

## **Heathrow is using much better noise metrics than before**

### **More relevant metrics are now being used to measure noise annoyance**

**Metrics matters a lot.** The way noise is measured and the assumptions behind when it becomes annoying are critical factors in the determining Government noise policy.

There has been real progress in recent years. Credit goes to campaigners who gave banded on about outdated metrics for nearly 20 years, the Airports Commission who came to the issue with fresh eyes, Heathrow who came to understand the need for change and the Department for Transport which moved things forward significantly in its new airspace policy announced in autumn 2016.

#### **Outdated metrics sidelined**

Things are not yet perfect – which I'll come to later – but we are in a different world from the dark days of two decades ago. Then the 57 decibel contour was king. If you were inside the contour, it was accepted you had a noise problem. Outside of it, you didn't really count.

So what was so magical about the 57 decibel contour? It was constructed like this. Over a 16 hour day, the number of aircraft passing over an area and the noise of each plane were noted. The noise was then averaged out. This was then turned into an annual average. If the annual average was over 57 decibel, the area was within the 57 decibel contour.

Why 57 decibels? Because, at the time, this was the level at which the Government argued 'the onset of community annoyance' began. Acousticians were careful to say that it was more subtle than that and that some people became annoyed at lower levels but, to all intents and purposes, the 57 decibel contour became the official cut-off point, used at public inquiries and in industry and government documents to illustrate the numbers impacted by individual airports. Latterly, it made no sense. Around Heathrow for example places like Putney and Fulham – both clearly heavily impacted by aircraft noise – were outside the contour.

#### **New metrics introduced**

Things began to look up when, over a decade ago, the EU required member states to use a different metric known as 55Lden. It argued that the 'onset of community annoyance' started at a lower level. The difference in numbers impacted at Heathrow was huge: over 725,000 using 55Lden compared with around 245,000 using 57LAeq. Lden averages the noise out over an 8 hour day, a 4 hour evening and an 8 hour night, with 5 and 10 decibels added to the evening and night figures respectively to account for generally lower background levels at those times.

The Airports Commission under Sir Howard Davies moved the metrics debate forward significantly. It suggested a range of metrics should be used included the 'N' metric. Local communities often feel these are more meaningful to them than the average noise. So, for example, N60 would indicate the number of flights over 60 decibels that went over an area in any given period. Heathrow also began to move towards using a suite of metrics.

The culmination of this improved process was the Government's 2016 Airspace Policy. It effectively ditched the 57LAeq contour and replaced it with the 54LAeq as point where 'the onset of community annoyance' starts. But it went further. On the basis of a report it had commissioned from the Civil Aviation Authority (CAA), the Department for Transport recognized that around 7% of people could be disturbed when the noise averages out at 51 decibels. These are more meaningful metrics.

In geographical terms, it takes the annoyance boundary from about Barnes (57 contour) to Clapham (54 contour) to about the Southwark/Lewisham border (51 contour). As the crow flies, Barnes is 9 miles from Heathrow, Clapham 14 miles and Nunhead (fairly close to the Southwark/Lewisham border), 19 miles. Similar calculations can be done west of the airport.

### **Latest WHO Guidelines**

The latest guidelines from the World Health Organisation, published in October 2018, recommend even lower levels. WHO says that the daytime safe level for aircraft is 45Lden and at night 40Lnight. These are lower levels than previously thought safe. WHO arrived at these figures in this way: when 10% of people said they were annoyed by aircraft noise (during the day) at a given level, that level became the safe level. WHO is *not* saying that *most* people will be annoyed or experience health problems from aviation noise at 45Lden. But what it *is* saying is that, in its view, *enough* people will do so for it to be the recommended guideline. These are lower levels than the other studies came up with. I suspect the exact level matters less than the trend. All the studies are suggesting people can get annoyed by aircraft noise at lower levels than previously recognised.

**So metrics are much better but there is still room for improvement.** For example, the existing metrics do not reflect the actual noise impact in areas like Ealing or Teddington which only get planes (on easterly departures) about 30% of the year but, when they do, the impact is significant. A metric that measures only the days areas are overflown would be more meaningful and needs to be added to the suite of metrics used. This would also capture the problems experienced in places like Reading and Caverham which are currently a little outside the 51 decibel contour when measured over a year. A metric also needs to be used which reflects the cumulative impact on areas which experience noise from two airports, such as Heathrow and London City.

**Accurate metrics matter because only when there is a clear idea of the numbers impacted by noise from an airport can realistic policies be put in place to deal with that noise.** Metrics can determine levels of compensation, whether efforts should be made to provide communities with relief and respite from the noise and, indeed, to assess the impact of any new runway.

**For more details on the technical side of metrics:** <http://hacan.org.uk/wp-content/uploads/2018/11/Metrics.pdf>