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1. **INTRODUCTION**

1.1.1 This document contains technical information and has been targeted for stakeholders with an interest in understanding the content of the *Airspace and Future Operations Consultation Document* in more detail as well as those more familiar with the operation of Heathrow. If you would like to read a summary of all the proposals in this consultation, please see Heathrow’s *Airspace and Future Operations Consultation Document*.

1.2 **Purpose of Document**

1.2.1 The purpose of this document is to describe how Heathrow currently operates at night, how this might change with expansion, and to seek your views on the choices that are to be made about night time operations. The feedback we receive will help us to define how a ban on scheduled night flights might operate. It will also inform our proposal for managing the noise effects from flights at night outside the hours of a scheduled ban.

1.2.2 In this document we are going to explain:

- Balancing the benefits and adverse effects of night flights
- Night flights at Heathrow today
- Feedback from our previous consultation & other engagement
- How night flights might operate in the future
- The length of a ban on scheduled night flights
- The start and end time of the ban on scheduled night flights
- Managing early morning arrivals after the end of the ban on scheduled night flights
- Managing exceptions to the ban on scheduled night flights
- Incentivising quieter aircraft during those parts of the night period outside of the ban on scheduled night flights
- Next steps

1.3 **The policy context set by the Airports National Policy Statement**

1.3.1 Heathrow has a well-established record of seeking to reduce the effects of aircraft noise, particularly those associated with night operations. This is evidenced
through the implementation of several voluntary measures; our consistent position supporting Government's limitations on flights before 06:00; and most recently our launch of a Quiet Night Charter which can be found on our website at www.Heathrow.com/noise.

1.3.2 However, we know we need to do more, which is why we have long proposed that expansion should only take place in the context of putting forward a range of balanced measures to manage the effects of noise at night. The independent Airports Commission identified the benefits of a scheduled night flights ban and we adopted this recommendation when we published our response to the Airports Commission’s package of recommendations in May 2016.

1.3.3 Accordingly, when the Airports National Policy Statement (Airports NPS) was designated on 26 June 2018 it specifically stated:

"The Government also expects a ban on scheduled night flights for a period of six and a half hours, between the hours of 11pm and 7am, to be implemented. The rules around its operation, including the exact timings of such a ban, should be defined in consultation with local communities and relevant stakeholders, in line with EU Regulation 598/2014". ¹

1.3.4 Also, in the Airports NPS, the Government expects us to make particular efforts to incentivise the use of the quietest aircraft at night outside the hours of the ban on scheduled night flights.

1.3.5 This document has been produced as part of our consultation on Airspace and Future Operations Consultation. There are a number of matters on which we would be grateful for your views, ahead of bringing forward our detailed proposals in our consultation in June.

1.4 **Scheduled flights and scheduled times**

1.4.1 The night period is defined as the period from 23:00 to 07:00. The paper at Appendix 1 explains why this is the case.

1.4.2 In considering the exact timings of a ban on scheduled night flights it is important to understand that scheduled times and runway times are not the same.

1.4.3 Around the world, when airports refer to the scheduled time of an arrival or departure flight, this is the time stated on the passenger ticket.

1.4.4 What this means is that the ‘scheduled time’ of an arrival is the time at which the aircraft is due to reach the airport stand (so when the aircraft stops, and passengers disembark following its taxi from the runway).

¹ Airports NPS, paragraph 5.62
1.4.5 The time at which the aircraft lands on the runway is instead referred to as the ‘runway time’ for an arrival.

1.4.6 Similarly, the ‘scheduled time’ for a departure is the time at which the aircraft pushes back from the airport stand (so when the aircraft leaves to make its way to the runway for take-off).

1.4.7 The time at which the aircraft takes off from the runway is referred to as the ‘runway time’ for a departure.

1.4.8 In relation to current operations at Heathrow, for example, the scheduled time of the first arrival is 04:45 but it is expected on the runway (its runway time) from 04:30. Equally the last departure will have a scheduled time of 22:50, but it is expected to depart the runway (its runway time) at approximately 23:00.
2. BALANCING THE BENEFITS AND ADVERSE EFFECTS OF NIGHT FLIGHTS

2.1 A Balanced Approach

2.1.1 In 2001 ICAO\(^2\) published the manual: A Balanced Approach to Aircraft Noise Management. Known as the ‘Balanced Approach’, it is given legal effect in the UK through EU Regulation 598/2014 (referred to in this document as EU598). See Section 5 of this document for further information.

2.1.2 EU598 requires assessing the noise situation at an airport and analysing the various measures available in respect of aircraft noise management where a noise problem has been identified. This is through the exploration of four principal elements, namely:

1. Reduction at source (quieter aircraft);
2. Land-use planning and management;
3. Noise abatement operational procedures (optimising how aircraft are flown and the routes they follow to limit the noise impacts); and
4. Operating restrictions (preventing certain noisier types of aircraft from flying at certain times or at any time), which must not be applied as a first resort, but only after consideration of the other measures of the Balanced Approach.

2.1.3 The Government has set out in the Airports NPS (5.47) that it:

“wants to strike a fair balance between the negative impacts of noise (on health, amenity, quality of life and productivity) and the positive impacts of flights. There is no European or national legislation which sets legally binding limits on aviation noise emissions. Major airports are, however, under a legal obligation to develop strategic noise maps and produce Noise Action Plans based on those maps, on a five yearly basis. They are also required to review and, if necessary, revise action plans when a major development occurs affecting the existing noise situation…”

\(^2\) ICAO – The International Civil Aviation Organization is a UN specialized agency, established by States in 1944 to manage the administration and governance of the Convention on International Civil Aviation (Chicago Convention). It works with the Convention’s 192 Member States and industry groups to reach consensus on international civil aviation Standards and Recommended Practices (SARPs) and policies in support of a safe, efficient, secure, economically sustainable and environmentally responsible civil aviation sector.
2.1.4 In addition, the Government continues in the Airports NPS (5.55) to acknowledge a clear need for the continued management of noise at Heathrow stating that:

“aircraft noise is a significant concern to communities affected and that, as a result of additional runway capacity, noise-related action will need to be taken. Such action should strike a fair balance between the negative impacts of noise and positive impacts of flights.”

2.1.5 Therefore, in determining the package of measures we should employ to manage noise from expansion, we need to strike a balance between identifying the impact of night noise on health and well-being on one hand, and the impact on the connectivity and economic benefits of night flights on the other.

### 2.2 The adverse effects of night noise

2.2.1 There are a number of respected scientific studies from across the world that have examined the potential health and quality of life effects of night noise. We are conducting a review of these studies to get a more complete understanding of the issues and the strength of the evidence for effects of different noise sources including aircraft, road traffic, railways, construction and cumulative/combined noise in the day-time and the night-time.

2.2.2 We are also looking into the most representative metrics to use for night time noise. While most studies use time based metrics such as $L_{Aeq}$, $L_{night}$ or $L_{den}$, there is also a potential merit in considering more short-term measures such as $L_{max}$. Current metrics also only consider noise outside which does not allow the benefits of interventions such as noise insulation to be recognised.

2.2.3 The research to date finds that exposure to noise at night from sources such as aircraft, road traffic and railways can adversely affect health and quality of life. The key health and quality of life effects being considered for the night-time period include both self-reported sleep disturbance and objective sleep disturbance, as well as annoyance, and cardiovascular health. Our noise assessment for the expansion of Heathrow will include assessments of all these noise sources and effects. However, this paper relates specifically to noise from night flights.

2.2.4 Given the clear potential health impacts of aircraft night noise, we propose to develop a package of measures to manage the effects of noise from night operations. Part of those measures will include a ban on scheduled night flights as required by the Airports NPS, in conjunction with other tools to incentivise the use of the quietest aircraft such as the quota system will we describe below.
2.3 The benefits of night flights

2.3.1 Night flights are an important part of operations at airports around the world. With long-haul flights, the time differences in an inter-connected global transport system and desirability of landing times; it is difficult to avoid night flights (i.e. movements in the early morning or late evening).

2.3.2 Early morning connections (from east or west) are important for those travelling from outside of Europe. This is because:

1. It enables passengers to do a full day’s business in or around London and the South East. Alternatively, it allows other passengers to catch the first wave of short haul departures to other UK regions and Europe (beginning in the 06:00 to 07:00 period), enabling them to do a full day’s business there;

2. Flights from locations such as Hong Kong, which are scheduled to depart later in the evening (local time) will arrive at Heathrow early in the morning. To require those flights to land later at Heathrow would mean they would have to leave their departure airports even later in the evening. It is not always possible or desirable for them to do that as many of the departure airports have their own late night restrictions and very late departures (i.e. after midnight local time) are unattractive to passengers.

2.3.3 Heathrow is the UK’s only hub airport and the Airports NPS recognises its importance to the UK’s global aviation hub status. Hub airports are unique because they pool demand for long haul global connections. This enables more flights to more destinations that other point to point airports can’t support.

2.3.4 Long haul flights are important economically because they are operated by larger aircraft which carry more passengers and more freight in the hold of the aircraft, and the international connectivity they bring boosts Heathrow’s international hub status. This leads to economic benefits for the whole UK economy. This is recognised by the Airports NPS which states:

“Heathrow Airport is best placed to address this need by providing the biggest boost to the UK’s international connectivity…Building on this base, expansion at Heathrow Airport will mean it will continue to attract a growing number of transfer passengers, providing the added demand to make more routes viable. In particular, this is expected to lead to more long-haul flights and connections to fast-growing economies, helping to secure the UK’s status as a global aviation hub, and enabling it to play a crucial role in the global economy”.

2.3.5 Analysing 2017/2018 Heathrow flight schedules data, shows that 99% of arrival flights before 07:00 and 50% of flights after 22:00 were long haul. This compares with an hourly average of 37% of flights across all hours.
2.3.6 Half of the flights arriving at Heathrow before 06:00 are from Southeast Asia, with others coming in from the Middle East, North America and Oceania. Because of the time difference, there is a demand from business people departing these locations and wanting to arrive in London to work the next working day, or to catch a connecting flight.

2.3.7 Early morning arrivals at Heathrow are particularly suited to serving flights from fast growing Asian markets (China, South Asia and South-East Asia). Any restrictions on arrivals in the morning-night time period would disadvantage the UK relative to other markets, giving an advantage to growing transit traffic from these regions through Istanbul and the Gulf.

2.3.8 Early morning arrivals at Heathrow are also very suited to serving transatlantic flights. These are amongst the most important for airlines serving Heathrow. Amsterdam or Paris can accommodate these early morning arrivals from the US as those airports would not be subject to arrival flight restrictions from 06:00 to 07:00 GMT as that is 07:00 to 08:00 European local time. These airports are the UK’s competitors for receiving these flights.

2.3.9 Early morning flights have important economic benefits for the UK. CEPA’s analysis demonstrates that the economic benefits to the UK of early morning flights at Heathrow are high. This reflects the higher proportion of long-haul flights landing in the morning and the importance of night flights in serving the transatlantic and fast growing Asian markets.

