.

Terminal 5
- Under Terminal 5 Planning Condition A4, the number of air transport movements at Heathrow Airport shall be limited to 480,000 each year.
- With effect from the 1 January 2016, the area enclosed by the 57dB(A) Leq16hr (07:00-23:00) contour, when calculated and measured by the CAA’s Aircraft Noise Contour Model, or any system that succeeds it, shall not exceed 145 square kilometres.
- The recording and management criteria for engine testing will be extended to cover the Terminal 5 application site without any increase in the current maximum and average period of testing permitted for Heathrow with four terminals:
  - the total ground running time in any one night period shall not exceed 150 minutes
  - the total ground running time at high power in any one night period shall not exceed 60 minutes
  - the ground running time at high power in the night period shall not exceed a rolling 30 day average of 20 minutes.
- In addition to the overall airport constraint on permitted period for engine ground running, any run on any stand on the Terminal 5 application site at idle power will not exceed 10 minutes for any single engine.
- Between 23:00hrs and 07:00hrs local only check starts (maximum five minute duration) will be permitted on
6. BAA’s framework for noise management

any stand on the Terminal 5 application site

• During the night quota period (23:30-06:00hrs local), aircraft arriving at the Terminal 5 application site, and aircraft scheduled to depart from it in that period, will use the stands closest to the centre of the site, i.e furthest away from Longford and Stanwell, in preference to the outer stands. This would apply to both the core building and the satellites.

• During the night quota period (23:30-06:00hrs local), and except in an emergency or for maintenance of the runway and taxiway system, taxiing operation to the north and south of the Terminal 5 application site will be restricted to inner taxiways only. These operational constraints will be applied through Heathrow ATC in the same way as the current taxiing constraints on Terminal 4 are implemented to ensure compliance.

• No pier served stand within the Terminal 5 application site shall be used for live aircraft movements until there is available to that stand a supply of PCA.

• Aircraft arriving at the Terminal 5 application site under engine power, and aircraft scheduled to leave the application site under engine power, during the night quota period shall be allocated a centre stand in preference to any other stand; provided that if all centre stands are so allocated or unavailable for use for any reason, such aircraft may be allocated to another stand.

To help with the understanding of some of these conditions a current (as of May 2009) airfield map has been included in Annex 8.

Noise mitigation and compensation

The Air Transport White Paper stated that in addition to controlling and reducing aircraft noise impacts, a proportion of the large economic benefits provided by airport development should be used to mitigate their local impacts. The principal mitigation measure for aircraft noise impacts is the provision of acoustic insulation and can be required on a statutory basis under section 79 of the Civil Aviation Act 1982 at Heathrow. In practice, however, all Heathrow Airports current noise insulation schemes are provided on a voluntary basis and meet the expectations of the Air Transport White Paper. Specifically these are that airport operators are expected to:

• offer households subject to high levels of noise (69 dBA Leq or more) assistance with the costs of relocating; and
• offer acoustic insulation (applied to residential properties) to other noise-sensitive buildings, such as schools and hospitals, exposed to medium to high levels of noise (63 dBA Leq or more).

To address the impacts of future airport growth Government also expects the airport operators to:

• offer to purchase those properties suffering from both a high level of noise (69 dBA Leq or more) and a large increase in noise (3 dBA Leq or more); and
• offer acoustic insulation to any residential property which suffers from both a medium to high level of noise (63 dBA Leq or more) and a large increase in noise (3 dBA Leq or more).

In 2005, after separate consultations, BAA launched a number of schemes at Heathrow, including 2 voluntary blight mitigation arrangements in respect of potential development at Heathrow Airport. The Noise related schemes include a Community Buildings Noise Insulation Scheme and a Home Relocation Assistance Scheme. Following the introduction of the current night restrictions regime, BAA launched the Night Noise Insulation Scheme in 2007.

Night Noise Insulation Scheme

As part of the Government's latest night flights regime announced in June 2006, the Government recommended that BAA Heathrow introduce a new domestic noise insulation scheme to address the impacts of night flights on local communities.

The residential night noise insulation scheme is based on the noise footprint of the noisiest aircraft regularly operating in the night quota period (11.30pm-6.00am).

Since the scheme is intended to mitigate the impact of night flights, rooms eligible for insulation will be bedrooms or bed-sitting rooms only (which are used as bedrooms on most days of the year). The scheme will provide noise insulation for all bedrooms or bed-sitting areas in approx 41,000 homes around Heathrow (see map 3 Annex 9)
6. BAA’s framework for noise management

**Property Market Support Bond**
This blight scheme provides a transferable bond which gives people the confidence to buy and sell property in the area at un-blighted prices.

The Bond also acts as a promise that if BAA Heathrow announces a decision to apply for planning permission for a third runway, the bond holder can require BAA to buy the property at un-blighted prices.

**Home Owner Support Scheme**
For properties that fall within a proposed 66 Leq Noise contour for a possible third runway, this blight scheme is designed to ensure that properties in the area can be bought and sold at normal market rates. Householders who take part in the scheme can sell their house to BAA, if BAA announces its intention to proceed with construction.

**Home Relocation Assistance Scheme**
For properties that fall within the 2002 69 Leq noise contour over the current runways at Heathrow, this scheme provides eligible home-owners with financial assistance with the costs of moving away from areas of high levels of airport noise (see map 2, Annex 9).

**Community Buildings Noise Insulation Scheme**
For eligible community buildings that fall within the 2002 63 Leq Noise Contour over the current runways at Heathrow, this scheme offers acoustic insulation to noise-sensitive buildings in the community. Noise sensitive community buildings eligible in this scheme are those with widespread use within the community, where people spend long periods of time, or where they are vulnerable (such as in hospital). These include hospitals, schools and colleges, nurseries attached to schools and hospices, nursing homes, registered nurseries, libraries and community halls (see map 1, Annex 9).

We have developed a community-led body which is responsible for making necessary decisions involved in administering this scheme. BAA Heathrow provides funding of up to £5 million in any full financial year towards this activity. The scheme provides noise mitigation to the buildings which can extend to window replacement, mechanical ventilation or any other activity related to provision of noise insulation.

**Residential Day Noise Insulation Scheme**
The Day Noise Scheme provides acoustic insulation to residential buildings in the community. This includes free secondary glazing or half price double glazing to external windows and doors only, plus loft insulation. It is restricted to the 18 hour 1994 69 LAeq noise contour, enhanced to take account of early morning arrival noise.

**Stakeholder communication and engagement**
We participate in, as well as host, a number of engagement forums with a range of stakeholders where noise issues are discussed. As an indication of the variety of stakeholder interactions we have we have described some examples below.

**Aircraft Noise Monitoring Advisory Committee (ANMAC)**
The Aircraft Noise Monitoring Advisory Committee was set up by the Government in the early 1990’s to advise them on the operation of the noise monitoring equipment which BAA had been required to install by the DfT under the Civil Aviation Act 1982. Since then the committee has been used as an advisory body on various noise issues. Membership includes representatives from NATS, the Environmental Research and Consultancy Division (ERCD) of the CAA, the Scheduling Committees and their technical advice, BAA from Heathrow, Stansted and Gatwick, and a representative and technical adviser from the Consultative Committees of the three airports. The committee is chaired by the head of the Environment Division at the DfT.

**Heathrow Airport Consultative Committee (HACC)**
The HACC is an independent committee which includes representatives of airport users, local authorities and other bodies concerned with the locality. BAA Heathrow meets a statutory obligation by consulting with the committee. The HACC meets six times a year and is a public forum.
6. BAA’s framework for noise management

**Noise and Track Keeping Working Group (NTKWG)**
The NTKWG is a group set up by BAA Heathrow comprising local community representatives, air traffic control and airport personnel. It is active on noise and track-keeping and other environmental issues and reports on these to the HACC.

