Aircraft Noise – and a new runway

What are the main actions needed to control the impact of aircraft noise?

- Progress should be made to reduce noise to the WHO recommended levels
- Changes to flightpaths should be permitted ONLY if clear and compelling justification can be demonstrated. They should be kept to a minimum and only considered if they provide other communities with significant respite
- The number of flights causing significant disturbance should be reduced – not only through technological and operational changes, but limits on the quantity of flights

Why is aircraft noise an important issue for airport expansion?

Noise not only causes irritation to people exposed to it, but increasingly it is recognized that it can also have adverse impacts on health. That is particularly the case when the planes are heard very frequently, and at night when they can disturb sleep. Aircraft noise is especially annoying and stressful, as individuals feel they have little control over the situation, and are powerless to get any improvements. That is invariably the case for those living under flight paths. Aircraft noise is excluded from the usual safeguards and remedies there would be for other, terrestrial, sources of noise.

How is noise measured?

The measure most used by the UK government is the 57 Leq contour. This is a line drawn around airports, within which average noise over a 16 hour period (0700-2300) over the 3 summer months from mid-June to mid-September, is 57 decibels. Being an average measure, it gives only an approximation to the experience of someone on the ground. People do not hear averages. They hear planes when they fly nearby. It is the number of planes – the quantity of noise events to which people are exposed – that upsets them.

Surveys conducted in the 1980s showed that within the 57 Leq contour more than 50% of people said they were annoyed by aircraft noise. The UK government has traditionally taken this as the “threshold of community annoyance.” The next contour out is 54 Leq, a little less noisy and including many more people. This Leq method of measurement is widely regarded as an inadequate way to reflect the noise reality for those being overflown.

An alternative measure used by the EU in the Environmental Noise Directive is Lden (“den” stands for “day, evening, night.”) This is similar to Leq but adds extra weighting for noise in the evenings and at night.

What are the guideline noise levels set by World Health Organisation?

The World Health Organisation (WHO) is the recognized authority on the link between noise, annoyance and health. It has set out noise guidelines which member states of the EU have signed up to. The WHO has found that people start to get moderately annoyed when noise averages out at 50 decibels over a 16 hour day (50LAeq) and begin to become seriously annoyed when it averages out at 55 decibels (55 LAeq). At night WHO recommends the outdoor noise should average out at no more than 40 decibels over an 8 hour night period (40Lnight).

However, these targets are challenging, so the WHO suggests countries move towards these with an interim target of 55Lnight. There is no timescale to meet these noise levels. We suggest that the centerpiece of UK policy on noise, including aircraft noise, should be to indicate how and when the WHO guidelines will be met.

How many people are disturbed aircraft noise now?

For Heathrow, the Airports Commission calculated that at present over 600,000 people come within the 54 Leq contour and over 725,500 within the 55 Lden contour. For Gatwick the numbers within the same contours are lower, around 12,500 at present within the 55Lden contour (2006 data from ECRD). But the Gatwick figures may seriously underestimate the annoyance caused in rural areas where background noise is lower and expectations of
tranquility are higher. Moreover Gatwick is surrounded by several Areas of Outstanding Natural Beauty where peace and quiet are valued.

It is claimed by the Airports Commission that less noisy aircraft in future might reduce these figures to below their present levels, even with an additional runway, although that is not proven and difficult to believe.

What are the health and economic impacts of aircraft noise?

The annoyance caused by noise can lead to stress which in turn can lead to cardiovascular problems as well as psychological problems. It can even sometimes affect ability to function effectively at work, especially if sleep has been disturbed. Research has shown that even if people are unaware of a noise at night, while asleep, their bodies still hear it and respond to it. This may be the mechanism by which noise has cardiovascular effects. The impacts of noise are worse if people feel they have no control over the situation, and are unable to influence it.

The monetary costs of transport noise are enormous, and though hard to accurately quantify, arise from the cost of sleep disturbance, stress, and the cost of medical treatment for cardiovascular conditions, including strokes.

New flight paths, and concentrated flight paths

Aircraft now rely on satellite navigation, similar to the Satnavs used in cars. This enables them to keep exactly on a prescribed track. As part of a European wide rationalisation of flight paths, under the SESAR (Single European Sky ATM Research) programme, NATS (National Air Traffic Services) under the auspices of the CAA (Civil Aviation Authority) are introducing concentrated flight paths, starting at Gatwick but also with trials at Heathrow, Birmingham and now Edinburgh.

It is claimed that this is in line with the aim laid down in the DfT’s Aviation Policy Framework White Paper ‘to reduce the number of people significantly affected by aircraft noise.’ The new concentrated routes have, however, resulted in fury and anguish from residents under them, with the creation of many new local protest groups. While a smaller number of people may be affected by aircraft noise under a concentrated flight path, many of those are significantly more intensely affected. The impact is for a larger number to be badly impacted.

A return to the previous more dispersed routes would be less damaging. People feel a great injustice if a concentrated flight path is introduced over their homes, with no prior warning, and with no ability to oppose the change or have it reversed.

All communities overflown are looking for respite from the noise. Periods of respite should be provided for every community overflown.

AirportWatch argues that changes to flightpaths should be permitted only if clear and compelling justification can be demonstrated.

How much more noise would there be with a new runway?

A new runway at either Heathrow or Gatwick would, at full capacity, mean up to an extra 250,000 flights per year (which would be 684 flights per 24 hour day, or 42 per hour over 16 hours of the day) with the consequent noise.

The number of extra people to be affected by noise averaging over 55 Lden from a 2nd Gatwick runway might be around 37,000 or perhaps up to 48,000 by around 2040. (There are no exact numbers, and all projections are based on a range of assumptions). At Heathrow, the equivalent number within the 55 Lden contour might be between Heathrow’s estimate of 650,000 to 800,000, to just over 1,000,000 from TfL. These are huge increases.

Juggling flight paths around might enable the greater noise contour lines to include slightly fewer people, at the expense of slightly lower noise contour lines including more people. Either way, even if some targets for the numbers within the higher contours were met, there would be significantly more aircraft noise overall.

AirportWatch is an umbrella movement uniting the national environmental organisations, airport community groups, and individuals opposed to unsustainable aviation expansion, and its damaging environmental effects, including climate change & noise.

If you would like more information, or to discuss the issues, please get in touch.
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Briefing from AirportWatch (June 2015).
A fully referenced version is available on the AirportWatch website and also briefings on other aspects of the runways debate at http://tinyurl.com/MP-Briefings