2.3.10 Feedback from recent focus groups we have held on night flights has also highlighted the perceived benefits which departures scheduled late in the evening offer to leisure travel. For example, a later departure at the end of the working day allowing one less day of annual leave to be taken for holidays, and there are benefits of flying overnight to families with young children for long-haul travel.

2.3.11 The ability to fly in the night period is valued by different airlines for different reasons. For example, Low Cost Carriers (LCCs) will value a later finish rather than an early start.

2.3.12 Late evening flights are also important to freight operators and airlines due to the nature of their ‘just in time’ overnight operations. These flights are key to the express market, the business model on which relies on timely delivery a wide variety of goods including medical supplies, engineering parts and fresh produce.

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3 “Although data on yields of specific flights is confidential, it is widely surmised that early morning transatlantic arrivals are among the most financially valuable flights for airlines serving Heathrow”, page 61, Cambridge Economic Policy Associates (CEPA) (2016)
4 See paragraph 2.13 of the Airports NPS.
More widely, it is also important that airports offer their airlines the opportunity to operate their full-service schedule every day. This necessitates an ability to recover from delays, bad weather or other exceptional circumstances. Around the world, all airports find it necessary to allow some late or early flights to operate to recover the flight schedule. By definition, this means flights early in the morning or late in the evening. As set out later in Appendix 2 of this document, the operations of these flights outside of their scheduled times is closely regulated at Heathrow.
3. NIGHT FLIGHTS AT HEATHROW TODAY

3.1 Current Restrictions and Measures

3.1.1 Currently at Heathrow there are a combination of mandatory and voluntary measures that are applied to control noise from aircraft operations during the night period. These are illustrated in Figure 1 and detailed in Appendix 2.

3.1.2 Overview of mandatory Department for Transport (DfT) restrictions (we refer to all of these as the night restrictions):

1. The night period is 23:00 to 07:00. There are restrictions on the type of aircraft that can be scheduled or allowed to operate in this period.

2. There is then a more restrictive period (23:30 to 06:00) known as the Night Quota Period (NQP) which has no scheduled ban but has limits on the total number of movements and quota count points which are set by the DfT. The limits are set on a seasonal basis: summer and winter. Heathrow is currently limited to 5,800-night flights a year:
   - 3,250 in the summer season and
   - 2,550 in the winter season.

3. The effect is that there are no restrictions on the number of aircraft permitted between 23:00 and 23:30 or between 06:00 and 07:00.

4. Flights may be allowed to operate during the night period if there is disruption, emergency or passenger hardship. These flights are known as dispensed flights and are not subject to the night restrictions (or our voluntary restrictions set out below). There are specific reasons for dispensed flights given in the Civil Aviation Act, for example immediate danger to life or health, air traffic congestion, disruption to air traffic flow, diversions from other airports due to low visibility. This is described in detail in Appendix 3.
Figure 1 - Existing restrictions on night flights

- **NIGHT PERIOD (23:00 - 07:00)**: Defined by UK policy
- **NIGHT QUOTA PERIOD (23:30 - 06:00)**
- **VOLUNTARY PERIOD OF NO SCHEDULED FLIGHTS**
  - Last Scheduled Departure 22:50
  - Last Scheduled Arrival 23:05
- **EXCEPTIONAL CIRCUMSTANCES ONLY**
- **EARLY MORNING SCHEDULED ARRIVALS**
  - 1st Scheduled Departure 06:00
  - 1st Scheduled Arrival 04:45
- **FULL SCHEDULED OPERATIONS**

**22:00** - **07:00**

- **22:00**: Usually late aircraft departures, allowing the airport to recover from extended delays
- **23:00**: Recovery from disruption allowed, but with tight restrictions on numbers of aircraft allowed each year
- **00:00**: Voluntary ban on arrivals before 04:30
- **01:00**: Arrivals only. Restrictions on number and type of aircraft
- **02:00**: Arrivals and departures. Restrictions on type of aircraft
3.1.3 In addition to the mandatory restrictions Heathrow also employs a range of voluntary measures:

1. Although Heathrow is permitted to schedule flights throughout the night quota period, in fact it voluntarily does not schedule flights between 23:05 and 04:45.

2. There is a voluntary arrangement with relevant airlines that aircraft scheduled to arrive after 04:45 will not land on the runway before 04:30.

3. Although permitted under the existing restrictions there are no scheduled departures or arrivals of freight flights in the night quota period (23:30 to 06:00).

4. The launch of a Quiet Night Charter in October 2018 which includes a number of shared goals with airlines to reduce the number and impact of flights delayed into the night period.

3.2 Distribution of night flights

3.2.1 There are primarily two types of operation during the night period (23:00-07:00), those that are scheduled and those that are delayed. Aircraft are scheduled up until 23:05 at night, and from 04:45 in the morning.

3.2.2 Aircraft can be delayed over the course of a day and sometimes this can mean that they need to operate after 23:00 (described here as the recovery period). The large majority of these (over 80%) will typically operate at the start of the night period before the more restrictive night quota period begins at 23:30.

3.2.3 There are also occasions when aircraft encounter longer delays (late runners) and therefore seek to operate after 23:30 (described here restricted recovery period). Typically, these aircraft will operate before midnight and certainly before 01:00. There are only rare occasions when flights operate later.

3.2.4 There are a number of reasons why an aircraft could be delayed which might include for example an aircraft developing a technical problem, passengers or baggage being offloaded or delays picked up from the originating airport.

3.2.5 If late runners and dispensed flights were not permitted under any circumstance the only alternatives would be to divert arriving passengers to another airport or delay departing flights. This would cause inconvenience, for example, requiring overnight accommodation to be found for passengers or in some circumstances passengers having to wait for several days for another flight for some long-haul destinations.
3.2.6 There are therefore essentially five broad periods of activity through the night period:

1. 23:00-23:29 “RECOVERY” - this is the period when the airport schedule can recover from any delays that have built up over the course of the day. This period is not subject to movement or quota limit restrictions, as flights within this period do not fall into the Night Quota Period but it falls within the night period and is predominantly a period where no operations are scheduled;

2. 23:30-01:00 “RESTRICTED RECOVERY” - this is the period when the airport schedule is continuing to recover from any delays that have built up over the course of the day or any aircraft technical issues that could have occurred. Because this period falls into the night quota period there are restrictions on the type and number of aircraft that can operate in this time. This period will very rarely go beyond 01:00, and there is no guarantee that an aircraft will be permitted to operate, even if there is quota and movements still available.

3. 01:00-04:30 “EXCEPTIONAL CIRCUMSTANCES ONLY” – Typically for over 90% of the time, this period will not have any unscheduled night operations. On the occasions when flights do occur it is for very exceptional reasons, as defined in Appendix 3.

4. 04:30-06:00 “EARLY MORNING SCHEDULED OPERATIONS” – this is the beginning of the operational day when the first aircraft begin to arrive at Heathrow touching down on the runway after 04:30. There may be up to 20 aircraft scheduled to arrive during this period on any one day with an average of 15. This period still falls within the Night Quota Period (NQP), so the number and type of aircraft are tightly controlled, and the airport is responsible for ensuring that the limits are not exceeded.

5. 3.11.5 06:00-07:00 “FULL SCHEDULED OPERATIONS” – during this period the airport moves into a full schedule of arrival and departure operations. It is not within the night quota period, but the restrictions of the night period still apply as set out at 3.3.1.

3.2.7 Figure 2 shows the number of nights each year since 2010 on which there have been flights for the different periods of the night.
3.3 Recent trends

3.3.1 The combination of night restrictions and voluntary measures has had success in reducing night noise as demonstrated in Figure 3 below.

3.3.2 In the period since 2006 the number of flights operating outside of their scheduled time in the period between 23:00 and 04:30 has reduced by 25%. In addition, of those that have operated in that period 93% did so within the first hour of the night period (i.e. before midnight) in 2017 compared with 85% in 2006.

3.3.3 Since 2006 the noise contour areas have reduced by between 17% and 40% as Figure 3 shows. The population living within these areas has increased over the same period, but taking a static population based on 2006 the overall population exposed would also have reduced by between 12% and 33%.
### Figure 3 - Change in noise contours between 2006 and 2017

<table>
<thead>
<tr>
<th>Noise Level</th>
<th>Static Population Comparison 2006</th>
<th>Population Growth/Encroachment</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt;50dB L\textsubscript{Aeq}</td>
<td>-17%</td>
<td>8%</td>
</tr>
<tr>
<td>&gt;50dB L\textsubscript{Aeq}</td>
<td>-12%</td>
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</tr>
<tr>
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<td>11%</td>
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<td>14%</td>
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<td>&gt;48dB L\textsubscript{Aeq}</td>
<td>-33%</td>
<td>14%</td>
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</tbody>
</table>
4. FEEDBACK FROM CONSULTATION ONE & OTHER ENGAGEMENT

4.1.1 At our January 2018 consultation (Airport Expansion Consultation One), we explained that the Government had indicated in the draft Airports NPS that they expected Heathrow to implement a ban on scheduled night flights of 6.5 hours.

4.1.2 In our Consultation One materials we stated that our preferred timing of such a ban would be from 23:00 until 05:30 because we believed this would be fairer for all local communities as it gives a more equitable distribution of flights to those living under the departure routes as well as those living under the arrivals routes. We asked for views on the timing of the ban, and whether there were any other issues that we should consider.

4.1.3 We also indicated that we expected that the dispensation guidelines set by Government for Heathrow, Gatwick and Stansted would continue to apply. Given the importance of these guidelines this remains our position and we do not intend to propose any changes as this remains a matter for the Secretary of State to determine.

4.1.4 We asked:

Do you have any views on:

- Our preferred 6.5 hour night flight ban on scheduled flights period of 23:00 to 05:30
- We are also interested to hear views from stakeholders and local communities on whether there are any other measures we should consider in managing the adverse effects of night flights

4.1.5 A summary of the feedback received in relation to these questions at Consultation One is included at Appendix 4 to this report. Heathrow’s interim responses to these issues are also set out in Heathrow Expansion Consultation One - Interim Feedback Report Volume 2 which is also provided as part of this consultation.

4.1.6 In relation to the specific question of the timing and length of the ban, the range of response is summarised below. The content of this document addresses the substantive points raised. Other more specific points raised are dealt with in the Heathrow Expansion Consultation One - Interim Feedback Report.
4.2 **Local Authorities**

4.2.1 Local authority feedback was varied. Most supported the concept of a scheduled ban, but over half of the respondents stated that they thought that the ban should be longer than 6.5 hours. There was some variance on the preference on the timing of the ban – those that specified preference for the ban to be for 8 hours stated that it should be from 23:00 to 07:00. One Local Authority suggested that 23:30 to 06:00 as recommended by the Airports Commission would be better for avoiding sleep disturbance. Two authorities raised that the definition of a scheduled ban should be clearer.