**Flight Operations Performance Committee (FLOPC)**
FLOPC is an internal committee of BAA Heathrow. Its membership comprises pilots, NATS and BAA Heathrow’s Airside Operations team. It reviews noise, track and CDA performance, shares best practice and also advises on noise abatement procedures. A report from the FLOPC is presented at each NTKWG.

**Local Focus Forum (LFF)**
The LFF was set up to keep residents up to date with progress with Terminal 5. It represents residents’ associations and councillors closest to the airport. With Terminal 5 now complete, the forum has continued and is now an opportunity to share with them information about pending developments and operational impacts that might affect the local area.

**Flight Evaluation Unit (FEU)**
BAA Heathrow monitors compliance with the various noise control measures and handles noise queries and complaints through its Flight Evaluation Unit (FEU). The FEU responds to all queries/complaints and reports on complaints to DfT and the Heathrow Airport Consultative Committee (HACC) on which local people are represented by both local authorities and noise groups.

**Webtrak**
WebTrak is an on-line facility that allows people to see and track flights using Heathrow Airport as well as showing the aircraft type, flight number, speed and altitude they are flying at. For security reasons, the data is delayed between 24 & 48 hours so the tracks are not in real time.

**Reporting**
We produce an annual FEU report which provides detailed information on performance against noise control measures. We also include a summary of our activity in relation to noise management as part of our annual Corporate Responsibility Report. Both these are made available on our website at baa.com. In addition we report regularly to the DfT, airlines and NATS as well as our NTKWG and HACC meetings.
7. Results of the 2006 noise mapping

Since Heathrow has had an extensive noise management regime and produced annual summer LAeq 16 hour day contours for some years, the results of the 2006 noise mapping do not raise any significant new issues. Traditionally our approach to noise management has contained actions aimed at addressing areas outside these contours and additionally, ground noise. As stated above, the actions contained within this plan will continue to adopt this approach.

The results of the noise mapping are illustrative of the location of Heathrow Airport in relation to the city of London. The alignment of the two runways means that residents of Windsor and others to the west of the airport as well as Hatton and Feltham to the east are impacted by the airport’s operation. Heathrow has witnessed strong growth over recent decades, currently handling 68 million passengers and 477,000 flights a year compared to around 48 million passengers and 427,000 flights a year in 1996.

The prevalence of westerly winds mean that approximately 70% of aircraft arrivals come from the east, over London and around 70% of departures are to the west.

There are six departure routes for each runway for both easterly and westerly operations, and the Lden maps indicate the impact of these NPR’s particularly to the West where the departure routes form spurs in the contours over parts of Slough, Windsor and Egham.

For aircraft arriving at Heathrow the contour is significantly influenced by arrivals from the east where a long single spur of the 55 Lden contour extends over Barnes and Fulham to the east.

The impact of departures is less marked on the Lnight contour map reflecting that the night period typically consists of scheduled arrivals.

Detailed below are the results of the 2006 noise mapping, showing the estimated number of people and dwellings exposed above various noise levels from the strategic mapping of noise from aircraft using Heathrow Airport This data has been sourced directly from the data pack provided to us by DEFRA. We have included data from Lday, Levening, Lnight, Lden and Leq noise contours. We considered these results and our current noise mitigation measures in compiling this draft noise action plan.

The number of dwellings has been rounded to the nearest 50, except when the number of dwellings is greater than zero but less than 50, in which case the total has been shown as “< 50.” The associated population has been rounded to the nearest 100, except when the associated population is greater than zero but less than 100, in which case the total has been shown as “< 100.”

Table 1
Estimated total number of people and dwellings above various noise levels, Lden

<table>
<thead>
<tr>
<th>Noise level (dB)</th>
<th>Number of Dwellings</th>
<th>Number of People</th>
</tr>
</thead>
<tbody>
<tr>
<td>≥ 55</td>
<td>314,350</td>
<td>725,500</td>
</tr>
<tr>
<td>≥ 60</td>
<td>81,000</td>
<td>191,400</td>
</tr>
<tr>
<td>≥ 65</td>
<td>22,000</td>
<td>56,400</td>
</tr>
<tr>
<td>≥ 70</td>
<td>3,500</td>
<td>9,700</td>
</tr>
<tr>
<td>≥ 75</td>
<td>250</td>
<td>600</td>
</tr>
</tbody>
</table>
## 7. Results of the 2006 noise mapping

### Table 2
Estimated total number of people and dwellings above various noise levels, $L_{\text{day}}$

<table>
<thead>
<tr>
<th>Noise level (dB)</th>
<th>Number of Dwellings</th>
<th>Number of People</th>
</tr>
</thead>
<tbody>
<tr>
<td>≥ 54</td>
<td>262,300</td>
<td>605,700</td>
</tr>
<tr>
<td>≥ 57</td>
<td>107,600</td>
<td>253,700</td>
</tr>
<tr>
<td>≥ 60</td>
<td>46,300</td>
<td>114,000</td>
</tr>
<tr>
<td>≥ 63</td>
<td>21,400</td>
<td>54,100</td>
</tr>
<tr>
<td>≥ 66</td>
<td>6,450</td>
<td>17,300</td>
</tr>
<tr>
<td>≥ 69</td>
<td>1,800</td>
<td>4,500</td>
</tr>
<tr>
<td>≥ 72</td>
<td>400</td>
<td>900</td>
</tr>
<tr>
<td>≥ 75</td>
<td>&lt; 50</td>
<td>&lt; 100</td>
</tr>
<tr>
<td>≥ 78</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

### Table 3
Estimated total number of people and dwellings above various noise levels, $L_{\text{evening}}$

<table>
<thead>
<tr>
<th>Noise level (dB)</th>
<th>Number of Dwellings</th>
<th>Number of People</th>
</tr>
</thead>
<tbody>
<tr>
<td>≥ 54</td>
<td>249,650</td>
<td>583,800</td>
</tr>
<tr>
<td>≥ 57</td>
<td>105,700</td>
<td>251,000</td>
</tr>
<tr>
<td>≥ 60</td>
<td>43,500</td>
<td>108,800</td>
</tr>
<tr>
<td>≥ 63</td>
<td>19,200</td>
<td>48,600</td>
</tr>
<tr>
<td>≥ 66</td>
<td>5,500</td>
<td>14,400</td>
</tr>
<tr>
<td>≥ 69</td>
<td>1,550</td>
<td>3,700</td>
</tr>
<tr>
<td>≥ 72</td>
<td>350</td>
<td>800</td>
</tr>
<tr>
<td>≥ 75</td>
<td>&lt; 50</td>
<td>&lt; 100</td>
</tr>
<tr>
<td>≥ 78</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>
7. Results of the 2006 noise mapping

### Table 4
Estimated total number of people and dwellings above various noise levels, LAeq, 16

<table>
<thead>
<tr>
<th>Noise level (dB)</th>
<th>Number of Dwellings</th>
<th>Number of People</th>
</tr>
</thead>
<tbody>
<tr>
<td>≥ 54</td>
<td>258,400</td>
<td>597,700</td>
</tr>
<tr>
<td>≥ 57</td>
<td>109,700</td>
<td>258,500</td>
</tr>
<tr>
<td>≥ 60</td>
<td>45,150</td>
<td>111,800</td>
</tr>
<tr>
<td>≥ 63</td>
<td>20,850</td>
<td>52,800</td>
</tr>
<tr>
<td>≥ 66</td>
<td>6,200</td>
<td>16,600</td>
</tr>
<tr>
<td>≥ 69</td>
<td>1,750</td>
<td>4,300</td>
</tr>
<tr>
<td>≥ 72</td>
<td>350</td>
<td>800</td>
</tr>
<tr>
<td>≥ 75</td>
<td>&lt; 50</td>
<td>&lt; 100</td>
</tr>
<tr>
<td>≥ 78</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

