

- 
- The Evidence - Comparison of ANASE (2005-6), other European studies & ANIS (1980-82)
  - What are the Policy Implications
  - Research focus (to date)
  - Resident Information & Compensation
  - Summary



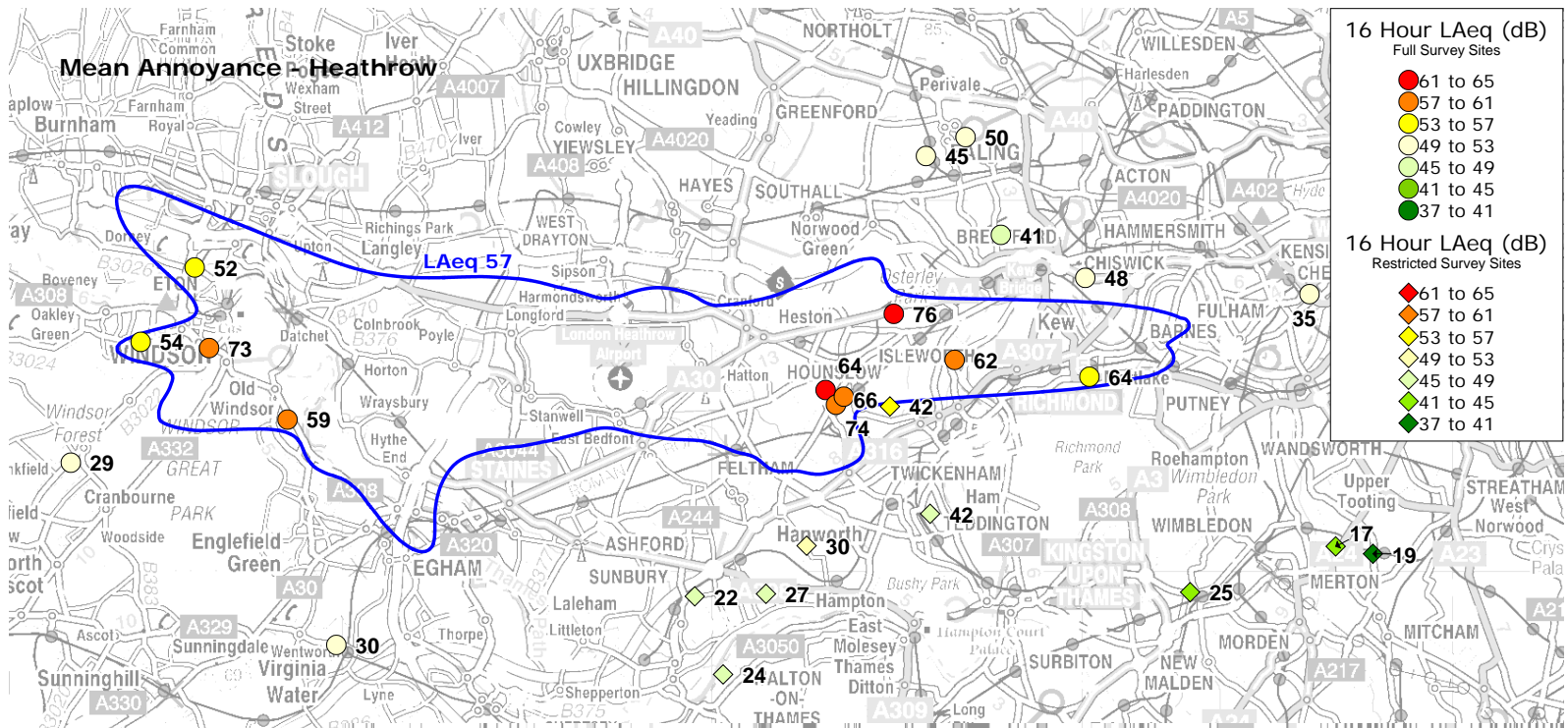


## Current practice:

- Community Annoyance is directly related to Sound Levels (L)
- Community Annoyance is also related to the Number of Aircraft (N). The LAeq noise metric accounts for both L and N according to the long time averaged A-weighted sound energy
- Current UK policy assumes that LAeq is the best proxy for community annoyance, based primarily on the UK Aircraft Noise Index (ANIS) Study - data collection in 1980 and 1982

The adoption of 57 LAeq as the '*onset of significant annoyance*' is based on the ANIS study





- LAeq is assumed to be a valid proxy for community annoyance
- 57 LAeq (16-hour) is regarded as the 'onset of significant annoyance'