4.3 **Parish Councils**

4.3.1 Two parish councils expressed that the ban should be for 8 hours from 23:00-07:00. One of these said that it should be a ban on scheduled and unscheduled aircrafts. One asked for a ban on departures by noisy aircraft.

4.4 **Heathrow Strategic Planning Group (HSPG)**

4.4.1 The HSPG expressed support for the Airports Commission recommendation that a ban is required for 6.5 hours per night between 23:30 and 06:00, with further management in the 23:00-07:00 period

4.5 **Members of the Public**

4.5.1 Many members of the public were supportive of there being a ban on scheduled night flights although some respondents didn’t think that a ban should be introduced. There were a variety of views about the timing of the ban and many people expressed a view that it should be longer than 6.5 hours (up to 8 hours). Some respondents wanted it to include all aircraft including unscheduled aircraft.

4.5.2 Some considered that Heathrow’s preferred night period ban (23:00 to 05:30) was adequate or suitable, that the timing of the ban would suit the working local community and people’s sleep patterns or that the proposals would reduce noise which would benefit local communities. Other respondents commented that 05:30 is too early for flights to resume.

4.5.3 Other comments suggested the night period ban would improve operational efficiency, be short enough that the airport remains competitive, benefit users of the airport and still allow early morning flights from overseas.
4.6 Community Groups

4.6.1 Community groups were generally supportive of a ban but expressed strong views that it should be more than 6.5 hours, and in many cases that it should be 8 hours from 23:00 to 07:00.

4.7 Airlines

4.7.1 Most of the airlines who responded expressed strong concerns about the economic impacts of a night flight ban, stating that it would force cancellations of flights or even routes affecting passengers and cargo. Airlines considered it essential that the economic damage and technical consequences of a night flight ban need to be considered. Some airlines said that they had identified alternatives that should be considered, and that Heathrow should continue to seek alternatives to a ban.

4.7.2 Some airlines stated that should Heathrow proceed with the scheduled night flight ban as proposed it should operate between 23:00 to 05:30 to minimise disruption and detriment to current operations at the airport and minimise the negative impact of an expanded Heathrow.

4.7.3 One airline (not currently operating at Heathrow) supported a night time ban between 23:30 and 06:00 as it would be in the interests of a greater number of passengers and would maximise utilisation of the aircraft.

4.7.4 The London Airline Consultative Committee (LACC) and the Board of Airline Representatives (BAR UK) said the airline community is not in agreement with a rigid night ban or the hours of 23:00 to 05:30 due to its economic damage and technical consequences. They stated that it would introduce operational and commercial risks as airlines are not able to move flights within the curfew period resulting in existing and potential markets being lost to Heathrow and the UK.

4.8 Businesses

4.8.1 One business response suggested that an impact assessment be undertaken to assess the effect on competitiveness of businesses and the freight sector that rely on late departures and/or early morning flights. One chamber of commerce and one other business considered the night time ban should be 23:00 to 05:30 as it would meet most people’s sleep requirements and the needs of business. However, another said they did not consider there was much difference banning aircraft between 05:30 and 07:00 but that the latter would be more acceptable to local communities. Another respondent suggested that the night flight ban should be gradually reduced.
4.9 **Engagement Feedback**

4.9.1 Ahead of this consultation, Heathrow sought to engage stakeholders and local residents, presenting information on the draft noise objective and the current and potential future runway operations. This engagement took place during October and November 2018 with focus groups of local residents and informed stakeholder workshops, including one with the Heathrow Strategic Planning Group (HSPG).

4.9.2 Overall there was a positive attitude to the news that the ban on scheduled night flights was to be extended to six and a half hours. Participants in all groups valued the night time as a period to be protected from noise if possible. There were certain queries raised:

1. From some members of the community groups workshop, calling for the ban to be extended to the full 8 hours of the night period;
2. From the HSPG members, asking whether the ban could start earlier than the proposed 23:00; and
3. From a small minority of residents who struggled with the distinction between scheduled flights and the reality, and wanted to see a more absolute ban, instead of a ban on scheduled flights.

4.9.3 While there was some surprise about the recovery periods there was an acceptance that there is a trade-off to be made between implementing a stricter ban and allowing for recovery from disruption. Residents wanted to understand more about how it was determined whether a flight could depart late, and some called for greater restrictions on the number and type of aircraft that were allowed to fly each night.

4.9.4 In both the resident focus groups and the HSPG workshop there were participants who were appreciative of the economic and convenience aspects of night flights and wanted to see in the consultation materials a discussion of these benefits. These included:

1. The convenience aspects of being able to get a flight when you need to.
2. Their own desire, and that of business travellers, to fly overnight, allowing one to sleep, before waking up in London and being able to have a whole day of activity.
3. The economic value of flights from the Far East and the West Coast of North America.

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6 *Noise Objective and Runway Operations – Report from Stakeholder and Community Engagement (Nov 2018 – Stonehaven)*
4.9.5 The Hounslow residents we engaged live closest to the airport. They expressed a concern that a more compressed arrival period in the early morning (resulting from moving the earliest scheduled arrival time by 45 minutes) would lead to more traffic to and from Heathrow at a time that was already busy. They also suggested that the business travellers arriving in the morning would rather arrive earlier to experience less traffic on their way into London.
5. **HOW NIGHT FLIGHTS MIGHT OPERATE IN THE FUTURE**

5.1.1 To manage noise from aircraft at Heathrow with expansion, we will need a package of mitigation measures. In relation to noise from aircraft at night, we need to consider how the different components of a night flight restrictions regime might fit together. Part of these measures will include a ban on scheduled night flights and we are also developing a package of other measures to incentivise the use of quieter aircraft at night outside the hours of the scheduled night flight ban.

5.2 **Legal and Policy Context - Airports NPS**

5.2.1 Our application for development consent for expansion, must, under the terms of s.104 of the Planning Act 2008 be decided in accordance with the Airports NPS. We have set out above in section 1 the requirements of the Airports NPS in respect of a ban on scheduled night flights.

5.2.2 In addition, as the Airports NPS recognises, the ban on scheduled night flights must comply with the Balanced Approach, set out below.

5.3 **Legal and policy context - Balanced Approach**

5.3.1 In this section we provide an overview of the policy and legal context in relation to establishing operating restrictions and set out our proposal for a noise objective and current thinking on a future night restrictions regime.

5.3.2 At Heathrow the UK Government is the competent authority responsible for setting the night restrictions. Section 78 of the Civil Aviation Act 1982 enables the Secretary of State to determine the night flight restrictions which have been a feature of Heathrow since the early 1990s.

5.3.3 The process undertaken to develop the night restrictions must be undertaken having regard to, among other things, the ICAO Balanced Approach and EU Regulation 598. These two documents are connected: the aim of EU Regulation 598 is to ensure that the ICAO Balanced Approach is adopted at airports within the European Union.

5.3.4 EU Regulation 598 requires the competent authority – in this case the Department for Transport (DfT) – to go through a process of assessment and evaluation before imposing any ‘operating restrictions’ (such as movement caps, quotas or limits on operating hours) at an airport for noise abatement reasons. We anticipate that our application for development consent will include proposed operating restrictions.
that will be considered by the Secretary of State as part of his determination of that application.

5.3.5 Whilst the DfT is the competent authority responsible for imposing operating restrictions at Heathrow, Heathrow Airport Limited is developing its proposals consistent with the requirements of EU Regulation 598 and is seeking the views of a range of stakeholders and balancing the benefits and adverse effects of any operating restrictions, including those relating to night flights. This is an on-going process.

5.3.6 An important step in developing our night restrictions is the development of a ‘noise abatement objective’ to help guide our decision making. This is also an integral part of the EU Regulation 598 process where setting the noise objective helps to inform the package of noise management measures to achieve the optimum outcome. The final noise objective is therefore important in settling any night restrictions.

5.4 **Our current proposal for a noise objective**

5.4.1 Having regard to existing noise policy and the Airports NPS, we have begun to develop a proposal for a draft noise objective, which will help guide the decisions that need to be made about night restrictions. Our current proposal is:

“To limit and, where possible, reduce the effects of noise on health and quality of life and deliver regular breaks from scheduled flights for our communities during the day and night. We need to do this whilst making sure the measures we put in place are proportionate and cost effective”

5.4.2 This proposal reflects the balance needed between enabling the benefits of night flights to be realised and seeking to reduce adverse health effects. This is consistent with current national policy and with historic night flight objectives established by successive Governments across previous restriction regimes. The proposed objective also reflects the support provided in the Airports NPS for respite during the day and night, including the need for a scheduled night flight ban.

5.4.3 More detail on the noise objective, EU598, and the process for developing a noise envelope which will include the night restrictions is set out in *Developing Our Approach to Noise Management*.

5.4.4 If you wish to comment on our proposal for a noise objective, please see question 1 in the questionnaire.
5.5 Developing a future regime

5.5.1 In developing our future night restrictions regime, we are interested in hearing your views on the following points in particular:

1. The start and end time of the scheduled night flights ban;

2. How we should handle early arrivals after the end of the scheduled night flights ban;

3. Incentivising quieter aircraft during those parts of the night period outside the scheduled night flights ban; and

4. Any other comments on the development of the proposed future runways operations including the night restrictions.
6. **THE LENGTH OF A BAN ON SCHEDULED NIGHT FLIGHTS**

6.1.1 Currently there is no ban on scheduled night flights in effect at Heathrow, Stansted or Gatwick Airport.

6.1.2 The Airports Commission in supporting the expansion of Heathrow concluded that a ban on scheduled night flights of 6.5 hours should be secured as one of the measures to manage noise effects. The Commission suggested that this should be between 23:30 and 06:00.

6.1.3 We accepted the Airports Commission recommendation of a 6.5 hour ban when we published our response to the Airports Commission’s package of recommendations in May 2016. However, we set out an alternative option in relation to the specific timing which we discuss below.

6.1.4 Subsequently the Government broadly supported that conclusion and in the Airports NPS states that:

"The Government also expects a ban on scheduled night flights for a period of six and a half hours, between the hours of 23:00 and 07:00, to be implemented".

6.1.5 In Consultation One we sought feedback about the length of the ban. Responses varied.

6.1.6 There are essentially three possible variants in relation to the length of a scheduled night flight ban as shown in Figure 4 below.

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**Figure 4 - The three possible variants in relation to the length of a scheduled night flight ban**

- **Scheduled Ban on Night Flights**
  - Less than 6.5 hours
  - 6.5 hours
  - More than 6.5 hours
6.1.7 Bans that are less than 6.5 hours offer greater operational flexibility and are economically more advantageous but do not comply with the Secretary of State expectation set out in the Airports NPS. Feedback from Consultation One told us that other than stakeholders from the aviation industry and business, there was little support for a shorter scheduled ban.

6.1.8 Significantly reducing the length of the scheduled ban would mean little material change for communities compared with today’s arrangements and therefore unlikely to be considered an appropriate balance in sharing the benefits of expansion.

