

Heathrow

# Noise Action Plan 2024-2028

CONSULTATION DOCUMENT  
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# Foreword

Heathrow brings huge economic benefits both locally and nationally – as one of the largest single-site workplaces in the UK, Heathrow is proud to employ over 70,000 people, over half of whom live in Heathrow's five local boroughs. Nationally, Heathrow is the UK's only Hub airport and therefore plays a big role in underpinning the UK's economic success, connecting regions across the country to over 200 destinations in over 80 countries.

We are aware that aircraft noise remains an issue for those living around the airport. That's why we work together with airlines, NATS (our air traffic controllers), Government, and local communities to manage and reduce the effects of aircraft noise. Our draft Noise Action Plan (NAP) sets out how we are planning to manage and reduce the impacts of aircraft noise over the next five years. It includes draft actions that Heathrow proposes to carry out to mitigate.

The plan which follows is now the fourth Noise Action Plan Heathrow has produced. It demonstrates the progress we have made in seeking to remain a global leader in noise management and delivering against initiatives which reduce the impact of aircraft noise.

Since our last published action plan in 2019, we have made solid progress against the actions we set out to achieve. This includes:



- A significant improvement in the aircraft fleet, with the quietest Chapter 14 category representing 79.6% of total aircraft movements in 2022, up from 60.8% in 2018.
- The launch of our new Fly Quiet and Green league table to incentivise airlines to use their quietest aircraft and best operational practices. We have further developed the programme since the first quarter of 2023. The updated version will produce results from the beginning of Q2.
- We published studies on Heathrow’s noise management, government policy, perceived value of the respite provided by runway alternation, and we published adherence reports on the Government’s policy on its night restriction regime, Airspace Noise and ATM Performance, Summer and Noise Action Plan Contours, Steeper Climb Gradient Trial Report (DET 09R departure), and noise data for the first three years of Airbus A350 operations.
- Our research and development in the detection of landing gear deployment has made significant progress despite complex technical challenges.
- The establishment of the Noise and Airspace Community Forum (NACF), which replaced the Heathrow Noise Community Forum (HNCF) and features a newly appointed independent chair who will play a pivotal role in bringing together industry and local stakeholders to help shape Heathrow’s approach to noise management.

- Completing our airspace change for Slightly Steeper Approaches and adopting the trial procedure as a permanent procedure for our RNP approaches in December 2021.
- A complete review of our Noise Insulation Scheme (NIS) to allow for an improved offer for local communities, including the creation of an independent panel to advise on the priority of homes and premises including schools to be treated each year.
- Continued improvement of ventilation facilities at local schools, building on our window and Adobe building programmes.

Heathrow has long been at the forefront of international efforts to address aircraft noise and we know we must continue to build on this. We are proud of the fact that, despite the number of aircraft movements at the airport going up, our noise footprint has shrunk considerably over the past few decades and is at the smallest it has ever been. This trend has continued over the last ten years ever since the action planning process required by the Environmental Noise (England) Regulations 2006/2238, implementing EU Directive 2002/49, has been in place.

In 2006 the area of our 55dBA L<sub>den</sub> contour was 245 km<sup>2</sup> and by 2019, our last representative year, this had reduced by 28% to 176 km<sup>2</sup>.

To continue to drive improvements over the next five years, here are some key actions we will be working on:

Key areas of development	Actions
Establishing a Fleet Forecasting Forum to predict the pace of future technology and likely take up at Heathrow	1A to 1C
Reviewing the landing charges structure in order to meet our sustainable growth objectives and to accelerate the transition to a Chapter 4-free fleet	2A to 2C
Establishing a Technical Engagement Forum to undertake a review and renewal of the Code of Practice supporting the achievement of the noise abatement objectives	3A to 3L
Developing and trialling operational practices aimed at increasing the level of predictable respite, particularly at night.	4A to 4D
Identifying opportunities to enhance the collection and analysis of noise data in order to improve our understanding of the effectiveness of the noise abatement interventions	5A to 5D
Establishing a MoU with local authorities, providing our forecast outputs to reduce sleep disturbance at night, and supporting land use planning	6A
Launching the new Round 4 Noise Insulation Schemes in 2024	7A and 7B
Seeking to introduce a voluntary ban on non-dispersed operations after midnight and before 4:30am	8A
Developing and implementing a ground noise management plan which will include work with international partners to develop a standard for the use of pre-conditioned air where available	9A
Establishing a longitudinal noise attitudes survey, so we can enhance our understanding of our stakeholders and the effectiveness of our noise strategy	10A to 10G
Strengthening the independent scrutiny of our noise management strategy and providing independent insight, assurance, and transparency	11A to 11D
Undertaking a review and enhancing our online information and tools to improve accessibility and provide greater insights in a more efficient way	12A to 12C

This plan goes beyond the requirements of European and UK legislation by including actions which will manage both ground and air noise for affected communities. It includes new commitments which are part of our sustainability strategy ‘Heathrow 2.0’ and will see us continue to deliver progress in this key area.

We look forward to working closely with our local communities, airlines, NATS, manufacturers and policy makers to deliver our new Noise Action Plan that continues to build on our efforts to reduce the impact of noise from our operations.

**JOHN HOLLAND-KAYE**  
Chief Executive, Heathrow Airport Limited



SECTION TWO

# Purpose and scope





## Purpose

The purpose of this Noise Action Plan is to set out how we intend to make progress against our Heathrow 2.0 noise objective and comply with the requirements of the Environmental Noise (England) Regulations 2006/2238 (ENR) (which implements the European Union Environmental Noise Directive 2002/49/EC) and other associated UK Government regulations.

The airport operator is deemed the competent authority for drawing up the Noise Action Plan, which for Heathrow airport, is Heathrow Airport Limited (HAL). The final adoption and approval of the Noise Action Plan is undertaken by the Secretary of State for the Department of Environment, Food and Rural Affairs (Defra).

Government guidance states that noise action plans are *“designed to manage noise issues and effects arising from aircraft departing from and arriving at the airport”, “including noise reduction if necessary”*.

Heathrow has made significant progress in addressing the noise challenge, but we recognise that Heathrow’s operations do result in noise impacts for our local communities. This document sets out how we plan to manage, and where possible reduce, the impact of aircraft noise.

However, in some cases responsibilities for noise management fall to the DfT, to NATS or the CAA, so in those cases we are committed to recommending and seeking to influence proposed changes. The DfT’s Air Navigation Guidance 2017, available on the Government’s website, sets out the roles and responsibilities of all bodies that have a role in managing aviation noise.

Our first Noise Action Plan covered the period 2010 to 2015. This is our fourth Noise Action Plan and it covers the period 2024 to 2028. It has been compiled in line with Defra’s 2022 guidance (see Annex 2) and the main actions (Section 8) have been developed in dialogue with various stakeholder groups including the Noise and Airspace Community Forum (NACF).



## Scope

In accordance with the requirements of Regulation 2006/2238, this action plan makes reference to  $L_{den}$  noise contours calculated on a decibel (dB) scale for 2021 operations. They were produced by the Environment Research Consultancy Department (ERCD) of the CAA using the UK civil aviation noise model ANCON (version 2.4) and were published for Heathrow Airport in September 2022. The 2021 Strategic Noise Maps produced by Defra are shown in Annex 11. We have also drawn on supplementary information.

ERCD produced summer and Noise Action Plan contour reports commissioned by Heathrow for 2020 and 2021. Normally we would expect to use the 2021 report to form the baseline of our next plan from 2024. However, due to Covid travel restrictions and the operational impacts of the pandemic, noise contour results for 2021 show a highly anomalous situation for most UK airports including Heathrow. The significant reduction in air traffic over this period has meant that most contours substantially reduced in size and fewer people were affected by noise.

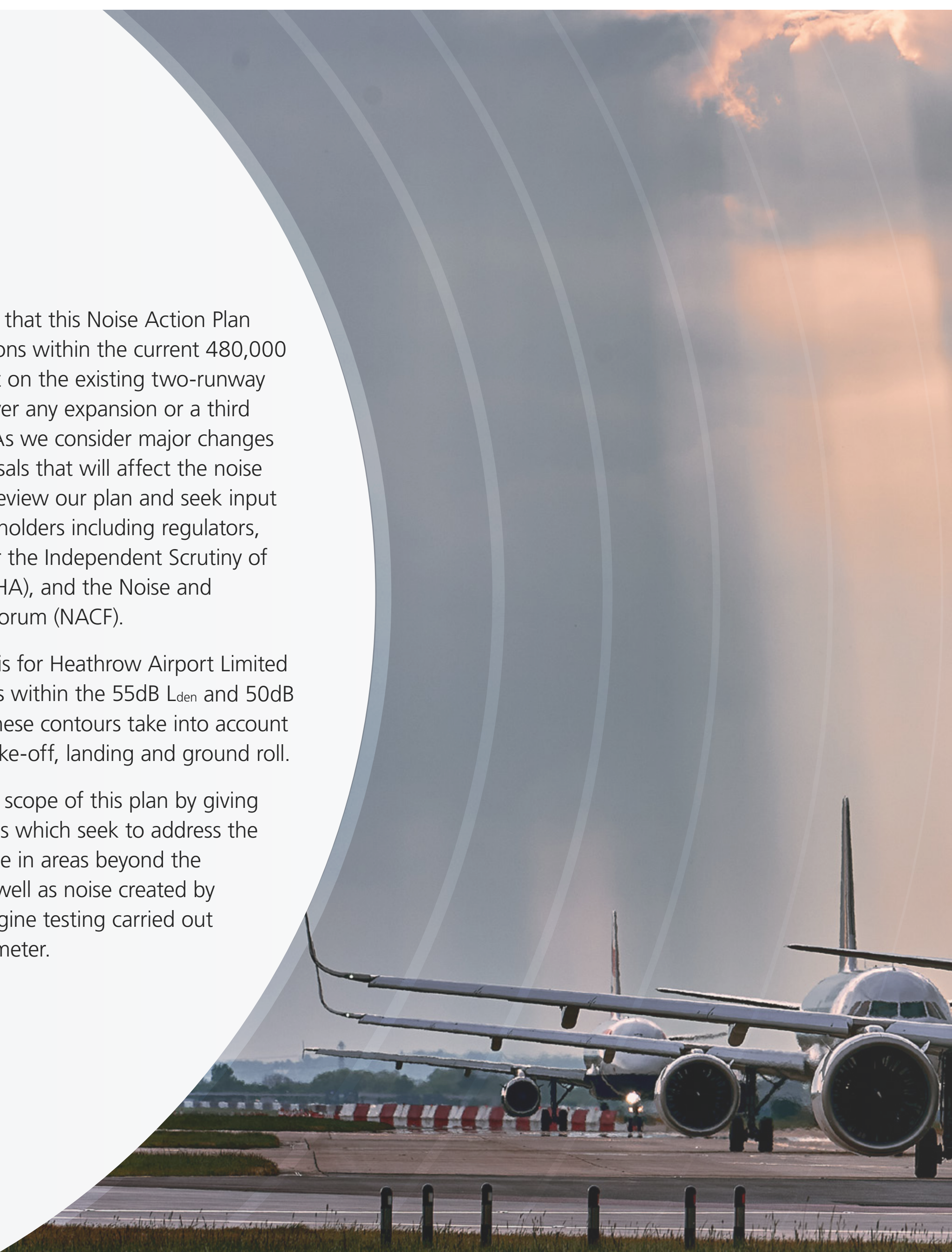
Therefore, action plans created on the basis of 2021 data are unlikely to result in effective actions that will lead to meaningful improvements in the management of noise for our local communities. We have received guidance from the Government which says we should draw on information which better reflects the situation for our next Noise Action Plan as appropriate. As a result, we can supplement 2021 data with information from 2019 which is the most representative period. This may include (but is not restricted to) contours from previous years, annual contours produced to meet other requirements, summer contours, or projections.

Through the actions set out in this plan, we will seek to manage aircraft noise from Heathrow's operation. It is important to note that this Noise Action Plan only includes actions related to developments for which the airport has been granted planning permission, or for which there are active project plans to take forward to planning consent at the time of publication. This Noise Action Plan does not therefore include a mitigation strategy or specific actions to deal with airport expansion.

Specifically, this means that this Noise Action Plan applies only to operations within the current 480,000 annual movement limit on the existing two-runway system. It does not cover any expansion or a third runway at Heathrow. As we consider major changes or development proposals that will affect the noise environment, we will review our plan and seek input from a variety of stakeholders including regulators, airlines, the Council for the Independent Scrutiny of Heathrow Airport (CISHA), and the Noise and Airspace Community Forum (NACF).

The legal requirement is for Heathrow Airport Limited to consider noise issues within the 55dB  $L_{den}$  and 50dB  $L_{night}$  noise contours. These contours take into account aircraft noise during take-off, landing and ground roll.

We have extended the scope of this plan by giving consideration to actions which seek to address the impacts of aircraft noise in areas beyond the specified contours, as well as noise created by taxiing aircraft and engine testing carried out within the airport perimeter.





## Scope continued



Figure 2.1: Extract from Heathrow 2.0. summarising our noise goals

The Noise Action Plan also aligns with Heathrow 2.0, our sustainability strategy which was updated in 2022 and sets out a clear sustainability vision and goals for Heathrow that we aim to achieve by 2030. Within the pillar. “A great place to live and work”, Objective 4 is called “Quieter nights, quieter flights” and contains a headline goal to “limit, and where possible reduce, the number of highly sleep-disturbed and highly annoyed people compared to 2019”. There are also a series of targets:

- Reduce noise contour areas compared to 2019
- Introduce easterly alternation by 2028
- Protected period of the core night by 2025 (no flights except dispensed operations between midnight and 4:30am)
- Incentivise the use of Chapter 14 aircraft to reduce Chapter 4 operations to less than 2019 levels.
- Increase nights without aircraft after 11:45pm relative to 2019 levels.

The Noise Action Plan provides the detail on how we will manage, and where possible reduce, the impact of aircraft noise in the period 2024-2028. Doing so will support us to achieve the 2030 goal and targets set out in Heathrow 2.0.

The Noise Action Plan does not include noise from non-aircraft sources such as airport construction activities or noise from road and rail traffic associated with the airport. Action plans for noise associated with major road and rail routes are dealt with separately under Government legislation and do not fall within the responsibility of airport operators.

For information, please see [Strategic noise mapping \(2017\) - GOV.UK \(www.gov.uk\)](#) and Annex 14.

New noise from sources associated with any expansion of the airport would also be addressed through the planning and consenting process.



SECTION THREE

# Description of Heathrow Airport



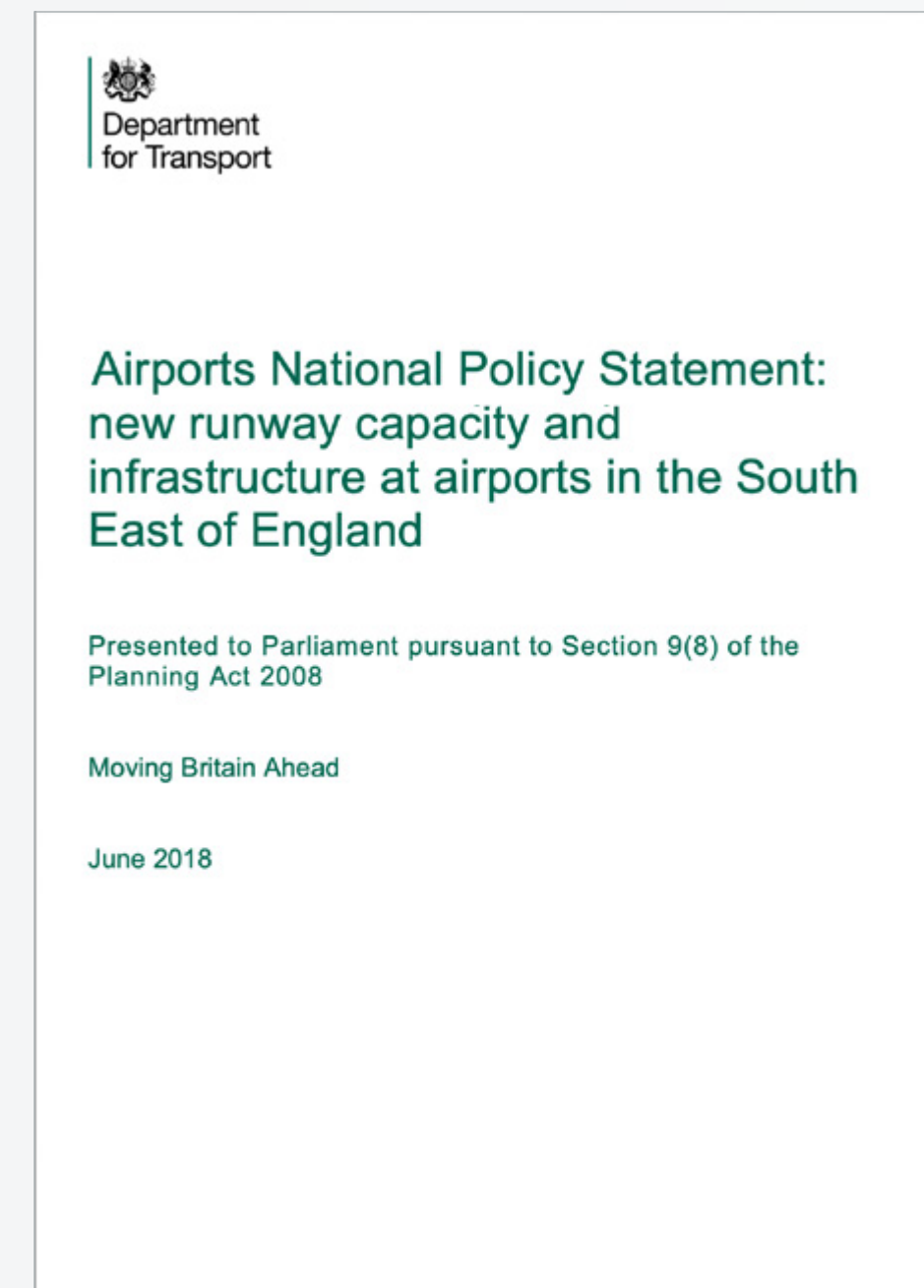


## PLANNED DEVELOPMENT 2024-2028 AND BEYOND

### Heathrow Expansion

On 26 June 2018, the Airports National Policy Statement: new runway capacity and infrastructure at airports in the South East of England (the ANPS) was formally designated by the Secretary of State for Transport following a House of Commons vote in favour of the policy. The ANPS provides policy support for the expansion of Heathrow Airport and the construction of a third runway to the north west of the existing airport. To obtain planning permission for the final scheme, we must make an application for a Development Consent Order (DCO) under the Planning Act 2008.

