

PRESS RELEASE

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New Report Accuses Government of Bias in the Way it Measures Aircraft Noise

Department for Transport accused of a Del Boy approach to noise measurement

A major new report from HACAN ClearSkies (1) reveals the extent to which government figures underestimate aircraft noise. *The Quiet Con* alleges that the Department of Transport is preparing for airport expansion in the forthcoming Aviation White Paper in the full knowledge that the way it calculates aircraft noise is misleading.

The Quiet Con reveals that, when measuring noise, the Department for Transport:

- Gives undue weight to the noise of each aircraft passing overhead and not enough weight to the number of planes. This means that, under the Department's calculations, one Concorde is the equivalent of 120 Boeing 757s. The report argues that for most people, "four hours worth of non-stop Boeing 757s at a rate of one every two minutes is very much worse to have to endure than one extremely loud Concorde, followed by 3 hours 58 minutes relief."
- Doesn't reflect the real level of noise people experience when a plane passes overhead. This is because the Department includes the quiet times of the day, and the quiet days of the year, when averaging out the noise.
- Refuses to measure low-frequency noise - the rumble and roar of an aircraft. The report's researchers found that, when low-frequency noise is taken into account, a plane passing overhead can be around 8 decibels louder.
- Underestimates the level at which people start to get annoyed by aircraft noise. The Department for Transport argues that 'the onset of community annoyance' sets in when noise averages out at 57 decibels. This would mean that, in the Department's eyes, aircraft noise is not a problem in places such as Putney, Fulham and Battersea. The World Health Organisation maintains that annoyance starts at around 50 decibels and serious annoyance at 54 decibels.

HACAN ClearSkies argues that the Department for Transport is likely to be in breach of the EU Noise Directive if it does not alter the way it measures noise (2).

The Quiet Con makes a number of recommendations (3). These include adopting the approach used in Sydney. In addition to averaging out noise, the Sydney authorities produce maps showing the *actual* noise level of planes along the flight path together with figures of the *number* of planes passing over any one area.

John Stewart, the Chair of HACAN ClearSkies, said, "The Department for Transport has a Del Boy approach to measuring aircraft noise. Our report shows that its methods are flawed and biased. But they give the impression that Government wants to get across: that the noise climate is better than it really is. The Aviation White Paper, which may propose a 3rd runway at Heathrow, will be fatally flawed unless the Department begins to measure aircraft noise accurately."

ENDS

Notes for Editors:

(1). The report, *The Quiet Con*, was produced by HACAN ClearSkies with the assistance of FANG (the Federation of Aircraft Noise Groups) and the UK Noise Association. It was written by Richard Hendin, a former pilot with the Royal Navy, with technical input from Dr David Manley BSc Hons, F InstP, MIEE, MIOA, an independent acoustician and expert in low-frequency noise.

(2). See report's summary for more details.

(3). Key recommendations are listed in the summary of the report.

For further information contact John Stewart on 0207 737 6641 or 07957 385650.

The Quiet Con

Summary of Main Report

Published by HACAN ClearSkies, representing residents under the Heathrow flight path. Tel/fax 020 8876 0455; email: info@hacan.org.uk; website: www.hacan.org.uk

How the Department for Transport measures aircraft noise

Noise is measured in decibels (db).

The Department for Transport measures aircraft noise as follows:

- The noise of the plane (dbA) is measured as it passes overhead.
 - Then the number of planes passing over during 16 hour day (7am- 11pm) is factored in to give an average noise (Leq) over the day.
 - Then, at the end of the year, the noise on each of the 365 days is averaged out.
 - That figure is the one used when drawing up the noise contours.
 - **An example:** Stockwell - the noise of each plane flying overhead is measured in decibels (most of them are over 60 decibels - dbA). This is then multiplied by the number of planes coming over between 7am and 11pm. This is then averaged out to get a reading for the day (it will come to about 55 dbA Leq). At the end of the year, the average for the year is calculated. This becomes the designated noise contour for the year - in Stockwell's case about 55dbA Leq).
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The Quiet Con reveals this approach to be less than honest

a). Averaging out the noise can be misleading

- The 16 hour day includes all the quiet periods when there are no planes. In areas close to Heathrow, where runway alternation applies, there are only planes for half the day.
- No account in the annual average is taken of the days when there are no planes because of the direction of the wind.
- Undue weight is given to the noise of each aircraft, but not enough weight to the number of planes. Concorde best illustrates this point. Under the way the Department measures noise, one Concorde is the equivalent of 120 Boeing 757s. This means that, when Concorde is retired, 120 extra Boeing 747s a day could use Heathrow without changing the noise contour. Yet for most people "four hours worth of non-stop Boeing 757s at a rate of one every two minutes, is very much worse to have to endure than two minutes of one extremely loud Concorde, followed by 3 hours 58 minutes relief."