6.1.9 On the other hand, although there was some support for a longer ban in the consultation feedback, bans of longer than 6.5 hours would have disadvantages operationally. This would increasingly impact on capacity, competitiveness and connectivity and, more widely, the economy.

6.1.10 Extending the ban beyond 6.5 hours would result in a significant retiming of flight times and in some instances, may result in the loss of routes. This would be unattractive not just for airlines, but for passengers too. Thus, extending the ban would provide less attractive flight times and / or the loss of routes undermining the economic and connectivity benefits. This is particularly the case if a longer ban were to encroach into the morning period which is important for the reasons we set out in Section 2.3.

6.1.11 On balance from the information and feedback we have had to date we believe our previously stated support for a 6.5 hour scheduled night flight ban strikes the right balance. We intend to carry out further assessment and consultation on our night noise proposals in order to assist the Secretary of State with the discharge of his duties under EU598 and would welcome any thoughts you have.
7. **THE START AND END TIME OF THE BAN ON SCHEDULED NIGHT FLIGHTS**

7.1.1 Feedback to our previous consultation included suggestions to begin the scheduled night flight ban prior to 23:00. A number of airlines were among those that responded in most detail on this issue, partly because an earlier start to the ban on scheduled night flights would also mean an earlier finish and many of these airlines and their passengers particularly value early morning flights.

7.1.2 Whilst in reality an individual’s “night” may begin earlier we do not think the ban can start before 23:00. This is because, in the UK, the night period is consistently defined by noise policy as the period between 23:00 and 07:00 and therefore given the expectation that the ban should relate to night time we do not consider a ban starting outside of this time would meet the expectations of the Airports NPS.

7.1.3 We also consider that the end of the ban should not be later than 06:00. This is because banning scheduled operations during the 06:00 to 07:00 period would have significant economic implications; would significantly impact on Heathrow’s ability to compete with other European hub airports; and crucially would not enable Heathrow to operate at least 740,000 movements, which is a clear Airports NPS requirement for expansion. Equally this time period is important for both arriving and departing passengers whether travelling for business or leisure.

7.1.4 In developing our thinking on the start and finish times for the ban on scheduled night flights there are some detailed issues to consider with which this consultation will assist.
8. **MANAGING EARLY MORNING ARRIVALS AFTER THE END OF THE BAN ON SCHEDULED NIGHT FLIGHTS**

8.1.1 Outside of the ban on scheduled night flights there will still be a period when scheduled aircraft will operate in the early morning hours which are still within the overall night period. We need to determine how aircraft should operate in this period with expansion.

8.1.2 With current operations, on average we have around 15 scheduled early morning arrivals (i.e. landing before 06:00) but this does fluctuate between days and across seasons. In the winter for example there are some mornings when up to around 20 aircraft arrive before 06:00.

8.1.3 How we operate early morning arrivals will have a bearing on how late we can start.

8.1.4 We have not sought to operate any more flights before 06:00 in the future than we do today. This is evidenced in our submissions to historic consultations undertaken by the Government over the past 20 years and in our statements in relation to expansion. This is an important assumption in considering how we manage future operations before 06:00 and with a ban on scheduled night flights in place.

8.1.5 However, we still need to maintain the same number of pre-06:00 arrivals as we currently have, but we will have to start our operation later than we do today to accommodate the proposed ban on scheduled night flights. This will mean we need to narrow the window within which these flights land.

8.1.6 To understand this better we have undertaken some preliminary work (summarised in *Appendix 5*) with subject matter experts based on the current pre-06:00 schedule.

8.1.7 We have assumed that the flights that currently land at Heathrow before 06:00 would be able to depart from their departure airport at different times to accommodate a later scheduled arrival at Heathrow. This is not always straightforward given the complex nature of the slot co-ordination between departure and arrival airports. We will continue to test this assumption as we prepare the final package of measures for consultation later this year.

8.1.8 The conclusion of our work to date has indicated that a single runway could routinely handle the pre-06:00 arrivals but this is dependent upon the time at which the ban ends. The likelihood of needing two runways increases as the end of the ban (and consequently the first landing time) moves closer towards 06:00.
8.1.9 The work so far has concluded that a single runway for arrivals with the first arrival having a runway time of 05:15 (scheduled time 05:30) could routinely handle the same volume of pre-06:00 arrivals as today. Two runways would facilitate those arrivals with the first arrival having a runway time of 05:30 (i.e. a scheduled time of 05:45).

8.1.10 In relation to the above, it should be noted that there are also occasions when the airport is operating in low visibility conditions, during which time it may not be possible to accommodate all the pre-06:00 arrivals on one runway. Low visibility procedures requiring 6 miles spacing would reduce capacity on one runway to approx. 18 arrivals (over the 45 minute period between 05:15 and 06:00) which may not meet requirements on some days. Using two runways would remove most of the uncertainty created by the need to use low visibility procedures.

8.1.11 As we continue to develop our thinking on the optimal timing of the scheduled night flight ban we are keen to consider views on whether we should assume one or two runways in operation before 06:00.

8.1.12 The advantage of splitting the arrivals over two runways is that the number of aircraft over each community would be less. The disadvantage is that more communities would be overflown at the same time by aircraft landing before 06:00 and communities would have fewer days of early morning respite through alternation.

8.1.13 On the other hand, by keeping the arrivals on one runway the advantage is that fewer communities would be overflown at any one time by aircraft landing before 06:00 and communities would have more days of early morning respite through alternation. However, there would be more aircraft on the nights that they were overflown and the overflight would start 15 minutes earlier. For more information on alternation please see Runway Operations – Respite through Alternation.

8.2 Consultation Questions

Please note the exact times are subject to further evaluation of the options.

4a. To help inform our consideration of the options, we want to know whether you would prefer for us to:

- Option 1 – Use one runway for scheduled arrivals from 5.30am (runway time 5.15am)
- Option 2 – Use two runways for scheduled arrivals from 5.45am (runway time 5.30am)

4b. Please tell us the reasons for your preference:
4c. Please provide any other comments or suggestions you might have on early morning arrivals:
9. MANAGING EXCEPTIONS TO THE BAN ON SCHEDULED NIGHT FLIGHTS

9.1.1 Whilst all interested parties, including local communities, passengers and airlines, want flights to operate to schedule, inevitably delays occur. When these delays result in flights operating in the night period there is a delicate balance to strike between the effects on local communities, passengers and the airline network.

9.1.2 During 2017 just over 3,200 flights operated after 23:00. Around 590 of these operated after 23:30 when the restrictive night quota period begins. The number of flights that can operate after the start of the night quota period is effectively limited by the fact that around 90% of the permitted quota count points and movements are allocated to scheduled early morning flights. To stay within the limits therefore there is no guarantee that a request to operate will be granted as the allocations need to be carefully managed across the whole season. As discussed above we refer to this as a “restricted recovery” period.

9.1.3 Recent community stakeholder feedback observed during our consultation material testing focus groups indicated that whilst there was some surprise about the existence of a restricted recovery period there was an acceptance that there is a trade-off to be made between implementing a stricter operational ban and allowing for recovery from delay and disruption.

9.1.4 Also, from the stakeholder feedback it was clear that local residents wanted to understand more about how the use of the recovery period was determined; in what circumstances a flight could depart late; and some called for greater restrictions on the time, number, and type of aircraft that were allowed to fly each night.

9.1.5 Whilst we expect the number of late running aircraft to reduce because of the increased resilience offered by an additional runway we also recognise that there will still be a need to allow some flights after the start of the scheduled ban period; for example, if the aircraft has developed a technical problem or there has been a security problem. We therefore anticipate operating a restricted recovery period after the start of the scheduled night flight ban.

9.1.6 In noting the feedback from first Airport Expansion Consultation and our focus groups we recognise the importance of striking the right balance between the needs of the different stakeholders.

9.1.7 In responding to this challenge, we will be preparing proposals for statutory consultation later this year in relation to how we intend to manage the “restricted recovery” period in the future. We acknowledge that it is important that we try to accommodate passengers by allowing flights to operate where we can, but we...
also want to develop measures that reduce the need for these flights and to ensure there is benefit for both passengers and residents alike.

9.1.8 As we prepare for our statutory consultation in June we will test a range of measures to manage the entire night period as well as specifically for the restricted recovery period.

9.1.9 For the restricted recovery period we envisage developing a modified form of the existing quota count system (described in Appendix 2). This would be modified so that the restricted recovery period is managed separately, in order to draw a clear distinction between the scheduled flights operating outside of the scheduled night flight ban period (e.g. in the early morning) and those permitted to operate within it (i.e. in the restrictive recovery period).

9.1.10 By taking this approach, we believe it provides clarity between the need and use of the distinct parts of the night period and will help secure a longer period in the night without regular flights compared with today. The type of measures employed within a defined restricted recovery period could for example include:

1. Limits on the type of aircraft allowed to operate in the restricted recovery period to ensure only the quieter category of aircraft can operate – for example only the quietest classification aircraft (known as Chapter 14 Aircraft);
2. Limiting the time frame within which flights can operate during the scheduled ban period; and
3. Restricting and regularly reviewing the total quota count that can operate in the restricted recovery period over the course of a season or year.

9.1.11 The restricted recovery period could be further managed by designating and alternating the runway or runways that can be used for recovery flights to provide predictable breaks for communities.

9.1.12 We have also set out in Appendix 3 the dispensation and exemptions regime applying to all airports. We do not propose that there should be any changes to this regime. Accordingly, the scheduled night flight ban would apply subject to the same Government rules regarding dispensed and exempted flights.

9.1.13 We would welcome further thoughts on how we manage the effects of aircraft that arrive or depart late and how it could be managed most effectively to balance the needs of all stakeholders.

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7 Aircraft noise (“noise at source”) has been controlled since the 1970s by the setting of noise limits for aircraft in the form Standards and Recommended Practices (SARPs) contained in Annex 16 to the Convention on International Civil Aviation (the “Chicago Convention”). Noise provisions appear in Volume I of Annex 16. In 2014 the ICAO Council adopted the new Chapter 14 noise standard for jet and propeller-driven aeroplanes.
10. **INCENTIVISING QUIETER AIRCRAFT DURING THOSE PARTS OF THE NIGHT PERIOD OUTSIDE OF THE BAN ON SCHEDULED NIGHT FLIGHTS**

10.1.1 As well as setting out an expectation of a 6.5 hour ban on scheduled night flights within the 8-hour night period the Airports NPS also states that:

“In addition, outside the hours of a ban, the Government expects the applicant to make particular efforts to incentivise the use of the quietest aircraft at night.”

10.1.2 We have set out above and in Appendix 2 today's night quota system and would support continuation of a future night quota system for expansion in order to incentivise quieter aircraft during those parts of the night period outside of the ban on scheduled night flights.