Due to the effects of Covid, progress on our DCO application was paused in 2020. We are currently reviewing our plans around Expansion and will provide an update as soon as possible.



Heathrow has two runways, four passenger terminals and one cargo terminal with two aprons. The airport is located approximately 21 km (13 miles) west of the city of London. Surrounding the airport are a mixture of suburban housing, business premises, open land and infrastructure including three large reservoirs to the west. In 2019, there were just under 478,000 aircraft movements handling around 80.9 million passengers. In 2022, we had just over 380,000 movements and around 60 million passengers.

### Easterly Alternation

We are progressing with our plans to enable the construction of the taxiways required to enable full easterly alternation following the ending of the Cranford Agreement under the Town and Country Planning Act. We are progressing with our plans to enable the construction of the taxiways required to enable full easterly alternation following the ending of the Cranford Agreement under the Town and Country Planning Act.<sup>1</sup> This will provide predictable respite to more local communities.

<sup>1</sup> <https://www.heathrow.com/noise/heathrow-operations/cranford-agreement>



## PLANNED DEVELOPMENT 2024-2028 AND BEYOND

### Airspace Change Process

Airspace changes are regulated by the CAA following its seven stage CAP 1616 Airspace Change Process.

The CAA reformed the airspace change process and introduced CAP1616 Airspace Change in December 2017, to ensure that it meets modern standards for regulatory decision-making, and is fair, transparent, consistent, and proportionate. The process ensures that when the CAA decides whether to approve a proposal to change UK airspace, it does so in an impartial and evidence-based way that takes proper account of the needs and interests of all affected stakeholders.

The CAP1616 airspace change process introduced additional CAA scrutiny and validation of sponsors' work and evidence as they develop proposals; increased requirements relating to transparency and engagement; and introduced new opportunities for those impacted by proposals to have their voices heard.

The airspace change process is designed to align with the Government's policy on managing airspace. Airspace change options are assessed using WebTAG, a series of guides and analysis tools. The Department for Transport have published guidance explaining what WebTAG is and how it can be used to assess noise impacts. [Quote taken directly from <https://www.caa.co.uk/Commercial-industry/Airspace/Airspace-change/Airspace-Change/Airspace-change-process>]

### Airspace Modernisation

The majority of UK flight paths were designed decades ago, at a time when aircraft and navigation were much less sophisticated than today. A nationwide airspace modernisation programme is therefore underway across UK airports.

Modernisation of the UK's airspace is required to accommodate growing demand for air travel in a sustainable way. The Government has embarked on its airspace modernisation strategy<sup>1</sup> which is being sponsored by the Civil Aviation Authority and the Department for Transport.

The aim of the strategy is to make airspace more efficient, to improve punctuality, to reduce CO<sub>2</sub> emissions, to reduce noise and to ensure there is capacity to meet future demand. The strategy will require UK airports to modernise their airspace, as well as the airspace network above them, known as en route airspace. The UK's Airspace Modernisation Strategy is part of ICAO's Global Air Navigation Plan.

The Government's strategic rationale for upgrading UK airspace provides more information on the need for airspace modernisation in the UK and the policy is captured within the UK Airspace Modernisation Strategy<sup>2</sup> which describes the planned upgrades.

The Airspace Change Organising Group (ACOG) website provides more information about the benefits of airspace modernisation. Heathrow is working closely with ACOG and other airports to develop plans that integrate and work together across the UK.

Heathrow had initially proposed to undertake airspace modernisation through its Airspace Change Proposal (ACP) for Airport Expansion, but the Expansion project is on pause as the airport's current priority is to recover from the COVID-19 pandemic. However, Heathrow remains committed to airspace modernisation and keeping pace with the wider UK programme, so we have begun a new ACP to make the necessary changes to flight paths (see existing flight paths shown in Annex 3) to and from our existing two runways.

We have developed design principles for this airspace change in collaboration with key stakeholders, and we submitted these to the CAA in February 2022. The CAA passed us at the Stage 1 Gateway, and we are now at Stage 2 of the CAA's process, where we are developing and assessing potential route options. You can follow our progress on the CAA's airspace change portal<sup>3</sup>.

<sup>1</sup> Upgrading UK airspace: strategic rationale - GOV.UK <https://www.gov.uk/government/publications/upgrading-uk-airspace-strategic-rationale>

<sup>2</sup> Airspace Modernisation Strategy | Civil Aviation Authority (caa.co.uk)

<sup>3</sup> Airspace change proposal <https://airspacechange.caa.co.uk/PublicProposalArea?plD=386>



## PLANNED DEVELOPMENT 2024-2028 AND BEYOND

### Long-term noise strategy

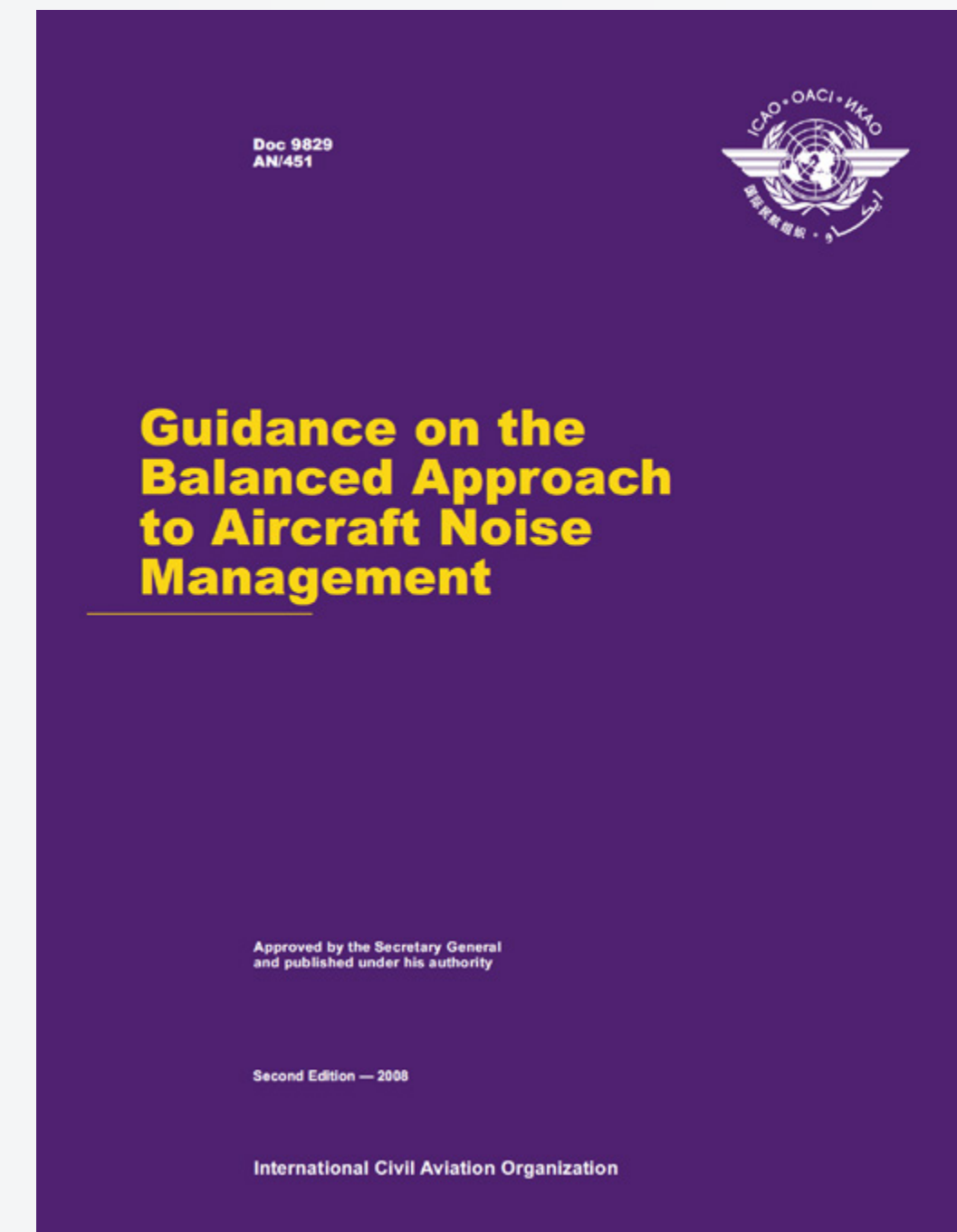
Heathrow's long-term noise strategy has been in place for many years now and is based on the four principal elements of ICAO's Balanced Approach, to which we have added a fifth element we call "Working with Communities" as part of our overall strategy.

This approach is not expected to change in the long term. Section 4 of this document sets out the regulatory regime under which Heathrow manages noise and Section 5 sets out Heathrow's noise management framework in more detail.

Our sustainability leadership plan, Heathrow 2.0 (described in Section 2), sets out our ambition towards a future of sustainable aviation. At the heart of this ambition is our commitment to manage and where possible reduce our noise impacts. We expect a number of key areas of activity to be central to not only this Noise Action Plan, but future iterations.

These include:

- On-going modernisation of the fleet and incentives to use aircraft with the newest noise reduction technologies
- Investigation and appropriate implementation of effective noise abatement procedures
- Airspace design and management to minimise adverse noise impacts and, where appropriate, to maximise respite for residents
- Provision of a comprehensive sound insulation scheme for the most affected houses and schools
- Continual improvement of voluntary measures especially for reducing the impacts of night operations
- Enhanced monitoring, reporting and management of all noise sources from ground and air operations
- Clear and transparent engagement with community groups and industry stakeholders to achieve collaborative and beneficial improvements
- Promotion of a research agenda that enhances our understanding of the impacts of aviation and the effectiveness of the interventions used to reduce noise impacts.





SECTION FOUR

# Background to noise and regulation





## Aircraft noise

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

Airframe noise occurs when air passes over the aircraft's body (the fuselage) and its wings.

This causes friction and turbulence, which make noise. The amount of noise created varies according to the way the plane is flown, even for identical aircraft. Aircraft land with their flaps and undercarriage extended and this creates more friction (and produces more noise) than a plane with its flaps retracted and gear up.

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

Aircraft manufactured today are much quieter than they were 30 or even 20 years ago and this trend is expected to continue as even quieter aircraft are introduced in the future. As a result, even though the number of aircraft movements over the past decade has been relatively stable, airport noise contours have continued to reduce in size.

## Measuring and reporting noise

For many communities aircraft noise is a series of discrete noise events of no longer than one to two minutes duration, varying in noise level and frequency of occurrence, and spaced out over part or all of a day, with daily, weekly and monthly variation. Consequently, measuring noise, describing its impacts and describing change are inherently complex. Any attempt to define and measure noise and change has its limitations and cannot capture the full spectrum of personal experiences of noise. Furthermore, there are many subjective effects such as perception, attitude and visual impact – collectively these are sometimes labelled “non-acoustic factors”. Nevertheless, seeking to quantify noise with objective metrics is essential for any efforts to manage the impacts of noise.

There are a range of metrics which are used to describe aircraft noise and to inform policy. The most common international measure of noise is known as  $L_{Aeq}$  (often shortened to  $L_{eq}$ ) which means ‘equivalent continuous noise level’. Most policy is based on the  $L_{eq}$  metric because, based on current research, it has proven to have the best correlation with associated health outcomes such as annoyance and sleep disturbance (see Table 4.1 below).

In the UK, daytime aircraft noise is typically measured by calculating this average noise level in decibels (dB) over 16 hours (07:00-23:00) during the summer period to give a single daily figure. As these  $L_{eq}$  16hr contours have been used in the UK for over 30 years, they allow historic trends to be monitored.

In 2002 the EU Environmental Noise Directive (END) provided a standardised means for mapping and assessing road, rail and air transport noise across Europe. Strategic noise maps must be created every five years based on the metric  $L_{den}$ , detailing how the identified noise problems are to be managed and mitigated over the five-year period. Like  $L_{eq}$ , the noise metric  $L_{den}$  is also a time-averaged noise metric with penalty weightings for noise in the evening (19:00-23:00) and night (23:00-07:00) periods.

Noting that research on health impacts is usually based on  $L_{eq}$  metrics we acknowledge, however, that most people struggle to understand how the concept of ‘average noise over a day’ relates to their own individual experience. We have been working for a number of years, and most recently through Heathrow's Noise and Airspace Community Forum, to expand the use of supplementary and event-based metrics that better reflect individual experiences of noise following feedback from community members. The outcomes of this work can be seen in our recent annual Noise Contour Reports, which present data with a wide range of historic and new metrics, as well as our Community Noise Information Reports from noise monitors located in community areas.

These reports include the longstanding average noise level metrics but are supplemented by other noise metrics that reflect the number of aircraft noise events above a specific sound level (e.g. 65dBA  $L_{max}$ ), as well as westerly and easterly only contours, and other information such as overflight maps and flight path usage statistics.

All our Noise Reports can be found at [Reports | Heathrow](#).



## Effects of noise

Noise can have a significant and disruptive effect on everyday life. There are many different effects and sources of noise and individuals experience each of them to varying degrees.

Heathrow has conducted a literature review of published, peer-reviewed scientific papers that have been written by recognised experts in noise and its effects on health and quality of life from across the world. This review evaluated the strength of evidence for noise effects from different noise sources including aircraft, road traffic, railways, construction and cumulative/combined noise.

The key health and quality of life effects considered are summarised in Table 4.1, along with the strength of evidence for that effect associated with aircraft noise. It can be noted that whilst noise might negatively impact on some health outcomes and determinants, Government policy also acknowledges the potential health benefits of aviation, such as the impact of aviation on the health determinants of employment, income and education in the population.

The Government continues to research the effects of noise on human health. We welcome the research undertaken by the government and believe it is important for this work to continue, particularly around the effectiveness of interventions taken to manage noise. We are committed to broadening our understanding and addressing any notable research gaps.

We recognise that human response to noise is extremely complex, varies between people and places, and is influenced by many non-acoustic factors. We will continue to monitor Government research in these areas.

Effect	Specific outcomes	Key metric used	Current strength of the evidence
Cardiovascular	Hypertension Coronary Heart Disease (CHD) Acute Myocardial Infarction (AMI) Stroke	L <sub>den</sub> , L <sub>eq</sub> 16hr and L <sub>eq</sub> 24hr	Sufficient
Self-reported sleep disturbance	Interference with falling asleep Awakening/interference with staying asleep	L <sub>night</sub> and L <sub>max</sub>	Sufficient
Objective sleep disturbance	Awakening	L <sub>night</sub> and L <sub>max</sub>	Sufficient
Cognitive development	Reading Standardised test scores	L <sub>eq</sub> , L <sub>den</sub> and, for a few studies, L <sub>max</sub>	Sufficient
Annoyance	Bothered, disturbed or annoyed by noise at home	L <sub>eq</sub> 24hr, L <sub>den</sub> and L <sub>dn</sub>	Sufficient
Hearing impairment	Loss in hearing	L <sub>eq</sub> 8hr (individual exposure)	None at <75dB(A)
Mental health, wellbeing and quality of life	Wellbeing Quality of life Psychological symptoms Psychological illnesses e.g. depression, anxiety Medication for psychological illnesses	L <sub>eq</sub> 8hr (individual exposure) L <sub>eq</sub> 16hr and L <sub>eq</sub> 8hr	Sufficient

Table 4.1 Heathrow Airport's aircraft noise regulation and controls



## Interdependencies

### NOISE & EMISSIONS

There are interdependencies between the noise produced by an aircraft, the emission of local air pollutants from aircraft engines and the emission of carbon dioxide (CO<sub>2</sub>) from aircraft engines.

