



Department
for Transport

Night Flight Restrictions at Heathrow, Gatwick and Stansted

Decision Document

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Executive summary

This government response follows the consultation launched on 2 December 2020 which sought views on the night flights regime at the designated airports (Heathrow, Gatwick and Stansted) beyond 2022, and night flights in the national context. This government response is in relation to Part One of that consultation, which closed on 3 March 2021. Respondents were able to reply via online SmartSurvey, e-mail and by post.

Part One of our consultation featured two main proposals. Firstly, the proposed rolling over of existing night flight restrictions for the designated airports from 2022 to 2024. This would mean that the current limits in place at Heathrow, Gatwick and Stansted airports would remain unchanged (aside from the proposal to ban QC4 rated aircraft movements during the night quota period as discussed below) between October 2022 and October 2024. We considered that maintaining the existing restrictions would mean minimal change for communities that are overflowed compared to the period of the current regime (2017-2022) and would be the fairest approach given the uncertainty around post-COVID-19 consumer behavioural changes and the recovery of the aviation sector. We also noted that there is an argument for not changing limits at this stage, in so far as we do not have sufficient evidence to support a substantial change in policy.

The second main proposal within Part One of the consultation was to place an operational ban on QC4 rated aircraft movements at the designated airports during the night quota period (23:30 – 06:00). We proposed to take advantage of the withdrawal of QC4 rated aircraft (e.g. a Boeing 747-400 on departure) from most scheduled services due to the COVID-19 pandemic, by banning movements of such aircraft during the night quota period. We presented our view that this will have minimal negative impacts for industry but would benefit communities by removing the noisiest aircraft from operating during the night quota period.

Following this consultation and taking into account responses from industry, community groups and individuals, the following decisions have been reached. Firstly, the night noise objective and existing restrictions will be rolled over for a period of three years rather than two as originally proposed in our consultation. A two-year rollover, which would have necessitated consultation on new proposals in 2022, would no longer provide enough time for the government to have conducted

thorough research to properly inform and develop a new evidence-based night noise regime. This is because of a change in the government's view on the pace and trajectory of the aviation sector's recovery. By rolling over for three years, the extra year will allow the government to develop a more meaningful evaluation of the costs and benefits of night flights (as called for in a number of consultation responses from community groups), taking into account the effects of the pandemic and the extent and speed with which aviation demand returns. This will enable decisions to be taken against a background of a wider evidence base, including on the negative impacts on sleep and health, against which the economic benefits of night flights have to be balanced.

Some recovery is necessary to allow for research which is representative of pre-pandemic times, and which can therefore accurately examine the benefits of night flights, alongside how night flights at, or closer to, their normal level would impact on local communities. Although many individuals urged the government to implement change now as skies are quieter, basing policies on a time when the UK was in full or partial lockdown and most international travel had been halted, would not be representative of future demand for aviation services and would be likely to have negative longer-term economic effects. In reaching this decision we took into account the views of community groups and considered that it was likely that a longer extension would increase the strength of feeling expressed by consultees opposed to any extension. Nonetheless, even considering this our decision is that time must be allowed for the sector to recover to enable an accurate analysis of the benefits of night flights and associated negative impacts for communities. The restrictions will be reassessed in time for a new regime to commence in October 2025, by which time we would have a better understanding of how COVID-19 has impacted the aviation sector.

Secondly, the government will proceed with the implementation of a ban on QC4 rated aircraft movements, at the designated airports, during the night quota period. Despite receiving some opposition to the proposal from industry, the government has not received robust evidence that this would have more than a minimal impact on industry, while benefitting communities by taking the noisiest aircraft out of operation during the night quota period.

The rules for the next regime are summarised in the table below:

Table 1 – Structure of the night flights regime, October 2022-2025

		Movement Limit	Noise Quota Limit
Heathrow	Winter	2,550	2,415
	Summer	3,250	2,735
Gatwick	Winter	3,250	1,785
	Summer	11,200	5,150
Stansted	Winter	5,600	3,310
	Summer	8,100	4,650

Part Two of the consultation, which sought early views and evidence on policy options for the government's future night flight policy at the designated airports beyond 2024, and nationally, remains open until 3 September 2021. Work is now underway to analyse the responses to this part of the consultation, which will be used to shape long-term policy proposals for the period beyond 2025.

Consultation responses received on revisions to our night flight dispensation guidance will be used to revise the guidance for airport operators with a view to providing better clarity. We will publish this updated guidance before the new night flight regime takes effect in October 2022.

We now aim to publish a further night flight restrictions consultation during 2023, and it is at this stage that we will set out firm proposals for longer-term policy reform.

1. Overview of consultation responses

This section provides an overview of the consultation responses received on our proposals. The following chapters then summarise the responses received to individual questions on our consultation proposals, along with the government's response on these matters.

Overall, 950 responses to our consultation were received. 414 of these were via the Smart Survey, while 535 were received via email, and one via post. Approximately 165 of the e-mail responses were part of campaigns by community groups.

91% of the online SmartSurvey responses were individual respondents and 9% were on behalf of an organisation. Almost 70% of online SmartSurvey respondents were located in the South East of England.

The breakdown of respondent type is given below:

Table 2 – Breakdown of responses by organisation type and individual

Individual	820
Aircraft noise community group or other environmental group	36
Airline	7
Airport	7
Business organisation or Trade Union	6
Freight carrier or express service	6
Public body, MPs, Councils and Local Authorities	63
Consultative committees	5
Grand Total	950

Overall themes

Many individuals and community groups called for a total ban on night flights, except in exceptional circumstances, between the hours of 23:00 and 07:00. They often stated that the World Health Organization (WHO) recommend a period of 8 hours of uninterrupted sleep.¹ These respondents argued that a two year wait for change is too long and would simply delay meaningful and beneficial policy being implemented. They argued that it would be easier to put in place a reduced quota for night flights from the current position of the heavily reduced night time flying levels, rather than allowing those night flight movements to return to pre-pandemic levels before then trying to reduce them.

Residents in rural areas state that due to less ambient noise, aircraft noise is even more of a disturbance for them. Gatwick residents pointed out that the majority of night flights that cause them disturbance are passenger leisure-related flights. They argued that these flights do not bring significant financial benefit to the UK, and that the sleep of local residents should be prioritised over this. They point out that a bad night's sleep affects productivity at work and has a negative impact on the economy.

Some respondents argued that their health and wellbeing is negatively impacted by aircraft noise at night and that regular poor sleep pre-disposes obesity, heart disease, diabetes and a shorter life expectancy. Some respondents argued that there is a direct link between noise and certain health conditions.

Following the COVID-19 pandemic, some respondents argued that this is a good time to implement change and prevent noise levels from going back to previous levels. As quieter skies have been enjoyed by residents for the past year, many fear a return to how things used to be, and believe that they are now more aware of noise.

There was some concern expressed in responses surrounding the contribution that night flights make to climate change, with some respondents expressing the viewpoint that there is a need to reduce flying and further environmental damage.

There was also a call from respondents for government to conduct an in-depth study into the economic benefits of night flights and to measure any benefits against the negative impacts that night flights have on residents, such as lower productivity at work by residents affected by aircraft noise and potential future NHS costs due to increased risks of residents impacted by night noise developing serious health conditions.

On the other hand, some respondents saw the value of night flights in providing global connectivity for both passengers and freight. They argued that quieter aircraft have been introduced in recent years proving the commitment of industry to lowering noise and reducing the environmental impact of aviation and therefore favoured the proposal to rollover existing restrictions. These respondents also argued that the proposed rollover of existing restrictions made sense in terms of rebuilding the economy and allowing the aviation sector to recover from the COVID-19 pandemic.

¹ We believe respondents are referring to the WHO 2009 "Night Noise guidelines for Europe". These do not specifically recommend a period of 8 hours interrupted sleep but instead note the impacts associated with sleep of less than this period. https://www.euro.who.int/_data/assets/pdf_file/0017/43316/E92845.pdf

Industry pointed to significant progress having been made with the introduction of quieter aircraft in recent years. This represents billions of pounds of investment by the aviation industry. Industry urged the government to consider extending the existing regime until the aviation sector has recovered from the COVID-19 pandemic. They spoke of substantial uncertainty surrounding the pandemic, and called for continuity of regulations and the requirement to maintain a flexible operating environment for dealing with the potentially prolonged effects.

Additional detail

Community groups do not agree with rolling over the existing night flight regime. They argue that the government has not made any changes to this regime for the past 15 years despite serious health and economic impacts on communities near airports and under flight paths. Despite some aircraft becoming quieter, night flights are still regarded by communities as a major issue.

Due to the COVID-19 pandemic, there has been a large reduction in night flights at the designated airports, as shown in table 3:

Airport	Summer			Winter		
	2019	2020	% Change	2019/20	2020/21	% Change
London Heathrow	3,052	986	-67.7%	2,716	835	-69%
London Gatwick	11,566	1,284	-88.9%	1,910	302	-84%
London Stansted	8,837	3,403	-61.5%	3,862	2,516	-35%

Table 3 - Annual comparison of air traffic movements during the Night Quota Period (NQP) at the designated airports, by season

This reduction has been greatly welcomed by communities affected by aircraft noise. They view this as a great opportunity for government to impose further night restrictions at airports and show a commitment to delivering improved night noise outcomes for communities, looking ahead to when the sector has recovered.

They stated that government's role as noise regulator should be to carry out costs and benefits analysis and strike an appropriate balance. Further maintaining the current regime appears as though there is a bias in favour of the aviation industry and a disregard for those significantly negatively affected by aircraft noise. They believe that airlines will not have any meaningful incentives to use quieter aircraft at night if current regulations are rolled over.

Furthermore, at Gatwick, community groups commented that most flights are leisure related and thus do not warrant night flights as they do not have significant economic nor trade value directly to the UK. The health risks and disturbance caused is too high a price to pay for airlines to be able to offer slightly reduced prices.

Communities raised that in the short-term, government should make it clear to airports that they are expected to reduce night flights substantially and limit night flights to those of 'genuine economic importance' and emergencies. Others gave the view that a phased reduction in night flights should occur, working up to a total ban of night flights between

11pm to 7am and that maintaining the current restrictions is not enough. Community groups feel that the impact of COVID-19 on the industry, does not constitute a reason for government to delay reform of the night flight regime further. They feel that a review should take place this year which considers the mental and physical impacts of night flights and balance this against the economic benefits of night flights to the aviation industry.

They argued that allowing the night flights restrictions to lapse would be ‘unbearable’ for many people many miles around. This would significantly harm mental well-being and physical health and is likely to result in legal challenges. Community groups also questioned whether the ‘Balanced Approach’² is being met. They pointed out that the consultation has not explained why night flights are so important and why they cannot be switched to daytime flights, which would allow the UK to trade just as well while allowing communities to have improved sleep. Additionally, communities referred to a 2018 report of the World Health Organization, Environmental Noise Guidelines for the European Region³, which for night noise exposure strongly recommended reducing noise levels produced by aircraft during the night-time to 40dB L_{night} . Communities argued that for the government to have an accurate costs and benefits analysis, this noise contour needs to be considered rather than the current 48dB L_{night} contour.