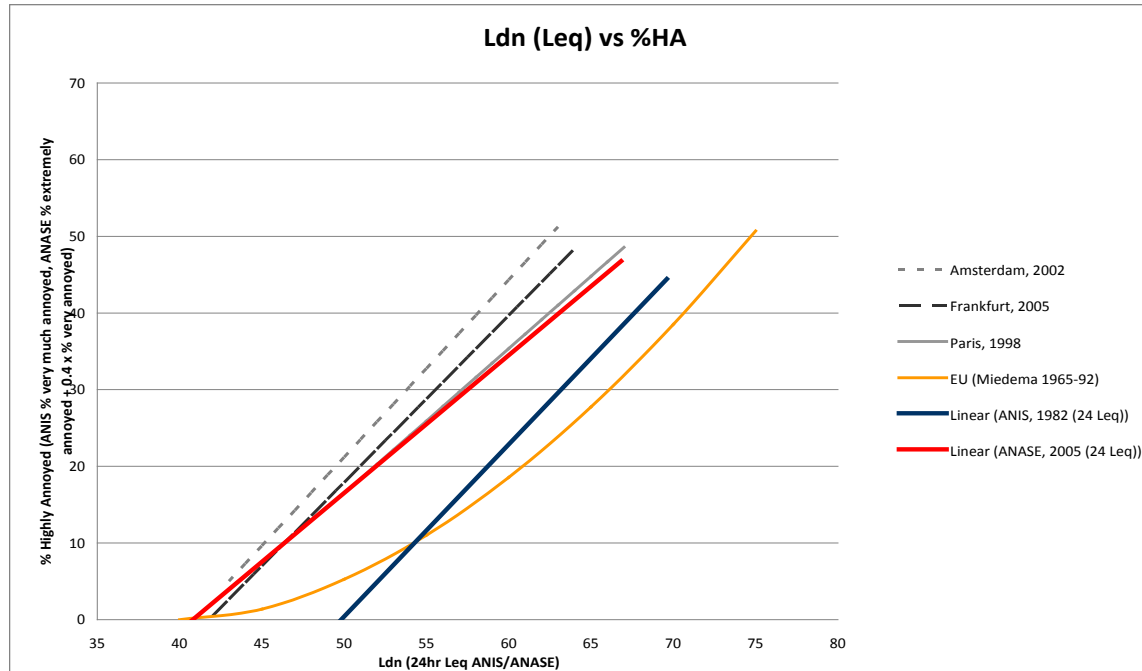


*“This brings me on to another criticism of LAeq.*

*It was pointed out that the original study which led to its adoption had taken place in 1982 ... and people’s perceptions of noise may well have changed in the 18 years since the ANIS report was produced.*

*The Department recognised that ... it would have been useful if further social surveys had been carried out. **I strongly endorse this view.** If parties are to have confidence on the indices used to measure the noise climate they need to be founded on a sound basis of **up-to-date research**”*

*T5 Inspector, Roy Vandermeer (2001),  
source: HACAN Appendix II; our emphasis*



- Analyses of the major European airport dose – response studies compared to 'historic' studies such as ANIS and the European standardised dose-response curve.
- A noticeable step-change between the established relationship based on 1970s and 1980s data of early 2000s → Are people more annoyed (on average) now than before?

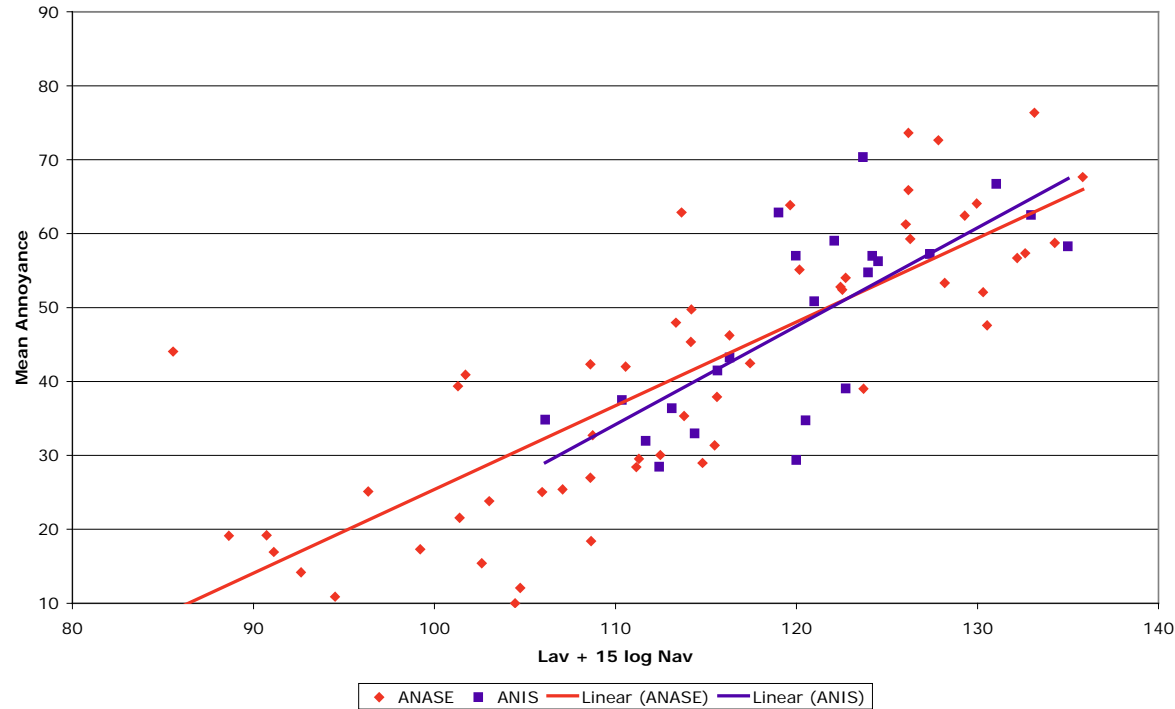


## Implications for Policy



if, in 2007, the Government had accepted the results of the 2005/6 ANASE study, in the same way that the results of the 1982 ANIS study had been, this would have implied;