Finding the right balance can affect aircraft noise management strategies. Most of the technological advances in aircraft design in the last 25 years have led to both a reduction in noise and CO<sub>2</sub> emissions, but a few cases have resulted in a less optimal performance in emissions of local air pollutants such as oxides of nitrogen (NO<sub>x</sub>).

There are many factors that will influence the design of aircraft and engines and the challenge for the aviation industry is to address these issues simultaneously.

Operational controls also need to be balanced. For example, the adoption of a reduced thrust setting for an aircraft during take-off can reduce NO<sub>x</sub> emissions by 30% or more in some cases compared to using full thrust. Many airlines already employ reduced thrust departures as their standard operating procedure. Whilst this is beneficial in the immediate vicinity of the airport, there can be a small increase in noise experienced by those further away from the airport under the departure flight path, as the aircraft flies at a decreased angle of ascent.

We have long been aware of the interdependencies between noise, local air quality and CO<sub>2</sub> emissions and we have undertaken a number of studies to help quantify the exact balance that needs to be struck for specific situations. The level of scientific understanding of interdependencies is constantly evolving and Heathrow continues to promote further research.

Similarly, there can be more subtle noise distribution interdependencies. With steeper climb rates, aircraft will be higher along their departure flight paths earlier, and this can reduce noise for communities further from the airport but increase noise for communities that are nearer. Furthermore, some procedures can decrease noise directly below a flight track but increase noise received at sideline locations. We are conducting a study on the effects of steeper climbs, and we have deployed monitors to measure centreline and sideline noise. This will inform Heathrow's future strategy on airspace design.

## The legal context – regulation of aircraft noise in the UK

There are three main tiers of regulation which govern aircraft noise in the UK: international, national and local regulation. Local controls could be considered as a fourth tier. Figure 4.1 below illustrates the legislative hierarchy.



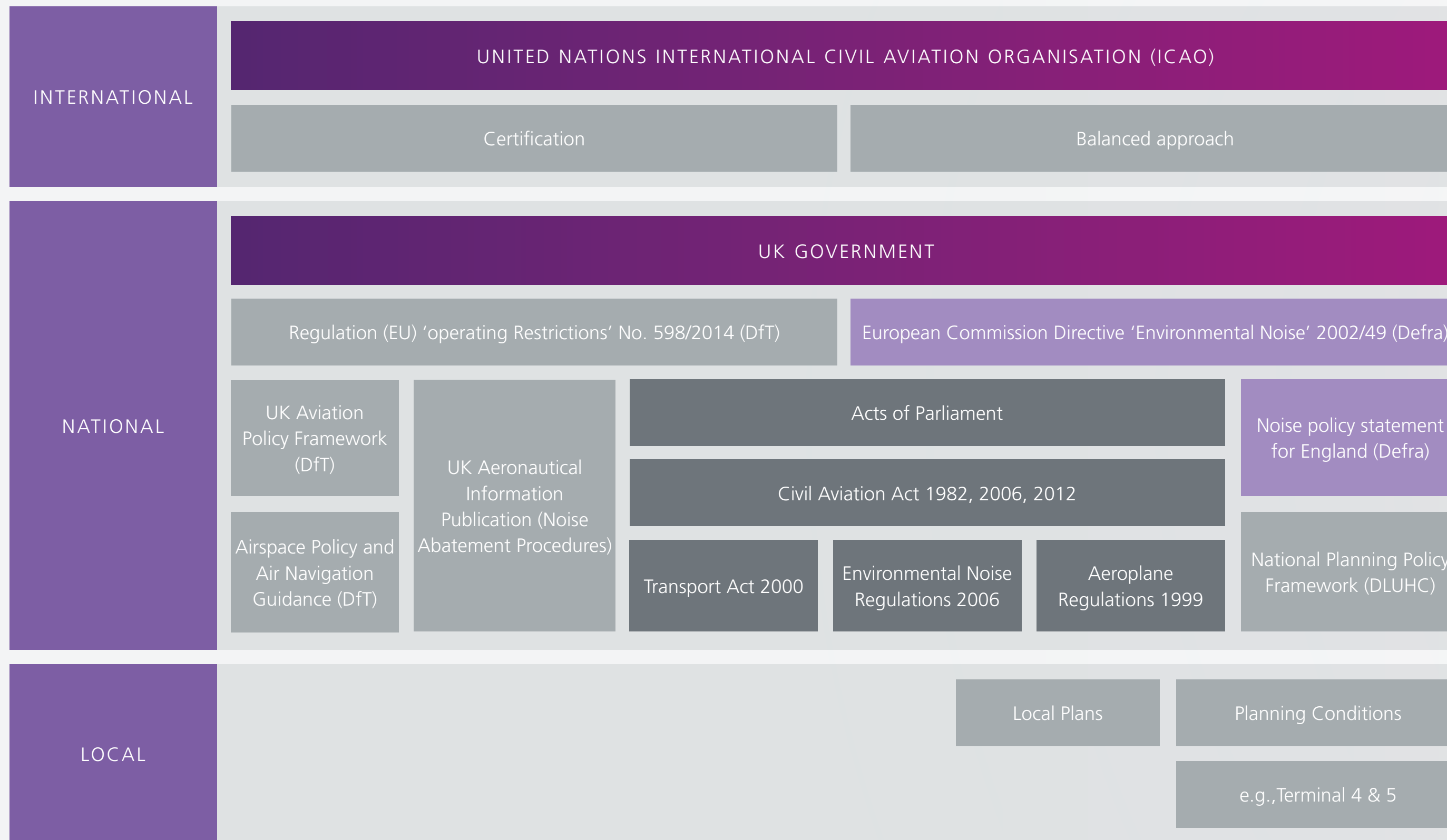


Figure 4.1  
Heathrow Airport's aircraft noise regulation and controls



## International regulation

The International Civil Aviation Organization (ICAO) is a specialised agency of the United Nations, created to promote the safe and orderly development of international civil aviation throughout the world. It sets standards and recommended practices necessary for aviation safety, security, efficiency and regularity, as well as for aviation environmental protection. After a standard is adopted it is put into effect by each ICAO member state in its own territories.

### NOISE CERTIFICATION STANDARDS

ICAO has set progressively tighter certification standards for noise emissions from civil aircraft. Aircraft operating in member states must conform to these standards, which are known as ‘Chapters’. The Chapters set maximum acceptable noise levels for different aircraft at three specific points during landing and take-off.

The first aircraft noise standard, Chapter 2, was introduced in 1973 and aircraft in this category have been banned from operating within the EU since 1 April 2002 unless they are granted specific exemptions. Chapter 3, 4 and 14 categories were introduced in the years 1977, 2001 and 2013 respectively.

Since 2006, all new aircraft types have had to meet the requirements of Chapter 4, which were set at 10 decibels below Chapter 3 (cumulative of the margins at the three assessment points).

The latest noise standard, Chapter 14, was agreed in 2013. This increased stringency by 7 decibels (cumulative margin) relative to Chapter 4 levels, and it became effective (for large aircraft) from 31 December 2017. As with the Chapter 4 standard, Heathrow supported efforts for an even more stringent level, however we welcome the continuous improvement the new standard secures.

Nearly 80% of civil aircraft operating today fall within the Chapter 14 category. As yet, there is no internationally agreed date for the phase-out of Chapter 3 aircraft, although Heathrow set a voluntary target for all movements to be Chapter 14 compliant by 2045 (see Action 1B).

### BALANCED APPROACH

In 2001 ICAO published the manual, A Balanced Approach to Aircraft Noise Management.

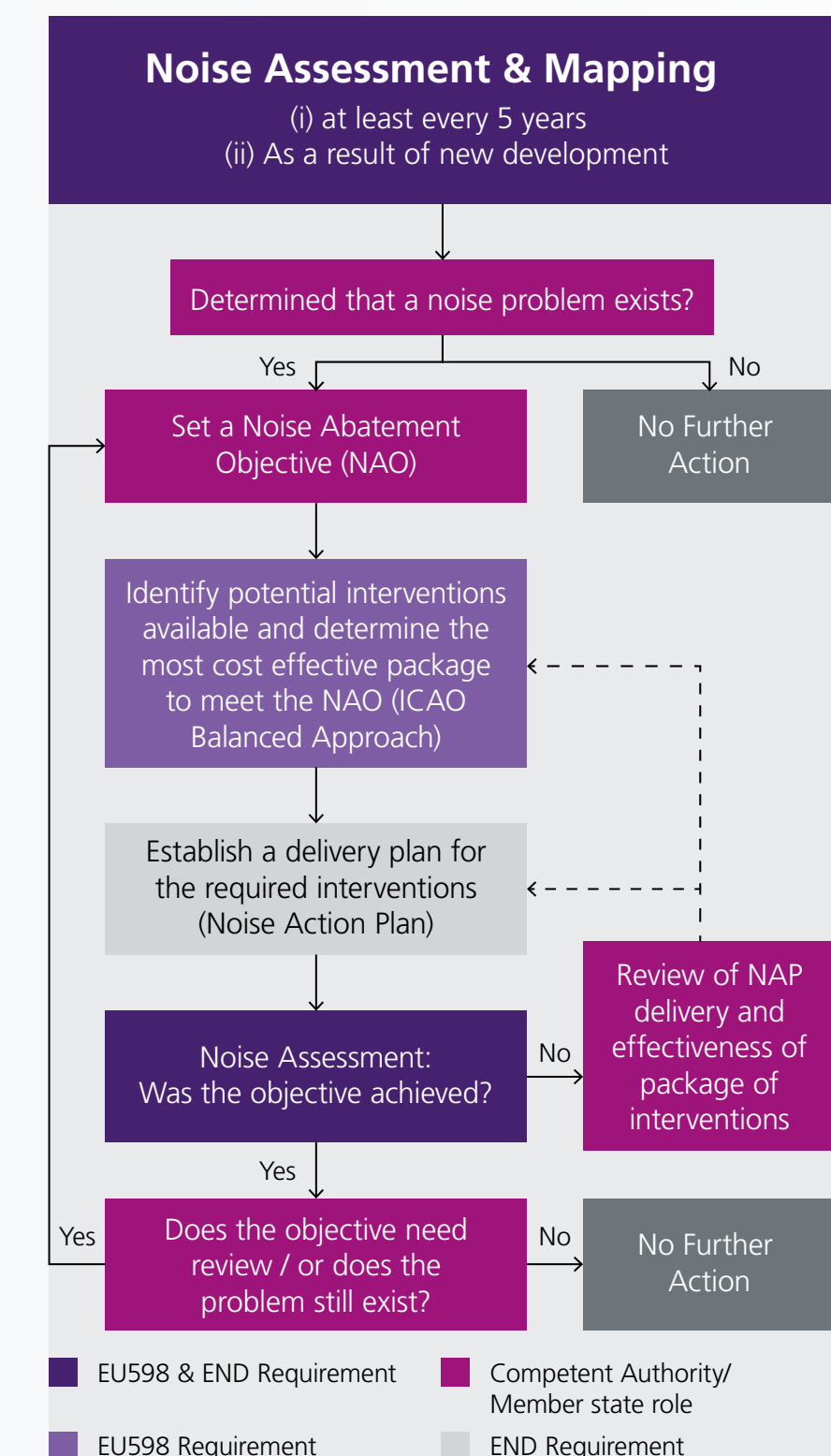
Known as the ‘Balanced Approach’, it recommends identifying the noise problem at an airport and analysing the various measures available to reduce noise through the exploration of four principal elements, namely:

- reduction 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); and
- operating restrictions (preventing certain noisier types of aircraft from flying at certain times or at any time).

With the goal of addressing the noise problem in the most cost-effective manner, ICAO has developed policies on each of these elements, as well as on noise charges.

This approach, together with our focus on improving communication and community engagement activities, forms the basis of our framework for noise management described in the next section.

The following high-level schematic shows the interaction between the Noise Action Planning Requirements and the application of the ICAO Balanced Approach when setting a noise abatement objective.



High Level schematic of Interaction between END (the Noise Action Planning Requirements) and EU598 (Application of the ICAO Balanced Approach) with setting a NAO



## European regulation

In Europe, common aviation policy relating to the management and control of environmental issues are increasingly assuming responsibility for the regulation of aircraft noise standards. These have now been transposed into UK law or have influenced UK law.

### The regulations and directives of most relevance to aircraft noise are:

- 1 EC Directive 92/14/EEC** replaced by EC Directive 2006/93/EC on the limitation of the operation of aeroplanes covered by Part II, Chapter 2, Volume 1 of Annex 16 to the Convention on International Civil Aviation, second edition (1988). This directive banned Chapter 2 aircraft from landing in the EU from 1 April 2002.
- 2 Regulation (EU) No. 598/2014** of the European Parliament and of the Council of 16 April 2014 on the establishment of rules and procedures regarding the introduction of noise-related operating restrictions at union airports within a Balanced Approach and repealing Directive 2002/30/EC (retained EU Legislation). This ensures that the Balanced Approach is adopted in respect of aircraft noise management. It also sets out the definition of marginally compliant aircraft and the process to be followed in the implementation of an operating restriction which might restrict access to the airport. It requires that noise-related operating restrictions cannot be introduced as a first resort – a range of other mitigation measures must be considered first. If a noise-related operating restriction is considered necessary, it can only be imposed after the ‘cost effectiveness’ of the restriction has been considered
- 3 EC Directive 2002/49EC** (Environmental Noise Directive or ‘END’) as implemented by the Environmental Noise (England) Regulations 2006/2238. The regulations reflect the EC Directive’s aims and require the creation of strategic noise maps from all transport sources (road, rail and air) in urban areas every five years, and to adopt action plans to manage noise. The directive also aims to harmonise methods for measuring noise across the EU. It is under these regulations implementing the directive that Heathrow has produced this Noise Action Plan.



## Acts of Parliament and regulations

The UK Government also enacts Acts of Parliament and regulations which deal with aircraft noise.

The relevant legislation is detailed below:

### 1 **The Civil Aviation Acts 1982, 2006, 2012.**

These Acts grant the Government powers to introduce noise control measures to limit or mitigate the effect of noise and vibration connected with taking off or landing aircraft at designated airports. The Secretary of State has currently designated Heathrow, Gatwick, and Stansted.

These powers were widened by the Civil Aviation Act 2006. This Act also permits an airport authority to charge aircraft operators for use of the airport based on noise and emissions. Airport operators can thereby introduce differential charges to incentivise the use of quieter and cleaner aircraft. Information regarding Heathrow's financial incentives is available in Heathrow Conditions of Use 2023.

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

At Heathrow, we use this power to fine airlines. The money is used for projects in local communities including environmental and noise mitigation projects for schools and community groups.

The 2012 Act was designed to modernise key elements of the regulatory framework for civil aviation in the UK and it offers a package of reforms to make regulation, and the sanctions which support it, flexible, proportionate, targeted and effective.

### 2 **The Airports (Noise-related Operating Restrictions) (England and Wales) Regulations 2018.**

These regulations came into force on 23 July 2018, and designated the UK's 'competent authorities' in relation to deciding upon and monitoring operating restrictions for the purposes of Regulation (EU) No598/2014. They also revoked the Aerodromes (Noise Restrictions) (Rules and Procedures) Regulations 2003, concerning the adoption of noise related operating restrictions. They require airport operators to provide the competent authority with any information that they may require to carry out their functions under Regulation (EU) No598/2014.

### 3 **The Environmental Noise (England) Regulations 2006.**

These regulations transposed the requirements of EC directive 2002/49/EC (Environment Noise Directive, see above) into UK law. They place a duty on the Secretary of State to produce strategic noise maps and, under regulation 19, airport operators are obliged to produce Noise Action Plans based on the strategic noise maps.

Once prepared and adopted, the Noise Action Plans must be reviewed and if necessary revised at least every five years, and whenever a major development occurs affecting the noise situation. The regulations were amended in both 2008 and 2009.

### 4 **Airports Act 1986.**

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

### 5 **Aeroplane Noise Regulations 1999.**

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



## National regulation, controls and policy

### NOISE POLICY STATEMENT FOR ENGLAND (NPSE)

The Noise Policy Statement for England (NPSE) was published by Defra in 2010 and is recognised through UK aviation noise policy. Its policy vision is to “*promote good health and a good quality of life through the effective management of noise within the context of Government policy on sustainable development*”.