10.1.3 Further, currently a method used by the Government is to progressively reduce the amount of quota available in the night quota period as new technology has become available and been deployed. This has helped support and maintain the improvements seen in noise exposure levels. We would support the continuation of this type of approach.

10.1.4 We currently incentivise the use of “best in class” aircraft today by differentiating the landing charges applied to individual flights based on their certificated noise levels. As part of the package of measures we will use to manage future night flights we will be reviewing the structure of our landing charges and engaging with airlines to understand how best we could encourage and enhance the use of the quietest practicable fleet during the night.

10.1.5 There are other potential measures that we will explore over the coming months. These will include potentially limiting the type of aircraft that can be operated or scheduled to operate during the night period based on the certificated noise levels. This would give us an additional lever for flexibility to ensure that the aircraft that operate in the night period are the quietest/best in class aircraft.

10.1.6 In addition, our commitment to reduce adverse noise effects overall compared with 2013 and the development of a “noise envelope” will also act as a strong incentive towards quieter aircraft. The concept of a noise envelope will mean that to meet targets or stay within prescribed limits and grow sustainably new technology and operating procedures will be needed.

10.1.7 We would welcome views on how we could further incentivise the use of quieter aircraft.
10.2 Consultation Questions

Please note the exact times are subject to further evaluation of the options.

5a. Please provide any comments or suggestions on how we should encourage the use of the quietest type of aircraft at night (outside the proposed scheduled night flight ban):

5b. Please provide any other comments you have on night flights and restrictions:
11. **NEXT STEPS**

11.1.1 When selecting night noise mitigation measures and any controls imposed as part of the noise envelope, we must do this in accordance with the "Balanced Approach to Aircraft Noise Management". The goal of the Balanced Approach is to identify the noise-related measures that achieve maximum environmental benefit most cost-effectively, using objective and measurable criteria. As stated earlier the need to apply the Balanced Approach is a legal and policy requirement.

11.1.2 A key principle of the Balanced Approach is that non-restrictive measures which don't limit access to the airport (such as incentivising the use of quieter aircraft and requiring aircraft to use quieter operating measures) should be applied first, before any restrictive measures such as bans, or quotas are imposed.

11.1.3 The European Regulation which enforces the balanced approach in the UK also requires the Government to ensure that a cost-effective package of noise mitigation measures has been selected for the airport.

11.1.4 To assist the Secretary of State with this, we have developed a draft process for the selection of noise mitigation measures, part of which will involve conducting a cost effectiveness assessment of the relevant measures. For further details please see Developing our approach to noise management.

11.1.5 We will present our proposed package of measures including our noise envelope at the Airport Expansion Consultation in June. Between now and then, we will engage with key stakeholder groups to help test and refine our options.
APPENDIX 1 – DEFINITION OF THE NIGHT TIME PERIOD

INTRODUCTION

This Appendix summarises legislation, policies and guidance which set out definitions of night time in relation to aviation noise. These sources are used to define the appropriate night-time period for the assessment of night-time noise and for setting the noise objective for night-time operations.

DEFINITION OF THE NIGHT-TIME PERIOD

Aviation noise policy


The Airports National Policy Statement (Airports NPS) is the primary policy for noise for Heathrow expansion. It defines the basis for decision making and the noise objectives for the scheme. The policy refers to the 8 hour night-time period from 23:00 to 07:00 in relation to the expectation to implement the ban on scheduled night flights. In a footnote to paragraph 3.54 the policy document states that:

“11pm to 7am is the standard night period used in noise measurement, and is used in World Health Organisation guidelines and the Environmental Noise Directive”.

UK Airspace Policy (2017) and Consultation Response (2017)

The response on the UK Airspace Policy (AP) has been used to inform the assessment methodology for the effects of noise on health and quality of life. In particular, the policy defines the Lowest Observable Adverse Effect Levels (LOAELs) for aircraft noise during the day and night. The LOAEL for night-time is defined in the consultation response to be the LAeq,8h metric which is defined by night-time exposure from 23:00 – 07:00.

Night flight restrictions at Heathrow, Gatwick and Stansted; Decision Document (2017)

The current night flight restrictions at Heathrow that are defined by the Government are set out in this document. The night flight restrictions are based on different periods of the night, such as the Night Quota Period from 23:30 – 06:00. The glossary defines the overall Night Period as 23:00 – 07:00.

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8 The LOAEL is the level above which adverse effects on health can quality of life can be detected
The document also provides a summary of the responses received on the night flight restrictions consultation documents. For example, it states that many individuals and communities living around airports suggested various different times of the night between which there should be no flights, with a ban between 23:00 and 07:00 the most common suggestion.

*Aviation Policy Framework (March 2013)*

The Aviation Policy Framework (APF) sets the framework for noise management at UK Airports that applies, as amended by the Consultation Response on UK Airspace Policy, until Government publishes its Aviation Strategy (at this time understood to be early 2019).

In the context of monitoring the impact of night noise, the policy defines the night period to be the 8 hour period between 23:00 and 07:00.

*European legislation and guidance*

*Environmental Noise Directive (END) 2002/49/EC*

In 2002 the European Commission published Directive 2002/49/EC (the Environmental Noise Directive – END), establishing common environmental noise indicators for the European Union. The selected common noise indicators are $L_{den}$ to assess annoyance, and $L_{night}$ to assess sleep disturbance.

The END defines the night period as 8 hours in duration and between 23:00 and 07:00 as a default (though member states can choose the start of the day and consequently the start of the evening and night-period). In the UK the default period of 23:00 to 07:00 has been adopted for the purposes of the END.

*World Health Organization Environmental Noise Guidelines for the European Region (2018)*

The World Health Organization (WHO) has published several guidance documents relating to environmental noise, the most recent being the Environmental Noise Guidelines for the European Region. The guidelines provide recommendations for protecting human health from exposure to environmental noise originating from various sources.

The WHO provide guidelines for night-time aviation noise (and other noise sources) using the $L_{night}$ metric which they define, in reference to the END, as “measured over an eight-hour period during night time, usually between 23:00 and 07:00”.
CONCLUSIONS

This Appendix identifies legislation, policies and guidance which set out the definition of night time in relation to aviation noise.

The sources referred to show that the UK Government has consistently and historically classified the aviation night-time as referring to operations that occur during the 8 hour period from 23:00 to 07:00. This is the “default” period presented in the Environmental Noise Directive and is consistent with night-time reference periods defined by the WHO.

It is therefore concluded that the appropriate definition of the night-time period for the assessment of night-time noise and for setting the noise objective for night-time operations is the 8 hour period from 23:00 to 07:00.
Currently at Heathrow there are a combination of mandatory and voluntary measures that are applied to control noise from aircraft operations during the night period.

**MANDATORY MEASURES**

The mandatory measures are all set out in a 'quota count' system which applies to the major London airports (Heathrow, Gatwick and Stansted). The quota system is imposed by the Secretary of State\(^9\). The current quota system is set out in the “Night flight restrictions at Heathrow, Gatwick and Stansted – Decision Document” published in July 2017. The basic structure of the current night flying restrictions at Heathrow (and Gatwick and Stansted) has been in place since 1993 and is amongst the most stringent in the world.

The quota count system seeks to prevent the noisiest aircraft from being operated during the night period, control the overall numbers of aircraft being operated during the night quota period and incentivise the use of quieter aircraft.

The night period is defined as the period from 23:00 to 07:00. The paper at Appendix 1 explains why this is the case. An aircraft is deemed to have operated in the night period, if the time recorded for that aircraft by the air traffic control unit as ‘airborne’ or ‘landed’, respectively falls within that period, irrespective of its scheduled departure or arrival time.

**Prohibiting the noisiest aircraft**

The quota system classifies all aircraft according to noise criteria. Each aircraft is given a noise classification which is the noise level band in EPNdB, for take-off or landing, as the case may be, for the aircraft in question. The noise classification is referred to as a quota count value. Figure 5 sets out the different quota counts for the different noise level bands.

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Figure 5 - Quota counts for the different noise level bands

<table>
<thead>
<tr>
<th>Noise Classification</th>
<th>Quota Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Below 81</td>
<td>0</td>
</tr>
<tr>
<td>81 – 83.9</td>
<td>0.125</td>
</tr>
<tr>
<td>84 – 86.9</td>
<td>0.25</td>
</tr>
<tr>
<td>87 – 89.9</td>
<td>0.5</td>
</tr>
<tr>
<td>90 – 92.9</td>
<td>1</td>
</tr>
<tr>
<td>93 – 95.9</td>
<td>2</td>
</tr>
<tr>
<td>96 – 98.9</td>
<td>4</td>
</tr>
<tr>
<td>99 – 101.9</td>
<td>8</td>
</tr>
<tr>
<td>Greater than 101.9</td>
<td>16</td>
</tr>
</tbody>
</table>

Individual aircraft will have their own quota count value since it is based on their specific noise classification which can vary not only by aircraft type but also its certificated weight and engine configuration. It will also vary for departure and arrival.

Below is Figure 6 with some examples of common aircraft types and their quota count values.

Figure 6 - Common aircraft types and their quota count values

<table>
<thead>
<tr>
<th>Quota count</th>
<th>Arrival examples</th>
<th>Departures examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Embraer 195</td>
<td>Gulfstream 4</td>
</tr>
<tr>
<td>0.125</td>
<td>A320 NEO</td>
<td>A320 NEO</td>
</tr>
<tr>
<td>0.25</td>
<td>A320, A319, B789</td>
<td>A320</td>
</tr>
<tr>
<td>0.5</td>
<td>A320, B739, B77, A330, A380</td>
<td>A320, B738, B787, A359</td>
</tr>
<tr>
<td>1</td>
<td>B777, B767</td>
<td>A320, B738, B777, B788</td>
</tr>
<tr>
<td>2</td>
<td>B744</td>
<td>A330, A340, A380, B767</td>
</tr>
<tr>
<td>4</td>
<td>B743</td>
<td>B744, B777</td>
</tr>
<tr>
<td>8</td>
<td>B741, B707</td>
<td>B743</td>
</tr>
<tr>
<td>16</td>
<td>N/A</td>
<td>Concorde, B741, B743</td>
</tr>
</tbody>
</table>

The first restriction imposed by the quota count system is that no aircraft with a quota count value of 8 or 16 may take off or land during the night period. This prevents the noisiest aircraft altogether.
Limiting the number of flights and encouraging quieter aircraft

Next, in relation to quieter aircraft, the numbers of the aircraft that can operate at night are controlled by the use of a movement limit (number of flights). Movement limits are set for a winter period and a summer period. Presently, the movement limit at Heathrow for the period of 23:30 to 06:00 (the night quota period) is 2,550 in the winter and 3,250 in the summer.

However, in addition to the movement limit, there is a noise quota limit. The quota count value for each aircraft (as described above) landing in the night quota period is tallied and may not exceed the quota count limit. Presently the quota count limit at Heathrow is 2,415 in the winter and 2,735 in the summer.