### Table 5
Estimated total number of people and dwellings above various noise levels, Lnight

<table>
<thead>
<tr>
<th>Noise level (dB)</th>
<th>Number of Dwellings</th>
<th>Number of People</th>
</tr>
</thead>
<tbody>
<tr>
<td>≥ 48</td>
<td>159,100</td>
<td>362,500</td>
</tr>
<tr>
<td>≥ 51</td>
<td>71,200</td>
<td>167,200</td>
</tr>
<tr>
<td>≥ 54</td>
<td>31,250</td>
<td>79,500</td>
</tr>
<tr>
<td>≥ 57</td>
<td>14,800</td>
<td>39,200</td>
</tr>
<tr>
<td>≥ 60</td>
<td>6,250</td>
<td>17,000</td>
</tr>
<tr>
<td>≥ 63</td>
<td>1,650</td>
<td>4,700</td>
</tr>
<tr>
<td>≥ 66</td>
<td>400</td>
<td>1,200</td>
</tr>
<tr>
<td>≥ 69</td>
<td>&lt; 50</td>
<td>&lt; 100</td>
</tr>
<tr>
<td>≥ 72</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>
8. Evaluating the implementation and the results of the Action Plan

Performance Indicators for the Action Plan
We will monitor a set of performance indicators to track progress against each area of focus, to ensure that the work we are undertaking is resulting in the maximum benefit in terms of managing noise impacts.

The full range of indicators is set out against each of the actions in the noise action plan in Section 9, below. Our performance against these indicators will be regularly reviewed internally through our environmental governance structure. During the five-year period of this action plan, we may add to or amend the range of performance indicators to respond to improvements which enable us to better manage the airport noise impacts. Where we feel it is appropriate and in order to help encourage improved performance we may from time to time set an annual target against one or more of the performance indicators (see action 4.3). Annual targets will be reported on in our annual reporting.

Set out below are a series of key performance indicators which we propose to publish annually through our Corporate Responsibility and/or Flight Evaluation Report.

We have included figures for 2006 (where available) against our key performance indicators, in order to set a baseline for future comparison.

<table>
<thead>
<tr>
<th>Reference number</th>
<th>Key performance indicator</th>
<th>2006 Baseline</th>
</tr>
</thead>
<tbody>
<tr>
<td>KP1</td>
<td>Percentage of Chapter 4 (or equivalent) Aircraft</td>
<td>N/A</td>
</tr>
<tr>
<td>KP2</td>
<td>Area inside the 55dBA L_{den} daytime contour (km$^2$)</td>
<td>152km$^2$</td>
</tr>
<tr>
<td>KP3</td>
<td>Area inside the 48dB LAeq$^{6.5}$hour nighttime (winter &amp; summer seasons combined) contour (km$^2$)</td>
<td>N/A</td>
</tr>
<tr>
<td>KP4</td>
<td>Area inside the 57dB LAeq$^{16}$hour daytime summer contour (km$^2$)</td>
<td>117.4km$^2$</td>
</tr>
<tr>
<td>KP5</td>
<td>Average Quota Count of aircraft scheduled to operate in the night quota period (2330-0600)</td>
<td>1.71</td>
</tr>
<tr>
<td>KP6</td>
<td>Number of infringements of the daytime departure noise limit.</td>
<td>34</td>
</tr>
<tr>
<td>KP7</td>
<td>Percentage of aircraft achieving a CDA (24 hour period)</td>
<td>83.99%</td>
</tr>
<tr>
<td>KP8</td>
<td>Percentage of aircraft on track (all routes)</td>
<td>94.2%</td>
</tr>
<tr>
<td>KP9</td>
<td>Number of individual callers making noise related enquiries</td>
<td>2378</td>
</tr>
<tr>
<td>KP10</td>
<td>Percent of noise related enquiries responded to within 5 working days</td>
<td>N/A</td>
</tr>
</tbody>
</table>

As a way of measuring the success of this action plan we have identified a number of expected outcomes. These are set out below:

- No operations in 2015 by marginally compliant Chapter 3 aircraft (Chapter 3 high).
- At least 97% of aircraft movements by Chapter 4 or equivalent aircraft in 2015.
- The introduction of easterly alternation for arrivals.
- Performance against the noise abatement procedures detailed in the UK AIP will be maintained and where practicable improved against the 2006 baseline.
- No daytime infringements against the 94dBALmax daytime departure noise limit.
- Routine reporting of noise impacts using alternative metrics.
- The 57dBA$^{16}$hour Leq summer daytime contour will be within 127km$^2$.
- The 48dBA$^{6.5}$hour Leq night contour (winter/summer combined) will be within 55km$^2$. 
### Our approach to managing noise