The vision is supported by three Noise Policy Aims:

*“Through the effective management and control of environmental, neighbour and neighbourhood noise within the context of Government policy on sustainable development:*

- **Aim 1:** *avoid significant adverse impacts on health and quality of life*
- **Aim 2:** *mitigate and minimise adverse impacts on health and quality of life, and*
- **Aim 3:** *where possible to contribute to the improvement of health and quality of life.”*

The NPSE refers to the established concept of the Lowest Observed Adverse Effect on health (LOAEL), which is the level above which adverse effects on health and quality of life can be detected. The Statement then extends this concept to introduce the definition of the Significant Observed Adverse Effect (SOAEL) as the level above which significant adverse effects on health and quality of life occur.

The NPSE does not stipulate the values of the LOAEL and SOAEL, which can vary depending on noise source, receptor and time of day. This allows flexibility for different policy areas such as annoyance as opposed to impact on health indicators, and the ability to adapt policy in line with recent research.

### EVOLVING GOVERNMENT POLICY

Over the course of 2017 the Government consulted on aviation strategy, airspace policy and expansion in the southeast. This consultation incorporated changes relating to updating noise analysis, a new air quality plan and Government policy changes.

### OVERARCHING AVIATION NOISE POLICY

The government’s overall policy on aviation noise updated in March 2023 ([Overarching aviation noise policy - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/policies/overarching-aviation-noise-policy)) is “to balance the economic and consumer benefits of aviation against their social and health implications in line with the

International Civil Aviation Organisation’s Balanced Approach to Aircraft Noise Management. This should take into account the local and national context of both passenger and freight operations, and recognise the additional health impacts of night flights. The impact of aviation noise must be mitigated as much as is practicable and realistic to do so, limiting, and where possible reducing, the total adverse impacts on health and quality of life from aviation noise.”

As stated in [Night-time noise abatement objectives for the designated airports from October 2025 - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/policies/night-time-noise-abatement-objectives-for-the-designated-airports-from-october-2025), the government is undertaking a review of previous research on the benefits of night flights and are also continuing to work with the Civil Aviation Authority (CAA) to monitor air passenger travel via the departing passenger survey, which includes questions for passengers on the purpose of their travel and which will help understand how preferences may have changed as a result of the COVID-19 pandemic. It is also continuing to review new studies on the benefits of night flights.

In summary, the government needs to strike a fair balance between these positive and negative impacts of night flights, and wants a night-time noise abatement objective which aims to minimise the adverse effects of aviation noise on health and quality of life.



## National regulation, controls and policy continued

### PLANNING POLICY – NATIONAL POLICY PLANNING FRAMEWORK (NPPF)

Land-use planning can play an important role in reducing the impact of aircraft noise by restricting certain types of developments near airports like houses and schools. The revised National Policy Planning Framework (NPPF) came into force on 20 July 2021. This replaces the previous NPPFs published in February 2019, July 2018, and March 2012.

The NPPF sets out the Government's planning policies for England and how these are expected to be applied. It provides a framework within which local plans can be developed which reflect community needs.

The NPPF noise aims widely reflect those in the NPSE. In particular, the NPPF asks that planning policies and decisions should contribute to and enhance the natural and local environment by preventing new and existing development from contributing to, or being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or land instability.

The NPPF also asks that planning policies and decisions ensure that any new development is appropriate for its location. In doing so they should mitigate and reduce to a minimum any potential adverse impacts resulting from noise from new development, and avoid noise giving rise to significant adverse impacts on health and the quality of life. The NPPF also aims to identify and protect tranquil areas which have remained relatively undisturbed by noise.

This does not explicitly prevent the construction of new dwellings or conversion of existing buildings. At the heart of the NPPF is a presumption in favour of sustainable development.

### UK AIR NAVIGATION GUIDANCE 2017

In October 2017 the Government published its Air Navigation Guidance (ANG) setting out how it will implement its environmental, airspace and noise management policies in relation to air navigation. The 2017 UK ANG replaces the 2014 UK ANG.

The Air Navigation Guidance provides guidance to:

- the Civil Aviation Authority (CAA) on its environmental objectives when carrying out its air navigation functions; and
- the CAA and the wider aviation industry on airspace and noise management, including in relation to the role of the Secretary of State in the UK's airspace change process.

It also includes a copy of the new air navigation directions issued to the CAA under the Transport Act 2000, The Civil Aviation Authority (Air Navigation) Directions 2017, since amended by the Civil Aviation Authority (Air Navigation) (Amendment) Directions 2018, and The Civil Aviation Authority (Air Navigation) (Amendment) Directions 2019.

### AIRPORTS NATIONAL POLICY STATEMENT

On 26 June 2018, the Airports National Policy Statement: new runway capacity and infrastructure at airports in the southeast of England (the 'ANPS') was formally designated by the Secretary of State for Transport following a House of Commons vote in favour of the policy in Parliament.

The ANPS sets out:

- the need for additional airport capacity in the southeast of England;
- why the Government believes that need is best met by a northwest runway at Heathrow Airport;
- the specific requirements that a DCO application for a new northwest runway will need to meet to obtain consent. The ANPS (including its proposals in relation to noise and compensation) will apply to a relevant application for development consent for expansion at Heathrow Airport made under the Planning Act 2008.



## Other

### PROFESSIONAL PRACTICE GUIDANCE ON PLANNING & NOISE

In 2017 the Association of Noise Consultants (ANC), the Institute of Acoustics (IOA) and Chartered Institute of Environmental Health (CIEH) published a jointly produced document, *The Professional Practice Guidance on Planning & Noise* (ProPG).

The guidance is a blueprint for acoustic practitioners, council planners and developers, and it aims to protect home dwellers from noise by putting good acoustic design at the heart of all new residential development. The three organisations say that if their recommendations are followed early in the planning process:

1. good acoustic design will enable homes to be built in some areas previously considered unsuitable because of noise;
2. noisy sites where residential development will never be suitable can be quickly identified, saving developers time and unnecessary costs, and
3. home building can be started much earlier on sites where noise is not an issue.

We are encouraged by this document, and we would support further work with planning authorities to deliver the described outcomes.

### NIGHT FLIGHT RESTRICTIONS

DfT is currently reviewing night-time restrictions and conducting a two-stage consultation process to determine the restrictions for 2025, as stated in [Night-time noise abatement objectives for the designated airports from October 2025 - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/consultations/night-time-noise-abatement-objectives-for-the-designated-airports-from-october-2025). This process includes proposing a new objective for night-time noise. The revised policy and confirmation of the night-time noise objective are expected to be announced towards the end of 2023. For information on existing movement and quota limit values at Heathrow, please refer to Annex 5 and [Night flights | Heathrow](#).

### QUOTA COUNT

From October 2018 a new QC/0.125 category was introduced to reduce the number of aircraft exempt from the noise quota and all aircraft now count toward Heathrow's movement limits. Noise quota limits at the airport were reduced from 5,100 to 2,735 (summer) and from 4,080 to 2,415 (winter).

For more detail see Annex 6 and the DfT [Night flight restrictions at Heathrow, Gatwick and Stansted Decision Document](#).

### UK AERONAUTICAL INFORMATION PUBLICATION (AIP)

The UK AIP is designed to be an operations manual containing thorough details of regulations, procedures and other information pertinent to flying aircraft in the UK. It covers aspects such as Continuous Descent Approaches (CDAs) and other noise abatement procedures. The full range of noise abatement procedures in the UK AIP can be accessed at the following link: [eAIS Package United Kingdom \(nats.co.uk\)](https://www.nats.co.uk/eais-package-united-kingdom).

A copy of the noise abatement procedures as of April 2023 can also be seen in Annex 8.

### LOCAL AUTHORITIES AND PLANNING CONDITIONS

As well as Government legislation, additional noise-related controls can be introduced by local planning authorities as part of the planning system. This is often done by way of planning obligations contained in section 106 agreements made between the airport operator and the planning authority. For example, at Heathrow there are a series of planning conditions that relate to the planning permission for Terminal 4 and Terminal 5.

These conditions restrict various modes of aircraft operations at different times of the day relative to the location of the activity on the airfield.

A more detailed explanation of these, and an airfield map, are provided in Annexes 7 and 2 respectively.



SECTION FIVE

# Heathrow's framework for noise management





In this section we set out Heathrow's strategy for managing aviation noise, describe the measures currently in place, and discuss the developments and outcomes from our previous Noise Action Plans.

## Our noise strategy

Heathrow is determined to remain at the forefront of international efforts to address the challenge of aircraft noise, while continuing to safeguard the connectivity and economic benefits that the airport provides.

We have carefully crafted a comprehensive noise management strategy underpinned by our 'Responsible Business Actions' (RBA). These actions serve as the foundation of our sustainable business practices, supporting our ongoing efforts to refine and improve our Noise Action Plan. They also support our framework for Noise Management which has five pillars, shown in Figure 5.1. The first four of these reflect the four principal elements of ICAO's Balanced Approach to Aircraft Noise Management.

Our first pillar, Quieter Planes, is based on the 'Reduction at Source' element of the Balanced Approach. Our second pillar, Quieter Procedures, reflects the element of 'Noise Abatement Operational Procedures'. Our third pillar is on Land-use Planning and Mitigation and includes sound insulation and land use, similar to ICAO's second principal element. Our fourth pillar takes the Balanced Approach element on Operating Restrictions and expands it to include Voluntary Measures.

Our fifth pillar, Working with Local Communities, goes beyond the Balanced Approach as we recognise the importance of community engagement and collaboration in identifying and understanding issues and working towards improvements.



## Our noise strategy continued

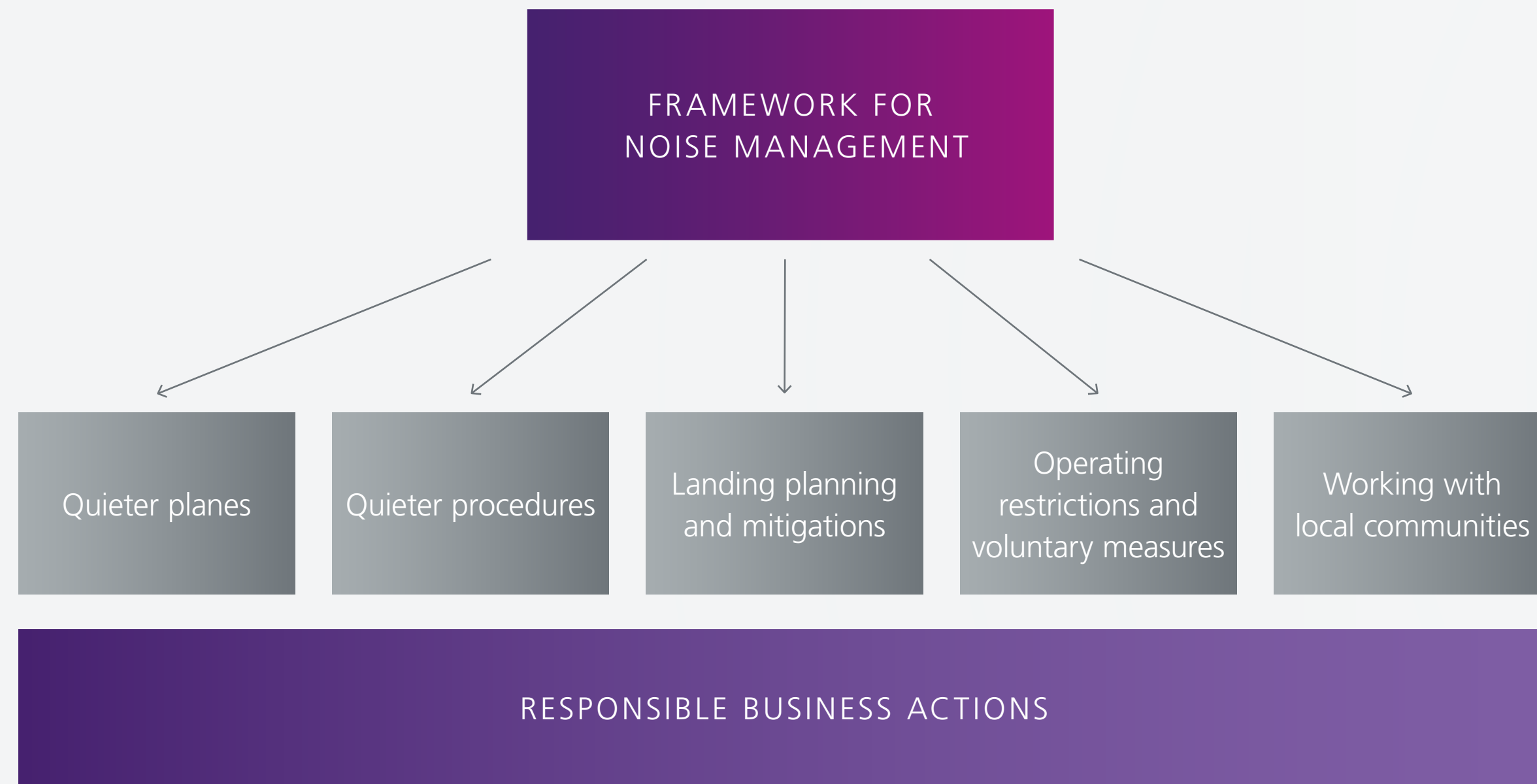


Figure 5.1 Framework for noise management

Approach	General commitment
Quieter planes	As aircraft and technology improves and planes become quieter, we will continue to work to ensure that residents share in the benefits. We are committed to continuing to provide a strong financial incentive for airlines to use the quietest planes currently available, including in the early morning period, through the use of differential charging fees.
Quieter procedures	We are committed to take full advantage of opportunities to manage airspace differently, working with local communities to identify changes that could benefit them. This will include trialling new air traffic management and operating procedures.
Land-use planning and mitigation	We are committed to continuing to help with noise insulation and mitigation through a new range of schemes. We will also continue to press the Government to provide more detailed guidance on planning around airports, and to restrict noise sensitive development in high noise areas. We are also committed to establishing a Memorandum of Understanding with local authorities to standardise the means of exchanging information on land use planning and airport operations.
Operating restrictions and voluntary measures	In line with the principles of the ICAO Balanced Approach, we agree that restrictions should not be considered as a first resort, and we are committed to developing voluntary measures through collaborative approaches. These can be quicker to implement and more effective. Where restrictions are in place, we are focused on ensuring that they are adhered to fully.
Working with local communities	At the heart of our work to address aircraft noise, we are committed to engaging openly and constructively with local communities to understand their concerns and to provide accessible information and an on-going dialogue.
Responsible Business Actions	



# Existing measures to manage aircraft noise

Based on our Noise Management Framework, Figure 5.2 provides a summary overview of the measures used at Heathrow to control noise impacts. These are explained in the following sections.

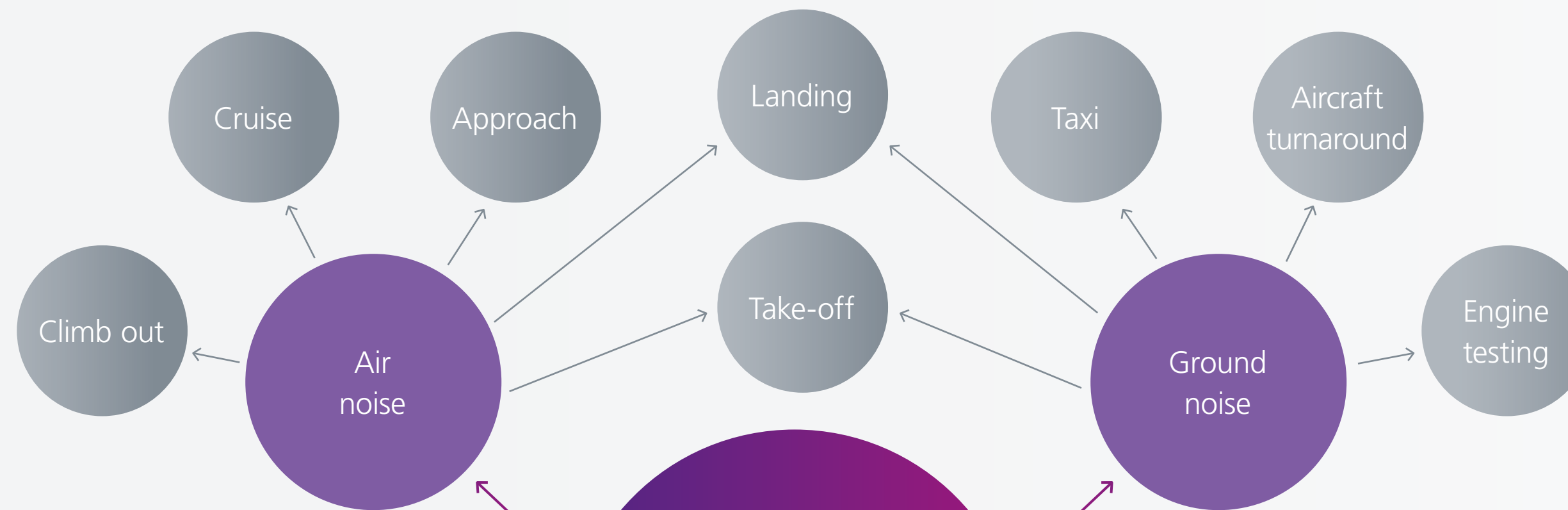


Figure 5.2  
Heathrow Airport's noise management and control measures currently in place

## SOURCES

## MANAGEMENT

- Variable landing charges
- Fly Quiet and Green
- Voluntary agreements

- Fly Quiet and Green
- Noise abatement procedures
- Preferential runway use
- Ground noise management plan



- Residential Insulation Scheme
- School and Community



- Movement Cap
- Night restrictions
- Quiet Night Charter



- Engagement forums
- Monitoring and reporting
- Accessible information on websites
- Industry groups

- Building Insulation Scheme
- Local planning conditions and encroachment



## Quieter planes

Tough noise management practices at Heathrow have played a key role in driving developments in quieter aircraft technology. Limits and restrictions at Heathrow (see Annex 5), and in particular those that apply to flights at night, are seen by aircraft engine manufacturers as important tests for new aircraft to meet over and above international requirements.