Community groups are supportive of the ban on QC4 rated movements but believe QC2 rated aircraft movements should also be included and that the ban should last for an 8-hour period, and some questioned why this ban could not begin immediately. They also added that pricing disincentives should be implemented for airlines operating at night - only the quietest aircraft should be used if necessary.

The three designated airports expressed support for the rationale behind the proposed roll over of existing restrictions, giving the view that they regard this as a pragmatic response. Airlines also agreed with the proposal to extend the current regime and welcomed the certainty that this would afford them as they sought to return to pre-COVID-19 schedules without the extra challenge of stricter regulations. Some industry stakeholders argued that the next regime should be extended even further, to allow time for them to be fully recovered from the impacts of COVID-19 before any new restrictions were to be put in place. Some airlines made the point that they are investing in quieter, cleaner aircraft and were supportive of the environmental agenda, but this goal could be worked towards while still allowing night flights to take place and without further operational restrictions on those flights.

When developing night flight policy, airlines argued that overly restrictive operating constraints would work against the government’s goal of a ‘Global Britain’. They pointed out that night flights play an important role in connecting markets around the world and allowing the UK to effectively compete in trade. Some argued that instead of outright bans

² The government recognises the International Civil Aviation Organization (ICAO) Assembly’s Balanced Approach to aircraft noise management. The Balanced Approach consists of identifying noise problems that exist at an airport and then assessing the cost-effectiveness of the various measures available to reduce noise through the exploration of four principal elements, which are reduction of noise at source, land-use planning and management, noise abatement operational procedures and operating restrictions. <https://www.icao.int/environmental-protection/Pages/noise.aspx>

³ https://www.euro.who.int/_data/assets/pdf_file/0008/383921/noise-guidelines-eng.pdf

on night flights, less restrictive ways of minimising noise for local communities should be introduced instead of operational restrictions. They pointed out that the Sustainable Aviation noise roadmap states it is possible to achieve growth in night flights without increasing noise above current levels.

They referred to the Balanced Approach and stated that any decisions around night flights must be based on a comprehensive assessment of the costs and benefits of the proposal. Some airlines added that if further restrictions on night flights were implemented, this could lead to fewer destinations being served resulting in reduced regional and international connectivity for UK consumers and associated impacts upon the economy.

Overall, freight carriers agreed with the proposal to roll over current restrictions for two years. However, they also requested the roll over period be extended further to allow time to assess the impact of COVID-19, to provide evidence, and for policies to be made based on this. They backed this up by noting that the International Air Transport Association (IATA) have stated that global passenger traffic will not 'return to pre-COVID levels until 2024'. One freight carrier went even further than this and suggested the UK should allow restrictions to lapse, allowing more flexibility to support the aviation industry's recovery.

Freight carriers made it a point to differentiate cargo flights from passenger flights. Their business model is very time-sensitive and requires overnight flying to pick up orders late afternoon, fly them overnight and deliver them the next morning. This is particularly essential for items of high importance and with sensitive time frames that freight carriers tend to deliver. They also point out that cargo operations do not benefit from the same flexibility that passenger flights do, thus more restrictions would make it difficult for them to continue business efficiently. They adhere to narrow schedule windows at various hubs that they use for international deliveries, and being unable to run certain flights may mean missing this window.

2. Proposal to maintain the existing night noise objective for the designated airports for two years, from October 2022 to October 2024

We asked the following question:

Do you agree with our October 2022 to 2024 night noise objective for the designated airports?

"Limit or reduce the number of people significantly affected by aircraft noise at night, including through encouraging the use of quieter aircraft, while maintaining the existing benefits of night flights"

The majority of individuals and members of community groups expressed the view that the proposed objective is not ambitious enough, and called for an objective which was stricter and for the night flight regime to be tightened significantly to bring progress in reducing the number of night flights.

To keep the objective the same as the current one was seen as an absolute minimum, but many in this group believe that noise from aircraft at night is still too intrusive and damaging. Some suggested that people living near to airports are adversely affected more than had previously been understood, and suggested that the benefits that accrue from night flights do not compensate for the significant costs that these flights impose on the local community.

There were some who felt that there is no justification for any night flights at any airport, and many who made the point that sleep is vital to good health, and their view that people need eight hours a night of undisturbed sleep. They questioned why the night flight quota and restrictions do not apply to the whole eight-hour night period. Others suggested that the objective should cover normal bedtime hours for children, such as 20:00 – 07:00.

Some would like to see a gradual decrease in the number of flights before midnight, stating that these flights often disturb sleep early in the night which then influences their sleep pattern for the remainder of the night. Others mentioned that they wanted to see a reduction of the number of flights taking place early in the morning, adding that in the early

hours there is no such thing as a quiet aircraft engine. Some respondents added that it is not just an issue of the noise that comes from aircraft taking off or landing, and that they would like to see a reduction in the noise of aircraft on the ground and noise from associated vehicles travelling to and from the airport during the night. Others remarked that noise from aircraft prevented them leaving windows open during the summer months, and wrote of the stress and disruption that night flights cause to them.

Some expressed the opinion that the objective is one-sided and subjective, by requiring what they regard to be the unsubstantiated benefits of night flights to be maintained. These respondents also felt that the objective is inconsistent with the government's assertion that it takes aircraft noise at night very seriously. They added that the working hours of most noise generating commercial operations are much more robustly controlled by regulations or planning conditions, than are night flights. Others stated that the role of the government as noise regulator at the designated airports should be to assess the costs and benefits of night flights and look to find an appropriate balance. They claimed that the government has not carried out this type of cost/benefit assessment for over 15 years. In their view, maintaining the current objective as proposed in the consultation, would further defer a meaningful evaluation of the costs and benefits of night flights. They added that the government should not ignore the growing evidence on the health impacts resulting from night time aviation noise, in favour of preserving what these respondents regard as the unnecessary and unjustified benefits for the aviation industry. Some argued that the current objective should be more clearly orientated to reducing night noise to driving continuous improvement.

A community group argued that the proposed objective to "limit or reduce the number of people significantly affected by aircraft noise at night" needs to be strengthened. The second part of the proposed objective, "while maintaining the existing benefits of night flights" they considered to be biased towards the aviation industry and suggested that this would in effect guarantee no reduction in night flight numbers.

Others argued that the objective is obsolete as it does not reflect current Air Navigation Guidance, which requires the avoidance, minimisation and mitigation of significant adverse impacts. They were critical of the government not producing a health impact study, without which it was not in a position to assess the effects of night flights. They also noted that the CAA had not yet published the Survey of Noise Attitudes (SoNA) Night report, an evidence base without which, in their opinion, the public could not be consulted in a meaningful way on night flights. Several respondents did ask that Part Two of this consultation on the longer-term regime be put on hold until publication of the SoNA Night report was available.

Some felt that the night flight regime over the last 10 years has failed to create a balance between industry and community interests, while some expressed disappointment that the objective lacked a quantified target for the levels of night noise or for the numbers of people affected. In their view, the objective should specify target figures for the area of and number of people in the 48dB L_{Aeq} 8hr night contour (23:00-07:00) and the number of movements in the 8hr night period, so that the measures can be used to monitor progress towards these targets.

One county council was of the opinion that the noise objective fails to consider the differences between airports located in urban, densely populated areas (where ambient noise levels are much greater), compared to airports located in more rural, less populated areas (with correspondingly lower ambient noise levels).

There were number of individual respondents on the community side who also recognised that COVID-19 has heavily impacted upon the UK economy, and upon the aviation industry in particular. Some of these responses argued that major operational change to the night flight regime should be avoided at the present time, while others argued that fewer restrictions and more night flights should be allowed to assist the aviation industry during the current period of financial difficulty. Others were of the view that the current balance between community impact, and the economic benefit of night flights should be maintained. Some respondents made the point that newer models of aircraft are quieter and more efficient. While others regarded restrictions on night flights as placing a limit on the UK economy, at a time when the economy needing to recover quickly following the impact of COVID-19.

The airline community were generally supportive in principle of the proposed night noise objective. Some made the point that when the objective is revised, the contribution of the other elements of the International Civil Aviation Organization (ICAO) Assembly's Balanced Approach should be explicitly integrated. They felt that the emphasis in the current wording on noise reduction at source fails to properly recognise the role of the other measures contained within the Balanced Approach.

Airlines were of the opinion that they have demonstrated continual and substantial improvements in the noise performance of the aircraft which they operate in the UK. They pointed out that if aircraft delivered in the early 2000s are compared with those arriving today, it is clear that innovation and technology are delivering quieter and more efficient aircraft.

Government response

Having taken into account the responses received to the consultation, the government intends to proceed as per the consultation proposal. For the purpose of the next night flight regime, we intend maintaining the existing night noise objective for the designated airports, to **“Limit or reduce the number of people significantly affected by aircraft noise at night, including through encouraging the use of quieter aircraft, while maintaining the existing benefits of night flights”**.

We have noted the strength of feeling expressed by the individual and community responses, who are seeking reductions in night noise limits sooner rather than later. However, as a result of the impact COVID-19 has had on the aviation sector, and the uncertainty around the timing of the sector's recovery, we believe that maintaining the existing objective is the correct course of action. The government continues to believe the proposed approach to limiting or reducing the number of people significantly affected by aircraft noise, while maintaining the existing benefits of night flights, remains the correct approach for the 2022-2025 night flights regime. In the longer-term we remain open to revision of the night noise objective.

In Part Two of the consultation, as part of the section on our national night flight policy, we have asked a question about a proposal to include a night noise reference in our noise objective. We continue to analyse responses to this part of the consultation and will come forward with firm proposals in due course.

A reason for extending the closing date of Part Two of the night flight consultation on longer-term policy reform to 3 September 2021, was to allow consideration of the SoNA

Night report⁴. We will ensure that the SoNA Night report is taken into account, together with other relevant new evidence, in formulating proposals for the second stage consultation.

⁴ CAP 2161: Survey of Noise Attitudes 2014: Aircraft Noise and Sleep Disturbance

3. Measurement of the noise objective for the designated airports

We asked the following question:

Do you agree with how our October 2022 to 2024 draft noise objective for the designated airports will be measured?

Many of those responding from the local communities who said that they did not agree with the proposed objective, said it would therefore be inconsistent to agree the means of measurement of that objective. Some who expressed a view that there should be no night flights, felt that measurement should therefore be unnecessary.