<table>
<thead>
<tr>
<th>Action number</th>
<th>Action</th>
<th>Impact</th>
<th>Timescale</th>
<th>Performance indicator</th>
<th>Nos affected</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Demonstrating we are doing all that is reasonably practicable to minimise noise impacts</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.1</td>
<td>Quietest Fleet Practicable</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.1.1</td>
<td>We will monitor the fleet profile at Heathrow (proportion of movements by Chapter 3 High, Chapter 3, Chapter 3 Minus, and Chapter 4) and report this on an annual basis in order to track progress towards a quieter fleet.</td>
<td>Arrivals</td>
<td>Annually 2010 - 2015</td>
<td>Annual percentages of; Chapter 4 and Chapter 4 equivalent, Chapter 3 High, Chapter 3 Minus operations Annual Contours Publish figures in the annual FEU Report.</td>
<td>Communities within and beyond 55 Lden</td>
</tr>
<tr>
<td>1.1.2</td>
<td>We will continue to use noise related landing charges to encourage airlines to use the quietest aircraft possible at Heathrow &amp; review these on an annual basis.</td>
<td>Arrivals</td>
<td>Annually 2010 - 2015</td>
<td>Annual percentages of; Chapter 4 and Chapter 4 equivalent, Chapter 3 High, Chapter 3 Minus operations Annual Contours Publication of Conditions of Use</td>
<td>Communities within and beyond 55 Lden</td>
</tr>
<tr>
<td>1.1.3</td>
<td>We will seek to consult with our airline partners by the end of 2010 on the voluntary phase out of marginally Chapter 3 compliant (Chapter 3 high) aircraft at Heathrow in order to help accelerate the introduction of quieter aircraft.</td>
<td>Arrivals</td>
<td>2010</td>
<td>Track the annual percentage of Chapter 3 high operations Annual Contours Publish figures in the annual FEU report.</td>
<td>Communities within and beyond 55 Lden</td>
</tr>
<tr>
<td>1.1.4</td>
<td>For all new aircraft types that enter a scheduled operation at LHR we will undertake comparative noise studies relative to older equivalent aircraft types with ERCD in order to show the improvements in new aircraft types</td>
<td>Arrivals</td>
<td>2010 for the A380</td>
<td>Publication of reports</td>
<td>N/A</td>
</tr>
<tr>
<td>1.2</td>
<td>Quietest practicable aircraft operations, balanced against NO\textsubscript{x} and CO\textsubscript{x} emissions</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.2.1</td>
<td>Together with our partners in Sustainable Aviation we will develop a best practice guide for departures by the end of 2012 which will aim to optimise the operational performance of departing aircraft with regard to noise, balanced with emissions.</td>
<td>Departures</td>
<td>2012</td>
<td>Publication of DCOP</td>
<td>Communities within and beyond 55 Lden</td>
</tr>
<tr>
<td>Action number</td>
<td>Action</td>
<td>Impact</td>
<td>Timescale</td>
<td>Performance indicator</td>
<td>Nos affected</td>
</tr>
<tr>
<td>---------------</td>
<td>--------</td>
<td>--------</td>
<td>-----------</td>
<td>-----------------------</td>
<td>--------------</td>
</tr>
<tr>
<td>1.2.2</td>
<td>We will work with airline customers to agree the introduction of a noise control scheme to penalise operators that breach noise controls.</td>
<td>Departures</td>
<td>2013</td>
<td>Publication of noise control scheme</td>
<td>Communities within and beyond 55 Lden</td>
</tr>
<tr>
<td>1.2.3</td>
<td>We will work with DfT, NATS and the CAA to identify and assess the changes necessary to end the Cranford Agreement and allow the introduction of alternation on easterlies. We will publicise key dates and changes.</td>
<td>Arrivals</td>
<td>2010</td>
<td>Publication of a schedule for these works to inform local residents about timescales.</td>
<td>Within and beyond 60 Lden Communities</td>
</tr>
<tr>
<td>1.2.4</td>
<td>We will continue to promote adherence with our voluntary agreement on reverse thrust through forums such as FLOPC, Sustainable Aviation and other communication events.</td>
<td>Arrivals</td>
<td>Ongoing</td>
<td>Publication of a schedule for these works to inform local residents about timescales</td>
<td>Communities within 60 Lden</td>
</tr>
<tr>
<td>1.2.5</td>
<td>We will continue to promote adherence to the Arrivals Code of Practice (ACOP) and in particular the achievement of continuous descent approaches (CDAs) through forums such as FLOPC, Sustainable Aviation and other communication events.</td>
<td>Arrivals</td>
<td>Ongoing</td>
<td>% of CDA achievement % meeting Joining Point criteria. Publish figures in the annual FEU report.</td>
<td>Communities within and beyond 55 Lden</td>
</tr>
<tr>
<td>1.2.6</td>
<td>We will continue to fine aircraft in breach of the DfT departure noise limits.</td>
<td>Departures</td>
<td>Ongoing</td>
<td>Number of infringements and amount of fine money raised. Publish figures in the annual FEU report.</td>
<td>Communities within 70 Lden</td>
</tr>
<tr>
<td>1.2.7</td>
<td>We will review the fining levels set for breaches of the departure noise limits in 2010 and at least every three years.</td>
<td>Departures</td>
<td>2010 and 2013</td>
<td>Publication of results of fining level review</td>
<td>Communities within 70 Lden</td>
</tr>
<tr>
<td>1.2.8</td>
<td>We will implement the operational Noise Policy set out by the DfT by continuing to promote, monitor, and seek to improve and report on adherence to the Departure Noise Abatement procedures detailed in the Heathrow AIP.</td>
<td>Departures</td>
<td>Ongoing</td>
<td>Monitor relevant statistics (noise infringements, track keeping and 1000ft) and publish figures in the annual FEU report</td>
<td>Communities within and beyond 55 Lden</td>
</tr>
<tr>
<td>Action number</td>
<td>Action</td>
<td>Impact</td>
<td>Timescale</td>
<td>Performance indicator</td>
<td>Nos affected</td>
</tr>
<tr>
<td>---------------</td>
<td>--------</td>
<td>--------</td>
<td>-----------</td>
<td>-----------------------</td>
<td>--------------</td>
</tr>
<tr>
<td>1.2.9</td>
<td>We will implement the operational Noise Policy set out by the DfT by continuing to promote, monitor, seeking to improve and report on adherence to the Arrival Noise Abatement procedures detailed in the Heathrow AIP</td>
<td>Arrivals</td>
<td>Ongoing</td>
<td>Monitor relevant statistics (CDA and joining point) and publish figures in the annual FEU report</td>
<td>Communities within and beyond 55 Lden</td>
</tr>
<tr>
<td>1.2.10</td>
<td>We will work with our partners in Sustainable Aviation to develop and promote low noise flight procedures through evaluation of future operational methods and implementation of best practice, for example: evaluating the feasibility of implementing steeper approaches. We will report on these bi-annually through our contribution to the Sustainable Aviation Report.</td>
<td>Arrivals</td>
<td>Bi-Annual</td>
<td>Publish in the Sustainable Aviation bi-annual report</td>
<td>Communities within and beyond 55 Lden</td>
</tr>
<tr>
<td>1.2.11</td>
<td>We will work with our airline customers and NATS to identify, trial and evaluate the costs and benefits of future operational methods which may have the potential to enhance our noise management opportunities. For example trials of P-RNAV arrivals and departures.</td>
<td>Arrivals</td>
<td>Annually 2010 - 2015</td>
<td>Results of trials published in Sustainable Aviation report; Publish progress in FEU Report annually</td>
<td>Communities within and beyond 55 Lden</td>
