

# Turning the WHO noise report into action

**John Stewart looks at policy measures which could deal with the trend WHO identifies: health can be affected by lower noise levels than previously thought**

The new World Health Organisation (WHO) noise guidelines published in October argued that people's health was impacted by aircraft noise at much lower levels than previously thought.

Three immediate questions come to mind:

- How accurate are the WHO figures?
- Are they supported by other studies?
- If they are broadly correct, what measures can be put in place to cut the impact of aircraft noise?

## 1. How accurate are the figures?

The safe limits the WHO proposes are:

Road	53Lden	45Lnight
Rail	54Lden	44Lnight
Aircraft	45Lden	40Lnight
Wind Turbine	45Lden	no recommendation*
Leisure	70 LAeq	

\* WHO felt that there was insufficient evidence to make a recommendation but stressed that it was not saying there was no problem.

The limits were arrived at in this way: when 10% of people said they were annoyed by a particular noise source (during the day) at a given level, that level became the bench-mark, the health threshold, the recommended guideline. The night time guidelines, generally, are lower because the evidence showed that regular sleep disturbance can have a worse impact on health than annoyance. Therefore the benchmark was set at a lower level. The recommended threshold was the level at which 3% of people were 'highly sleep-disturbed'. WHO's findings are based on a comprehensive assessment of the available research and the organisation has expressed a high level of confidence in its recommendations.

Nevertheless, some questions come to mind. 45Lden is a low figure. In geographical terms, around Heathrow for example, it would cover areas well over 20 miles from the airport. There are undoubtedly people living in those areas who are highly annoyed by aircraft noise. They contact HACAN on a regular basis. What I don't know whether or not they make up 10% of the population. The WHO acknowledges that this 10% may be too high amongst the population as a whole; it may be distorted by the clear finding that people are most likely to be highly annoyed when change has taken place, such as a new runway or new flight paths. There also does seem to be a correlation between the rise in annoyance and a rise in the volume of planes flying over any one community. But, perhaps more fundamentally, if WHO had chosen a different level at which people became highly annoyed – say 8% or 12% of the population - it would have had different results.

## **2. Are they supported by other studies?**

This is a key question. In a very real sense they are as WHO arrived at its figures only after reviewing a wide range of studies. And studies which were published after the WHO had done its research confirm that people get annoyed at lower levels than previously acknowledged. Both the huge NORAH Study carried out in Germany and a recent report by the Civil Aviation Authority confirmed the trend. The CAA's work, SoNA (Survey of Noise Attitudes, 2014) for example found that 7% of people become significantly annoyed at 51LAeq. A slightly different metric and a less dramatic finding but spelling out a similar message to WHO. And I think that is the key point. The exact metric at which annoyance or sleep disturbance may lead to health problems may always be open to some debate, but the trend is very clear: people can be impacted by aircraft noise at much lower levels than previously thought.

## **3. What measures can be put in place to cut the impact of aircraft noise?**

If these limits were to be achieved tomorrow there would be no planes in our skies, no cars on the roads and the rail network would come to a standstill. And that is not what the WHO is not calling for. But it is equally clear that doing nothing is not an option. It wants to see measures put in place that will cut the impact of transport noise on people's health.

So, what could be done? Some measures will be easier to recommend than others.

### **The more straightforward measures**

#### **CDA (continuous descent approach) is in place at all airports**

This is where aircraft descent smoothly, cutting noise and enabling them to be higher for longer. It is standard practice at an airport like Heathrow. There seems no operational reason why it cannot be the standard at all airports.

#### **Less noisy planes continue to come on-stream**

This is happening but at a slow pace. The step change we have seen over the last 30/40 years has come to an end.

#### **Money from aviation taxes like Air Passenger Duty is used for research into quiet aircraft**

The industry continues to put money into developing less noisy planes but this could be given a useful boost if the money raised by Government from aviation taxes could be earmarked for research and development into the quiet plane.

