

# MOVING TOWARDS A 4<sup>TH</sup> GENERATION IN AIRCRAFT NOISE MANAGEMENT

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Heathrow connects Britain to the world. Being responsible of 78 per cent of all UK long-haul flights, Heathrow joins Britain both to our established trading partners and to the world's emerging economic powerhouses.

The airport represents an integral part of the local community in West London and the Thames Valley. A total of 114,000 jobs in the local community are supported by the airport<sup>1</sup>, representing more than one in five of all jobs in the area. Thanks to the connectivity that the airport provides, the economic landscape of the surrounding region has been reshaped.

Yet, as well as bringing huge benefits to Britain, an airport of the size and importance of Heathrow has downsides for people living nearby – in particular, the challenge of aircraft noise. At Heathrow we recognise that the problem of aircraft noise is real, serious and needs to be addressed.

## Our Approach to Noise Management

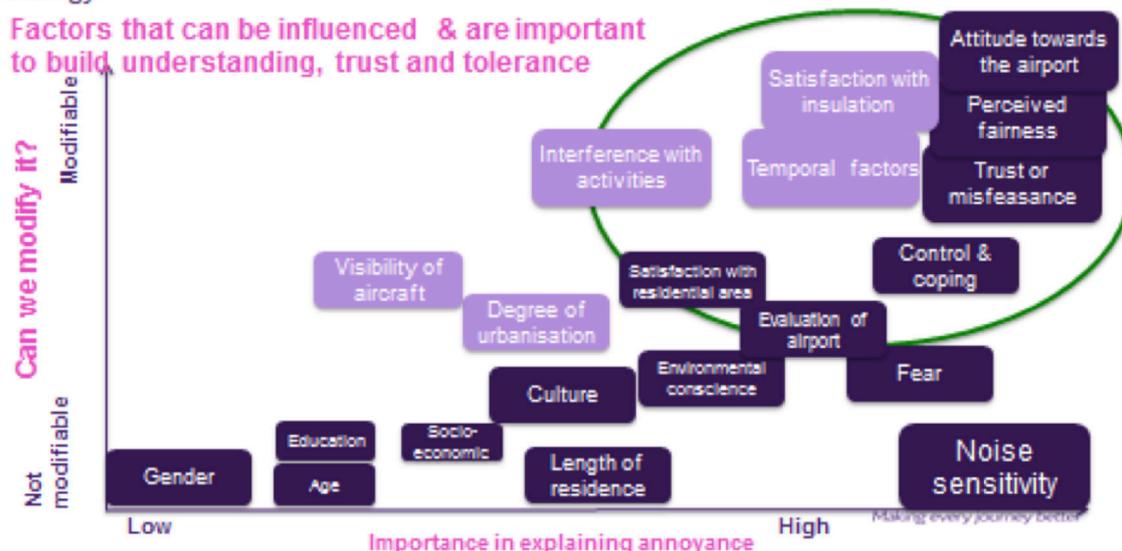
The attitudes of local communities towards an airport are important to its future success. Indeed, their adverse response can result in political and social pressure against the operation and development of the airport. There are numerous examples, particularly in mature economies where growth aspirations have failed or been severely delayed because of fractured relationships.

In seeking to address the concerns of local community stakeholders, we have traditionally closely aligned our activities to the ICAO Balanced Approach. Whilst this remains a key facet of our approach and in general has provided industry, regulatory and policy stakeholders with a clear and a solid bedrock upon which to build noise management plans, it has become increasingly clear to us that something more is needed.

Essentially, the Balanced Approach has focused on abatement i.e. reducing decibels and it is clear that this will remain a critical aspect of noise management – we must always seek to reduce the sound levels where we can. However, more recent research has shown the importance of non-acoustic factors and increasingly airports are recognising this in their assessment of local community reaction to their operations. We have long supported this research through our participation in the Aircraft Noise Non Acoustics (ANNA) group or input into research such as the COSMA study.