Since the late 1990s, Heathrow has provided a financial incentive for airlines to use the quietest aircraft through the use of variable landing charges. Each year we publish our Conditions of Use document which includes the differential charging structure for aircraft operating at Heathrow. These charges promote the use of best-in-class aircraft by charging more for the noisiest, and less for the quietest aircraft in relation to the ICAO noise standards.

In 2017 we became the first airport in the world to introduce new charging categories based on the Chapter 14 noise standard. On 1 January 2023 we introduced the Chapter 14 Ultra Low category. The qualification criteria are set out in Table 5.1 below and details of the charges can be found at [Heathrow Conditions of Use 2023](#).

In 2016 Chapter 3 aircraft represented 0.55% of air traffic movements. In 2022 this dropped to less than 0.1%. From 1 January 2023, effective noise charges were revised and the cost of landing a Chapter 3 aircraft became 20 times more expensive than the quietest Chapter 14 Ultra Low aircraft.

Noise certification standards are described in Section 4. Below, Table 5.1 shows the sub-categories of the noise chapters that are used for noise landing charges at Heathrow.

We will continue to work towards our stated target of zero Chapter 3 aircraft movements through the Noise Action Plan period.

Through the UK Government and our membership of Airports Council International (ACI), we continue to work with and lobby ICAO to continually improve aircraft noise certification standards, and to provide noise management and community engagement guidance.

Table 5.1 Qualification criteria for noise categories as from 1 January 2023

Criteria to be met concurrently	Chapter 3 Maximum	Chapter 4 ultra high	Chapter 4 super high	Chapter 14 high	Chapter 14 base	Chapter 14 low	Chapter 14 super low	Chapter 14 ultra low
Chapter 14 certification or equivalent	No	No	No	Yes	Yes	Yes	Yes	Yes
Cumulative EPNdB reduction from ICAO Chapter 3 standard *	Less than 10	Less than 14	Less than 17	Less than 20	Less than 23	Less than 26	Less than 29	29 or more

\*This represents the sum of the differences between the certified noise values for a particular aircraft registration at the three monitoring points (Flyover, Sideline and Approach) and the Chapter 3 limits at these points.



## Quieter procedures

### ARRIVAL AND DEPARTURE PROCEDURES

A range of noise reduction measures are already in place at Heathrow. Some of these have been introduced by the Government and some are a result of voluntary initiatives by the airport, working together with airlines and NATS. The key procedures in place at Heathrow are summarised in Table 5.2 below with additional information given in Annex 6.

Source	Measure	Aim
Departures	<b>Noise Limits:</b> There are noise limits applied at fixed noise monitors for departing aircraft and fines are enforced for breaches (see Annex 4 and 6).	To deter noisy movements by detecting and penalising aircraft which exceed the limits, and to encourage the use of quieter aircraft and best operating practices.
Departures	<b>1,000 foot rule:</b> Aircraft are required to be at a height of not less than 1,000 feet AAL (above aerodrome level) at 6.5 km from the start of the take-off roll as measured along the departure track of that aircraft.	This encourages aircraft to gain height as quickly as possible and then reduce engine power and noise at the earliest opportunity. This aims to reduce the noise closer to the airport.
Departures	<b>4% minimum climb gradient:</b> Aircraft are required to achieve this climb gradient between 1,000 and 4,000 feet AAL.	This discourages low flying departing aircraft in areas near to the airport.
Departures	<b>Noise Preferential Routes:</b> Aircraft departing from Heathrow are required to follow specific flight paths called Noise Preferential Routes (NPRs) up to an altitude of 4,000 feet.	NPRs were designed to avoid the overflight of built-up areas where possible.
Departures	<b>Westerly preference:</b> This means that during periods of light easterly winds, aircraft will often continue to land in a westerly direction making their final approach over London.	The westerly preference was introduced to reduce the number of aircraft taking off in an easterly direction over London – the most heavily populated side of the airport.
Arrivals	<b>Continuous Descent Approaches (CDA):</b> The approach involves aircraft maintaining a steady angle of approach when landing at the airport, as opposed to stepped approaches which involve prolonged periods of level flight.	The westerly preference was introduced to reduce the number of aircraft taking off in an easterly direction over London – the most heavily populated side of the airport.
Arrivals	<b>Joining point rules:</b> Aircraft landing at Heathrow follow a radio beam known as the Instrument Landing System (ILS) to align directly with the runway. At certain times of the day and night there is a minimum altitude at which aircraft can join the ILS. At these times they cannot be below this altitude.	This ensures that all aircraft maintain a consistent approach angle and flight path from a minimum distance from the runway. This avoids aircraft turning on to the final approach at lower altitudes over communities close to the airport.
Arrivals	<b>Limiting use of reverse thrust:</b> At night-time.	To minimise disturbance in areas close to the airport.
Arrivals	<b>Runway alternation:</b> During westerly operations (when aircraft arrive and depart towards the west) and wherever practicable, the arrival runway is alternated according to a published schedule. The departure runway is also alternated.	To provide local communities with predictable periods of respite without flights overhead by using the runways in a predictable pattern.
Arrivals	<b>Slightly Steeper Approaches:</b> Aircraft on final approach descend at an angle of 3.2 degrees, slightly steeper than the standard 3 degrees.	This procedure was trialled to keep some aircraft slightly higher and can provide a small reduction in noise.
Ground noise	<b>Auxiliary Power Units (APUs), Ground Power Units (GPUs), Pre-Conditioned Air (PCA) usage and engine testing,</b> especially at sensitive times when air noise is less dominant, these are controlled through Operational Safety Instructions (OSIs). Regular audits are undertaken to monitor compliance.	These procedures seek to optimise the use of appropriate ground power services at the most appropriate time and in the most appropriate circumstances, to reduce or limit ground noise, emissions and fuel usage. It also includes robust restrictions on night ground engine run tests to reduce ground noise at the most sensitive times. We are currently conducting trials to select the most optimal equipment for the renewal of our entire installation of GPUs and PCA.

Table 5.2 Range of current operating procedures



## Quieter procedures continued

### GROUND NOISE MANAGEMENT PLAN

The major sources of noise due to activities on the ground at Heathrow include taxiing aircraft, engine ground runs (EGRs) and the operation of aircraft auxiliary power units (APUs). Noise from these sources is not included in our strategic noise maps and is not required to be included in an airport's Noise Action Plan, but we know from active engagement with local residents that it is of concern and that there is more we can do to structure our approach to managing and monitoring ground noise impacts.

A new Noise Action (see Action 9A) is proposed to develop and implement a ground noise management plan. This plan will include cooperation with international partners to develop a Standard for the use of Pre-Conditioned Air where available. Once implemented, the project will enable us to amend our relevant Operational Safety Instructions, tighten our operating rules, and improve our record keeping and pre-approval processes. These changes will help reduce and control ground noise.

## Land-use planning and noise mitigation

### NOISE INSULATION SCHEMES

Heathrow has offered a range of noise insulation and mitigation schemes that have met or exceeded Government guidance since the mid-1990s. Our current schemes are described below in Table 5.3 and in Annex 9.

In compliance with an action set out in the 2019-23 Noise Action Plan (Action 3.1), we undertook a major review of our noise insulation schemes in 2021. As a result, we launched new and improved schemes to take full effect from 2024.

*Table 5.3 Range of noise insulation and mitigation schemes that Heathrow currently offers*

Mitigation scheme	Description
Community buildings noise insulation scheme	This scheme applies to noise sensitive community buildings that fall within the 2019 63dBA Leq 16hr noise contour, including hospitals, schools and colleges, nurseries attached to schools and hospices, nursing homes, registered nurseries, libraries and community halls. All reasonable measures are used to encourage the community buildings' owners to register for the scheme. The scheme then provides acoustic insulation to the registered buildings, and this can extend to window replacement and mechanical ventilation.
Home relocation assistance scheme	For properties that fall within the 2019 69dB LAeq 16hr noise contour at Heathrow, and residents who have been living in the property before 31 December 2022, this scheme provides eligible home owners with financial assistance with the costs of moving away from areas of high levels of airport noise. The scheme is currently capped at £20,000 per home.
Residential noise insulation scheme	This scheme provides acoustic insulation to residential buildings in the local community. This includes acoustic double glazing or secondary glazing to external windows and doors, plus loft insulation, ceiling over boards and ventilation. It is restricted to the combined boundary from the 2019 63 dB LAeq,16hr and 55 dB LAeq,8hr contours, and the 90dBA SEL arrival footprint of the noisiest scheduled aircraft arriving before 6:00am. The scheme is being implemented in phases, starting in areas of high levels of airport noise. Residents will be contacted and invited to participate in the scheme in the relevant phase.



## Land-use planning and noise mitigation continued

### LOCAL PLANNING CONDITIONS

We support the principles of the Aviation Policy Framework (APF) which align with the National Policy Planning Framework (NPPF) and expect local planning policies to ensure that any new development is appropriate for its location, and the effects of pollution – including noise – on health, the natural environment or general amenity are taken into account.

This does not rule out all noise-sensitive development in locations that experience aircraft noise. The NPPF is clear that the planning system should prevent new development being put at unacceptable risk or being adversely affected by unacceptable levels of noise pollution.

As part of the planning process for Terminal 4 and Terminal 5, a number of special conditions were attached to the planning permission which relate to airport noise management. These are set out in Annex 7.

Our 2019 Airport Noise contour report (ERCD Report 2001, page 46) shows how many people would be in the 55dB  $L_{den}$  2019 contour area using both the 2006 and 2019 population databases (based on data provided by ERCD; CAA uses the CACI database). This contour area of 176.2 km<sup>2</sup> was 28% smaller than in 2006 (244.7 km<sup>2</sup>). The population count in 2006 was 756,100, and it decreased by 12% to 664,300 in 2019. Had the population remained at 2006 levels in 2019, the 2019 population count would have been 574,500: a decrease of 24% from 2006. This shows that in the period 2006-2019, the reducing contour area meant that 91,800 people were effectively moved out of the  $L_{den}$  55dB contour. This figure would have been 181,600 had the population not grown. This indicates that 89,800 people moved into the new reduced noise contour in 11,200 additional households.

Of course, Heathrow recognises that there is a high demand for housing and people want to move into London. Airport noise may or may not be a consideration for many making that decision – especially at the lower noise levels. However, the same trend of new housing occurs in areas with higher noise levels. We believe according to the NPPF and APF, that local authorities have a responsibility to ensure appropriate protection where development is permitted in noise impacted areas.

We will continue to work with local authorities, the Government and local community groups on local plans. This Noise Action Plan includes Action 6A, which involves establishing a Memorandum of Understanding (MoU) with local authorities. Through the application of the MoU, we will provide our forecasted outputs, including aircraft type scheduling and operational performance, to collaboratively reduce night sleep disturbance and support land use planning. The aim is to encourage local planning authorities to make informed decisions and also share plans with the airport while receiving advance information and take noise forecasts into account in their decision-making process.



## Operating restrictions and voluntary measures

The following operating restrictions are in place at Heathrow.

- **Air Transport Movement Cap:** there is an annual ATM cap of 480,000 movements per year, which was set out in the consent conditions for Terminal 5.
- **Night flight restrictions:** the DfT launched a consultation 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. At the time of writing, DfT is preparing a consultation on the new regime for commencement in autumn 2025. An overview of the current regime is provided in Annex 6.

We have committed not to schedule aircraft to arrive before 4:30am in agreement with airlines. It is a voluntary measure and has not been breached, except in an emergency. We measure performance on this commitment in our Fly Quiet and Green programme.

Another voluntary measure is the agreement not to schedule cargo flights to operate between 11:30pm and 6:00am.

In partnership with our airline partners, we continue developing a Quiet Night Charter (QNC) aimed to provide and support predictable operations, fewer off-schedule air transport movements, greater transparency and quieter operations. Action 3B of this Noise Action Plan has been written to ensure support for this initiative.

## Working with our local communities and industry stakeholders

The Government's Aviation Policy Framework (APF) promotes working in partnership and actively participating in a number of engagement forums with a range of stakeholders on noise. The APF is underpinned by two core principles:

- **Collaboration:** *By working together with industry, regulators, experts, local communities and others at all levels, we believe we will be better able to identify workable solutions to the challenges and share the benefits of aviation in a fairer way than in the past.*
- **Transparency:** *To facilitate improved collaboration, it is crucial to have clear and independent information and processes in place. Those involved in and affected by aviation need to have a clearer understanding of the facts and the confidence that proportionate action will be taken at the international, national or local level.*

We have long supported these two principles in our approach to noise management. Accordingly, working in partnership with communities and industry is a key pillar of our Noise Management Framework.

By listening and talking to residents, community groups and elected representatives, we can gain a better understanding of the issues that are important to our local communities and the role we can play to ensure Heathrow is both a great place to live and work. Table 5.4 provides a list of Heathrow's stakeholder engagement forums and industry groups.

One of our key community engagement forums which focuses on noise is the Heathrow Noise and Airspace Community Forum (NACF), established in 2022 with an independent chairperson. It continues the work of the former Heathrow Community Noise Forum (HCNF), which was set up in 2015 in response to local concerns regarding future changes to airspace as a result of the Government's Airspace Modernisation Strategy. The NACF is made up of representatives from local authorities and community groups from around the airport, along with industry representatives from NATS, British Airways, the DfT, the CAA and Heathrow.

The NACF was set up to promote a common level of understanding of Heathrow's existing operations amongst community representatives and stakeholders. It also seeks members' inputs into the planning and preparation of Heathrow's future airspace design as part of the Government's plans to modernise the UK's airspace.



## Working with our local communities and industry stakeholders continued

Forum	Description
<b>Engagement Forum</b>	
Heathrow Community Engagement Board (HCEB)	Heathrow Community Engagement Board (HCEB) was launched to act as a focal point for engagement between Heathrow airport, local authorities, community groups, passengers and other airport users has now become the Committee for the Independent Scrutiny of Heathrow Airport (see below).
Council for the Independent Scrutiny of Heathrow Airport (CISHA)	In 2022, Heathrow launched a new forum, the Council for the Independent Scrutiny of Heathrow Airport (CISHA) to fulfil the functions of the former Heathrow Airport Consultative Committee and Heathrow Community Engagement Board. This was the result of an extensive review and stakeholder consultation exercise during 2020 and 2021 which identified a compelling case to make engagement more effective, transparent and efficient. This new oversight body provides umbrella oversight over Heathrow's existing five community engagement forums and coordinates discussion, response and action.
Heathrow Community Noise Forum (HCNF)	HCNF was set up in 2015 in response to local concerns regarding aircraft noise and future changes to airspace as a result of the government's airspace modernization strategy. In 2022 it became the Heathrow Noise and Airspace Community Forum (see below).
Heathrow Noise and Airspace Community Forum (NACF)	The NACF was launched in 2022 to fulfil the functions of the former HCNF. Its purpose is to <ol style="list-style-type: none"> <li>Engage with local authority and community representatives on issues related to noise, airspace and runway operations at Heathrow;</li> <li>Improve members' understanding on issues related to these topics;</li> <li>Listen to the key concerns of communities living around the airport, providing them with an opportunity to have their say;</li> <li>Bring together industry, government and regulator, local authority and community representatives in one place to allow for an open dialogue with key stakeholders.</li> </ol>
Noise Insulation Scheme Prioritisation Panel	The Prioritisation Panel is an independent and impartial body made up of a small number of representatives from community stakeholders, airlines, Local Authorities, health & noise experts and Heathrow with the remit of: <ul style="list-style-type: none"> <li>making recommendations to Heathrow on the allocation of priorities to the order in which premises will be treated under the schemes each year, and</li> <li>driving outcomes in escalated special cases or disputes.</li> </ul> The Panel forms part of Heathrow's delivery model for the NIV schemes. It is established to have transparency of governance, accountability, membership and practices while protecting confidentiality.