A common theme from the community side was that it is individual flights which wake people, rather than average noise levels, and that they would like to see a measurement of peak noise. Some community responses expressed the view that the current noise metrics fail to take into account the frequency of noise impacts at night. The average noise metric fails to provide an adequate indication of the number of noise events experienced each night. A common view expressed was that 'Number above' contours are more representative of the impact of night flights. It was suggested that a number above metric should be used to provide an indication of the number of people exposed to a number of aircraft noise events louder than a certain decibel level. One metric suggested was N60 to show the number of events each night where the noise level exceeds 60dB, a level which some respondents suggested causes the most harm in terms of sleep disturbance and awakenings.

Some felt that the QC system is not based on sleep disturbance or health impacts and that in practice the QC categories do not reflect the reality of the level of disturbance caused. A respondent added that while consideration of the average noise quota is a measure of the aircraft fleet that operated, it does not take into account how those aircraft were operated. It relates to the aircraft when being certificated, and not when operating at an airport. This could be assessed using the noise monitors around the airport, either to determine average noise levels, or by considering the departure noise limits which could be reviewed.

Others suggested that given the night period is 8 hours (23:00 – 07:00), then the night contour for measuring achievement should also relate to the same period, rather than 6.5 hours (23:30 – 06:00).

Some expressed the view that the 48dB L_{Aeq} 6.5hr night contour seriously under-reflects the area (and therefore the numbers of people) seriously affected by night flights and resulting sleep disturbance. It was suggested that for the next regime, the population and area impacted at 45dB L_{Aeq} 6.5hr night should be provided as well. It was pointed out that the Lowest Observed Adverse Effect Level – the point at which adverse effects begin to be seen – for assessing the noise implications of proposed airspace changes is 45dB L_{Aeq} 8hr, as per the Air Navigation Guidance of 2017. In addition, there were also calls for contours to be published to show the extent of adverse effects as indicated by the WHO 2018 Environmental Noise Guideline recommended level for the protection of human health, measuring down to 40dB L_{night}

Some used this section of their response to suggest that night flights over areas with low background noise levels, mean aircraft are more disruptive than over other areas and this should be taken into account. Others added that the current measurement fails to reflect the full impact on sleep quality of a plane overhead at for example, 4:30am, when other background noise levels are low.

A respondent pointed out how noise is very subjective, in that once the brain has made an association between a noise and an adverse outcome it is conditioned to respond to that noise and becomes more sensitive to it. A noise level that an average person finds non-intrusive can be very intrusive to someone who has been adversely affected.

Another respondent felt that measurement should not only be in terms of decibels but should also reflect the pitch of the noise. They stated that in South-East London landing aircraft emit a high-pitched whining that may not exceed the threshold mentioned in policy, but will still disrupt sleep and wake up people because it is high pitched.

From the community side, comments were also received suggesting that the Transport Appraisal Guidance (TAG)⁵ assessment methodology should be updated in order that the costs in terms of adverse health impacts can be calculated. A local authority raised concerns about the use of the TAG methodology, stating that it is unclear whether the methodology takes in consideration the economic benefits of night flights and the public health impact of the aircraft in the night time period on communities' health and wellbeing. One campaign group urged that TAG assessments be optimised by minimising the average noise per individual or household and not by minimising the total adverse impact across the population. In their view, the former results in dispersion of noise and the latter results in concentration.

Amongst the responses from industry, there was general recognition from the airports of what they considered to be a pragmatic approach taken by government, with support expressed for the proposal that the government continues to monitor achievement against the night noise objective using the metrics proposed in the consultation. Airlines made reference to the impact of the COVID-19 pandemic and the uncertainty which this has created, when expressing their support for the proposals on how the objective should be measured. It was said that at a time when the sector is working to combat the ongoing impact of the pandemic and focussing on re-start and recovery efforts, the need to

⁵ TAG is the Department for Transport's suite of guidance on how to assess the expected impacts of transport policy proposals and projects.

maintain a stable regulatory environment with a flexible operating environment has never been so critical.

Industry responses also included comment on the use of area and number of people in a contour. They suggested that the number of people in a contour area as a metric, can be influenced by many factors, not least the approval of planning permissions, and added that an airport does not have the final decision on this, and can only feed into the planning process by objecting. This could be unfair to the designated airports who may be working towards reducing the size of the noise contour but the population continues to grow. There was a call for more robust guidance to be given to local planning authorities about development within areas exposed to aircraft noise.

Government response

We intend to continue to measure our achievement against the objective by the metrics proposed in the consultation namely:

- The area of and number of people in the 48dB L_{Aeq} 6.5 hour night contour.
- Sleep disturbance impacts associated with night flights, assessed using TAG methodologies.
- The average noise of an aircraft (as measured by the average noise Quota Count per aircraft movement over the course of a season.)

Having considered responses to the consultation, in particular a theme in responses seeking contours that are more representative of the impact of night flights, we do acknowledge that number above metrics could be useful. We will produce number above metrics in the future, and look at how they can be used, but for this regime we will not currently use them to measure our achievement against the objective.

Some respondents made the incorrect assertion that the contours produced in this consultation exclude the noise impact of flights granted dispensations. All contours have been produced using actual flight times, irrespective of scheduled flight times. We intend to continue this as currently practised.

At present we consider the Quota Count (QC) system⁶ to be the best tool for categorising aircraft for noise purposes. However, in Part Two of this consultation, which will close on 3 September 2021, we do welcome views and evidence on how the system works in practice. We continue to review the responses to this part of the consultation, and will consider these responses to inform policy options for longer-term reform.

Similarly, as part of our longer-term reform, we are considering whether night flight restrictions should refer to the full night period of eight hours (23:00 – 07:00) rather than 23:30 – 06:00. This is a question which we have asked as part of our call for evidence in Part Two of this consultation, and will be a point which we address in the longer-term.

In regard to comments received and set out above about the relevance of the WHO Environmental Noise Guidelines for the European Region (2018), which for night noise exposure strongly recommended reducing noise levels produced by aircraft during the

⁶ The Quota Count (QC) system was established in 1993. The system places limits on both movements, and the amount of noise energy that can be emitted.

night-time to 40dB L_{night} , these have always been intended as guidelines rather than binding limits. These levels also apply to noise from all sources and not just aviation. Addressing aviation noise in isolation is unlikely to achieve these levels given the totality of noise from all sources.

With regard to how progress against our objective will be measured, we recognise that some individuals will be disturbed by aircraft noise at night who are outside the 48dB L_{Aeq} 6.5hr contour. However, it is not possible to accurately produce noise contours for night time noise below this level. For the purposes of modelling, there is greater uncertainty about where precisely an aircraft will be at these further distances from airports so it is much harder to predict what the sound from an aircraft will be at an exact location. The CAA's model used to create noise contours requires validation from real aircraft noise events, which below these levels are hard to distinguish from other noise sources.

The 48dB L_{Aeq} 6.5 hour contour is therefore used to measure progress over time and assess the impacts of different options for the night flights regime. As required in the Air Navigation Guidance, our assessment of the health impacts associated with different airspace change options does measure impacts below this – down to 45dB L_{Aeq} 6.5 hr, which is consistent with the WHO's Methodological guidance for estimating the burden of disease from environmental noise. The level of accuracy is less critical for this purpose as it is about modelling future options rather than assessing past performance.

In regard to comments on the TAG assessment methodology, we are continually reviewing the evidence base and keeping on top of the latest developments. If a robust source of evidence is brought to our attention that suggests the current assessment methodology should be reviewed, we will do so and take it through the various stages required to change the TAG assessment methodology. Currently no new evidence has been provided that meets this criteria to trigger a change to the current assessment methodology.

4. Proposal to maintain the existing regime at the designated airports for two years, from October 2022 to October 2024

We asked the following question:

Do you agree that we should maintain the existing restrictions for two years from October 2022 to October 2024?

From the community responses, there was a strong message that they would like to see a significant reduction in the number of night flights, with some individuals calling for an immediate ban on night flights now, while others called for a phased reduction in the period 2022 to 2024, culminating in a ban on night flights at all UK airports for a full eight-hour period, with the exception of genuine emergencies. A common theme from respondents was that there should be eight hours per night without night flights, but some called for a quiet period between 21:00 and 08:00 to ensure that as many residents as possible are able to enjoy a restful sleep. Some pointed out that children too are entitled to a good night's sleep, and suggested that 23:30 for the start of the night quota period was too late. Others suggested that if night flights were to continue to be allowed, there should be at least a four-hour period of silence, with no flights except in exceptional circumstances, and a time of 01:00-05:00 was put forward for this.

If a total ban on night flights were to be rejected, then many of these respondents stated that there should be much lower limits on the number of night flights, restricting them to services which are genuinely essential for economic reasons or for emergencies. An opinion expressed was that it is the role of government to provide effective noise regulation and to afford communities the protection they need. In rolling forward the current regime, many community responses view the government as failing to meet these responsibilities.

While some community respondents recognised that time was required for the impacts of COVID-19 on the aviation industry to be fully understood, many felt that the pandemic should not be used as an excuse to delay long-term reform to night flight policy. Many expressed the view that prior to the pandemic, the number of night flights was already unacceptable. While the designated airports have spare capacity in the daytime, they questioned what was the justification for any flights in the night period.

Some expressed the view that extending the current restrictions would mean there is no meaningful incentive for the industry to use quieter aircraft at night. If aircraft are getting quieter, then in their view the noise quota limit needed to be reduced. One respondent pointed out that Annex D of the consultation shows that for some years all three designated airports have under-utilised their allocated quota count, adding that they regard this as a sign that the current limits are far too generous, and action is now needed to adjust them downwards. Some respondents called for noise quotas to be significantly reduced to make them relevant and effective. Others suggested that the night noise quotas for each airport need to be reviewed to take account of the banning of QC4 rated aircraft, and the general shift towards quieter aircraft, with the expectation that noise quotas could be reduced from 2022. As the current quotas were set in the knowledge that the Boeing 747-400, for example, was operating at the designated airports, so it was felt that with this aircraft now largely retired there would be scope for a reduction in quota point allocation.

Residents around Gatwick Airport were keen to point out that in the summer season Heathrow is permitted 3,250 movements, while the corresponding figure for Gatwick is more than three times as many, at 11,200. This level was felt to be excessive. Some acknowledged the reason for this being the different operating models of the different airports and the needs of low cost carriers to have late night arrivals, but they still felt it unreasonable that the communities around Gatwick face what they consider to be an unfair burden. They added that the higher noise allowance in the summer allows for more travel and tourism, however it provides the biggest disruption to sleep and wellbeing when people are likely to sleep with windows open due to higher temperatures.

Local authorities and parish councils generally acknowledged the important role that the aviation industry plays in local, regional and national economies, in particular by supporting employment for their residents. Some noted the severe difficulties which the aviation industry has faced during the COVID-19 pandemic, and expressed their support for measures that would see their local airports return to full operations. However, many local authorities and parish councils, would not welcome a similar return to previous levels of night flying. Furthermore, many stated that they were not supportive of the proposed two-year roll-over of existing restrictions. They expressed the opinion that the proposals do not go far enough to protect the sleep, and the health, of their residents.