Building a strong local relationship across different sectors of local communities could be key in changing the dynamic of the noise issues around airports and intuitively it makes sense – we all react differently to sound levels depending on our relationship

Increasingly airports are considering the non-acoustic factors in their noise management strategy.



with the source at least as much as the actual level itself. Engaging well with community stakeholders is now seen as a critical part of Heathrow’s noise action plan<sup>2</sup>.

Indeed, we would now argue that it is another pillar in the Balanced Approach Summarised in the B&K graphic below. An airports noise management strategy evolves over time as it matures. Airports typically move from a position of ignorance, through activities centred on management and abatement towards tolerance – or a 4th generation. Real community engagement and collaboration is critical to this next evolution and whilst the journey will at times be difficult it is a necessary pathway if, as an industry, we are committed to unlocking the impasse that can sometimes exist between community and industry stakeholders.

It is a journey that Heathrow has been on for several years. We are a long way from the end but we believe we have made some good progress and learnt some valuable lessons along the way, which are all consistent with the key principles identified in the new ICAO Circular on “Community Engagement on Aviation Environmental Management” delivered to CAEP/10.

There are three broad areas of activity that summarise how we have enhanced our approach:

- Improving understanding
- Improving collaboration
- Improving communication and transparency

### Improving our Understanding

Understanding our local community better has been an important step forward in our approach – we have conducted regular community polling of attitudes towards the airport. Not surprisingly, there are diverse views ranging from those who are

strong advocates of the airport to those who feel quite hostile towards it. Historically, dialogue on noise issues has been dominated by these two polar views. However, when invited to elaborate on these views, members of the public tend to express a diversity of opinions.

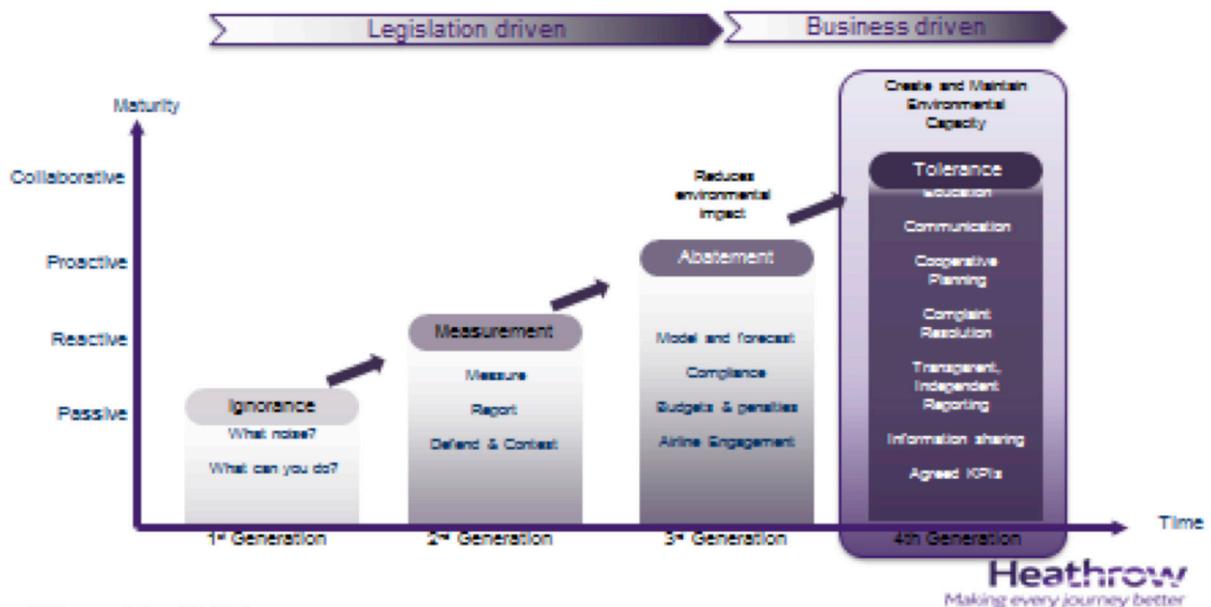
Conducting and supporting research has become an increasingly important aspect of our approach. We have looked at “independent noise authority” models around the world to help understand current best practice and have actively supported research into the importance of non-acoustic factors in noise management for over a decade. This covers areas such as “defining respite” or trends in property values. However, we firmly believe that broader independent research into a range of issues such as the effectiveness of noise insulation programmes and the relationship between airports and quality of life.