- the threshold for average community annoyance would now be (much) lower than 57 LAeq
- many more people would be inside the catchment deemed to be affected by '**the onset of significant annoyance**'
- the current benchmark (57 LAeq) is not supported by current 'scientific' evidence, or by the weight of public opinion
- it is *also* increasingly well-known that noise annoyance is determined by other factors additional to sound level alone - **AND** - **acceptability** is even more dependent on other factors



- In the UK, analysis using a higher weight given to N in relation to L implies:
  - ➔ there has been no increase in annoyance over time
  - ➔ the apparent increase is simply due to not taking sufficient account of the number variable in the LAeq metric





- The Noise and Number Index (NNI) was used from 1963 up until 1990 when ANIS provided evidence to suggest that LAeq provided a better fit with community annoyance
- NNI adopted a **higher weighting** for N (k value) = 15, cf k=10 (for LAeq)
- Our detailed investigation of ANIS suggests possible bias (probably inadvertent) against the number variable - due to the questionnaire design

#### ANIS Questionnaire

10b) Do you **ever** hear aircraft fly by here? [our emphasis]


10c) Which is the **most bothersome** noise you hear round here?

**11a)** [FOR EACH NOISE HEARD] Please look at this scale and tell me how much the noise from aircraft here bothers or annoys you?


[Very much, Moderately, A little, Not at all]

11b) How often does the noise from aircraft bother you these days?

- In the ANIS Exposure – Response analysis, the context to the annoyance question (Q11a) is “*the most bothersome noise*” NOT the current ISO standard : “*In the past 12 months, how much does aircraft noise bother or annoy you?*”
- This suggests (to us) that the ANIS questionnaire pre-disposed respondents to think about the *noisiest recent events*, rather than their overall attitude to aircraft noise. This is **not** current best practice

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- sound level metrics measure **sound**, they do not measure **annoyance**
  - We know that standardised Exposure – Response relationships average out over considerable variability. There is **uncertainty** over noise metrics and further **uncertainty** over questionnaire design. What does '**noise annoyance**' really mean?
  - Can any single question really provide sufficient insight into residents' overall views on key aviation issues - eg:
    - How many residents understand (*or are even interested in*) the technical information provided to them about aircraft noise?
    - How do residents balance the economic and social benefits of living near an airport against the environmental issues?
    - What are residents' views about mitigation and compensation?



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- the industry as a whole has made considerable investment in noise control and noise management over many years such that modern aircraft are considerably quieter than the first generation jets from the 1960s and 1970s. It is not clear to what extent this technical progress has been appreciated by the public, if at all
  - it is not clear to what extent that current mitigation, such as departures noise limits, night-time restrictions, ICAO noise certification procedures, noise insulation schemes, etc. etc. actually contribute to improving '**acceptability**' for average residents
  - we know that public engagement which focuses more on issues that residents are actually interested in rather than mere PR can change attitudes
  - **few residents have much interest in conventional noise contours - the metric is not necessarily the problem here.**


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## Summary



Issue	ANIS	ANASE
<b>Up-to-Date:</b>	31 years old	7 years old
<b>Sampled Sites:</b>	Arbitrarily selected	Stratified random probability sampling in line with government guidelines
<b>Reported Annoyance Question adopted:</b>	Strong risk of bias against number variable	Compliant with international standard, minimising risk of bias
<b>Context to Annoyance Question:</b>	Unethical by today's guidance	Compliant with today's guidance
<b>Noise Measurements:</b>	ANCON model according to international standards	INM model according to international standards
<b>Comparison with contemporary research:</b>	At odds with up-to-date European studies	Consistent with up-to-date European studies
<b>Independently reviewed:</b>	No Review	Continuously reviewed throughout the project by a large independent steering group.  Non-SP reviewers not policy independent

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- Reconsider LAeq as the 'right' policy tool
  - If it is decided to continue with LAeq to maintain continuity with the past, **stop** confusing objectively measured long time average sound levels with measures of community annoyance. It is obviously **counter-intuitive** to keep on telling people who are annoyed by aircraft noise but happen to live outside the 57 LAeq contour that they are not annoyed
  - Public engagement should focus much more on listening than on PR
  - Decision-makers especially need to ...:
    - ... be better informed on the likely actual impact on residents, and their views on it
    - ... make allowance for suitable compensation for those adversely affected, when assessing the viability of different options



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