Forum	Description
<b>Industry and Community Groups</b>	
Aircraft Noise monitoring Advisory Committee (ANMAC)	ANMAC was set up by the Government in the early 1990's to advise them on the operation of the noise monitoring equipment which Heathrow had been required to install by the DfT under the Civil Aviation Act 1982. Since then the committee has been used as an advisory body on various noise issues. Membership includes representatives from NATS, the Environmental Research and Consultancy Division (ERCD) of the CAA, the Scheduling Committees and their technical advisors, representatives from Heathrow, Stansted, and Gatwick as well as a representative and technical adviser from the Consultative Committees of the three airports. The committee is chaired by the Head of the Aviation Environment Division at the DfT. ANMAC has become largely dormant in recent years with the Airspace and Noise Engagement Group (see below) providing the most frequent interaction between DfT and stakeholders.
Aircraft Noise Engagement Group (ANEG)	The Airspace and Noise Engagement Group (ANEG) was established by government to act as a formal channel of communication between the Department for Transport (DfT) and airspace and airport noise stakeholders. The ANEG covers all aspects of national airspace and airport noise policy development. It acts as a sounding board to identify, discuss and, where possible, resolve airspace and airport noise issues that impact on the work of the department. Discussions are at a strategic policy level. The ANEG does not debate or attempt to resolve individual local issues. The ANEG is also an open forum for members to share their own relevant airspace and airport noise projects. It meets two to three times each year and notes of the discussions are made publicly available on DfT's website.
Airport Council International (ACI)	ACI represents airports in discussions with international organisations. The most important relationship is with the International Civil Aviation Organisation (ICAO), where international standards for air transport are debated and developed. ACI represents airports and develops standards and recommended practices for safety, security and environmental initiatives. Heathrow's membership of ACI gives it the opportunity to encourage the exchange of knowledge between European airports and share best practice.
Strategic Aviation Special Interest Group (SASIG), Aviation Environmental Federations (AEF), Heathrow Association for the Control of Airport Noise (HACAN)	We regularly meet with a range of community interest groups within the forums detailed above and individually.

Table 5.4 Heathrow's stakeholder engagement forums and industry groups



## Working with our local communities and industry stakeholders continued

The NACF meets throughout the year at regular intervals. More information can be found at [NACF | Heathrow](#).

Our airline partners are involved with many of the groups listed in Table 5.4 and we have an open invitation for them to engage with our Airspace, Noise and Performance team on operational and noise issues. Programmes such as Fly Quiet and Green have been very effective at encouraging airlines to work with us on improving their noise, fleet and flight track performance.

NATS, the UK's air navigation service provider, is continually engaged through many of the groups listed in Table 5.4, including the NACF and ANEG.

### COMPLAINTS SERVICE

Heathrow offers a noise complaints service which aims to provide full and comprehensive information to residents on how they are affected by Heathrow's operations.

Aircraft noise complaints can be made to the Heathrow Community Relations team via our online form ([heathrow.com/noise](http://heathrow.com/noise)), email ([noise@heathrow.com](mailto:noise@heathrow.com)) or by calling 0800 344844. We will record all complaints received and aim to respond to all complaints within five working days (providing that the necessary contact details are provided).

We publish quarterly noise complaint reports on the Heathrow noise website [www.heathrow.com/noise](http://www.heathrow.com/noise) which includes data on the number of people and complaints received, along with the geographic locations of where the complaints have come from.

### COMMUNICATIONS TOOLS

Heathrow provides a dedicated noise website [www.heathrow.com/noise](http://www.heathrow.com/noise) which hosts or links to a number of online tools which are accessible to the public. Through our noise website, residents and other stakeholders can access a wide range of information including:

- Information on Heathrow's operations such as arrivals, departures, wind direction and night flights;
- A selection of monthly statistics such as the number of arrivals, departures, early morning and night flights, airline flight track accuracy, runway usage and complaints (see [Data | Heathrow](#));
- WebTrak, an on-line facility that allows people to see and track flights showing the aircraft type, flight number, speed and altitude, as well as the noise levels detected on our network of 50 noise monitors (see Annex 3);
- xPlane, a purpose-built tool that allows residents to carry out their own analysis of Heathrow's flights and obtain data such as height, position and types of aircraft over a historic period;
- WebTrak My Neighbourhood, which provides a broader view of how often particular flight paths are generally used on a monthly, quarterly or yearly basis, and
- Reports, NACF meeting notes and presentations, and quarterly and annual performance reports.

In 2013 Heathrow launched a dedicated Twitter channel to provide real-time runway updates so local communities know which runways are being used for landings and departures, and the reasons for any changes throughout the day. The service also keeps residents informed about any unexpected circumstances that might impact runway operations (such as bad weather or an emergency), in turn resulting in changes to the published runway alternation schedule – see [@Heathrownoise](#).



SECTION SIX

# Results of the 2021 noise mapping





## 2021 Noise Mapping

The Regulation requires that Member States produce strategic noise maps for the main sources of environmental noise, i.e. major roads, major railways, major airports and for agglomerations with a population of 250,000 persons and a certain population density. The following noise contours are required for a calendar year with the metrics  $L_{den}$ ,  $L_{day}$ ,  $L_{evening}$ , and  $L_{night}$ . For the year 2021, we also report the summer contours  $Leq$  6.5hr night (for the summer and winter seasons combine, i.e., 28 March 2021 to 27 March 2022).

While Defra oversees the Noise Action Plan development process, the UK government has designated that the CAA is the competent authority to conduct the noise mapping.

The 2021 Strategic Noise Maps for Heathrow were included in the Defra Airport Noise Action Planning Data Pack 2023 London Heathrow Airport (EGLL) February 2023 and these maps are reproduced in Annex 11. Following the noise mapping at Heathrow in 2006, 2011 and 2016, the 2021 noise contours are now the fourth set produced to satisfy the END requirements. At Heathrow, to better track developments we have conducted this noise mapping every year since 2009.

It should be noted that Defra uses the Office of National Statistics (ONS) population database for its END strategic noise mapping and thus for this Noise Action Plan. In contrast, the CAA uses the CACI population database, and this is the basis of the data presented in our 2016 Noise Contour report. There can be small differences of 0.5-1% in population figures due to the different databases.

The COVID-19 pandemic had a significant impact on aircraft movements at Heathrow in the first half of 2021. The key operational changes between 2020 and 2021 include a 4% reduction in the annual 24-hour average movements (535.0) compared to 2020 (559.4). Annual average 12-hour day, 4-hour evening, and 8-hour night movements decreased by 1%, 22%, and 2%, respectively. However, movements over the 6.5-hour night period increased by 36%. As a result, the 2021 55 dB  $L_{den}$  contour area decreased by 4% to 75.6 km<sup>2</sup> (2020: 79.1 km<sup>2</sup>). The 2021 50 dB  $L_{night}$  contour area decreased by 6% to 30.6 km<sup>2</sup> (2020: 32.4 km<sup>2</sup>).

Annex 12 contains the results of the analysis of the 2021 Strategic Noise Maps. This includes data on the area of various contours and the number of dwellings and the estimated population at each noise level for the metrics  $L_{den}$ ,  $L_{day}$ ,  $L_{evening}$ ,  $L_{night}$  and  $Leq$ , 16hr from the year 2006 to 2021.

## 2019 Noise Mapping

For this consultation, we recognise that our Noise Action Plan cannot be drawn up based on data from the 2021 calendar year. As Heathrow operations have significantly reduced, so have our noise contours. The year 2019 is the latest representative period to compare noise maps. Consequently, the contours projected for 2023 are compared with the outcomes of 2016, 2019 and 2021 in Table 6.1 below.

Table 6.1 Comparison of 2023 predictions with 2016, 2019 and 2021 outcomes

Noise metric	Statistic	2006 outcomes	2016 outcomes	2019 outcomes	2021 outcomes	Predicted for 2023 (in 2019-2023 NAP)	Comments
55 dB $L_{den}$ contour	Area	244.7 km <sup>2</sup>	198.0 km <sup>2</sup>	176.2 km <sup>2</sup>	75.6 km <sup>2</sup>	179.1 km <sup>2</sup>	Figures demonstrate the year 2021 is not representative.
	Population	756,100	689,400	664,300	215,000	665,500	
	Households	338,500	286,100	268,400	84,500	277,900	
50 dBA $L_{night}$ contour	Area	84.4 km <sup>2</sup>	74.0 km <sup>2</sup>	72.2 km <sup>2</sup>	30.6 km <sup>2</sup>	70.4 km <sup>2</sup>	For the year 2019 there was 3% increase in population contours in addition to shape changes arising from the 10% higher proportion of westerly operations.
	Population	207,200	221,200	228,500	92,600	207,500	
	Households	88,900	86,300	86,500	32,100	80,600	

To understand how population affects these figures, see Annexes 12.1c and 12.5c.



## 2019 Noise Mapping continued

Notable outcomes from the 2019 noise mapping are outlined below.

- For all noise metrics, namely  $L_{den}$ ,  $L_{day}$ ,  $L_{evening}$ ,  $L_{night}$  and  $L_{eq}$  6.5hr the number of dwellings and people in each band (with very few exceptions) decreased between 2006 and 2012 and between 2013 and 2019.
- The  $L_{den}$  results show that the area of the contours has been reduced for all contour levels. The area of the 55 dB  $L_{den}$  contour was 176.2 km<sup>2</sup> (28% lower than in 2006) and was estimated to contain a population of 664,300, compared with 756,100 in 2006.
- Note that the 2019 population within 55dB  $L_{den}$  was only 11.9% lower than in 2006 (89,800). This is a result of the increase in population in those noise impacted areas.
- The annual passengers rose from 67.5 mppa in 2006 to 80.9 mppa in 2019, a 20% increase over the same time period.
- The increase in annual passengers/movements has had an opposite trend to that of the 55 dB  $L_{den}$  area/population/households for 2006 and 2009-2019.
- The annual passengers rose from 67.5 mppa in 2006 to 80.9 mppa in 2019, a 20% increase over the same time period.
- The 2019  $L_{night}$  50 dB contour area of 72.2 km<sup>2</sup> was 14% smaller than in 2006 (84.4 km<sup>2</sup>). However, the population count within this contour rose by 10% due to the effects of population encroachment. Had the population database remained unchanged from 2006, the 2019 population count would have reduced by 9%.

These results highlight that on-going improvements in noise management and the fleet are resulting in reducing noise levels and the physical extent of the  $L_{den}$  contours.

In 2019, total movements in the 6.5 hour Night Quota Period (NQP) period (23:30-06:00) for 2019 decreased by 6% to 15.9 from the previous year (2018: 16.9). Despite greater reductions in the noise level during the 6.5 hour Night Quota Period (NQP) period (23:30-06:00), the 8 hour night time noise contour (23:00-07:00) has not reduced as quickly as the  $L_{den}$  and this serves as a reminder that extra efforts are required to reduce night time noise.

Accordingly, we have included specific actions in this Noise Action Plan on night time noise, particularly through Noise Actions 3A, 3B, 3G, 3J, 4A, 5D, 8A and 10E.

More detailed information on noise mapping and trend analysis is available in the Heathrow Airport 2019 Noise Action Plan Contours and 2019 Summer Contours available from our website. This contains the END contours, the 2019 summer  $L_{eq}$  contours, as well as a broad range of supplementary metrics, some for the first time, including overflight track density diagrams and single mode contours. Much of this content was developed in response to community requests resulting in the most comprehensive noise contour report ever produced by Heathrow.

Table 6.2 below shows the key highlights and achievements of Heathrow's work on aircraft noise management over the last decade.



## 2019 Noise Mapping continued

Table 6.2 Highlights of noise outcomes after third Noise Action Plan

Area	Outcomes
Noise Mapping Outcomes	The area of the L <sub>den</sub> 55 dBA noise contour decreased by 28% from 244.7 km <sup>2</sup> in 2006 to 176.2 km <sup>2</sup> in 2019. The result was a 12% reduction in the population inside that contour. The area of the L <sub>night</sub> 50 dBA noise contour decreased by 14% from 84.4 km <sup>2</sup> in 2006 to 72.2 km <sup>2</sup> in 2019.
Quieter Planes	Chapter 3 aircraft movements are down to 0.06% of total movements in 2022, compared to 11% in 2010. Chapter 14 aircraft now account for nearly 80% of total movements.
Quieter Procedures	Fly Quiet and Green was launched in 2013– it is the first European public noise performance league table. The programme has improved airline engagement on both fleet and flight performance. We added new metrics since the beginning of 2023 and will publish the new League Table shortly. CDA has improved from 83.75% in 2010 to more than 90% in April 2023. Track Keeping average for 2023 is 95.62%. Various studies and trials have been conducted on departure, Heathrow noise benchmarking, Slightly Steeper Approaches and the detection of landing gear deployment.
Land-use Planning and Mitigation	To date under the Quieter Homes Scheme, we have completed insulation on 823 out of 1,124 eligible properties. The glazing works have been completed in 21 schools. We announced a new Noise Insulation Scheme in 2023
Operating Restrictions and Voluntary Measures	We have adhered to our total movement limit of 480,000 per annum while increasing total passenger movement from 67.5 million in 2006 to 80 million in 2019. At the same time the areas of the annual L <sub>den</sub> noise contours have shrunk by 28%. We have successfully maintained our voluntary ban on arrivals landing prior to 04:30. Similarly, we maintained our voluntary ban on scheduling cargo flights in the Night Quota Period (NQP) 23:30-06:00. The area of the 48 dB L <sub>eq</sub> night 6.5hr (the NQP period) decreased by 40% from 56.4 km <sup>2</sup> in 2006 to 33.4 km <sup>2</sup> in 2019.
Working with local communities	The Noise and Airspace Community Forum (NACF) meets every two months. It has been established to address noise and airspace issues in the Heathrow area. The Heathrow Community Trust (HCT) has received a total of £81,500 (2019-2022) from noise fines levied on airlines for breaching noise regulations. Heathrow will continue to direct all money raised by departure noise infringements to the Heathrow Community Trust to support their Environment and Sustainability Programme, which has helped to deliver community projects ranging from surplus food redistribution to the installation of equipment to support sustainable use of resources such as a drinking water fountain and solar panels. For more information, please visit <a href="https://www.heathrowcommunitytrust.org/">https://www.heathrowcommunitytrust.org/</a> . WebTrak, WebTrak My Neighbourhood, and xPlane are tools that help community members track flight movements and understand changes by allowing them to conduct their own analysis of Heathrow flights.

## Identification of noise problems and situations

For many years Heathrow has been at the forefront of international efforts to address aircraft noise, but we know there is more we can do to continue to reduce the impact of aircraft noise.