This means that although Heathrow could have 2,550 aircraft movements in the night quota period over the winter, the actual number will vary as a consequence of the specific aircraft operating those movements. Based on the current quota count limits the average quota count value of the aircraft would have to be less than 1 to achieve those 2,550 movements. Where aircraft with a higher quota count value are used, then the actual number of movements permitted in the night quota period would be less, for example, if only aircraft with a quota count value of 2 were operated, only 1,207 movements would be permitted in the winter period.

In this way, the quota count system is engineered to encourage the use of only the very quietest aircraft in the night quota period but, in any event, subject to a total limit of the number of aircraft movements.

In the night quota period, no aircraft with a quota count of 4 may be scheduled to land or take off, although such aircraft may take-off or land outside their scheduled times. Aircraft with a lower quota count may be scheduled in the night quota period.

Limits on the total quota count and movements permitted in a season (summer or winter and based around the annual clock changes) are set by the Department for Transport (DfT) typically every five years. The movement numbers permitted at Heathrow have remained constant since the start of the regime, but the quota limits have progressively reduced to reflect and secure the improvement in aircraft noise levels.

If the quota or movement total for a season is under the limit, the amount equivalent to the shortfall may be “carried over” to the following season, up to a maximum of 10% of the limit. This is regularly used at Heathrow to balance the differences between the summer and winter seasons (i.e. carrying over up to 10% from summer to winter). Shortfalls cannot be accumulated over several seasons.
On the other hand, if the quota or movement limits are exceeded in a season then the equivalent of the overrun is deducted from the following season\textsuperscript{10}.

Compliance with all the rules of the night flying restrictions is closely monitored by the DfT and Heathrow are required to regularly report on all aspects of the regime.

**Using the quota**

Heathrow takes its seasonal movement limit and quota count limit and allocates approximately 90\% of them to scheduled operations. Each airline operating flights within the night quota period is notionally allocated an appropriate amount of the movement and quota count limits to allow it to operate the scheduled operations.

In anticipation of occasions when aircraft are running late, not all the quota and movement allowance for a season is allocated to scheduled operations. Around 10\% is held in a “pool” to reflect the need for a restrictive recovery period at the start of the night quota period. Details of this are set out below.

**Exemptions and dispensations**

There are exemptions and dispensations that apply to the quota count system. These exemptions and dispensations are disregarded for the purposes of calculating the number of movements within a season and the quota count total for that season.

**Exemptions**

Light propeller-driven aircraft with a maximum certificated take-off weight not exceeding 8,618 kg, and which are being utilised to undertake essential airport safety checks are exempt from all aspects of the quota count system.

**Dispensations**

In addition to the minor exemption set out above, a series of dispensations are set out for aircraft operating in certain circumstances\textsuperscript{11}. Where a dispensation applies the aircraft movement is not counted for the purposes of that season’s movement limit or that season’s quota count limit.

The following circumstances are specified in relation to the taking off and landing of aircraft at the London airports (Heathrow, Gatwick and Stansted):

a. Emergencies, where there is an immediate danger to life or health, whether human or animal;

\textsuperscript{10} Up to 10\% of the limit for the exceeding season, and, if in excess of 10\% then the deduction from the following season is doubled. This has never happened at Heathrow. The overrun cannot exceed 20\%.

\textsuperscript{11} Set out in NOTAM made under s.78(4)(a) of Civil Aviation Act 1982.
b. Widespread and prolonged air traffic disruption; and

c. Delays as a result of disruption leading to serious hardship and congestion at the airfield or terminal.

The DfT has produced Guidance as to how these dispensations should be interpreted. This can be found in Annex B: Revised guidance on dispensations set out in the document “Night Flying Restrictions at Heathrow, Gatwick and Stansted” (see Appendix 3).

In addition to the above dispensation, specific dispensations can be specified by the Secretary of State for particular operations (i.e. a specific flight by a specific aircraft) or occasions. These might include flights by Heads of State or similar dignitaries on official business.

Dispensed flights (see Appendix 3) flights account for a small proportion of flights at night overall but represent most of the flights currently operated at Heathrow after 01:00. These will typically account for less than 1% of flights in the night period and 5% of all movements in the night quota period.

**Heathrow’s voluntary restrictions**

Heathrow has for many years developed and adopted voluntary restrictions on operations during the night period in addition to the mandatory restrictions set out above.

**Restrictions on Scheduled Movements**

Heathrow does not have any scheduled passenger departures after 22:50 or before 06:00 and no scheduled passenger arrivals after 23:05 or before 04:45. This creates a voluntary period of no scheduled operations period from 23:05 to 04:45.

Further, Heathrow has a voluntary arrangement with relevant airlines that aircraft scheduled to arrive after 04:45 will not land on the runway before 04:30.

In addition, Heathrow does not have any scheduled departures or arrivals of freight flights in the night quota period (23:30 to 06:00).

The scheduled movements that operate at Heathrow in the night quota period between 23:30 and 06:00, are all early morning arrivals and these typically account for over 90% of all night quota period movements. The majority are scheduled to arrive after 05:00. They are mainly long-haul passenger services, with over 70% originating from Asia and the Middle East as can be seen from Summer Schedule (Figure 7) and Winter Schedule (Figure 8) shown below.
Restrictions on movements outside their schedule

As set out above, in anticipation of occasions when aircraft are running late, not all the quota and movement allowance for a season is allocated to scheduled operations. Around 10% is held in a “pool” to reflect the need for a restrictive recovery period at the start of the night quota period.

Any aircraft wishing to operate in the night quota period outside that aircraft’s scheduled time will need to request permission to do so from Heathrow. Such an operation would ‘use up’ some of the 10% allocation held in the pool. Whether Heathrow permits that aircraft to have some of the pool allocation depends on the following factors:

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1. The operating airline’s history of requests in that particular season – i.e. has it already had a lot of the ‘pool’ quota?

2. The particular circumstances of the delay; and

3. How much of that season’s ‘pool’ quota remains.

Heathrow tracks ‘consumption’ of the ‘pool’ quota to ensure that the limits are not exceeded across the season and that its use is spread across the season.

Heathrow can and does refuse requests from aircraft to use the pool quota and movement limits. In such cases the aircraft either do not operate or are re-routed elsewhere.

Whilst all interested parties, including local communities, passengers and airlines, want flights to operate to schedule, inevitably delays occur. When these delays result in unscheduled night flights there is a delicate balance to strike between the effects on local communities, passengers and the airline network.

Accordingly, Heathrow presently operates the night quota regime to seek to protect as much of the middle of the night period as possible; only accommodation operations at the beginning or very end of the night period. Heathrow voluntarily structures the 8-hour night period divides into the following 5 broad periods of activity:

1. **23:00-23:29 “RECOVERY”** - this is the period when the airport schedule can recover from any delays that have built up over the course of the day. This period is not subject to movement or quota limit restrictions, as flights within this period do not fall into the Night Quota Period but it falls within the night period and is predominantly a period where no operations are scheduled;

2. **23:30-01:00 “RESTRICTED RECOVERY”** - this is the period when the airport schedule is continuing to recover from any delays that have built up over the course of the day or any aircraft technical issues that could have occurred. Because this period falls into the night quota period there are restrictions on the type and number of aircraft that can operate in this time. This period will very rarely go beyond 01:00, and there is no guarantee that an aircraft will be permitted to operate, even if there is quota and movements still available.

3. **01:00 – 04:30 “EXCEPTIONAL CIRCUMSTANCES ONLY”** – Because of a voluntary arrangement with airlines to avoid allowing flights after 01:00 for over 90% of the time, this period will not have any unscheduled night operations. On the occasions when flights do occur it is for very exceptional reasons, as defined in Appendix 3 (Exemptions & Dispensations)

4. **04:30 -06:00 “EARLY MORNING SCHEDULED OPERATIONS”** – this is the beginning of the operational day when the first aircraft begin to arrive at Heathrow landing on the runway after 04:30. This period still falls within the Night Quota Period (NQP), so the number and type of aircraft are tightly...
controlled and the airport is responsible for ensuring that the limits are not exceeded.

5. 06:00-07:00 “FULL SCHEDULE OPERATIONS” – during this period the airport moves into a full schedule of arrival and departure operations. It is not within the night quota period.

An overview of the night flight arrangements currently in place at Heathrow is provided in Figure 9 below.

**Figure 9 - Existing restrictions on night flights**

**Nature of Movements outside their Schedule Today**

Movements that operate between 23:30 and 06:00 (outside of their schedule time) are late-running aircraft, primarily departures, which operate during the first part of the night quota period (generally prior to midnight), in the Restricted Recovery period.

In line with Government guidance, dispensed flights will also account for a small proportion of flights at night overall but will represent most of the flights that occur after 01:00.
APPENDIX 3 – DISPENSATION GUIDANCE

Night Flying Restrictions at Heathrow, Gatwick and Stansted (Department for Transport - July 2014)

Annex B: Revised guidance on dispensations

This guidance updates the guidance provided in 1999. The purpose is to provide greater clarity and reflect recent practice. Whilst the guidance is not intended to cover every conceivable situation which might arise, it does cover situations which have arisen over the past years.

Department for Transport Guidelines on Flights Which May Be Given Dispensation from the Night Restrictions

Under Section 78(5)(f) of the Civil Aviation Act 1982, the Secretary of State may by a notice given in the prescribed manner to the person managing an aerodrome determine that a particular occasion or series of occasions on which aircraft take off or land at the aerodrome shall be disregarded from the restrictions made under section 78(3). These may include night flight restrictions.

In addition, the Secretary of State has the power under Section 78 (4) of the Civil Aviation Act 1982 to specify in a notice circumstances in which movements may be disregarded by the airport managers or a person authorised by the airport manager from the restrictions made under Section 78(3). That person shall then determine whether a particular occasion or series of occasions on which aircraft take off or land at the aerodrome should be disregarded from the night restrictions due to these circumstances. It shall be the duty of the person managing the aerodrome or the person authorised by an airport manager to notify the Secretary of State in writing within one week of every such occasion occurring.

A: Section 78(5)(f) Dispensations under a notice given by the Secretary of State

As a general principle, dispensations issued under Section 78(5)(f) are used in relation to state matters, where dispensations are required as a result of a Government decision, or where the circumstances are so exceptional that the airport’s operations become an issue of national interest (e.g. in the case of prolonged closure of the airport).

1. Flights involving VIPs

Flights would include:

- Senior members of the Royal Family;
- UK Government ministers and Service Chiefs of Staff;
• Senior members of foreign Royal Families, Heads of State, and senior ministers or Service Chiefs of Staff on an official visit or business where the person is being met by a Government representative; (status to be checked with the FCO or MoD when in doubt); but repositioning flights preceding or following the use of that aircraft for carriage of a VIP will not be disregarded and therefore not allowed if the aircraft is classified as QC/8, QC/16, consistent with the ban on these types of aircraft in the night period.