### **A less little straightforward**

#### **A national target to cut noise from aviation is introduced**

The Government is considering this as part of its new aviation strategy. It would be important as it could act as the driver to cut noise in the same way as air pollution targets have helped drive policy. It should be possible to come up with a target but I've put in this category because it is not clear at this stage just how it would work.

#### **Approach and departure routes to be as steep as practicable**

These are desirables but there are some constraints. The angle for landing aircraft must be shallow enough to allow planes to land safely and easily on the runway. Steeper angles are possible at airports such as London City which only operate smaller aircraft. And it may be that a two-tier glideslope is possible, with aircraft descending at a steeper angle further from the airport. Steeper departures would relieve the noise for those communities right under the flight path - the priority in my opinion - but would increase it for communities to the side. Additionally in busy airspace, such as over London and the SE, aircraft might need to be held down to avoid planes from other airports. That, though, should be resolved with the introduction of Precision Based Navigation (PBN) where, using satellite-based technology, aircraft can be guided much more accurately.

**Respite becomes the norm for local communities.** The key factor for communities is the number of aircraft which go over their heads. For a lot of people this is more important than the total number of aircraft using an airport or even the number of runways it has. In order to reduce annoyance, it is necessary to cut the number of flights overflying individual communities. This can be done by using the new precision satellite technology to create, and then rotate, multiple routes. There are two limiting factors: it may not always be possible for people very close to the runway to get respite (they should be first in line for mitigation); and the complexity of the airspace, particularly in London and the SE, may limit the number of respite paths available.

**Overflying new areas is avoided if possible. But sometimes it will be inevitable in order to ease the noise burden for existing communities.** The starkest finding from the WHO findings is that annoyance increases markedly when change takes place, at what they call 'high change' airports. This suggests that new areas should be avoided if possible. But this might not always be the fairest thing to do. If the noise burden for communities currently overflowed was to become excessive, the fairest thing to do would be to share it round even if that meant some areas getting it for the first time.

### **More challenging measures**

**Night flights are phased out.** This would be welcomed by local communities but would be resisted by the airlines. As a starting point, the Government should commission research into whether the economic benefits of night flights still outweigh the cost to the country of their health disbenefits. This should be done airport by airport. Unless the economic benefits of night flights at an airport are significantly higher than the health disbenefits, night flights should go.

**International action is taken on night flights.** Ultimately international action is needed on night flights. It would be difficult to justify a ban at European airports if that resulted in more night flights in the less well-off countries. Up-to-date research is needed into the true economic benefits of night flights, into whether other sectors of the economy (such as the hotel trade) would benefit if they were banned and into whether a worldwide night ban is operationally feasible. To my knowledge, the last comprehensive report on night flights was released by the European Commission in 2005. *Assessing the Economic Cost of Night Flight Restrictions* found "the argument for night flights seems likely to be basically commercially rather than operationally driven."

**Demand for flying is managed.** There is a case for putting this top of my list as, in theory, heavy taxes could be imposed on tickets in next year's budget which could cut demand at a stroke. But, in the real world, that is not going to happen. Taxes on aviation in this country are already amongst the highest in the world and any government will be worried about making UK uncompetitive by imposing higher taxes. But clearly the option should not be ruled out. Sir Howard Davies argued in his Airport Commission report that, if demand was such that carbon targets would not be met, fiscal measures should be used to dampen down demand. I think the same argument stands in the case of noise. For many communities noise levels are currently unacceptable. People's health is being damaged. If fiscal measures are required to deal with this by dampening down demand, governments should not shy away from this option.

#### **John Stewart**

John Stewart chairs HACAN, the organisation which gives a voice to residents under the Heathrow flight paths. He is also the lead author of *Why Noise Matters*, published by Earthscan in 2011.

**Full WHO report:** [http://www.euro.who.int/\\_data/assets/pdf\\_file/0008/383921/noise-guidelines-eng.pdf?ua=1](http://www.euro.who.int/_data/assets/pdf_file/0008/383921/noise-guidelines-eng.pdf?ua=1)