Other local authorities considered the proposed maintenance of the existing restrictions for two years to be an acceptable period of time, prior to the introduction of any further changes. Some recognised that recovery of the aviation sector may take time, and that further restrictions could inhibit this recovery. Some added that in the period facilitated by the proposed two-year rollover, they expected the government to carry out extensive research into the costs and benefits associated with night flying.

Amongst Gatwick local authorities, the point was made that historically Gatwick's winter quota has not been used in full and therefore should be reduced. The practice of carry-over from the winter season into the summer season at Gatwick, and an increased use of dispensations in recent years, has meant that the current limits do not fully reflect the true pattern of night flights at Gatwick, particularly in the summer months.

Others expressed concern that the consultation has presented no evidence in support of the need for continuing with a high level of night flights. They urge the government to reassess the balance between any economic benefits of night flights, against what they consider to be detrimental health and wellbeing impacts upon residents.

Some parish councils around Gatwick made the point that due to being in rural communities the noise impacts on residents are far greater than those experienced in urban communities such as those around Heathrow. They argued that the ambient noise in the rural environment is significantly lower than in the urban context. Another parish council close to Gatwick, commented that since the last review of night flights, noise levels have, on average, reduced. Therefore, this should now be reflected in a reduction of the existing night noise quotas. While such reductions now might be an interim measure ahead of a further review to be conducted before the introduction of a new regime, they would nevertheless act as a pointer to the way forward for the aviation industry. In their view, to maintain the existing level of restrictions for the period 2022-2024 would send entirely the wrong message, not only to the industry but also to the local community. One respondent added that a move to cut the maximum number of night flights movements by even just 10% would have negligible effect on the aviation industry whilst demonstrating a real commitment to communities impacted by excessive and intrusive aircraft noise.

One local authority close to Heathrow Airport is of the view that the precautionary and polluter pays principles should be followed whilst the evidence of the health impacts of sleep disturbance due to night flights remains unclear. For this reason, they argued that night flights at Heathrow should not take place until the airport has proven that these flights have no health impacts.

Another local authority expressed concern that the government could decide to roll forward the existing regime still further, beyond 2024, given the uncertainty of when air traffic levels will return to pre-pandemic levels, and therefore could reason that the impacts of the pandemic might not be fully understood in time for the planned consultation in 2022 on a new night flight regime to commence in October 2024. In their view, this would be unacceptable and they urged government to develop and engage urgently on a programme of work to ensure that there is a robust assessment of night flight costs and benefits, to allow for a properly informed consultation to take place in 2022. On the same issue, a representative group of local authorities stressed that the two-year roll-forward of the existing regime must not be a justification for inaction or further delay.

Many community responses referred to the health impacts of night flights, and studies which have highlighted the link between night flights and poor health, particularly around the risk of cardiovascular deaths. They felt that the WHO concerns on health must now be afforded a higher priority by government. The revised guidelines for aircraft noise, published by the WHO in 2018 recommended limits of 40dB L_{night} at night. One group felt that the tougher thresholds presented by the WHO are indicative of the strength of evidence relating to annoyance and sleep disturbance.

A parish council in the Stansted area suggested that the proposed rollover of existing restrictions would be complacent and irresponsible. In their view this is an indication that the government is neglecting the growing body of evidence that shows noise from aircraft at night has serious health consequences for overflowed communities.

Others living around Heathrow Airport made the point that the COVID-19 pandemic has demonstrated that a majority of the flights permitted in the Night Quota Period (NQP) at Heathrow are not vital to the UK. Some suggested that the COVID-19 pandemic may have resulted in a fundamental shift in the way that future business negotiations are conducted, with increased use of video conferencing. This must place in serious doubt the extent to which future business negotiations will require arrival from overseas destinations into

London before 06:00. A campaign group local to Heathrow stated that there would be little or no loss of economic value to the UK if all Heathrow night flights between 23:00 and 07:00 were to be re-timed into the day time.

Many of the community responses expressed how much they had enjoyed the more tranquil skies since the impact of COVID-19, describing the plane free skies as blissful and that the change had been astounding. They reported how sleep has improved hugely with the disturbance from aircraft noise being to a far lesser extent, with a corresponding increase in well-being. Some respondents said that the pandemic has made people re-evaluate the environment they want to live in, and they called for this improvement to be secured, with one suggestion that the government should impose an initial 60% cut in the current movement quotas from October 2022. Many felt that now is the ideal time to build back from the pandemic in a way that eliminates night flights.

As well as responding on the impacts of noise, some respondents also referred to the view that banning night flights would serve to reduce light pollution and cut emissions. They made the point that light pollution not only affects residents with the removal of dark skies, but is also damaging to wildlife and disruptive of wildlife's natural patterns.

There were a small number of community responses that argued that the latest generation of aircraft are quieter and so more night time movements should be allowed for that same noise level, so delivering benefit to the UK economy. Others recognised that with the uncertainties due to COVID-19 it would be sensible to maintain the existing restrictions for two years from October 2022 to October 2024, but that this period must be used to prepare for a totally new night-time regime to include more stringent quotas which should cover the whole 23:00 – 07:00 night-time period.

Others called on the aviation needs of the UK economy to be re-assessed, in light of major changes such as the impact of Brexit, and environmental developments such as the need to address climate change issues. Others agreed that having the existing restrictions in place would be a better outcome than having no restrictions, and recognised that agreeing significant changes to the regime in the time available would be very difficult.

The Independent Commission on Civil Aviation Noise (ICCAN) recognised the pressures that the COVID-19 pandemic has placed on the aviation industry, and the government's ability to make time for its officials to conduct a rigorous and robust consultation on the next regime, in time for this to be put into effect. In the circumstances, ICCAN agreed with the proposed two-year extension of the current regime (and with it the noise objective) to allow that time and noted that they would look to ensure that proper and due consideration is given to various options for the next regime.

On the industry side, the very challenging and uncertain conditions that the aviation industry is operating in at present was a dominant theme of the responses, with the proposed roll over of the existing restrictions being widely seen as a pragmatic approach. Industry responses noted that the disruption caused to the air transport system over the past year due to the COVID-19 pandemic has been unprecedented. They also added that the travel restrictions and other government aviation measures introduced to combat the spread of COVID-19 could continue for some time and that a point in time at which these would no longer be necessary remained highly uncertain.

With this in mind, airports and airlines welcomed the certainty that the proposed roll over would give them, assisting them in their planning for recovery. However, some on the industry

side recommended that the government consider a roll over period for longer than the two years proposed. Given the scale of the review of the existing restrictions, and the time and resources required to meet the legal obligations, as well as the ability to measure this accurately and secure data due to the pandemic they questioned whether a two year roll over would be sufficient to undertake the necessary steps adequately. They added that aviation is likely to take some years to recover from the COVID-19 pandemic, and believed it to be premature to assume there will be sufficient understanding of the recovery in 2022, noting that this is when the proposals for a new regime (post-October 2024), would be due for consultation.

Industry responses stressed the considerable uncertainty associated with the date of sector recovery, it being dependent on the effectiveness of global vaccine programmes and the necessity of maintaining travel restrictions and lockdowns in the coming years.

One industry body considered that a return to relative post-pandemic normality should be considered as a prerequisite for any meaningful impact analysis to inform subsequent consultations on proposed future regulatory regimes. Furthermore, the industry body added that the implementation of new regulations in an environment that is not representative of how the industry would otherwise operate or naturally evolve may risk no longer being relevant or fit-for-purpose once the global pandemic subsides and air transport begins to recover.

Other responses from industry felt it sensible to continue with the existing arrangements for the three designated airports for the next two years, while also suggesting that the government approach should remain flexible to allow the possibility of a further extension to the rollover, given that the pace of recovery from the COVID-19 pandemic is currently unknown.

Another industry viewpoint was that the existing regime has been an effective mechanism for reducing night noise over the period of the scheme. The rollover of the current regime would allow time for changes in the industry to transition before then implementing any changes to a future regime. Any change to the current regime whilst demand continues to be impacted by the COVID-19 pandemic could have long lasting impact on the efficient use of airport slots. Industry responses also argued that there is likely to be an increasing importance of night flights post-Brexit, as the UK establishes new agreements with trading blocs in different time zones.

Industry also wished it to be noted that controls set by government for the three designated airports are often replicated at other UK airports in various forms. They added that government should be mindful of how further restrictions could affect other UK airports, which in most cases will have locally agreed objectives for noise.

Government response

The government recognises the need to protect communities that are overflowed by aircraft at night from the negative impacts of night time airport operations. Aviation noise can negatively impact health in a number of ways including sleep disturbance, increased risk of cardiovascular disease and other health impacts, and can also impact amenity/annoyance levels. It is therefore understandable that communities would wish to lock in the benefits of fewer night flights associated with the pandemic.

However, the government also recognises that night flights do offer significant benefits to the UK. These include the benefits to consumers and the economy through both increased competition and choice for business and leisure customers as well as helping to preserve the UK's connectivity to a wide range of locations. All of which contribute to the UK's status as a great place to do business. Night flights also have wider economic benefits, for example those brought about by the freight sector and next day delivery services that these flights support. The fact that many of these benefits have been foregone during the pandemic in no way diminishes their future value to the UK economy.

The principle of the operating restrictions in place at the designated airports has therefore been to balance these negative impacts against the benefits of night flights. Given that the current night flight regime expires in October 2022, there is a need for the government to provide certainty on the future of night flight operations at the designated airports. This will allow airlines to plan ahead with certainty, and will also provide reassurance to communities that night flights will not operate in an unrestricted way.

As a result of the impact which COVID-19 has had on the aviation sector and the uncertainty around the sector's recovery, making changes to movement and quota count limits now risks further upsetting the balance between the economic benefits of night flights and protecting communities from noise, particularly in what is already a very challenging period for the aviation sector. The government continues to believe that it would not be appropriate to make changes to the movement and quota limits at a time when the demand for aviation services after the pandemic is still unknown. To do so would mean assessing the costs and benefits against a baseline which is speculative.

We recognise that the removal of QC4 rated movements from the night period may leave headroom in total quota limits. However, we do not believe it would be appropriate to make changes to quota limits at this time. The designated airports are primarily constrained by their movement limit, rather than their quota limit. Given the small number of QC4 rated movements identified in recent seasons at the designated airports, to amend the limits now to account for the removal of those QC4 movements would have very little impact on an airport's total quota or movement limits, neither will it have a positive effect on driving the change to the use of quieter aircraft types. Given this, and the current uncertainty within the sector, we do not believe this is the right time to reassess those limits.