</tr>
<tr>
<td>1.2.12</td>
<td>We will continue to administer the DfT night restrictions regime and take steps as required to ensure that the number of operations at night is within the limits prescribed.</td>
<td>Arrivals</td>
<td>Ongoing</td>
<td>Publish usage report each season at HACC; Publish progress in FEU Report annually</td>
<td>Communities within and beyond the 48 dBA leq 6.5hr (winter/summer combined) contour</td>
</tr>
<tr>
<td>1.2.13</td>
<td>We will continue to engage with our aviation partners through FLOPC and other communication opportunities to seek to improve adherence to the AIP noise abatement procedures.</td>
<td>Arrivals</td>
<td>Ongoing</td>
<td>Update of actions quarterly in FEU quarterly report.</td>
<td>Communities within and beyond 55 Lden</td>
</tr>
<tr>
<td>1.2.14</td>
<td>In order to manage ground noise we will continue to work with airline customers and ground handling agents to ensure engine maintenance activity is conducted within the terms of the appropriate operational safety instructions (OSIs).</td>
<td>Ground Noise</td>
<td>Ongoing</td>
<td>Number, location &amp; duration of engine runs; Publish progress in FEU report annually</td>
<td>Communities within 75 Lden</td>
</tr>
<tr>
<td>Action number</td>
<td>Action</td>
<td>Impact</td>
<td>Timescale</td>
<td>Performance indicator</td>
<td>Nos affected</td>
</tr>
<tr>
<td>---------------</td>
<td>------------------------------------------------------------------------</td>
<td>------------</td>
<td>-----------</td>
<td>---------------------------------------------------------------------------------------</td>
<td>-------------------------------------</td>
</tr>
<tr>
<td>1.2.15</td>
<td>In order to manage ground noise we will continue to work with airline customers and ground handling agents to ensure aircraft turnaround activity is conducted within the terms of the appropriate operational safety instructions (OSI).</td>
<td>Ground Noise</td>
<td>Ongoing</td>
<td>Number of APU compliance checks number of non compliances with OSI</td>
<td>Communities within 75 Lden</td>
</tr>
<tr>
<td>1.2.16</td>
<td>In conjunction with our partners in Sustainable Aviation we will continue to lobby for and seek to support continual improvements in technology and operations towards the ACARE goal of 50% reduction in perceived external noise by 2020 based on new aircraft of 2020 relative to equivalent new aircraft in 2000.</td>
<td>Arrivals Departures Ground Noise</td>
<td>Ongoing</td>
<td>Publish in the Sustainable Aviation bi-annual report</td>
<td>Communities within and beyond 55 Lden</td>
</tr>
<tr>
<td>1.2.17</td>
<td>We will seek to protect quiet areas in any airspace change process that impacts Heathrow where it does not conflict with the governments stated policy of not adding to the burden of more densely populated areas.</td>
<td>Arrivals Departures Ground Noise</td>
<td>Ongoing</td>
<td></td>
<td>Communities within 55 Lden</td>
</tr>
<tr>
<td>1.2.18</td>
<td>In conjunction with our airline customers and NATS we will investigate improvements to the stand utilisation and taxi procedures at Heathrow in order to reduce ground noise.</td>
<td>Ground Noise</td>
<td>2012</td>
<td>Publishing a report on optimisation opportunities for taxing and stand utilisation.</td>
<td>Communities within and beyond 60 Lnight</td>
</tr>
<tr>
<td>1.2.19</td>
<td>We will continue to promote adherence to the airline voluntary agreement regarding the operation of cargo flights and early morning arrivals during the night period</td>
<td>Arrivals Departures Ground Noise</td>
<td>Ongoing</td>
<td>Number of aircraft and aircraft details Publish progress in FEU report annually</td>
<td>Communities within and beyond the 48 dBA leq 6.5hr (winter/summer combined) contour</td>
</tr>
<tr>
<td>1.2.20</td>
<td>We will continue to administer engine ground running restrictions to ensure that the number of minutes of high power engine testing limits are not exceeded</td>
<td>Maintenance</td>
<td>Ongoing</td>
<td>Monitor engine running statistics Publish figures in the annual FEU report</td>
<td>Communities within 65 Lnight</td>
</tr>
<tr>
<td>Action number</td>
<td>Action</td>
<td>Impact</td>
<td>Timescale</td>
<td>Performance indicator</td>
<td>Nos affected</td>
</tr>
<tr>
<td>---------------</td>
<td>------------------------------------------------------------------------</td>
<td>------------------------------</td>
<td>-----------</td>
<td>---------------------------------------------------------------------------------------</td>
<td>--------------</td>
</tr>
<tr>
<td>1.3</td>
<td>Effective and credible noise mitigation schemes</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.3.1</td>
<td>We will undertake a review of our existing Community Buildings Noise Insulation and our Home Relocation Assistance noise mitigation and compensation schemes in 2010.</td>
<td>Perceived Impacts</td>
<td>2010</td>
<td></td>
<td>N/A</td>
</tr>
<tr>
<td>1.3.2</td>
<td>In line with our current scheme we will continue to offer acoustic insulation assistance to noise sensitive buildings such as schools and hospitals, exposed to medium to high levels of noise 2002 (63 dB(A) Leq or more)(See Annex 9: MAP 1 for scheme boundary).</td>
<td>Perceived Impacts</td>
<td>Ongoing</td>
<td>Number of applications received vs number processed. Currently 67 buildings are eligible</td>
<td>67 properties</td>
</tr>
<tr>
<td>1.3.3</td>
<td>In line with our current Home Relocation Assistance Scheme we will continue to offer households subject to day noise levels in excess of 2002 69 dB(A) Leq assistance with relocation. (See Annex 9: MAP 2 for scheme boundary).</td>
<td>Perceived Impacts</td>
<td>Ongoing</td>
<td>Number of applications received vs number processed. 3735 possible eligible households</td>
<td>3,735 properties</td>
</tr>
<tr>
<td>1.3.4</td>
<td>In line with our current daytime noise insulation scheme for residential properties we will continue to offer acoustic insulation to all eligible households within the 1994 69 LAeq noise contour.</td>
<td>Perceived Impacts</td>
<td>Ongoing</td>
<td>Number of applications received vs number processed</td>
<td>8,500 properties</td>
</tr>
<tr>
<td>1.3.5</td>
<td>In line with our current night time noise insulation scheme for residential properties we will continue to offer acoustic insulation to all eligible households within the 90 dBA SEL contour. (See Annex 9: MAP 3 for scheme boundary)</td>
<td>Perceived Impacts</td>
<td>Ongoing</td>
<td>Number of applications received vs number processed</td>
<td>41,000 properties</td>
</tr>
<tr>
<td>1.3.6</td>
<td>To address the impacts of future growth we will continue to offer to purchase those properties suffering from both a high level of noise (63dBA Leq or more) and a large increase in noise (3dBA Leq or more)</td>
<td>Perceived Impacts</td>
<td>Ongoing</td>
<td></td>
<td>N/A</td>
</tr>
</tbody>
</table>
### Action number | Action | Impact | Timescale | Performance indicator | Nos affected
---|---|---|---|---|---
1.3.7 We will continue to research and promote the best use of noise mitigation for reducing the impact from engine ground running within our development plans. | Perceived Impacts | Ongoing | Number of applications received vs number processed | N/A
1.3.8 Following the ending of the Cranford agreement we will review our mitigation schemes. | Perceived Impacts | 2012 | N/A