Public consultation is also a key aspect of our approach and one we have used not only in shaping our noise action plan but also our expansion proposals.



Understanding local views to help shape our approach.

An airport noise management typically evolves over time.



### Improving Collaboration

Collaboration has been a fundamental feature of Heathrow's approach to noise management for a number of decades – however that has largely been with industry partners such as NATS, our air traffic services provider, and our major airlines. This has been very successful in reducing sound exposure levels but the historic lack of a community involvement in exploring potential solutions has been a weakness in this approach. The delivered improvement has often met an indifferent or even sceptical response.

The EU Environmental Noise Directive (END or Directive 2002/49) and a political frustration with the traditional polarised debate acted as catalysts for change at Heathrow. The EU Directive ensured that wide public consultation of proposed actions was undertaken. This gathered views from a diverse range of stakeholders and led to a clearer understanding of what was important to focus on. The process required active engagement and at Heathrow, this meant a series of public events and stakeholder group sessions. Community involvement became an integral part of our management approach.

There followed a step-change as the airport operator, industry partners (British Airways and NATS) and the leading community noise group, HACAN decided to come together to find areas of common ground. This resulted in a joint paper submitted to the Department of Transport and highlighted the need to identify supplementary metrics to support traditional contours and investigation of opportunities to offer more predictable respite. As a result, an early morning arrival respite trial<sup>3</sup> was undertaken and a number of additional metrics were included in Heathrow's annual noise assessment reports.

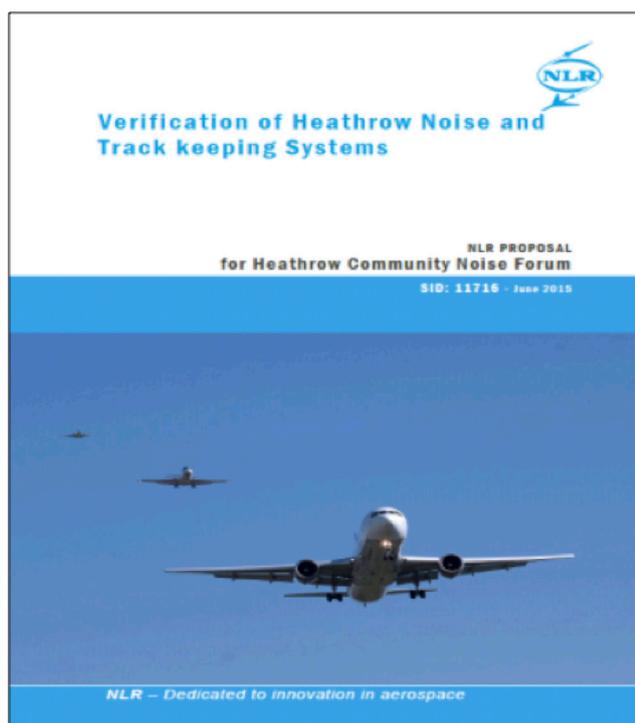
This initial group evolved to form the Heathrow Noise Forum (HNF) which added representation from the regulatory, international airline, local authority and regional perspective. The concept behind this group is that rather than having multiple representation from each stakeholder "cluster" the individual member is charged with gathering and bringing a rounded view from that perspective and in that sense enable a more strategic view of managing the noise issue. But there was also some key learning that the group has taken. In common with the rest of the world, the use of precision based navigation is coming to the UK. The HNF was keen to explore how this could be used positively to provide predictable respite (through multiple routes rather than concentration along one) and supported trials to explore this. As a result, there was a significant increase in complaints and the extent of these complaints was also much wider than seen traditionally. We recognised that the level of communication and engagement prior to the trials had not been sufficient which led to widespread misunderstanding and understandable concerns. Consequently, another engagement group, the Heathrow Community Noise Forum (HCNF)<sup>4</sup> was established which is made up of councillor and resident group representations from local boroughs, including many much further away from Heathrow than we have previously regularly engaged with.