We had initially considered that a two-year rollover period would provide sufficient time for a complete consideration of the longer-term options for managing aviation noise at the designated airports, whilst continuing to comply with legal consultation and notification requirements that are required to be undertaken before any new operating restrictions (such as movement and quota limits) can be imposed. We consulted therefore on the basis of a two-year roll over period. However, at that time the impact, scale and duration of the pandemic were unknown and the extent of the impact on the aviation sector in particular was unknown.

Since we consulted those impacts have become clearer, although uncertainty still remains about the scale and duration of these impacts. We have also considered all consultation responses and our own data on the sector's recovery. On the basis of all this, we have reached the view that the proposed option of a two-year rollover of the existing regime, would not provide sufficient time for the impacts of the COVID-19 pandemic on the aviation

industry to be better understood and for a meaningful and detailed evidence base to emerge or be developed that can properly support longer-term policy development and change. Taking into account these factors and the consultation responses, including the call for proper analysis of costs and benefits from those opposed to the rollover but yet still seeking an evidence based analysis and consideration of the night flights impact, it is our view that in order to best meet both industry needs for certainty and to gather evidence that will enable the government to fully analyse, assess and determine a regime, that it is appropriate to rollover the existing regime for three years.

In reaching this decision we took into account the views of community groups and considered that it was likely that a longer extension would increase the strength of feeling expressed by consultees opposed to any extension. Nonetheless, even considering this our decision is that time must be allowed for the sector to recover to enable an accurate analysis of the benefits of night flights and associated negative impacts for communities.

There has been a change in the government's view on the pace and trajectory of the aviation sector's recovery relative to the view held at the time of consultation, which has been affected by international travel restrictions/measures. The UK government will hold "checkpoints" through to no later than October 2021 to review travel measures, taking into account the emerging evidence and domestic and international health picture. The report of the Global Travel Taskforce (GTT)⁷ states that this "could include, for example, considerations around self-isolation, the Managed Quarantine Service, and options at which differing measures or restrictions may apply for those with proof of vaccination". The report of the GTT also states that 68% of UK adults surveyed agree that they will only travel abroad when they feel totally confident that travel restrictions won't change, and that 65% will hold off travelling abroad until they have been fully vaccinated. Both the government's periodic review of travel restrictions via checkpoints and the condition of current consumer confidence are likely to dampen consumer demand and affect the aviation sector's pace of recovery.

The government has also heard very clearly from consultation responses that a top-down review of the costs and benefits of night flights is required. In order to have sufficient time to undertake this review, and for all stakeholders to be able to make a meaningful contribution to such a review, the government now intends to proceed with a three-year rollover of the existing night flight restrictions.

During this period, we will work to develop the wider evidence base in this area, particularly with respect to issues such as the wider economic costs and benefits of night flights, and how the health impacts of aviation noise vary by time and affect different groups.

The next night flight regime will therefore now commence in October 2022 and will continue until October 2025.

We asked the following question:

⁷ <https://www.gov.uk/government/publications/global-travel-taskforce-safe-return-of-international-travel>

What would be the impacts to you should the government maintain the existing restrictions for two years, from October 2022 to October 2024?

The most prominent theme expressed in responses from individuals and community groups on this question, was that they would have to endure continued disturbance from night noise, with corresponding impacts on quality of life. Responses spoke of continued night time noise levels leading to sleep deprivation and resulting difficulty in concentrating at work during the day. Other health impacts were referred to that would not be improved by a maintaining of the existing restrictions. These included ongoing mental health issues, raised blood pressure, anxiety, depression, stress and lower life expectancy. Fatigue, bad mood, loss of productivity at work, and poor performance in education with reduced reading comprehension amongst school children were also mentioned.

Many of the responses from individuals and community groups felt that maintaining the status quo would not be good enough, and demonstrated a failure of ambition on the part of the government who it was felt should be seeking to reduce the number of flights at night, not allowing them to continue at current levels. Some felt that the impacts of the COVID-19 pandemic on the aviation industry, with the current level of reduced night time movements, presented an opportunity for the government to be bold on night flights, and suggested government should now take action that would lock in the benefits communities have enjoyed during the quieter night skies owing to the pandemic.

One campaign group felt it likely that some airports would seek to artificially ensure full, or near-full, utilisation of their night flight movement and quota limits in order to support arguments for retaining (or increasing) those limits after 2024. Another campaign group suggested that as a priority an urgent review of the direct impacts of night flight noise to mental and physical health was needed.

Other individuals expressed concern that the financial impacts of COVID-19 may affect the ability of airlines to invest in new, quieter aircraft. However, there were some responses from individuals who said that anything that would help the aviation sector would be welcomed given how the industry has suffered since the COVID-19 pandemic. Others noted that there would be little impact on them either positively or negatively by rolling forward the existing restrictions, and that this seemed a sensible, if unambitious, target, and that two years appeared a reasonable period for the rollover.

On the industry side, the impact that maintaining the existing restrictions would have, was felt to be positive. The severe impact that COVID-19 has had on operations was again noted, alongside the considerable uncertainty faced by the aviation sector. Whilst airports and airlines are unlikely to fully utilise their night movement allowance in the near future, it was said that the maintenance of current limits would provide much needed certainty to industry. It would assist with the planning of future schedules at a time when so many external factors are negatively impacting air transport and contributing to unpredictability of future demand. Industry responses expressed the belief that extending the current regime would help facilitate the sector's recovery from the COVID-19 pandemic. It was said that both the passenger and freight sectors will be key to recovery and to re-building global connectivity in future years.

Government response

From the consultation responses received from individuals and communities, the government has heard the argument that there is an opportunity to reduce night movements and corresponding levels of night noise. However, taking all factors into account, particularly the uncertainty currently faced by the aviation sector, we believe that maintaining the existing limits is the fairest approach for the next regime. At present, the current uncertainty makes it difficult to assess the costs and benefits of different measures, and that evidence is needed to support making a change to future regimes.

We asked the following question:

What would be the impacts to you should the government allow the night flight restrictions in place at the designated airports to lapse?

The majority of responses from individuals and community groups gave the view that there must be night flight restrictions in place. Many felt that to allow the restrictions to lapse would be disastrous and abhorrent. Others described the thought of unregulated night flight activity as being unbearable for many people. Fear was expressed as to what the resulting health impacts of such a move could be. Responses made clear that the impact on local communities from such a decision would be huge, triggering a loss of quality of life and a worsening of physical and mental health.

Some respondents remarked that they were surprised that such a question had been included in the consultation, so unimaginable was the outcome of the restrictions being allowed to lapse. The point was made that unregulated night flight activity would be inconsistent with previous government policy statements, would be a serious dereliction of duty by government, and should be inconceivable. Many respondents feared that with no restrictions in place, airports would have free-reign to fill the night period with flights, with an unacceptable effect on noise, air and light pollution.

There were a minority of responses from individuals who referred to airports being crucial to local and national economies, and which suggested the government should allow them to flourish, pointing out that parts of the world operate night flights without any restrictions.

On the industry side, airports recognised the importance of controls on night noise. In the absence of government controls, it was said that locally agreed noise controls could be implemented, but with the limited time available, the view was given that it would not be practical to develop, consult on and implement such locally agreed controls in time for the new regime to commence in 2022.

One respondent felt that if the government allowed the current restrictions to lapse, and then subsequently looked to introduce a new scheme for future seasons, the limits for that future season would need to be set at levels that could accommodate all existing historic slot entitlements, which may have increased due to the previous lapse of restrictions. The view put forward stated that at the designated airports, demand is greater than supply and so without any restrictions it is likely that slots would be allocated in the night period. If those flights were operated as per UK Slot Regulations, they would gain historic entitlement for the subsequent season. However, that is based on an incorrect understanding of the interaction of the various legislation governing slots and operating

restrictions. Operating restrictions could still be subsequently implemented even if the regime lapsed.

Government response

The current night flight regime is due to expire in October 2022. Without agreeing a new regime for the period beyond 2022, the default situation is that the designated airports would operate without operating restrictions.

The government recognises the International Civil Aviation Organization (ICAO) Assembly's "Balanced Approach" to aircraft noise management. The Balanced Approach consists of identifying noise problems that exist at an airport and then assessing the cost-effectiveness of the various measures available to reduce noise through the exploration of four principal elements, which are:

- Reduction of noise at source (quieter aircraft)
- Land-use planning and management
- Noise abatement operational procedures (optimising how aircraft are flown and the routes they follow to limit the noise impacts)
- Operating restrictions (including night flight restrictions)

Where there is a noise problem at an airport, UK law⁸ requires it to be addressed in accordance with the Balanced Approach and to be managed in a cost-efficient manner. Under the Balanced Approach operating restrictions should only be introduced at airports if there are no other ways of achieving the desired benefits.

In terms of reduction of noise at source, advances in aircraft technology have delivered improvements to the level of noise experienced on the ground, but we consider that this has not been enough to address the noise problem. Land use planning is an important mechanism in influencing the populations affected by aircraft noise and in the assessment (and appropriate mitigation) of environmental impacts resulting from aviation activity. However, in the time available, there is insufficient time for changes to be made. Further work on land use planning will be developed through the Aviation Strategy. The work on finalising the Aviation Strategy has been paused because of COVID-19, but we expect to resume work on developing those proposals later this year.

Noise abatement procedures have been set at the designated airports, and having reviewed these procedures, at present, other than ongoing work at some airports regarding departure noise limits, we do not consider significant changes to noise abatement procedures will help to meet the objective. Therefore, we remain of the view that operating restrictions are necessary, and that it would not be appropriate to let the current regime lapse. This could lead to night flights being restricted only by airport operational capacity, and this is not a position supported by the government. Therefore, the existing restrictions will be carried over into a new regime to take effect from October 2022.

⁸ EU Regulation 598/2014 as retained in UK law; see section 3 of the European Union (Withdrawal) Act 2018. Direct EU legislation, so far as operative immediately before exit day, forms part of domestic law on and after exit day.

5. Proposal to ban QC4 rated aircraft movements from operating at the designated airports between 23:30 and 06:00 from October 2022

We asked the following question:

Do you agree we should ban QC4 rated aircraft movements from operating at the designated airports between 23:30 and 06:00 from October 2022?

The overwhelming majority of respondents agreed with the proposal to ban QC4 rated aircraft movements at the designated airports between 23:30 and 06:00, noting that it would help reduce potential health risks as a result of not getting enough sleep and stress caused by sleep disturbance. A common feeling expressed was that it is right that the regulations are tightened to encourage the phasing out of older and noisier aircraft.