For the avoidance of doubt, VIPs for this purpose would not include businessmen on private jets, or ‘celebrities’ from the world of show business or sport.

2. Relief Flights
These would include flights carrying cargoes such as medical supplies required urgently for the relief of suffering during a period of emergency, as for example, during a refugee crisis or following an earthquake. They would exclude medical or other supplies intended for humanitarian purposes where there is no particular urgency. It would also not include the carriage of the media and their associated equipment to trouble spots.

3. Military Aircraft War/Hostilities
Movements by military aircraft should not take place at night in peacetime unless the aircraft has been classified for night operation or special approval has been given by the Department for Transport in exceptional circumstances such as security from escalated threats. Dispensations have been given in the past for troop movements through Heathrow where there has been an outbreak of war or similar hostilities and this requires contingency arrangements. Dispensations would not be appropriate once airlines have had time to assess the situation and make alternative arrangements.

4. Exceptional Circumstances
In the past the Secretary of State has provided dispensations in exceptional circumstances to enable flights during the night quota period and to allow aerodromes to recover from prolonged disruption. Examples include the periods following the Volcanic Ash Crisis in 2010 and following the severe prolonged winter weather in December 2010. Dispensations will be considered in similar exceptional circumstances.

5. Changes to Airspace arrangements as a result of Government Decisions
Where there is a temporary change in airspace as a result of Government decisions with consequences for airline schedules, dispensations would be granted so as to protect airports/airlines from financial consequences of matters wholly beyond their control. Past examples have included a flypast for the Queen’s Jubilee Celebrations and Olympic Celebrations where scheduled flights due to land or depart during the day were pushed into the night quota period.
B: Section 78 (4) – Dispensations under a notice granted by the Airport Manager or a person authorised by him:

As a general principle, dispensations issued under Section 78(4) should be used when they relate to operational matters affecting a small number of flights and the airport manager is better placed to take the decision.

1. Emergencies

Flights involving emergencies (other than those constituting “relief flights” as described in paragraph 2 of Section A above) where there is an immediate danger to life or health, whether human or animal.

2. Widespread and Prolonged Air Traffic Disruption

Disruption to air traffic is intended to cover disruption affecting air traffic flow such as strikes by Air Traffic Controllers or from political difficulties abroad or ATC computer problems. It would also cover disruptions to air traffic from strong winds, snow and ice and fog resulting in low visibility procedures. Unscheduled landings in the night period arising from diversions from other airports due to weather conditions provided an aircraft had taken off unaware that its intended destination was unavailable would also be covered. Problems arising from snow and ice should not in themselves constitute sufficient reason for dispensations, especially for departures, when the likelihood of adverse weather conditions should be taken into account in operations planning (but see Government exemption because of exceptionally severe weather above).

3. Delays as a Result of Disruption leading to Serious Hardship and Congestion at the Airfield or Terminal

Delays would cover disruption to air traffic as set out under (2) above. It would also cover emergencies such as the fire to an aircraft on the ground at Heathrow in July 2013, which led to severe terminal disruption or disruption caused by any hijacking activity. It would not cover strikes by baggage handlers which is within the control of the airport or normally delays arising from additional security checks which should be taken into account when planning operations. Disruptions are not abnormal, and we believe that adequate provision should be made within the airport’s night restrictions and operational measures such as at Heathrow under Tactically Enhanced Arrivals Measures to help mitigate disruption and facilitate recovery and the need for dispensations. Operational difficulties cannot be predicted precisely but experience indicates they can be expected to occur.

Airport managers must use their own judgement as to what constitutes serious hardship or suffering for the purposes of the above. Serious hardship or suffering is intended to cover cases where passengers are subjected to long delays when the terminal buildings are overcrowded, and their facilities strained and insufficient hotel accommodation is available. Only the minimum number of flights required to reduce overcrowding to a tolerable level should be disregarded. Mere inconvenience to passengers does not constitute hardship.
for these purposes. The same considerations should apply if serious hardship at an originating airport is to be a reason for disregarding a landing. Delayed cargo flights (other than those carrying animals and meeting one of the criteria above) and extra night shuttle flights to meet demand may not be disregarded for reasons of serious hardship and congestion and all such movements must count against the movements limit and the noise quota according to their QC classification. Dispensations would not be appropriate when aircraft operators have reasonable time to rearrange their schedules and accordingly would fall outside the scope of these Section 78(4) dispensations. All dispensations in times of air traffic disruption (whether ATC, political crisis, weather related etc.) are NET; i.e. any movements scheduled for the night period, but which do not occur (or occur in the daytime) because of that disruption, must be offset against this, with only the excess counting as dispensations from the movements limits and the noise quotas.

To Note:

Monitoring
All dispensations granted by the airport will be subject to monitoring.

Testing and Calibration of Instrument Landing Systems
Airborne safety calibration checks of the Instrument Landing Systems (ILS) used by arriving aircraft at the three London airports are carried out on behalf of the Civil Aviation Authority usually twice a year and generally at night. Normally the aircraft used for this purpose are exempt from the night restrictions (i.e. they are classified QC/0). However, any landings and take offs for the purpose of testing the ILS or other navigation equipment, by aircraft classified QC/0.5 or above, are not given dispensations and would count against the movement limits and noise quotas. Such flights should fall outside the scope of this suggested dispensation.

Department for Transport
July 2014
## APPENDIX 4 – AIRPORT EXPANSION CONSULTATION ONE FEEDBACK

<table>
<thead>
<tr>
<th>Issue</th>
<th>Summary of comments</th>
<th>Response</th>
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<tbody>
<tr>
<td>Supportive of a ban of 6.5 hours</td>
<td>A number of local authority, community and residents groups supported the proposed 6.5 hour ban between 23:00 and 05:30</td>
<td>Night flights were an important topic during Airport Expansion Consultation One and generated a variety of responses. On balance from the information and feedback we have had to date we believe our previously stated support for a 6.5 hour ban on scheduled night flights strikes the right balance. We intend to carry out further assessment and consultation on our night restrictions proposals. We have provided further information on our consideration of our approach to night flights in this current consultation, including how consultation one feedback has been taken on board. Please see the Airspace and Future Operations Consultation Document and Section 6 of this document for detailed discussion on these issues.</td>
</tr>
<tr>
<td>Oppose a ban on scheduled night flights</td>
<td>Most responses from the Airline Community state that they do not support a rigid night time ban or a ban between the hours of 23:00 to 05:30 due to its economic damage and technical consequences. They stated that it would introduce operational and commercial risks as airlines are not able to move flights within the curfew period resulting in existing and potential markets being lost to Heathrow and the UK.</td>
<td>The Airports NPS sets out a clear expectation for a ban on scheduled night flights. Therefore, it is to be expected that there will be a ban, but we are actively consulting to develop the rules for that ban. As we set out in this document, complying with the principles of the Balanced Approach when selecting our future proposals for night flights is a legal requirement and a requirement of the Airports NPS. Those legal requirements include an assessment of the ‘cost effectiveness’ of our proposals, including an assessment of the health impacts and the impact on capacity and the economy. This process is explained further in the information paper Our Approach to Noise Management.</td>
</tr>
<tr>
<td>Support ban but it should be longer than 6.5 hours</td>
<td>Several Local Authorities and other respondents such as community groups stated that the ban should be longer than 6.5 hours. Many stated that it should be 8 hours, some referenced the Transport Select Committee proposals for a minimum average period of 7 hours of respite a night. Those that said that it should</td>
<td>Generally, respondents welcomed the concept of periods at night with no overflight, but some expressed that 6.5 hours was not long enough, and others went as far as to say that less than 8 hours would not provide people with the amount of sleep required for good health. Other stakeholders such as airlines and businesses were concerned at the impact on flights from long haul destinations if a ban were imposed, and suggested alternatives should be considered.</td>
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<td>Issue</td>
<td>Summary of comments</td>
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<td>be an 8 hour ban said that it should be from 11pm to 7am</td>
<td>On balance from the information and feedback we have had to date we believe our previously stated support for a 6.5 hour ban on scheduled night flights strikes the right balance. We intend to carry out further assessment and consultation on our night restrictions proposals ensure that the ban duration and timing is optimised to meet the requirements of the Airports NPS and in accordance with the Balanced Approach. We have provided more information this in our “Night Flights” document that is part of this consultation. Complying with the principles of the International Civil Aviation Organization (ICAO) Balanced Approach when selecting our future proposals for night flights is a legal requirement and a requirement of the Airports NPS. Those legal requirements include an assessment of the ‘cost effectiveness’ of our proposals, including an assessment of the health impacts and the impact on capacity and the economy. This process is explained further in the information paper Developing our approach to noise management. We explain in this document that we consider that the end of the ban should not be later than 06:00. This is because banning scheduled operations during the 06:00-07:00 period would have significant economic implications; would significantly impact on Heathrow’s ability to compete with other European hub airports; and crucially would not enable Heathrow to operate at least 740,000 movements, which is a clear Airports NPS requirement for expansion. Equally this time period is important for both arriving and departing passengers whether travelling for business or leisure. We also explain in this document that we have assumed that the flights that currently land at Heathrow before 06:00 would be able to depart from their departure airport at different times to accommodate a later scheduled arrival at Heathrow. This is not always straightforward given the complex nature of the slot co-ordination between departure and arrival airports. We will continue to test this assumption as we prepare the final package of measures for consultation later this year.</td>
<td></td>
</tr>
<tr>
<td>Support a ban but it should be for all flights</td>
<td>Several organisations raised the difference between a full ban (no flights at night) and a ban on scheduled flights</td>
<td>In this document we have clearly set out the differences between scheduled and unscheduled flights in, and we have discussed how the periods after the start of the ban (at night) and after end of the ban (in the early morning)</td>
</tr>
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### Concerns about the health effects of night flights

The main concerns from members of the public regarding night flights and the proposed night flight ban were that noise disturbs sleep for adults and children, early morning and late-night flights interrupt sleep, night time noise impacts quality of life, health and well-being and that noise impacts local people and communities.

Some local authorities thought that these potential health effects were essential considerations in the timing of the ban on scheduled night flights.

#### Summary of comments

(Which would allow some flights at night) and thought that this should be clearer. One residents association said that they had understood that the Airports Commission had recommended a full ban. Some stated that they felt it should be a ban on all flights and not just scheduled flights, and some said that there were too many night flights today. Some local authorities said we needed to be clearer about the difference between scheduled and unscheduled flights.

#### Response

We note this feedback and recognise that sleep disturbance is an important potential effect on health and in this current consultation we set out the progress in our thinking about a scheduled ban on night flights.

In our statutory Airport Expansion consultation planned for June 2019 we will go further and include draft assessments of the likely significant effects of our proposals on noise on health and quality of life. A scoping report for the EIA and health impact assessment (HIA) for the project was submitted in June 2018 and can be viewed at [https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/TR020003/TR020003-000451-HTHR%20-%20Scoping%20Opinion.pdf](https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/TR020003/TR020003-000451-HTHR%20-%20Scoping%20Opinion.pdf)

This Scoping Report explains how we will undertake our assessment of noise impacts.