The first key issue to address with the HCNF members was the level of trust in the noise and track keeping systems we use to monitor and measure aircraft operations. There was as strong feeling that these were inaccurate, preventing any further analysis of change, whether temporary due to the trials or over time This is not a problem unique to Heathrow and is frequently an issue raised by other airport operators. To address this, we supported members of the HCNF in drafting a scope of work aimed at verifying the data and invited potential suppliers to respond. The HCNF members selected the preferred supply and then worked directly with them to undertake the verification work. Heathrow involvement was limited to the provision of the data to be verified and payment of the supplier. The final report is due in 2016.

In parallel an independent consultancy was appointed to undertake some data analysis of longer term trends in flight path patterns. This work has highlighted some incremental changes in some cases which are the subject of further work in 2016. Indeed, the group is currently in the process of agreeing a 2016 action plan through a series of focused working groups.

### Improving communication and transparency

Another finding from our regular polling and research has been that awareness of how the airport operates and our efforts to reduce its noise impacts is often low. Equally, feedback on the action planning process has raised local concerns about transparency and access to more detailed data and statistics has been a cause of frustration for some residents and community groups.



To try and address some of these issues, we have been focusing increasingly on our style of communications and identifying opportunities to provide reassurance and transparency of data. There are many examples over recent years but three examples that spring to mind immediately are the Fly Quiet Programme (FQP) our annual noise blueprint and the enhancement of our Webtrak system.

The FQP was the first in Europe to publish a league table of airline performance across a range of noise metrics. These include the composition of their fleet relative to ICAO standards, operational performance and night operations. The league table is published every quarter and has been well supported by many of the airlines<sup>5</sup>. It has not only provided a level of transparency not previously seen for interested local stakeholders but also offered a chance for airlines to demonstrate sustained good performance or step change improvements and has been broadly welcomed.

Our noise action plan contains over 45 actions and is a detailed and technical document that is, not easily accessible for many stakeholders. So in 2015, we launched our first noise blueprint<sup>6</sup>. The document is a simple summary of 10 key actions that we have placed particular focus on for the year. As part of the additional emphasis, the CEO of London-Heathrow wrote to his counterpart at 40 airlines to seek their support for the implementation of these 10 key actions.

Like a number of airports globally, Heathrow has had a web-track system in place for a number of years. These typically allow users to investigate and replay individual flights over particular locations. We have been working with our supplier to develop an enhancement to this system that will enable users to conduct

their own high level data analysis. As part of our CNF action plan one of the work streams will consider how to potential develop this on-line tool but based on our engagement with community stakeholders to date we have focused on enabling users to answer questions like how high, how many, how often and how these differ between different time periods and years.

By taking the sort of actions outlined above we believe this will build a basis for more constructive dialogue and engagement built on a common understanding of the data and critically trust.

### Going Forward

Although moving towards a 4th generation in noise management will not always deliver the clear quantifiable reduction in “noise footprints” that are traditionally sought, it can be expected to deliver changes in perceptions and attitudes from all those involved in seeking to reduce the impacts of aircraft noise. That is not to say that continuing to seek acoustic reductions is not part of the approach, clearly it remains critical, however it recognises that managing aircraft noise is about more than just the decibel.

As the relationship and trust develops on all side, we would hope to see a much more collaborate process in the design and development of our END noise action plan, building on the approach we have taken to date with Forums such as the HCNF and HNF.

Approaching this issue with a philosophy of seeking to build tolerance based on trust and collaboration will be key to achieving a long term solution.

At Heathrow we continue to seek wider community attitudes in order to continually improve our approach.

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