However, several responses stated that this proposal did not go far enough. Community groups argued that, considering the great disturbance night flights cause to local residents, night flights should only occur in cases of emergency or of genuine economic importance. There were calls for the night quota period to be extended to reflect what respondents have interpreted as World Health Organization guidance recommending 8 hours of uninterrupted sleep. This is in fact a misrepresentation of the guidance and takes the guidance out of the context for which it was intended. Respondents also questioned why this ban on QC4 rated aircraft movements could not begin sooner than 2022. They note that a majority of these movements are not currently being used due to COVID-19 and encourage government to take advantage of this and commence the ban of QC4 rated aircraft movements at the designated airports as soon as possible.

An environmental group were of the view that the impact of COVID-19 has meant many new aircraft orders being cancelled or delayed, and they feared that this could impact on the speed of transition to quieter aircraft. They acknowledged that the pandemic has accelerated the phasing out of older, less efficient - and comparatively noisier – aircraft from commercial passenger service, but the reduction in available ‘bellyhold’ freight capacity has seen many of these aircraft picked up by logistic companies whose business has grown considerably during the pandemic.

Some respondents were sceptical about this proposal and expressed that the benefits of this to communities would be minimal as most night flights are not QC4 aircraft. They state that the ban should be widened to include QC2 rated aircraft movements to noticeably improve the level of noise at night. There were some respondents confused as to why louder aircraft are being used at night when much quieter aircraft exists.

On the other hand, industry representatives were concerned about this proposed ban. QC4 rated aircraft movements are mainly used for cargo, and some industry responses suggested that banning these would mean the UK is unable to compete efficiently with major international cargo airlines. A ban on QC4 rated aircraft movements would mean smaller aircraft would be used, substantially reducing bellyhold capacity for freight. They point out that although QC4 rated aircraft movements are not typically used, they are vital when moving large volumes of cargo - for example, medical equipment during the COVID-19 pandemic. Industry responses noted that there are many Boeing 747-400 freighters still operating at UK airports that have supported the COVID-19 response. They asked that government demonstrate what the impact of banning these movements would be and what is to be achieved by this restriction within the framework of the ICAO balanced approach.

An industry body was of the opinion that an operational ban on QC4 rated aircraft movements is not necessary at this time. They note that the pandemic has prompted many airlines to accelerate the retirement of their older aircraft. They also added that there are cases where an operational ban would severely impact the ability of some operators to transport perishables, pharmaceuticals, medical equipment, and live animals to and from the UK.

Industry responses also pointed out that pre-pandemic, QC4 rated aircraft movements were only allowed to operate during the night quota period if delayed. Banning these aircraft from flying during the night even when delayed may have detrimental effects for freight and UK trade. They point out ICAO's balanced approach requires less restrictive means to be examined before implementing this ban which would disproportionately impact freight.

Industry pointed out that airlines are already in a difficult position due to the pandemic and imposing strict restrictions during this time would cause them further financial difficulty. They point out that some airlines may continue to use QC4 rated aircraft movements as the pandemic has forced them to delay the purchase of newer aircraft. Additionally, many airlines have leases that cannot be terminated at such short notice and would instead benefit from a longer transition period. There was some concern that banning QC4 rated aircraft movements at the designated airports would lead to airlines simply moving them to other airports, causing the noise issue to remain. Overall, most members of industry see this ban as going too far, particularly since QC4 rated aircraft movements are not commonly used for passenger flights and thus are not the main source of night noise.

One local authority made the point that whilst they are supportive of the ban on QC4 rated aircraft movements at night, they expressed concern that if the noise quota limit remains unchanged then the number of night flights could increase. They added that it is not just the volume of the noise but also the number of overflights that causes disturbance to local communities.

Government response

Prior to the pandemic, QC4 rated aircraft movements were the noisiest in regular service at any of the designated airports. Although they could not be scheduled during the night quota period (23:30 to 6:00), they could operate if delayed. To prevent these aircraft operating at night in the future, the government proposed to ban QC4 rated aircraft movements during the night quota period, at the designated airports, from October 2022. This proposal intended to benefit communities by removing the noisiest aircraft between 23:30 and 06:00, while having a minimal negative impact upon industry.

After considering the consultation responses received we will, as proposed in our consultation, be going ahead with the introduction of a ban on QC4 rated aircraft movements. The response from community groups and individuals was largely supportive of this proposal, although some questioned why such a ban could not begin sooner. As this operational ban will be a new operating restriction, it had to be consulted on under the regulations, and then the required notification and lead in times for slot committees taken into account, meaning that the ban will be introduced alongside the new night flight regime in October 2022.

We believe that the introduction of a ban on QC4 rated aircraft movements will help in limiting the number of people significantly affected by aircraft noise at night, by preventing the noisiest aircraft from operating. Figures 1 to 6 illustrate the 60 dB L_{Amax} noise footprints⁹ for departures at Heathrow, Gatwick and Stansted. For each airport, separate footprints are shown for a single easterly departure and a single westerly departure for both a QC4 rated aircraft movement and a QC2-rated aircraft movement. The comparison drawn between QC4 and QC2 aircraft is based on the assumption that an operational ban to QC4 aircraft movements would result in airlines operating the next noisiest aircraft type, which in this instance would be QC2-rated. The modelled departure routes at each airport were based primarily on the most commonly used routes for the B747-400 over the combined summer 2020 and winter 2020/2021 seasons (day or night).

Results are summarised in Tables 4, 5 and 6, which show the area, population and number of households within each 60dB L_{Amax} departure footprint at each of the designated airports. Differences in footprint areas for the same aircraft type (i.e. B747-400/-400F or B777-300ER/B777F) can be explained by operational differences at each airport. These could include differences in airline departure procedures (causing differences in engine thrust and noise), differences in take-off weight (generally a more heavily loaded aircraft will be lower over the ground compared to a lighter aircraft), and different airspace constraints (delaying climb along some airport departure routes, meaning that aircraft are lower).

These results indicate that the noise footprint of a QC2 rated aircraft at each airport is considerably smaller than for a QC4 aircraft, and thus the associated noise impacts of a QC2 aircraft are therefore significantly less. The figures assume there would be a one-for-one replacement of QC4 to QC2 aircraft.

⁹ Footprints are used to compare the noise characteristics of different aircraft and are helpful in depicting their relative contributions to noise exposure. While it is standard practice to plot 60dB L_{Amax} noise footprints for aircraft operations at night, the footprint boundaries for the B747-400 extend significantly beyond the point at which the ANCON aircraft noise model has been validated (see www.caa.co.uk/CAP1149). The results are therefore subject to some uncertainty.

Figure 1. Illustrative 60dB L_{max} easterly departure footprints for QC4 and QC2 aircraft at Heathrow (09R BPK)

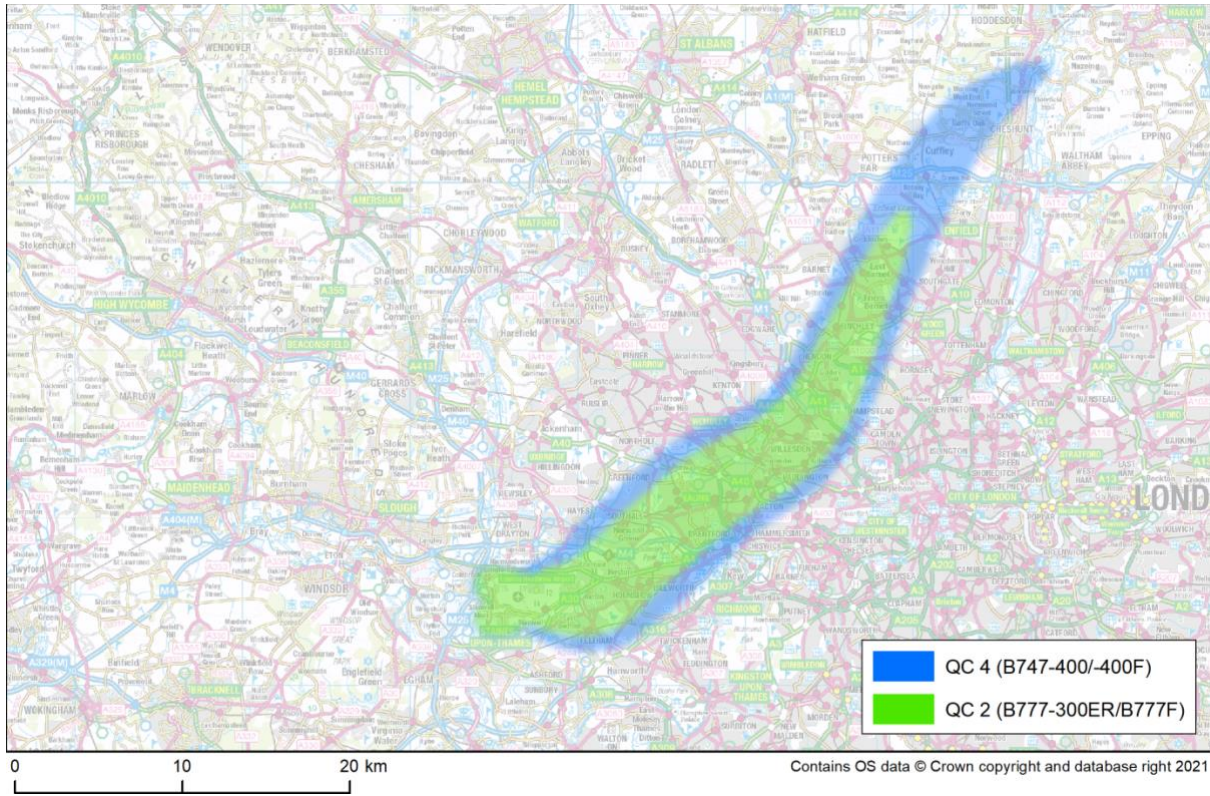


Figure 2. Illustrative 60dB L_{max} westerly departure footprints for QC4 and QC2 aircraft at Heathrow (27R BPK)