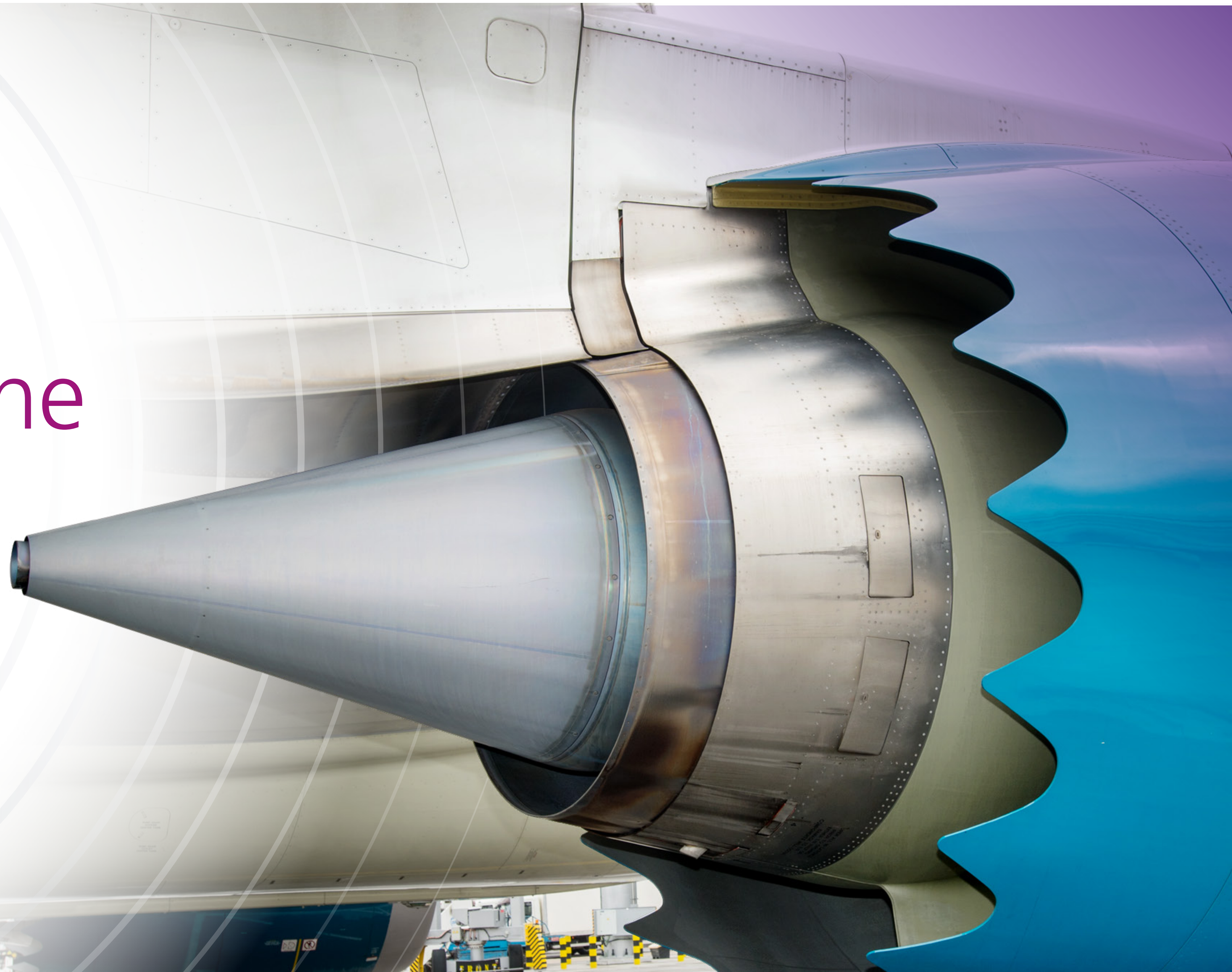
As reported in Annex 12, the area of the 2021 55dBA L<sub>den</sub> contour is at 75.6km<sup>2</sup> and this contains 84,500 dwellings in which 215,000 people live. In comparison, the area of the 2019 55dBA L<sub>den</sub> contour is at 176.2km<sup>2</sup>, contains 268,400 dwellings and 664,300 people.

We recognise that noise remains a challenge for Heathrow to continue to address. A priority is to focus on those in the highest contours as we have set an objective to reduce HSD & HA by 2030 vs 2019.



SECTION SEVEN

# Developing the Noise Action Plan





## Noise Action Plan – updated guidance

As mentioned earlier, Noise Action Plan requirements are set out in the Environmental Noise (England) Regulations 2006 (“the Regulations”) transposed from the EU Environmental Noise Directive (END) 2002/49/EC. In September 2022, Defra published updated guidance for airport operators to review and update their Noise Action Plans. (Extracts are provided in Annex 14.)

Defra also provided an Airport Noise Action Planning Data Pack 2022 which contained the 2021 strategic noise mapping of Heathrow Airport (see Annex 11). The data pack included the estimated population and dwelling statistics for various noise level indicators and associated noise level contour maps.

While the guidance recognises that this Noise Action Plan is basically a revision of the previous plan, it does require that the public are consulted and given effective opportunities to participate in the preparation and review of the Noise Action Plan.

Public input must be taken into account and the public should be kept informed of decisions taken.

Through this for public consultation, we are taking the steps outlined below to develop the Noise Action Plan 2024-2028. See Annex 15 for a summary of the development and consultation events.

### 1. Collaborative development of draft Noise Action Plan

In compiling this fourth Noise Action Plan we have used a wide range of information documents including:

- Our third Noise Action Plan (2019-2023), performance data and a review of progress and relevance against the existing actions;
- The Aviation Policy Framework and recent Government policy documents such as the draft Airport National Policy Statement, the draft Airspace Policy and draft National Planning Policy Framework;
- The 2021 Strategic Noise Maps and annual contour trends (see Annex 11);
- The audit findings our third Noise Action Plan (2019-2023) under review (see Annex 10); and,
- Resident feedback from surveys, focus groups and complaints (see Annex 13).

Starting in November 2022, we held twelve meetings with airlines to gather their views on continued, modified and new actions. We also organised three workshops with the working groups of the NACF to collect views and ideas from the local community. In addition, we consulted with other groups including the HSPG, international organisations, NATS, and internal departments.

The key outcomes of these collaborative efforts are assembled in the present draft actions which are included in Section 8.

### 2. Public consultation, feedback and redrafting

We are holding the public consultation on the draft of this Noise Action Plan from 5 June to 16 July 2023.

Public outreach and events include a door drop in the 55dBA  $L_{den}$  noise areas, advertisements through digital local radio stations, a website ([www.heathrow.com/quieter](http://www.heathrow.com/quieter)), letters to councils and MPs, two webinars and two drop-in events at the Heathrow Academy.

More details are provided in Annex 15.

### 3. Submission and publication

Defra requires that this draft Noise Action Plan be submitted by September 2023.

The Secretary of State will then decide whether to adopt it (with any proposed modifications) for formal publication in early 2024.

### 4. Annual reviews

We are committed to annually reviewing our Noise Action Plan in light of progress, audit findings and developments within the industry generally.

Consequently, the specific actions detailed in Section 8 may be amended or replaced in response to these reviews. We will confirm any amendments with CISHA and other key stakeholders such as the Airlines and NACF.

We will also review, and if necessary revise, our Noise Action Plan in the event of any major development affecting the existing noise situation at the airport, in accordance with the legal requirements relating to Noise Action Plans.



SECTION EIGHT

# Our approach to managing noise (the Noise Action Plan)





## Responsible business actions

Here we set out our business-as-usual activities that underpin our noise management strategy.

Area	Outcomes	Actions	Date	Performance indicator	Target	Impact	Communities affected
A	NAP review	We will review our Noise Action Plan to ensure that it aligns with Government policy and stated objectives.	2025	% actions on track or completed	90% on track	Ground, arrivals, departures Noise	Communities within and beyond 55dB L <sub>den</sub>
B	H2.0 review	We will review and align with our Heathrow 2.0 goals and set targets where appropriate.	2024	Number of people HSD & HA	Limit and where possible reduce the number of people HSD & HA compared to 2019	Ground, arrivals, departures Noise	Communities within and beyond 55dB L <sub>den</sub>
C	charging differential	Annually review the landing charge differentials as part of the CoU consultation.	Annual	% of Chapter 14 aircraft	Increase in Chapter 14 equivalent aircraft	Ground, arrivals, departures Noise	Communities within and beyond 55dB L <sub>den</sub>
D	Noise restrictions	Comply with DfT Night Noise Restrictions.	2024	% of Compliance with restrictions	100% DfT Night Noise Restrictions compliance	Ground, arrivals, departures Noise	Communities within and beyond 55dB L <sub>den</sub>
E	ATMs cap	Comply with Planning conditions (e.g., 480,000 cap).	Continuous	~ ATMs	<=480,000 ATMs	Ground, arrivals, departures Noise	Communities within and beyond 55dB L <sub>den</sub>
F	AIP noise compliance	Monitor and report AIP noise abatement compliance levels.	Continuous	% AIP compliance	Improve performance of AIP abatement requirements vs 2019 levels	Ground, arrivals, departures Noise	Communities within and beyond 55dB L <sub>den</sub>
G	Internal systems	Undertake internal audits of systems, processes and databases.	Whenever appropriate	Internal audit reports	Annual audit	Ground, arrivals, departures Noise	Communities within and beyond 55dB L <sub>den</sub>
H	Peers benchmark	Benchmark with peer airports through ACI membership/chair of the Environment Committee / Noise Task Force.	Continuous	Attendance	ACI Noise abatement Information Exchange Database in place, and number of airports actively updating at the KPI	Ground, arrivals, departures Noise	Communities within and beyond 55dB L <sub>den</sub>
I	International participation	Contribute to the work of ICAO and CAEP through working group membership	Continuous	Participation in CAEP meetings	LHR up to date on noise abatement technology and approaches.	Ground, arrivals, departures Noise	Communities within and beyond 55dB L <sub>den</sub>



The following actions complement our responsible business actions. Based on our five pillars (the four pillars of the balanced approach and working with Local Communities), we believe these actions are most effective in achieving our noise abatement objectives.

## Quieter Planes

To work with our airline partners to ensure that Heathrow operates with a 'best in class' fleet mix and report annually.

**Key Action 1:** Establish a Fleet Forecasting Forum (FFF) with input from the aircraft manufacturers, our top 10 airlines by movement and technical experts to predict the pace of future technology and likely take up at Heathrow.

Ref	Short title	Actions	Date	Performance indicator	Target	Impact	Communities affected
1A	Fleet forecasting	We will develop our forecasting process and issue forecast contours for a 5-year projection, annually, and for a 10-year projection, every 5 years. These will be shared with local councils.	2025	Number of authorities within the 55 dB Lden receiving updates	To share forecasts annually with MoU authorities from 2025	Ground, arrivals, departures Noise	Communities within and beyond 55dB Lden
1B	Chapter 3 and 4 phasing out	We will continue to engage closely with our airline partners to achieve the voluntary phase out of noisiest aircrafts. In line with this objective, we will establish a specific 'Fleet Forecasting Technical Group' targeting 0% ch3 aircraft by 2028, and 100% ch14 by 2045.	Annual	% Ch3, Ch4 and Ch14	Ch3 0% by 2028, Ch4 0% by 2045	Ground, arrivals, departures Noise	Communities within and beyond 55dB Lden
1C	Representativity	This group will represent at least 75% of all Air Traffic Movements (ATMs) and include participation from individual airlines operating Chapter 3 aircraft to ensure their active involvement. To maintain continuous improvement and effectiveness of the measure, we will publish annually the distribution mix of our fleet.	2024	Improvement in fleet mix	75% airlines ATMs represente	Ground, arrivals, departures Noise	Communities within and beyond 55dB Lden



## Quieter Planes continued

**Key Action 2:** Review the landing charges structure in order to meet our sustainable growth objectives and through the FFF identify opportunities to evidence and incentivise the accelerated adoption of new technology at Heathrow with the aim of accelerating the transition to a Chapter 4 free fleet before 2045.

Ref	Short title	Actions	Date	Performance indicator	Target	Impact	Communities affected
2A	New aircraft noise study	For all new aircraft types with scheduled operation at LHR and a representative data set, we will undertake comparative noise studies relative to older equivalent aircraft types with the CAA to show the relative performance of new aircraft types.	Whenever appropriate	Report published	One study commissioned per each new aircraft type	Ground, arrivals, departures Noise	Communities within and beyond 55dB L <sub>den</sub>
2B	A320 family deflectors	We will revise the Conditions of Use to require operators of A320 family aircraft to inform the BSC of those aircraft registrations that have not been retrofitted with vortex deflectors.	2024	% A320-family movements retrofitted	90 % A320-family movements retrofitted	Arrivals Noise	Communities within and beyond 65dB L <sub>den</sub>
2C	Chapter 3 table	We will publish a Chapter 3 league table of operators continuing to use these aircraft and increase the differential with the quietest group of aircraft.	2024	% Ch3 movements	0% Chapter 3 by 2028	Ground, arrivals, departures Noise	Communities within and beyond 55dB L <sub>den</sub>



## Quieter Procedures

We will work with all our stakeholders to explore and employ best practice, lower noise operating procedures to reduce the impact of aircraft on residents.

**Key Action 3:** Establish a Technical Engagement Forum (TEF) with membership from the aircraft manufacturers, top 10 airlines, NATS and Operations to undertake a review and renewal of the arrivals, departures and ground operations Code of Practice by 2026 aimed at supporting the achievement of the noise abatement objectives.

Ref	Short title	Actions	Date	Performance indicator	Target	Impact	Communities affected
3A	CoP	Following the review we will establish revised Codes of Practice focused on operational procedures and practices to support deliver against our objectives on High Annoyance and High Sleep Disturbance.	2026	Number of people HA and HSD	CoP published by 2026	Ground, arrivals, departures Noise	Communities within and beyond 55dB L <sub>den</sub>
3B	DfT Night and NAO	We will revise our Fly Quiet & Green and Quiet Night Charter in line with the recommendations from the TEF to support the achievement of the DfT Night Noise and Noise Policy objectives.	2025	Evidence of the review process	Adaptation of FQG and QNC	Ground, arrivals, departures Noise	Communities within and beyond 55dB L <sub>den</sub>
3C	FQG	We will work with airlines to improve the overall FQG scores working towards increasing the green scores.	Continuous	% of green dots	Increase in FQG scores vs a 2023 baseline	Ground, arrivals, departures Noise	Communities within and beyond 55dB L <sub>den</sub>
3D	Airline noise pack	We will provide an "airline specific noise pack" (ASNP) with contours and operational performance to enable them to better understand and forecast how they can manage their individual noise impacts.	2027	Reduction in HA & HSD	Top 5 airlines to have a noise pack issued by 2025	Ground, arrivals, departures Noise	Communities within and beyond 55dB L <sub>den</sub>
3E	NADP1&2	Review the findings from the CAA NAPD 1&2 Study commissioned with input from the NACF and consider how they can be incorporated into the revised Departure Code of Practice.	2024	Reduction in targeted HA and HSD	Departure CoP review completed by 2026	Departure CoP review completed by 2026	Communities within and beyond 55dB L <sub>den</sub>
3F	SOP	We will survey airlines' standard operating procedures (SOPs) every 5 years and maintain findings.	2025	% of ATMs covered by SOPs survey	Review of 10 SOPs by 2025	Ground, arrivals, departures Noise	Communities within and beyond 55dB L <sub>den</sub>
3G	TEAM	We will ensure compliance with the rules covering the use of TEAM (Tactically Enhanced Arrivals Mode) and publish statistics on its use.	2025	% TEAM application per annum	Reduction of TEAM application vs 2019	Arrivals Noise	Communities within and beyond 55dB L <sub>den</sub>
3H	RET	We will investigate the Reduced Engine Taxiing (RET) reporting procedures to facilitate airlines operations and increase RET operations.	2027	Assessment of RET procedures	Increased number of RET operations vs 2024 baseline	Ground, Noise	Communities within and beyond 55dB L <sub>den</sub>
3I	CDA	Raise the monitoring level of CDA from 6000 ft.	2024	% CDA	>90 % CDA (MTA)	Arrivals Noise	Communities within and beyond 55dB L <sub>den</sub>
3J	SSA	We will continue to promote the adoption of Slightly Steeper Approaches (SSA) during quieter operational periods report on usage during the night period.	2028	TEF meetings reports	Increase in SSA operations during night quota period vs 2021	Arrivals Noise	Communities within and beyond 55dB L <sub>den</sub>
3K	Departure noise limits	Review the effectiveness of departure noise limits and fines with the aim of improving performance at the mandatory noise monitors of the noisiest aircraft	2028	Number of events above L <sub>max</sub> thresholds at the fixed NMTS	Conclude review by 2025	Conclude review by 2025	Communities within and beyond 55dB L <sub>den</sub>
3L	Rate of climb	Consider how/if the overall departure noise footprint can be improved by adapting the minimum climb gradient.	2027	TEF progress reports	Conclude review by 2027	Departures Noise	Communities within and beyond 55dB L <sub>den</sub>



## Quieter Procedures continued

**Key Action 4:** We will develop, and trial operational practices aimed at increasing the level of predictable respite, particularly at night. This will include the implementation of easterly alternation during the daytime.

Ref	Short title	Actions	Date	Performance indicator	Target	Impact	Communities affected
4A	Preferential night route	We will work with members of the TEF and the NACF to develop a preferential night route trial to equitably share noise across local communities after 2300 thereby providing predictable periods of respite from night operations.	2028	Evidence of the review process	Decision on trial application by 2025	Ground, arrivals, Departures Noise	Communities within and beyond 55dB L <sub>den</sub>
4B	Pre0600 respite	We will work with the TEF and NACF to develop an early morning arrival trial (pre0600) aimed at extending the predictability of respite.	2028	Evidence of the review process	Decision on trial application by 2025	Arrivals Noise	Communities within and beyond 55dB L <sub>den</sub>
4C	Easterly alternation	We will introduce Easterly Alternation by the end of 2028.	2028	Evidence of the review process	Implementation of Easterly Alternation	Ground, arrivals, Departures Noise	Communities within and beyond 55dB L <sub>den</sub>
4D	APU usage	We will develop a plan to limit the APU usage on stands and adapt our Operational Safety Instructions (OSI) accordingly.	2027	TEF meetings reports	Publication of APU usage OSIs	Ground Noise	Communities within and beyond 55dB L <sub>den</sub>



## Quieter Procedures continued

**Key Action 5:** We will identify opportunities to enhance the collection and analysis of operational and noise data in order to improve our understanding of the effectiveness of the noise abatement interventions in the AIP and identified by the TEF.