#### 2 Engage with communities affected by noise impacts to better understand their concerns and priorities, reflecting them as far as possible in airport noise strategies and communication plans

| Action number | Action | Impact | Timescale | Performance indicator | Nos affected
---|---|---|---|---|---
2.1 We will continue to engage with local community representatives on air noise to understand local priorities through regular meetings with groups such as NTKWG, LFF, HACC and its Environment sub-committee. | Community Trust & Awareness | Quarterly | Minutes of Heathrow Airport Consultative Committee meetings | N/A
2.2 We will review and consult on our noise action plan every 5 years and when ever a major development occurs. | Community Trust & Awareness | 2014 | N/A
2.3 We will continue to provide public access to flight track information (delayed by 24 hours) via Webtrak, as well as other noise information from for example our website, noise booklets and our complaint handling service. | Community Trust & Awareness | Ongoing | % availability of Webtrak, number of hits on airport website, provision of and attendance at visitor exhibitions | % availability of Webtrak or hits on website FEU enquiries Number of reports, published and distributed
2.4 We will continue to produce the BAA Heathrow Annual Flight Evaluation Report and publish this on our website annually. Within this we will report the progress against this action plan also an annual basis. | Community Trust & Awareness | Annually | Publish a report by July each year. % of actions complete | N/A
2.5 We will continue to host the Heathrow Airport Noise and Track Keeping WG. To ensure that the group remains fit for purpose and effective we will review the, membership and terms of reference and work programme of the group during 2013 | Community Trust & Awareness | Quarterly | Minutes of NTKWG. | N/A
<table>
<thead>
<tr>
<th>Action number</th>
<th>Action</th>
<th>Impact</th>
<th>Performance indicator</th>
<th>Timescale</th>
<th>Nos affected</th>
<th>Action number</th>
<th>Action</th>
<th>Impact</th>
<th>Performance indicator</th>
<th>Timescale</th>
<th>Nos affected</th>
<th>Action number</th>
<th>Action</th>
<th>Impact</th>
<th>Performance indicator</th>
<th>Timescale</th>
<th>Nos affected</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.6</td>
<td>We will continue to log all complaints relating to aircraft operations and publish the statistics.</td>
<td>Community Trust &amp; Awareness</td>
<td>Ongoing</td>
<td>Complainant statistics in FEU quarterly and annual reports</td>
<td>N/A</td>
<td>2.7</td>
<td>We will continue to engage with national stakeholder groups such as AEF and SASIG to understand their noise priorities and help inform our strategies and policies.</td>
<td>Community Trust &amp; Awareness</td>
<td>Ongoing</td>
<td></td>
<td></td>
<td>N/A</td>
<td>2.8</td>
<td>We will continue to monitor and analyse our data on complaints about noise issues to understand and inform our noise priorities.</td>
<td>Community Trust &amp; Awareness</td>
<td>Ongoing</td>
<td></td>
</tr>
<tr>
<td>Action number</td>
<td>Action</td>
<td>Impact</td>
<td>Timescale</td>
<td>Performance indicator</td>
<td>Nos affected</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>---------------</td>
<td>------------------------------------------------------------------------</td>
<td>-------------------------</td>
<td>-----------</td>
<td>--------------------------------------------</td>
<td>--------------</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.4</td>
<td>We will seek to annually commission and publish the annual 55 Lden contour.</td>
<td>Land Use Planning</td>
<td>Annually</td>
<td>Area and population within the contour</td>
<td>N/A</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.5</td>
<td>We will seek to annually commission and publish the 48dBA6.5 hour night contour (for the winter and summer seasons combined).</td>
<td>Land Use Planning</td>
<td>Annually</td>
<td>Area and population within the contour</td>
<td>N/A</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.6</td>
<td>We will liaise with DEFRA as the competent authority for drafting Noise action plans for first round agglomerations (London), with the aim of ensuring compatibility between the action plans and their identification of quiet areas.</td>
<td>Land Use Planning</td>
<td>Ongoing</td>
<td></td>
<td>N/A</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td><strong>Organising ourselves to manage noise efficiently and effectively</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.1</td>
<td>We will continue to operate and enhance our Noise Management systems.</td>
<td>Consistent and effective management</td>
<td>Ongoing</td>
<td>Percentage Availability</td>
<td>N/A</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.2</td>
<td>We will carry out a cost effectiveness /cost benefit assessment on any new noise control measure that is considered for inclusion as part of the action plan.</td>
<td>Consistent and effective management</td>
<td>Ongoing</td>
<td></td>
<td>N/A</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.3</td>
<td>We will monitor the performance indicators listed within the action plan and where we determine that a discouraging trend is emerging we will seek to set an annual target to help address it.</td>
<td>Consistent and effective management</td>
<td>Ongoing</td>
<td>Annual targets</td>
<td>N/A</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td><strong>Achieving a full understanding of aircraft noise to inform our priorities, strategies and targets</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.1</td>
<td>We will commission research by independent consultants to benchmark internationally our ranking on operational noise management with other comparable airports in 2011 and 2013. We will publish the results on our website.</td>
<td>Community Trust and Awareness</td>
<td>2011, 2013</td>
<td>Benchmark Survey Results</td>
<td>N/A</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.2</td>
<td>We will commission research by independent consultants to benchmark internationally our ranking in aircraft noise communications with other comparable airports in 2012 and 2014. We will publish the results on our website.</td>
<td>Arrivals Departures Ground Noise</td>
<td>2012, 2014</td>
<td>Benchmark Survey Results</td>
<td>N/A</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Action number</td>
<td>Action</td>
<td>Impact</td>
<td>Timescale</td>
<td>Performance indicator</td>
<td>Nos affected</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>---------------</td>
<td>--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>----------------------</td>
<td>-----------</td>
<td>--------------------------------------------------------------------------------------------</td>
<td>--------------</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.3</td>
<td>We will continue to support work to better understand the interdependencies of aircraft operations management through our participation in groups such as ACI, Sustainable Aviation and Omega.</td>
<td>Arrivals Departures Ground Noise</td>
<td>Ongoing</td>
<td>Groups participating in Research Funding provided Number of trials ongoing.</td>
<td>N/A</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.4</td>
<td>We will continue to actively participate and contribute to any debate through ANMAC of current arrival and departure policy.</td>
<td>Arrivals Departures Ground Noise</td>
<td>Ongoing</td>
<td>Minutes of ANMAC Number of ANMAC meetings</td>
<td>N/A</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.5</td>
<td>We will continue to engage with the OMEGA research consortium to improve our understanding of interdependencies between noise, local air quality and climate change related emissions. We will ensure that the research in OMEGA informs our noise management policies</td>
<td>Community Trust &amp; Awareness</td>
<td>Ongoing</td>
<td>N/A</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.6</td>
<td>We will informally review our noise actions plans following publication of the noise maps in 2011 with HACC by the end of 2012.</td>
<td>Strategic Approach</td>
<td>2012</td>
<td>N/A</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.7</td>
<td>We will formulate a regime to track and describe our noise impact throughout the 5 year action plan programme by the end of 2011.</td>
<td>Community Trust &amp; Awareness</td>
<td>2011</td>
<td>Publish methodology and metrics used.</td>
<td>N/A</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.8</td>
<td>We will continue to keep abreast of government research into the potential health effects of aircraft noise in order to help inform and develop our strategies and policies.</td>
<td>Strategic Approach</td>
<td>Ongoing</td>
<td>N/A</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
In developing this action plan, we took the following steps to determine the most appropriate and effective actions to include in our draft noise action plan.

Firstly we undertook a review of all our existing noise management activities and considered how they potentially impacted on the areas enclosed by the 2006 noise mapping results (see section 7).

Secondly we used results from three international benchmarking studies we had commissioned independent consultants to conduct on our behalf, to identify any further potential actions we could consider. This exercise revealed that for operational noise controls Heathrow was the leading airport worldwide. Similarly, although direct comparison is intrinsically difficult, our mitigation and compensation benchmarking study showed Heathrow to be amongst the leading airports in this area. The final area of our benchmarking concerned stakeholder engagement and communication activities. The results of this study revealed most opportunity to further enhance our approach to noise management.

Thirdly we identified a number of new actions we could consider and gave them a general initial ranking (high, medium and low) in terms of their costs and benefits.

For the purposes of this consultation we quantified the financial costs of our current noise management activity (which would cover the vast majority of the actions contained within the current draft noise action plan) in Annex 10. Finally we agreed that for any new actions put forward in the final draft noise action plan to be submitted to the Secretary of State a more detailed analysis of the potential costs and benefits should be considered.

We have attempted to quantify the number of residents impacted by individual actions by using the results of the noise mapping and data pack provided by DEFRA. Our approach has been to identify which actions have a direct operational impact and then to broadly assess whether the action would impact the population within a specific contour area or be a more generic impact affecting the whole area covered by the noise mapping. Some actions (for example achieving more CDAs) will have most impact on areas beyond the area contained within the noise mapping contours.
11. Key consultation questions, with response form/web address for responses

We would welcome your comments on our proposals and invite your views on the questions posed below. The responses we receive will be taken into consideration and used to influence the detail of the final action plan. Responses to this consultation document do not indicate endorsement of present or future airport operations.

1. To what extent do you think that BAA Heathrow’s noise strategies outlined in the draft noise action plan are targeting the most important problems in relation to aircraft noise?

2. To what extent do you think that the draft noise action plan provides a suitable framework to manage aircraft noise?

3. The draft noise action plan proposes a number of performance indicators to measure progress in implementing the action plan. To what extent do you think that these performance indicators are sufficient?

4. As part of its objective to limit and where possible reduce the impacts of aircraft noise, Heathrow has set a benchmark goal to be in the top fifth of airport companies for best practice in international airport noise management on comparable sites. To what extent do you think that this goal is sufficiently challenging?

5. Do you have any other comments on Heathrow Airport’s draft noise action plan?

Responding to this consultation
This consultation was launched on 15 June 2009 and ends on 5 October 2009.

Responses are being managed by an external independent company, GfK NOP, on behalf of BAA. You can send your response in several ways:

- on the internet, by completing the response form online at:
  www.heathrowairport.com/noise
- by completing the response form in Annex 10 (page 55) and mailing to the following address:
  BAA Noise Action Plan Consultation
  c/o GfK NOP Datacentre
  Caxton House
  91 Victoria Road
  Chelmsford
  CM11 1JW

Next Steps
All responses will be reviewed and assimilated by an external consultant appointed by BAA. We will then review and finalise our Noise Action Plan. We plan to issue the finalised Noise Action Plan by the end of January 2010.
Annex 1: Glossary of terms