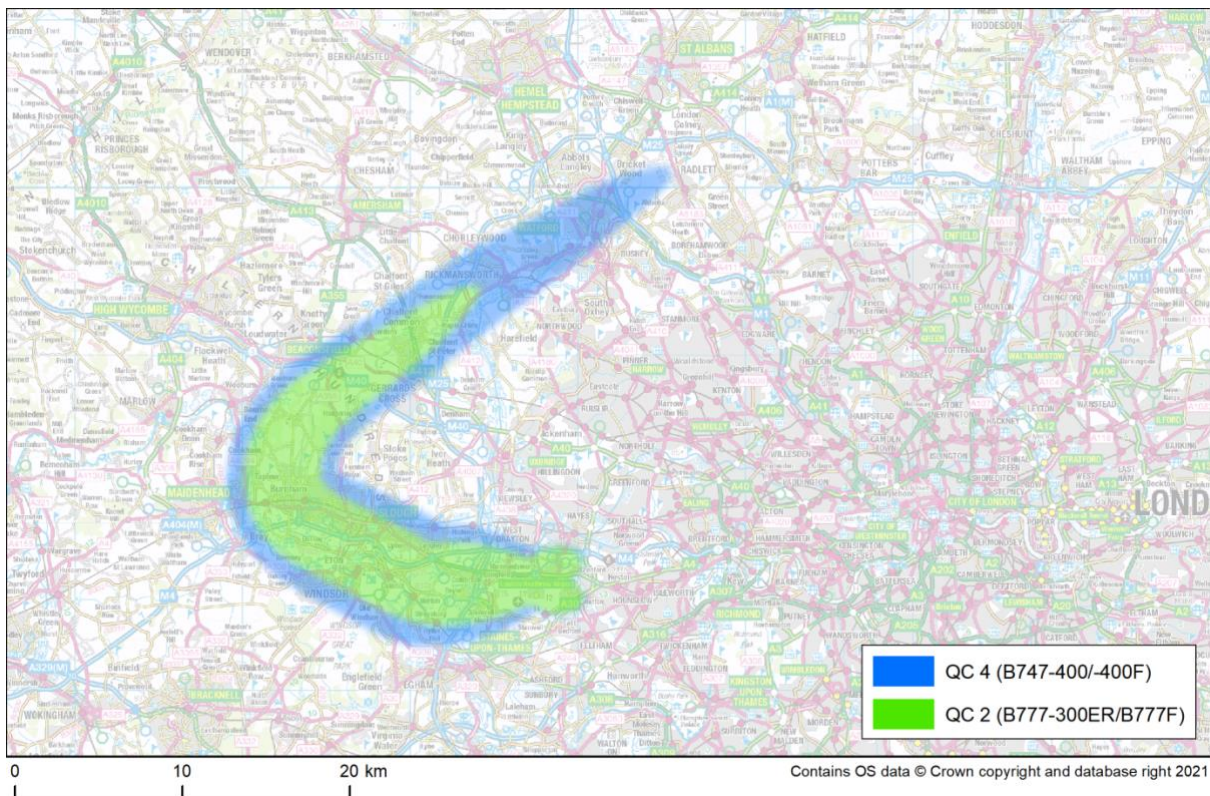


Figure 3. Illustrative 60dB L_{Amax} easterly departure footprints for QC4 and QC2 aircraft at Gatwick (08 LAM)

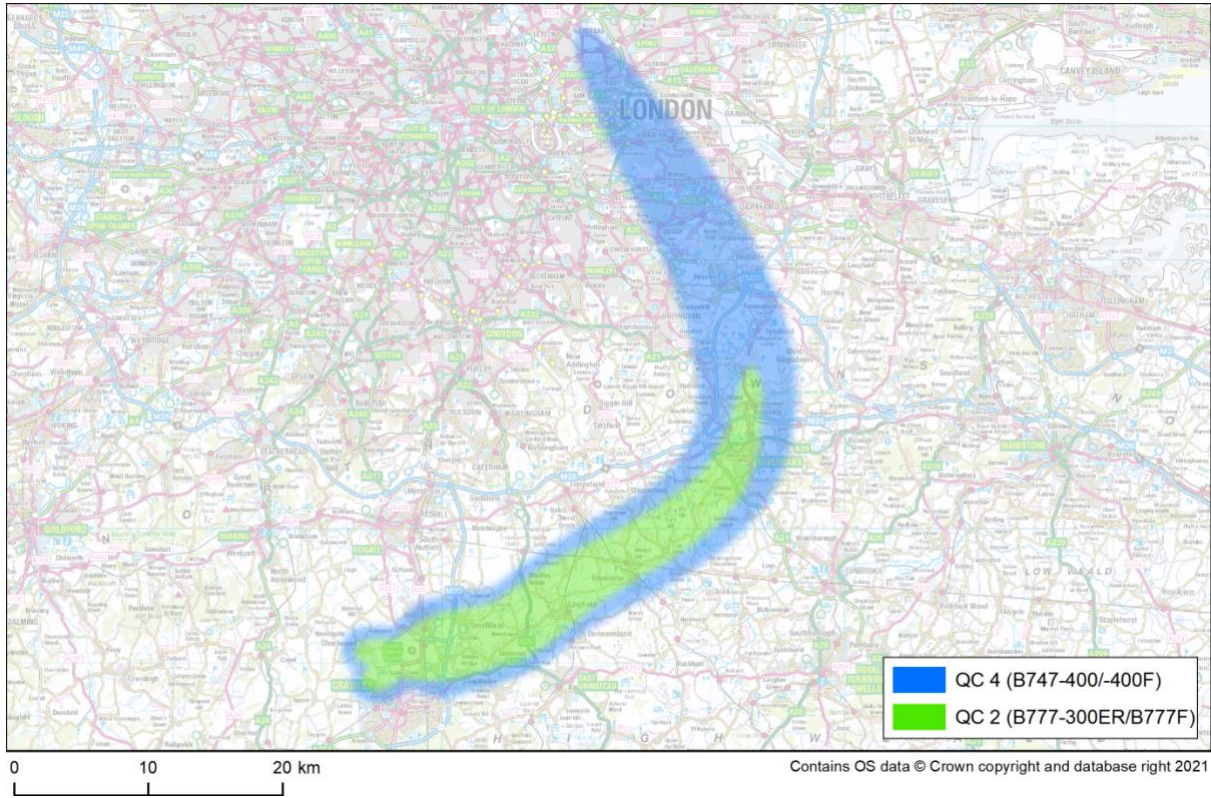


Figure 4. Illustrative 60dB L_{Amax} westerly departure footprints for QC4 and QC2 aircraft at Gatwick (26 LAM)

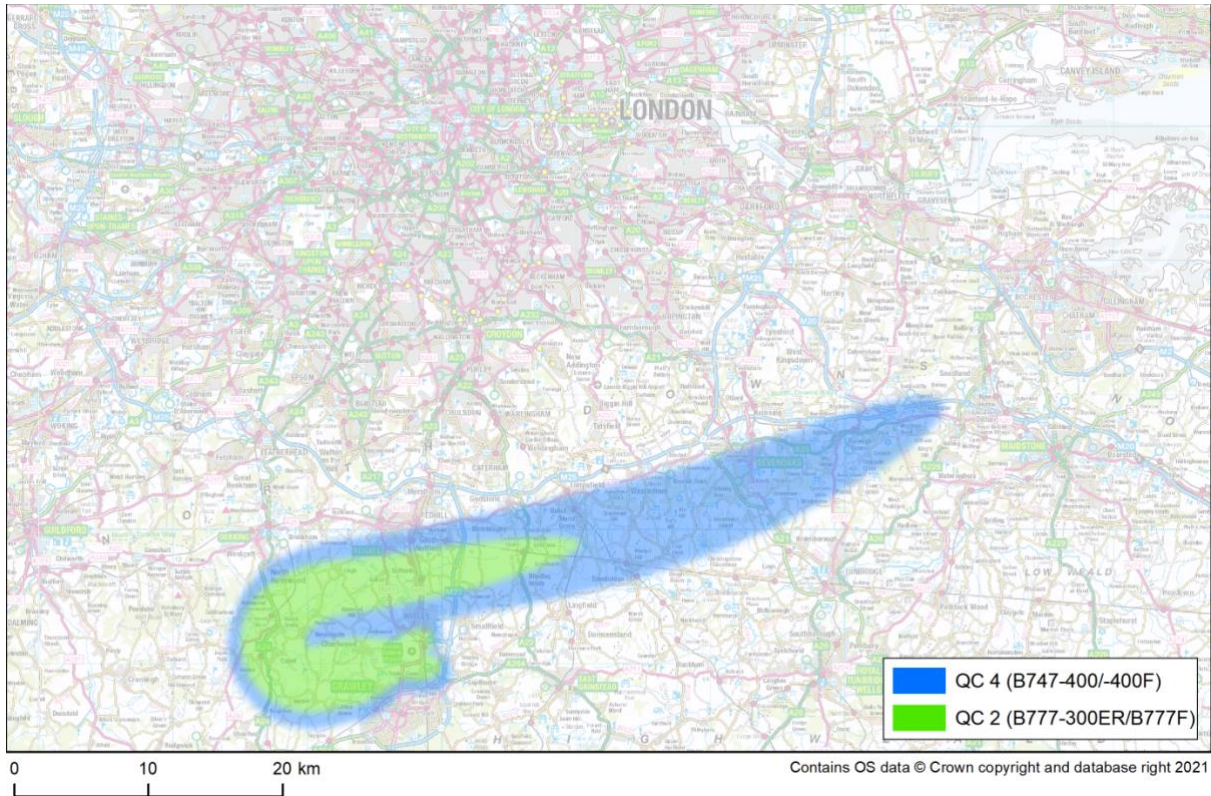


Figure 5. Illustrative 60dB L_{Amax} north-easterly departure footprints for QC4 and QC2 aircraft at Stansted (04 CLN)

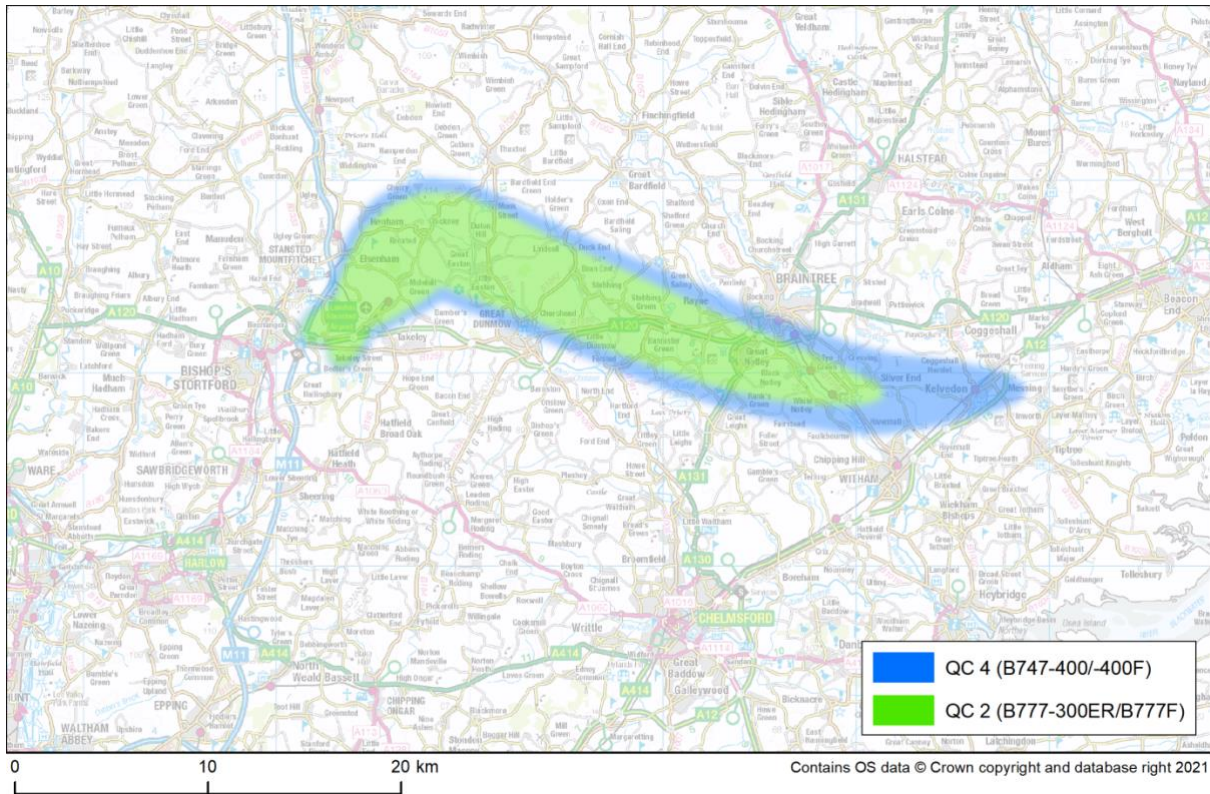


Figure 6. Illustrative 60dB L_{Amax} south-westerly departure footprints for QC4 and QC2 aircraft at Stansted (22 CLN)