Ref	Short title	Actions	Date	Performance indicator	Target	Impact	Communities affected
5A	Landing gear deployment	We will work with airlines to gather data and improve our monitoring of landing gear deployment.	2028	TBC following review	Established monitoring methodology by 2027	Arrivals Noise	Communities within and beyond 55dB L <sub>den</sub>
5B	Summer Landing Gear Observations	We will conduct field observations and collect data on landing gear deployment over a one-week period during each summer.	Annual	% of observations with landing gear deployed beyond 8nm	Collection of data for 50 operational hours (from summer 2024)	Arrivals Noise	Communities within and beyond 55dB L <sub>den</sub>
5C	NTK upgrade	We will upgrade our NTK system to make the analysis of our noise monitor network more efficient and effective.	2028	TBC based on tool capability	Semi automated noise monitor summary analysis by 2027	Arrivals, Departures Ground Noise	Communities within and beyond 55dB L <sub>den</sub>
5D	GNMP	We will develop a ground noise management plan to monitor and manage ground noise activity, including engine ground runs at night.	2027	Performance will be measured against the agreed indicators outlined in the Plan	Publication of Plan by 2027	Ground Noise	Communities within and beyond 55dB L <sub>den</sub>



## Land use planning and mitigation

To offer insulation and ventilation schemes to local communities, residents and for community buildings to help provide noise mitigation and work with local government to monitor and manage encroachment into high noise impacted areas.

**Key Action 6:** We will establish a MoU with Local Authorities, providing our forecast outputs, including aircraft type scheduling and operational performance, to collaboratively reduce night sleep disturbance, and supporting land use planning.

Ref	Short title	Actions	Date	Performance indicator	Target	Impact	Communities affected
6A	Forecast sharing	We will share the forecast noise contour outputs from our work with the Fleet Forecasting Forum.	Annual	Number of local authorities in L <sub>den</sub> 55dB contour engaged in MoU	MOU in place by 2025	Arrivals, Departures Ground Noise	Communities within and beyond 55dB L <sub>den</sub>

**Key Action 7:** Launch the new Noise Insulation Schemes in 2024 & through the Prioritisation Panel, agree the first phases of the residential insulation and schools ventilation.

Ref	Short title	Actions	Date	Performance indicator	Target	Impact	Communities affected
7A	NIS delivery	We will track delivery of the NIS program against an agreed plan and issue a report on progress through the CISHA	Annual	% take up	80% take up of eligible properties in active phases of the scheme	Arrivals, Departures Ground Noise	Communities within and beyond 55dB L <sub>den</sub>
7B	Independent chair funding	We will establish an independent chair and technical advice to the Prioritisation Panel.	Annual	Annual progress report	Set an annual delivery plan	Arrivals, Departures Ground Noise	Communities within and beyond 55dB L <sub>den</sub>

## Operating restrictions and voluntary measures

We will seek to introduce voluntary measures to address specific issues and, where required, consider introducing operating restrictions.

**Key Action 8:** In line with our Heathrow 2.0 commitment, we will seek to introduce a voluntary ban on non-dispensed operations after 0000 and before 0430 from 2025.

Ref	Short title	Actions	Date	Performance indicator	Target	Impact	Communities affected
8A	Nights without late runner	We will seek to increase the nights without late running aircraft (between 2330 and 0430) compared to 2019 levels over the course of the Noise Action Plan.	2028	Number of nights without late runner	At least a 10% increase in the number of nights without late runner per year compared to 2019 levels by 2028	Arrivals, Departures Ground Noise	Communities within and beyond 55dB L <sub>den</sub>

**Key Action 9:** We will develop and implement a ground noise management plan which will include work with international partners to develop a Standard for the use of Pre-Conditioned Air where available.

Ref	Short title	Actions	Date	Performance indicator	Target	Impact	Communities affected
9A	APU usage	We will develop a PCA usage plan, publish and adapt our published Operational Safety Instruction (OSI) to limit APU usage on stands.	2028	% of time reduction in APU usage	Revised OSIs on APU usage by 2028	Ground Noise	Communities within and beyond 55dB L <sub>den</sub>



## Research

To enhance understanding of community perceptions and the effectiveness of the noise management actions taken to reduce noise impacts.

**Key Action 10:** We will establish a longitudinal noise attitudes survey for Heathrow and continue to support and lobby for further research to enhance understanding of our stakeholders and the effectiveness of our noise strategy.

Ref	Short title	Actions	Date	Performance indicator	Target	Impact	Communities affected
10A	Research areas	We will work with stakeholders to identify research areas of common interest through forums such as the NACF and ANEG.	Continuous	Number of studies ongoing and completed	Publish 3 papers at Internoise and Icben by 2028	Ground, arrivals, departures Noise	Communities within and beyond 55dB L <sub>den</sub>
10B	LHR SoNA	We will commission an independent survey of noise attitudes around Heathrow every 5 years.	2027	Evidence of commission by 2026	Publication of surveys by 2028	Ground, arrivals, departures Noise	Communities within and beyond 55dB L <sub>den</sub>
10C	General attitude survey	We will undertake an annual survey of general attitudes towards sustainability at Heathrow.	Every 2 years	TBC based on survey design	Establish survey framework by 2025	Ground, arrivals, departures Noise	Communities within and beyond 55dB L <sub>den</sub>
10D	QoL indicators	Within our Heathrow 2.0 Great Place to Live and Work commitment we will continue to explore the relationship between QoL indicators and aviation.	2026	TBC based on the methodology adopted	Establish a methodology by 2025	Ground, arrivals, departures Noise	Communities within and beyond 55dB L <sub>den</sub>
10E	Research on respite	We will conduct respite research to assess the effectiveness and impacts of both the night trials and easterly alternation.	2028	TBC based on the methodology adopted	Study commission by 2026	Ground, arrivals, departures Noise	Communities within and beyond 55dB L <sub>den</sub>
10F	FG on strategic development	We will continue to use Focus Groups as appropriate to inform our strategic development.	Continuous	Number of noise related FGs	Establish 4 focus groups a year to support strategic development and test awareness	Ground, arrivals, departures Noise	Communities within and beyond 55dB L <sub>den</sub>
10G	NIS research	We will conduct independent academic research into the effectiveness of the NIS program in reducing HSD, HA cognitive development and improving QoL.	2027	Interim updates on study progress	Study completed by 2027	Ground, arrivals, departures Ground Noise	Communities within and beyond 55dB L <sub>den</sub>

## Working with local communities

To engage openly and constructively with local residents, businesses and community groups to understand and, where possible, address their concerns.

**Key Action 11:** We will strengthen the independent scrutiny of our noise management strategy through CISHA and continue to engage with stakeholders through a variety of Forums and provide independent insight, assurance, and transparency.

Ref	Short title	Actions	Date	Performance indicator	Target	Impact	Communities affected
11A	NACF chair	We will fund an independent chair of the Noise and Airspace Community Forum and their Technical Advisor.	Continuous	Evidence of funding	Technical advisor in place by 2024	Community Trust and Awareness	Communities within and beyond 55dB L <sub>den</sub>
11B	NAP progress report & audit	We will produce an annual noise action plan progress report and through CISHA appoint an independent auditor to verify the information provided.	Annual	Reported accuracy of progress report	Audit completed by June the following year	Community Trust and Awareness	Communities within and beyond 55dB L <sub>den</sub>
11C	AEDT and ANCON noise models	We will commission and publish a report describing how we utilise the AEDT and ANCON noise models in noise assessments.	2026	Commission by 2024	Report published by 2026	Community Trust and Awareness	Communities within and beyond 55dB L <sub>den</sub>
11D	NTK audit	Undertake an audit of our NTK systems to provide assurance around their accuracy once over the course of the NAP.	2025	Published audit report	Complete audit by June 2025	Community Trust and Awareness	Communities within and beyond 55dB L <sub>den</sub>

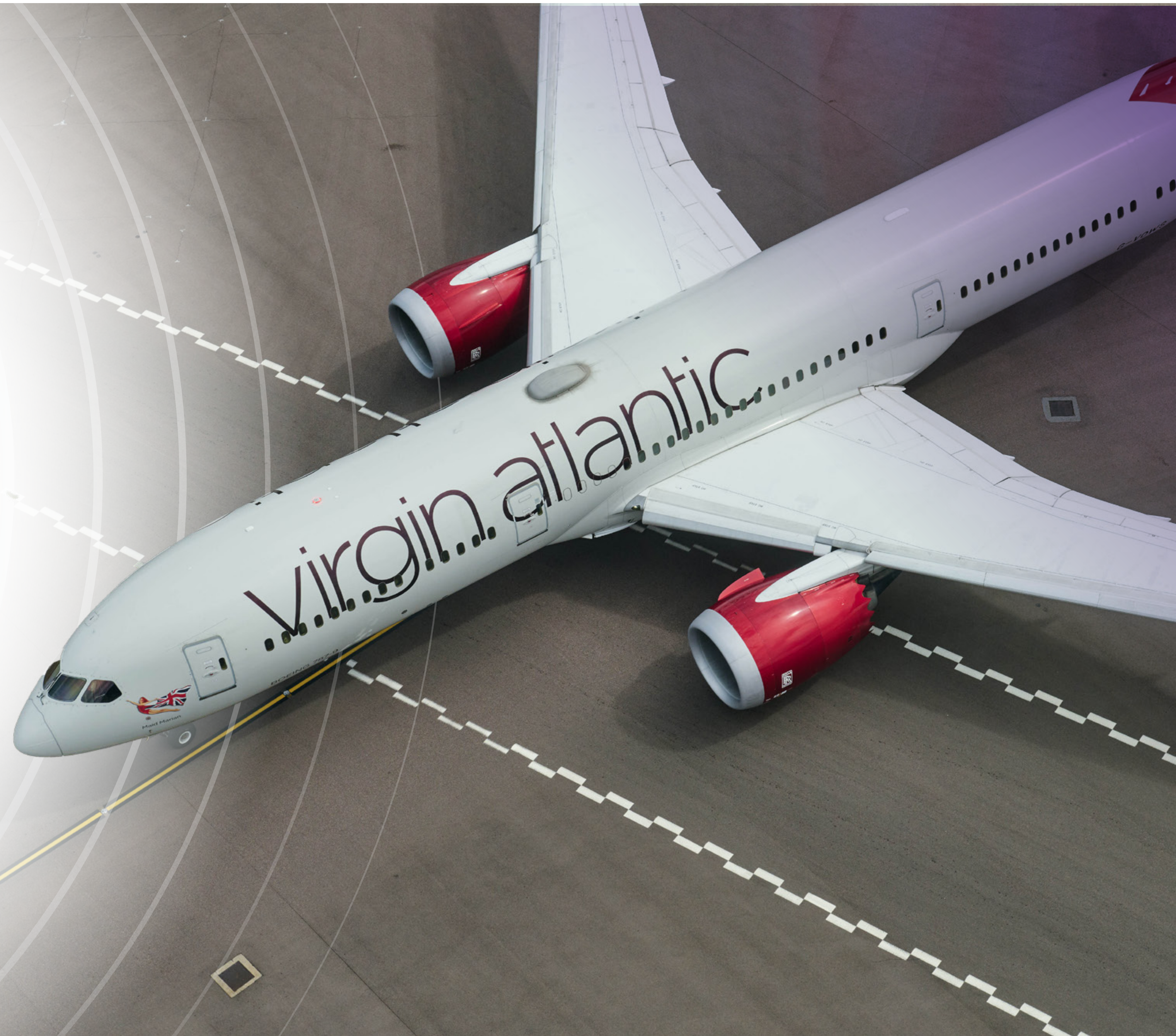
**Key Action 12:** We will undertake a review and enhance our online information and tools to improve accessibility and provide greater insight in a more efficient way.

Ref	Short title	Actions	Date	Performance indicator	Target	Impact	Communities affected
12A	Complaint analysis	Complete a review of complaint data analysis and presentation methodology	2026	Evidence of the review process	Complete review by 2026	Community Trust and Awareness	Communities within and beyond 55dB L <sub>den</sub>
12B	Annual noise contour	Continue to provide an annual noise contour report and seek to enhance it with supplementary indicators and data.	Annual	Contour trends	Annual reports published by June each year	Community Trust and Awareness	Communities within and beyond 55dB L <sub>den</sub>
12C	Data tracker	Consolidate our monthly data tracker to align with stakeholder use and CAA transparency guidance.	Monthly	Evidence of the review process	Publish monthly data within a month of completion	Community Trust and Awareness	Communities within and beyond 55dB L <sub>den</sub>



SECTION NINE

# Evaluating the implementation and the results of the noise action plan





As shown in Section 8, in order to evaluate the effectiveness and delivery of the Noise Action Plan we have:

- established the performance indicators;
- set specific goals and targets where appropriate;
- continued our commitment to providing an annual Noise Action Plan progress report and maintaining an independent audit process to verify statements made in the annual progress report.

We are committed to reporting publicly on our performance against the action plan and the effectiveness of our actions to address noise impacts. Since the first noise action plan was published, we have established an independent audit process to verify updates on progress (see Action 11 B).

Our definition of a performance indicator is that it is a quantifiable measure of performance against a stated objective, long term goal, action and/or annual target. A goal is interpreted as a longer-term SMART (specific, measurable, achievable, realistic, time bound) target.

Finally, we use the phrase annual target to define an annual milestone towards achieving the longer-term goal.

## Performance indicators

We will monitor the set of performance indicators generally on a quarterly basis to track progress against each area of focus. This will help to ensure that the work we are undertaking is resulting in the maximum benefit in terms of managing noise impacts.

The full range of indicators is set against each of the actions detailed in the Noise Action Plan in Section 8. In some cases this may just be providing evidence to the independent verification auditors that the action has been completed. Our performance against these indicators will be regularly reviewed internally through our environmental governance structure.

During the five-year period of this Noise Action Plan, we may add to or amend the range of performance indicators to respond to improvements which enable us to better manage and/or monitor the airport noise impacts. From time to time, we may set an annual target against one or more of the performance indicators and include this in our annual reporting.

## Goals and targets

For each of the actions we have either set a goal (where the action will take more than a year to deliver) or a specific target date. In some instances the action is drafted in such a way as to be a target in itself.

Note that all target dates given in a particular item refer to 31 December of that year.

## Tracking progress

We will produce a summary noise action plan progress report on an annual basis which will detail activity against all of the actions within the plan. In addition, we have identified a number of key performance indicators which will help provide a concise overview of the impact and delivery of the noise action plan. These are set out in Table 9.1 overleaf together with an associated target goal.

5 years after the cycle of this Noise Action Plan, Defra will be developing new strategic noise maps for 2026 as a basis for developing the next plan. With this in mind, we have calculated the forecasted Heathrow future fleet 2026  $L_{den}$  55-75 dB contours and  $L_{night}$  50-70 dB contours. To keep track of demographic changes, calculations were performed based on population data from 2019 and 2022. The results, including forecasted contour areas, populations, and households, are presented in Annex 17.

For financial information, please see Annex 18, which contains indicative annual expenditure by Heathrow on noise management activities over the next five years.



KPI		Associated target or goal
<b>Key END Summary statistic</b>		
KPI 1	Population, households, area and number of people HSD & HA in the 50dBA $L_{night}$ and 55dBA $L_{den}$	To reduce the number of people HSD & HA compared to 2019 levels
<b>Quieter planes: Measures of fleet mix</b>		
KPI 2	Moving annual percentage of fleet mix movements within the charging categories	Ch3 0% by 2028, Ch4 0% by 2045
KPI 3	Percentage of A320-family movements by retrofitted aircraft	MAT versus target of 90%
<b>Quieter procedures: Measures of operation performance</b>		
KPI 4	a. Track keeping compliance (excluding 09RCPT) and b. CDA	Track keeping – minimum 96.5% in a calendar year CDA – minimum 90% from 6000 ft in a calendar year
KPI 5	In Fly Quiet and Green, the number of green dot performance ratings.	More green score dots than Q1 2023 baseline
<b>Land-use planning and mitigation: Measure of implementation of schemes</b>		
KPI 6	% of eligible residential properties in completed phases taking up the scheme	Minimum of 80% take up of eligible properties in completed phases
KPI 7	Rate of overall satisfaction with the insulation scheme	Average satisfaction score of 85% residents satisfied with the service provided
<b>Operational restrictions: Measure of night time respite</b>		
KPI 8	For the period 23:30-04:30: a. Number of nights with no arrivals or departures b. Number of nights without non-dispersed flights. Reported monthly with Moving Annual Total, MAT	Increase of nights without aircraft post 23:30 relative to 2019
<b>Working with local communities</b>		
KPI 9	Public perception of Heathrow as rated by annual polling: “residents that report improvement on noise levels”	5% improvement (on 2023 baseline) by 2028
<b>General Noise Action Plan processes</b>		
KPI 10	Percentage of actions on track or complete.	At least 90% of actions considered to be on track or complete, verified by independent

Table 9.1: Key performance indicators



**Heathrow**