Roy Vandermeer, the Inspector at the Terminal Five Enquiry, endorsed this criticism of the method in his report: "I do not believe that the increase in the number of movements has been adequately reflected in the LAeq measure."

- No measurements are taken between 6am and 7am. - one of the busiest periods at Heathrow. This is because that period is regarded as "night". But, when it comes to setting quotas for the number of planes allowed to use Heathrow at night, "night" ends at 6am!

An example: In somewhere like Fulham most of the planes going overhead record noise levels between 60 and 70 decibels (dbA). But, the Department's figure will show that, over the year, the noise averages out at 55dbA Leq. It is argued that this figure is pretty meaningless as the *actual* noise people hear is much higher.

b). The Department for Transport does not measure low-frequency noise

- The 'A' weighting used to measure the aircraft noise just picks up noise at high and medium frequencies. Yet a significant component of aircraft noise is low-frequency. - typically, the rumble and roar of an aircraft. Measurements carried out by HACAN ClearSkies show that when low frequency noise is included a plane passing overhead can be around 8 decibels louder. To capture low-frequency levels 'C' weighting would need to be used to take the measurements.
- The World Health Organisation acknowledges the significance of low frequency sound: "special attention should be given to: noise sources in an environment with low background sound levels; combinations of noise and vibrations; and to noises with low-frequency components."
- But the Department has no plans to change: "On the question of aircraft noise weighting measurement, there are no plans to depart from A weighted decibels..." (written response from DfT, 27th March 2003).
- The report argues that the Department's failure to measure low-frequency noise is distorting its claims that aircraft have got significantly quieter: "It is true that aircraft have become quieter, but a lot of the improvements have been in mid to highest frequencies (the characteristic whine of a jet engine. Even the most modern large 'quiet' aircraft, like the Boeing 777, puts out a lot of low frequency sound."

For more details of low-frequency noise, see Part 2 of the report.

c). The Department underestimates the level at which aircraft noise annoys people :

- The Department for Transport agrees that noise does not begin to annoy people - what it calls 'the onset of community annoyance' - until it averages out (over the year) at 57 decibels (57dbA Leq). That is the reason it draws up each year its 57 decibel contour. The World Health Organisation says that people start to get annoyed by aircraft noise when it averages out at 50 decibels and seriously annoyed around 54 decibels. For the first time, in the SERAS consultation into options for airport expansion in the South East, the Department produced maps showing 54 decibel contours as well as 57. The difference in the numbers affected is huge. At present, around 375,000 people live within the 57 contour for Heathrow. That rises to over 600,000 within the 54 contour. Over a million people live within a 50 decibel contour.
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The Quiet Con makes a number of recommendations

It does not suggest the abolition of the Leq system of averaging noise out. It recognises that this would be difficult as it is used internationally, but it suggests changes that could make noise measurement reflect more accurately the way people hear aircraft noise. It suggests:

1. That quiet periods of the day and quiet days of the year are eliminated as far as practicable when averaging out noise levels.
 2. That additional methods are used to assess the noise climate, as recommended by the World Health Organisation. At Sydney Airport, similar to Heathrow because it is sited so that approaching aircraft overfly the city, does not rely solely on Leqs. Instead, maps are produced showing the density of air traffic, and also maps giving information such as the number of noise events above 70dBA on an average day (see appendix 3 of the report).
 3. That, when measuring aircraft noise, 'C' weighting should be used to allow low-frequency noise to be captured.
 4. That the UK Government should adopt the World Health Organisation standards of when noise disturbance sets in.
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European legislation could be a catalyst for change

Under the terms of the EU Noise Directive, member states are required to:

- Publish noise maps, by 2007, for all major airports showing exposure over a 12 hour day period, a 4 hour evening period and an 8 hour night period. There is no threshold level, for example 54 DbA Leq, at which the Directive says annoyance begins, but requires the number of people exposed to each 5 decibel interval to be identified. While it requires dbA Leq to be used, it says that additional noise indicators should be considered for low frequency noise.