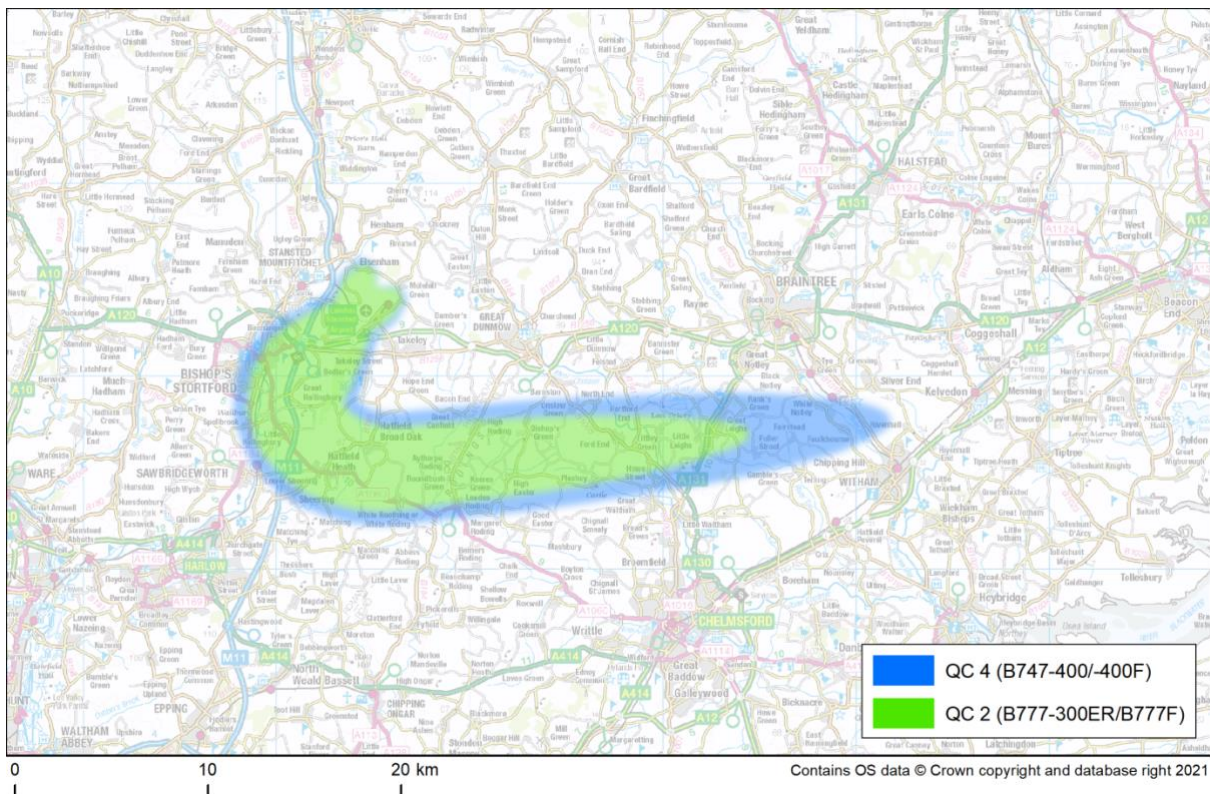


Table 4. 60dB L_{Amax} departure footprint areas for QC4 and QC2 aircraft at Heathrow

Aircraft	Footprint	Area, sq km	Population, 1000s	Households, 1000s
QC 4 (B747-400/-400F)	Easterly (09R BPK)	270	1,280	480
	Westerly (27R BPK)	270	390	150
QC 2 (B777-300ER/B777F)	Easterly (09R BPK)	150	790	290
	Westerly (27R BPK)	150	170	66
Differences	Easterly (09R BPK)	-44%	-38%	-40%
	Westerly (27R BPK)	-44%	-56%	-56%

Table 5. 60dB L_{Amax} departure footprint areas for QC4 and QC2 aircraft at Gatwick

Aircraft	Footprint	Area, sq km	Population, 1000s	Households, 1000s
QC 4 (B747-400/-400F)	Easterly (08 LAM)	440	710	250
	Westerly (26 LAM)	440	160	63
QC 2 (B777-300ER/B777F)	Easterly (08 LAM)	150	66	27
	Westerly (26 LAM)	150	29	11
Differences	Easterly (08 LAM)	-66%	-91%	-89%
	Westerly (26 LAM)	-66%	-82%	-83%

Table 6. 60dB L_{Amax} departure footprint areas for QC4 and QC2 aircraft at Stansted

Aircraft	Footprint	Area, sq km	Population, 1000s	Households, 1000s
QC 4 (B747-400/-400F)	Easterly (04 CLN)	200	54	22
	Westerly (22 CLN)	200	43	17
QC 2 (B777-300ER/B777F)	Easterly (04 CLN)	120	22	8
	Westerly (22 CLN)	120	23	9
Differences	Easterly (04 CLN)	-40%	-59%	-64%
	Westerly (22 CLN)	-40%	-47%	-47%

We have considered the concerns raised by industry, such as the proposed ban leading to less capacity for freight to move in the bellyhold of passenger flights, that more smaller aircraft would need to be flown instead of fewer larger aircraft, and that if airlines are no longer able to use their current fleet this could limit their flexibility and future growth. However, we did not receive strong evidence to suggest the impact on the aviation industry of the proposed ban on QC4 rated aircraft movements in the night quota period at the designated airports would outweigh the benefits in improved night noise, such as to dissuade government from proceeding with this proposal. We maintain that this proposal will have a minimal impact on the majority of the aviation industry. We have also considered the point on dispersal of QC4 rated aircraft movements to other (non-designated) airports elsewhere, but note that all bans displace aircraft to other airports.

Due to the small number of QC4 rated aircraft movements that have taken place in the NQP in recent years, a ban of QC4 rated movements would represent minimal costs to airlines

whilst providing communities with the reassurance that in the future they will not experience the noisiest aircraft at night and the associated health impacts. Additionally, it ensures that airlines will not be able to reintroduce these aircraft at night as aviation demand recovers, but will still be able to deliver capacity through quieter aircraft.

It is notable that some industry respondents did agree with our proposal and saw it as the next logical step towards fleet modernisation. Amongst the responses from freight carriers, it was noted that QC4 rated aircraft movements are not regularly used by them at the designated airports. The government is fully appreciative of the support the freight industry has provided during the pandemic, such as in delivering critical medical equipment and supplies, for which we understand that QC4 rated aircraft movements have at times been deployed. It is possible for dispensations to be granted in these rare cases of emergency, which in this instance would allow QC4 rated aircraft movements to continue to be used for this specific type of flight.

6. Glossary

Balanced Approach	Guidance developed by ICAO to address aircraft noise problems at individual airports in an environmentally responsive and economically responsible way
CAA	Civil Aviation Authority
dB	Unit of relative sound level or changes in sound level
dBA	Unit of sound pressure level measured on the A weighted scale, i.e. as measured on an instrument that applies a weighting to the electrical signal as a way of simulating the way a typical human ear responds to a range of acoustic frequencies.
Designated airport	Any airport designated for the purposes of section 78 of the Civil Aviation Act 1982 which allows the Secretary of State to require action to be taken to avoid, limit or mitigate the effect of noise from aircraft. Heathrow, Gatwick and Stansted are the three airports currently designated for these purposes
EPNdB	Effective Perceived Noise Decibels. A specialised noise unit used for aircraft noise certification tests.
ERCD	Environmental Research and Consultancy Department of the Civil Aviation Authority.

ICAO	International Civil Aviation Organisation.
L_{eq}	A measure of long-term average noise exposure. For aircraft it is the level of a steady sound which, if heard continuously over the same period of time, would contain the same total sound energy as all the aircraft noise events. L _{eq} is most commonly used with the A-weighted scale (as measured on an instrument that applies a weighting to the electrical signal as a way of simulating the way a typical human ear responds to a range of acoustic frequencies), expressed as L _{Aeq} . L _{Aeq 6.5hr night} is used in this consultation to refer to the noise levels in the period of the night, 23:30-06:00, that movement and noise quota limits apply to.
L_{Amax}	The maximum A-weighted sound level (in dBA) measured during an aircraft flyby
L_{night}	Usually, the eight hour L _{eq} average noise level from a specified source or sources as defined in Directive 2002/49/EC, in the UK defined to cover 23:00-07:00 local time; sometimes defined over other periods at night.
Movement Limit	The number of movements allowed during a season between 23:30 and 06:00 (the Night Quota Period).
Noise Contour	Aircraft noise maps which show lines joining points of equal noise to illustrate the impact of aircraft noise around airports.
Night Period	Defined as 23:00-07:00 local time.
Night Quota Period	Defined as 23:30-06:00 local time unless the context indicates otherwise.
Noise Quota	An aggregation of quota count for individual aircraft, used to define a seasonal limit or usage by comparison with the applicable limit.

Operating Restriction

Noise related action that limits or reduces access of civil subsonic jet aeroplanes to an airport. It includes operating restrictions aimed at the withdrawal from operations of marginally compliant aircraft at specific airports as well as operating restrictions of a partial nature, affecting the operation of civil subsonic aeroplanes according to time period

Quota Count (or QC)

The weighting attributed to the arrival or departure of a specified aircraft type by reference to its certificated noise performance, divided into 3EPNdB bands.

Scheduling committee

Responsible for formulating scheduling policies specific to a particular airport.

TAG

TAG is the Department for Transport's suite of guidance on how to assess the expected impacts of transport policy proposals and projects.

WHO

World Health Organization.