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>aal</td>
<td>above aerodrome level</td>
</tr>
<tr>
<td>AIP</td>
<td>Aeronautical Information Publication</td>
</tr>
<tr>
<td>ACARE</td>
<td>Advisory Council for Aeronautical Research in Europe</td>
</tr>
<tr>
<td>ACOP</td>
<td>Arrivals Code of Practice</td>
</tr>
<tr>
<td>AEF</td>
<td>Aviation Environment Federation</td>
</tr>
<tr>
<td>ANASE</td>
<td>Attitudes to Noise from Aviation Sources in England</td>
</tr>
<tr>
<td>ANCON 2</td>
<td>Aircraft Noise Contour Model version 2</td>
</tr>
<tr>
<td>ANMAC</td>
<td>Aircraft Noise Monitoring Advisory Committee. The committee is chaired by the Department for Transport and comprises, among others, representatives of the airlines, Heathrow, Gatwick and Stansted airports and airport consultative committees.</td>
</tr>
<tr>
<td>APU</td>
<td>Auxiliary Power Unit. A power unit located on the aircraft.</td>
</tr>
<tr>
<td>ATC</td>
<td>Air Traffic Control</td>
</tr>
<tr>
<td>ATWP</td>
<td>Air Transport White Paper</td>
</tr>
<tr>
<td>BAA</td>
<td>BAA plc, the company which own and runs Heathrow, Gatwick and Stansted airports amongst others, and is responsible for the operation of the NTK system.</td>
</tr>
<tr>
<td>CAA</td>
<td>Civil Aviation Authority</td>
</tr>
<tr>
<td>CDA</td>
<td>Continuous Descent Approach</td>
</tr>
<tr>
<td>dB(A)</td>
<td>A unit of sound pressure level, adjusted in accordance with the A weighting scale, which takes into account the increased sensitivity of the human ear at some frequencies.</td>
</tr>
<tr>
<td>Decibel (dB)</td>
<td>The decibel (dB) is a logarithmic unit of measurement that expresses the magnitude of a physical quantity relative to a specified or implied reference level. Its logarithmic nature allows very large or very small ratios to be represented by a convenient number. Being a ratio, it is a dimensionless unit. Decibels are used for a wide variety of measurements including acoustics, and for audible sound A-weighted decibels (dBA) are commonly used.</td>
</tr>
<tr>
<td>DCOP</td>
<td>Departure Code of Practice</td>
</tr>
<tr>
<td>DEFRA</td>
<td>Department for Environment Food and Rural Affairs (UK Government).</td>
</tr>
<tr>
<td>DfT</td>
<td>Department for Transport (UK Government)</td>
</tr>
<tr>
<td>ECAC</td>
<td>European Civil Aviation Conference</td>
</tr>
<tr>
<td>ERCD</td>
<td>Environmental Research and Consultancy Department of the Civil Aviation Authority.</td>
</tr>
<tr>
<td>FEGP</td>
<td>Fixed Electrical Ground Power</td>
</tr>
<tr>
<td>FEU</td>
<td>Flight Evaluation Unit</td>
</tr>
<tr>
<td>FLOPC</td>
<td>Flight Operations Performance Committee</td>
</tr>
</tbody>
</table>
## Annex 1: Glossary of terms

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>GPU</td>
<td>Ground Power Unit</td>
</tr>
<tr>
<td>ICAO</td>
<td>International Civil Aviation Organization</td>
</tr>
<tr>
<td>ILS</td>
<td>Instrument Landing System</td>
</tr>
</tbody>
</table>

### \( L_{\text{day}} \)

The A-weighted average sound level over the 12 hour day period of 0700 - 1900 hours.

### \( L_{\text{den}} \)

The day, evening, night level, \( L_{\text{den}} \) is a logarithmic composite of the \( L_{\text{day}} \), \( L_{\text{evening}} \), and \( L_{\text{night}} \) levels but with 5 dB(A) being added to the \( L_{\text{evening}} \) value and 10 dB(A) being added to the \( L_{\text{night}} \) value.

### \( L_{\text{eq}} \)

Equivalent sound level of aircraft noise in dBA, often called equivalent continuous sound level. For conventional historical contours this is based on the daily average movements that take place in the 16 hour period (0700-2300 LT) during the 92 day period 16 June to 15 September inclusive.

### \( L_{\text{evening}} \)

The A-weighted average sound level over the 4 hour evening period of 1900 - 2300 hours.

### LPA

Local Planning Authority

### \( L_{\text{night}} \)

The A-weighted average sound level over the 8 hour night period of 2300 - 0700 hours.

### NATS

Formerly known as National Air Traffic Services Ltd. NATS is licensed to provide en-route air traffic control for the UK and the Eastern part of the North Atlantic, and also provides air traffic control services at several major UK airports, including Gatwick.

### Noise Contour

Map contour line indicating noise exposure in dBA for the area that it encloses.

### NPR

Noise Preferential Route

### 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.

### PNdB

Perceived Noise Level, measured in PNdB. Its measurement involves analyses of the frequency spectra of noise events as well as the maximum level.

### PPG

Planning Policy Guidance

### P-RNAV

Precision Area Navigation

### QC

Quota Count - the basis of the London airports Night Restrictions regime
## Annex 1: Glossary of terms

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>SAE</td>
<td>Society of Automotive Engineers</td>
</tr>
<tr>
<td>SASIG</td>
<td>Strategic Aviation Special Interest Group</td>
</tr>
<tr>
<td>SEL</td>
<td>Sound Exposure Level. The level generated by a single aircraft at the monitoring point. This normalised to a 1 second burst of sound and takes account of the duration of the sound as well as its intensity.</td>
</tr>
<tr>
<td>SID</td>
<td>Standard Instrument Departure route</td>
</tr>
<tr>
<td>SOR</td>
<td>Start-of-roll: The position on a runway where aircraft commence their take-off runs.</td>
</tr>
<tr>
<td>SoS</td>
<td>Secretary of State</td>
</tr>
<tr>
<td>Sustainable Aviation</td>
<td>A UK aviation industry initiative aiming to set out a long term strategy for the industry to address its sustainability issues</td>
</tr>
<tr>
<td>T5</td>
<td>Heathrow Airport Fifth Terminal</td>
</tr>
</tbody>
</table>
Annex 2: Annex V of DEFRA END guidance

Box 2
Annex V from the END as it applies to airports

An action plan must at least include the following elements:

- A description of the airport and any other noise sources taken into account;
- The authority responsible;
- The legal context;
- Any limit values in place;
- A summary of the results of the noise mapping;
- An evaluation of the estimated number of people exposed to noise, including problems and situations that need to be improved;
- A record of the public consultations organised in accordance with Article 8(7);
- Any noise reduction measures already in force and any projects in preparation;
- Actions which the airport operator intends to take in the next five years, including measures to preserve quiet areas;
- Long term strategy;
- Financial information (if available): budgets, cost-effectiveness assessment, cost-benefit assessment;
- Provisions envisaged for evaluating the implementation and the results of the action plan.

The Action plan should contain estimates in terms of the reduction of the number of people affected (annoyed, sleep disturbed, or other).
Annex 3: ERCD strategic noise maps for Heathrow

Map 1. 2006 Lden (Source ERCD)
Annex 3: ERCD strategic noise maps for Heathrow
In 2008 the top five concerns reported to us by those people who got in contact with the Heathrow Flight Evaluation Unit were; Aircraft too loud; Low flying; Increased flights; General noise and early morning aircraft. The majority of those complainants are located within the greater London area.
Annex 4: Complaint data
Annex 5: Limit values in place at Heathrow

<table>
<thead>
<tr>
<th>No.</th>
<th>Limit Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Under Terminal 5 Planning Condition A4, the number of air transport movements at Heathrow Airport shall be limited to 480,000 each year.</td>
</tr>
<tr>
<td>2</td>
<td>With effect from the 1 January 2016, the area enclosed by the 57dB(A) Leq16hr (07:00-23:00) contour, when calculated and measured by the CAA’s Aircraft Noise Contour Model, or any system that succeeds it, shall not exceed 145 square kilometres.</td>
</tr>
<tr>
<td>3</td>
<td>If a third runway is built, the 57dBA daytime noise contour should not exceed its area in 2002 (127km²); and</td>
</tr>
<tr>
<td>4</td>
<td>Limit the 6.5 hour, 48 dB(A) Leq contour (for the winter and summer seasons combined) to 55km² by 2011 – 2012.</td>
</tr>
<tr>
<td>5</td>
<td>Night Movement and Quota Count Restrictions between 2330 and 0600 local.</td>
</tr>
</tbody>
</table>

### Winter

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Noise Quota</td>
<td>4141</td>
<td>4141</td>
<td>4141</td>
<td>4141</td>
<td>4141</td>
<td>4141</td>
<td>4080</td>
</tr>
</tbody>
</table>