The HIA reported in the Environmental Statement (ES) will identify and assess the positive and negative health effects of the scheme, reporting on likely significant health effects and the measures taken by the DCO project to enhance positive health effects and reduce negative health effects.

In terms of noise effects on health, the ES will report on a range of health and quality of life outcomes including annoyance, sleep disturbance, cardiovascular outcomes, and children’s learning. WebTAG analysis will also be used, as per policy requirements, to assess the health effects of the project.

The effects of the project on a range of noise sources (including aircraft, road traffic, railway, construction, aircraft-
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<td>ground noise, and combined noise) on these health outcomes will be assessed using the most up-to-date robust evidence for each health and quality of life outcome. The Lowest Observed Adverse Effect Level (LOAEL) and Significant Observed Adverse Effect Level (SOAEL) values for the assessments are set out in the Scoping Report, informed by policy, standards, empirical evidence and guidelines. Our consultation in June 2019 will set out the preliminary findings of these assessments. The World Health Organisation (WHO) have recently (October 2018) published the Environmental Noise Guidelines for the European region and values will be taken into account in the assessment as relevant either in terms of setting screening values or by way of sensitivity tests against the assessment methodology set out in the Scoping Report. However, the WHO Guidelines do not take precedence over UK policy requirements for the assessment.</td>
<td></td>
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<tr>
<td>5:30am start is too early</td>
<td>A number of local authority, community and residents groups said 5.30am is too early for flights to resume</td>
<td>On balance from the information and feedback we have had to date we believe our previously stated support for a 6.5 hour ban on scheduled night flights strikes the right balance. We intend to carry out further assessment and consultation on our night restrictions proposals ensure that the ban duration and timing is optimised. We are seeking views in this consultation about some aspects of the start time and are continuing to assess the right options for start and finish times.</td>
</tr>
<tr>
<td>Heathrow should listen to residents</td>
<td>Heathrow must listen to residents affected by night flights and fully consider their needs to achieve a compromise on the timing</td>
<td>We have noted this feedback and are committed to engaging with local residents. After this current consultation, we will have regard to the feedback while continuing to develop our detailed proposals in consultation with key stakeholders and local communities, and in the Airport Expansion Consultation planned for June 2019 we will present our updated proposals. Details of how we will continue to develop these proposals is available in the information paper Developing our approach to noise management.</td>
</tr>
<tr>
<td>Incentivising quiet aircraft</td>
<td>One local authority suggested that outside of the hours of the ban Heathrow should incentivise the use of the quietest aircraft and that this</td>
<td>We are continuing to consult on the scheduled ban on night flights in this consultation. In this document we set out proposals for incentivising the use of quieter aircraft outside the hours of the ban we</td>
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<tr>
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<td><strong>The ban will lead to more flights at night</strong></td>
<td>The Mayor of London stated that the proposed night flight ban between 11pm and 5.30am will lead to more flights scheduled in the current night quota period. He commented that without any restrictions on the intensive use of all three runways after 5.30am, the proposals could result in three times the number of scheduled night flights (11pm-7am) compared to today.</td>
<td>We note this feedback. In our Heathrow’s Airspace and Future Operations Consultation Document we set out our proposals for a noise objective at Heathrow for the Secretary of State to consider. This sets includes the phrase “limit and, where possible, reduce the effects of noise on health and quality of life” For an expanded Heathrow, this means that we will meet our previous committed goal to ensure that the overall noise impact will be limited to not exceed 2013 levels, which is the baseline set by the Airports NPS. This part of the objective also means that as aircraft and navigational technology improves, we will seek to reduce these effects. This includes the effects associated with night flights. In this document we set out that we have not sought to operate any more flights before 06:00 in the future than we do today. This is evidenced in our submissions to historic consultations undertaken by the Government over the past 20 years and in our statements in relation to expansion. This is an important assumption in considering how we manage future operations before 06:00 and with a ban on scheduled night flights in place. On balance from the information and feedback we have had to date we believe our previously stated support for a 6.5 hour ban on scheduled night flights strikes the right balance. We intend to carry out further assessment and consultation on our night restrictions proposals ensure that the ban duration and timing is optimised.</td>
</tr>
<tr>
<td><strong>Wildlife</strong></td>
<td>A night time ban needs to take into consideration the potential impact of the airport’s activities on its residents and wildlife and further consideration should be given to natural considerations such as birdsong.</td>
<td>This response has been noted and will be considered as we develop our proposals for statutory Airport Expansion consultation planned for June 2019.</td>
</tr>
<tr>
<td><strong>Stacking</strong></td>
<td>Concerns were also raised over stacking prior to landing</td>
<td>The plan to modernise the UK’s airspace involves using technology to remove the need for stacking in normal...</td>
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### Issue  
### Summary of comments  
### Response

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<tr>
<td>Early Growth</td>
<td>Comments were received that raising the ATM cap prior to the third runway opening should increase passenger volumes, reduce charges and allow new entrants and incumbents to apply for slots. However, they considered that this does not accord with the ICAO Balanced Approach and achieving this in advance of new runway capacity is challenging due to the impact on resilience and night flights.</td>
<td>Complying with the principles of the Balanced Approach when selecting our future proposals for night flights is a legal requirement and a requirement of the Airports NPS. Those legal requirements include an assessment of the 'cost effectiveness' of our proposals, including an assessment of the health impacts and the impact on capacity and the economy. This process is explained further in the information paper Our Approach to Noise Management. Early growth has been discussed in Heathrow’s Airspace and Future Operations Consultation Document and our proposals will be submitted in our DCO application.</td>
</tr>
<tr>
<td>Effects on other airports</td>
<td>St Albans Quieter Skies expressed concern that tighter restrictions on night flights at Heathrow could lead to an increase in night flights at Luton Airport.</td>
<td>This response has been noted and will be considered as we develop our proposals in our statutory Airport Expansion consultation planned for June 2019.</td>
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APPENDIX 5 – SINGLE/DUAL RUNWAY USE PRE 06:00

Introduction

This Appendix considers the question of whether a single runway can routinely handle the pre-06:00 early morning arrival movements given the benefits that would have for runway alternation options.

Position

The Airports NPS requires predictable alternation, in order to provide respite for communities. We seek to apply alternation in the early morning period. We need to devise an alternation pattern across the three runways with application in the pre-06:00 period.

If the number of flights in the pre-06:00 period cannot be landed because of the alternation pattern that applies in that period, this could create unacceptable delay in the three runway schedule and operating environment post 06:00. Whereas such a delay can generally be managed in the two runway operation currently by adding in ‘fire breaks’ in the schedule (reducing hourly capacity), the three runway system has more complex demands on terminal, stand and sequencing of flights (transfers etc) which could contribute to delay being unacceptable as the practice of ‘firebreaks’ would not deliver the stipulated capacity of the Airports NPS.

As a result, Heathrow postulates that to ensure capacity demands are best met by delivering the pre-06:00 early morning arrivals (current levels of 2R traffic), and guaranteeing predictable alternation patterns for local communities:

- Two runways would be required to be in operation from 05:30; or
- One runway would be required to be in operation from 05:15

Rationale

We have used data from our current two-runway environment to facilitate an informed understanding of the scheduled and actual (real-life) demand for pre-06:00 flights and the capability of the ATM system to handle this demand.

This will give a better understanding of what might be taken through into an expanded three runway Heathrow and the likely outcomes that might be expected by communities and stakeholders.
Outlier identification: to provide certainty to communities the runway configuration would require that all outliers could be accommodated before 06:00.

1. Historical schedule when run through the model produced the following:
   a. Summer Scheduled Traffic – outlier 17 and most commonly 13/14 arrivals pre-06:00
   b. Winter Scheduled Traffic – outlier 21 and most commonly 17 arrivals pre-06:00

2. The actual number of pre-06:00 arrivals will vary for a variety of reasons (such as summer capacity at out-stations (some airports will be operating with delays as they are in their ‘summer’, jet stream positions (jet stream moves around the Atlantic and increase/decreases track miles, ATC tactical interventions (ATC short cuts, or sector delays can change timings:
   a. Summer Actual Traffic – outlier 20 and most commonly 11-14 arrivals pre-06:00
   b. Winter Actual Traffic – outlier 26 and most commonly 17 arrivals pre-06:00

At this stage we will not examine the effect on the 06:00-07:00 hour of a compression into a period pre-06:00: we start from the premise that we would not want to routinely push
over-demand into the post 06:00 schedule. Further examination of this effect will occur later in the programme.

Capability of the runway:

We need to determine the capability of the runway (consistent delivery) to then compare that to the demand for pre-06:00 runway use.

Subject Matter Experts in ATC and Data analysis clearly suggest that the capability of the arrival runway is in the range 17-20 per half an hour (30 mins from first touchdown). There is no reason, at this time, why a single runway in an expanded Heathrow should be able to handle significantly more than 17-20 on a predictable and regular basis with our current understanding of a fully capable 3,500m runway with appropriate exits and the aircraft types observed in the pre-06:00 period. The main limiting factor is wake turbulence and any further research in this area is likely to generate only small incremental gains beneficial over a time period longer than the periods envisaged for any schedule changes pre-06:00.

This capability range would handle the summer (actual and schedule) outliers but would struggle with the winter actual outliers.

ATC have confirmed the following caveats apply to this range 17-20 movements –

1. All Heavies or Super Heavy (mixing in any aircraft lighter than this will disrupt spacing through wake turbulence requirements and reduce the capacity until the light category becomes the dominant category in the stream)

2. Aircraft would have to be available to ATC at the start of the time period or be in an appropriate sequence and capable of using the runway at the start of the time period to enable a consistent demand – for example 05:15 or 05:30. This would probably require Cross-border Arrival Management (XMAN), Target Time of Arrival Management (TTA) and Demand Capacity Balancing (DCB) tools.

3. The landing rates are highest performing landing rates (circa 80th percentile so not rarity but higher than the average)

4. Reasonable/average strength of wind

Conclusion

The conclusion is that a single runway would routinely handle the pre-06:00 arrivals. In a three runway operating model there would be occasions when two runways would be necessary to be in operation to guarantee that delay is not generated and passed into the day’s schedule.
A two-runway stream removes most of the uncertainty including low visibility procedures to a large degree and facilitates a 05:30 opening.

A single runway opening at 05:15 would routinely handle all the traffic although low visibility procedures requiring 6 miles spacing would reduce capacity to closer to 18 (over the 45 minute period) as a likely maximum.

A single runway/two runway choice is therefore largely dictated by the requirement to occasionally open a second runway with a 05:30 -start time which removes predictability for the communities.
If you would like a large text or alternative format of this document, please contact us on 0800 307 7996 or send an email to us at: info@heathrowconsultation.com

There are lots of ways you can contact us or find out more

- online via our project website
  www.heathrowconsultation.com
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