### Summer

<table>
<thead>
<tr>
<th>Movement Limit</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>Noise Quota</td>
<td>5610</td>
<td>5610</td>
<td>5460</td>
<td>5460</td>
<td>5340</td>
<td>5220</td>
<td>5100</td>
</tr>
</tbody>
</table>

| 6   | The Noise Abatement Procedures contained within the UK AIP(see Annex 5)                                                                                                                                                |
| 7   | Daytime (0700-2300) departure noise limit of 94DBA Lmax at 6.5km from start of roll.                                                                                                                                     |
| 8   | Night Shoulder (2300-2330 & 0600-0700) departure noise limit of 89DBA Lmax at 6.5km from start of roll.                                                                                                                                 |
| 9   | Night (2330-0600) departure noise limit of 87DBA Lmax at 6.5km from start of roll.                                                                                                                                          |
| 10  | The Ground running restrictions are set out in T5 planning conditions (see page 22)                                                                                                                                        |
Annex 6: Illustrative noise preferential route map
Annex 7:  Heathrow Airport airfield map
Annex 8: Noise mitigation scheme maps

Map 1: Community Buildings Noise Insulation Scheme Boundary
Annex 8: Noise mitigation scheme maps

Map 2: Home Relocation Assistance Scheme Boundary
Annex 8: Noise mitigation scheme maps

Map 3: Night Noise Insulation Scheme Boundary
## Annex 9: Financial information

Indicative annual financial expenditure (to BAA Heathrow) on noise management activities.

<table>
<thead>
<tr>
<th>Type</th>
<th>Description</th>
<th>Approximate Annual Cost (£K)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Staff Costs</strong></td>
<td>Comms Team, Airside Team, FEU, Strategy Environment Team – salary &amp; training</td>
<td>510</td>
</tr>
<tr>
<td><strong>NTK Equipment Costs</strong></td>
<td>Renewal, calibration, repair</td>
<td>150</td>
</tr>
<tr>
<td><strong>NTK Computer Costs</strong></td>
<td>Software licences, support development,</td>
<td>250</td>
</tr>
<tr>
<td><strong>Publications &amp; Comunications</strong></td>
<td>Seminars, documents, website</td>
<td>20</td>
</tr>
<tr>
<td><strong>Fines (levied against airlines)</strong></td>
<td>Dep noise limits, TK</td>
<td>100</td>
</tr>
<tr>
<td><strong>Noise Insulation &amp; Mitigation Schemes</strong></td>
<td>Insulation, relocation, community buildings, blight?, vortex?</td>
<td>8000</td>
</tr>
<tr>
<td><strong>Consultants</strong></td>
<td>Audit, Forecasting, noise studies, benchmarking etc</td>
<td>100</td>
</tr>
</tbody>
</table>
BAA is carrying out a consultation about aircraft noise and would like to seek your views on their proposed noise action plan. The action plan is available at www.heathrowairport.com/noise.

BAA has asked GfK NOP, a leading research agency, to conduct this survey about the noise action plan on their behalf. The survey should only take 10-15 minutes to complete, depending on the length of your answers.

Please read the noise action plan at www.heathrowairport.com/noise before proceeding with the survey, as we will be asking for your views on the plan.

If you would prefer to complete an online version of this survey, please go to: www.heathrowairport.com/noise

If you have any queries about the consultation or noise action plan, please contact BAA at the following email address: heathrowcommunityrelations@baa.com

The deadline for completed surveys to be returned is 5th October 2009.

Q1. To what extent do you think that BAA Heathrow’s noise strategies outlined in the draft noise action plan are targeting the most important problems in relation to aircraft noise? PLEASE PUT A TICK IN ONE BOX

<table>
<thead>
<tr>
<th>Completely</th>
<th>Partially</th>
<th>Not very</th>
<th>Not at all</th>
<th>Don’t know</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Q1a. Why is that? PLEASE WRITE YOUR RESPONSES IN THE BOX PROVIDED.

Q2. To what extent do you think that the draft noise action plan provides a suitable framework to manage aircraft noise? PLEASE PUT A TICK IN ONE BOX

<table>
<thead>
<tr>
<th>Completely</th>
<th>Partially</th>
<th>Not very</th>
<th>Not at all</th>
<th>Don’t know</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Q2a. Why is that? PLEASE WRITE YOUR RESPONSES IN THE BOX PROVIDED.

Q3. The draft noise action plan proposes a number of performance indicators to measure progress in implementing the action plan. To what extent do you think that these performance indicators are sufficient? PLEASE PUT A TICK IN ONE BOX

<table>
<thead>
<tr>
<th>Completely sufficient</th>
<th>Fairly sufficient</th>
<th>Not very sufficient</th>
<th>Not at all sufficient</th>
<th>Don’t know</th>
</tr>
</thead>
<tbody>
<tr>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
</tbody>
</table>

Q3a. Why is that? PLEASE WRITE YOUR RESPONSES IN THE BOX PROVIDED.

Q4. As part of its objective to limit and where possible reduce the impacts of aircraft noise, Heathrow has set a benchmark goal to be in the top fifth of airport companies for best practice in international airport noise management on comparable sites.

To what extent do you think that this goal is sufficiently challenging? PLEASE PUT A TICK IN ONE BOX

<table>
<thead>
<tr>
<th>Too challenging</th>
<th>Sufficiently challenging</th>
<th>Not very challenging</th>
<th>Not at all challenging</th>
<th>Don’t know</th>
</tr>
</thead>
<tbody>
<tr>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
</tbody>
</table>

Q4a. Why is that? PLEASE WRITE YOUR RESPONSES IN THE BOX PROVIDED.
Q5. Do you have any other comments on Heathrow Airport’s draft noise action plan?

PLEASE WRITE YOUR RESPONSES IN THE BOX PROVIDED

Q6. How much of the Heathrow Airport draft noise action plan have you read or looked at?

PLEASE PUT A TICK IN ONE BOX

<table>
<thead>
<tr>
<th>All of it</th>
<th>Most of it</th>
<th>Some of it</th>
<th>Hardly any</th>
<th>None of it</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Q7. The next question will allow us to classify your answers.
Which of the following best describes you? PLEASE PUT A TICK IN ONE BOX

- A private sector organisation (up to 250 employees)
- A private sector organisation (250 or more employees)
- Representative Organisation (e.g. Chamber of Commerce)
- Trade Union
- Interest or Pressure Group (including local residents association)
- Local Government
- Central Government
- A school, college or university
- A GP surgery, health centre or hospital
- Other public sector organisation
- Voluntary sector or Charity
- Local resident / individual
- Other (please write in)

Q8. Have you completed the survey on behalf of your company / organisation or from your own personal point of view?

On behalf of my company/ organisation
It’s my own personal view
Q9. Please complete the following details.

Name:  

Organisation (if applicable):  

Address:  

Postcode:  

Telephone:  

Email:  

A list of all individuals and organisations who respond to the consultation will be included in the finalised Noise Action Plan which will be published following the consultation. Please tick this box if you do not wish for your name or organisation name to appear in this list.  

Your details and responses will only be shared with BAA and will not be passed to any third party. Please tick this box if you do not wish for your details to be passed on to BAA with your responses. GfK NOP will then ensure that your answers are reported anonymously to BAA.  

BAA may wish to contact you to discuss further the issues that you have commented on. Please tick here if you do not wish to be contacted in future by BAA about the matters raised in this consultation.  

Please tick this box if you would like GfK NOP to send you a receipt to acknowledge your survey has been received.  

Thank you for participating in the BAA noise action plan consultation. Please return your completed survey to the following address by 5th OCTOBER 2009:

BAA Noise Action Plan Consultation  
GfK NOP Datacentre  
Caxton House  
91 Victoria Road  
Chelmsford  
CM1 1JW