



SoNA Annoyance & Respite for NACF

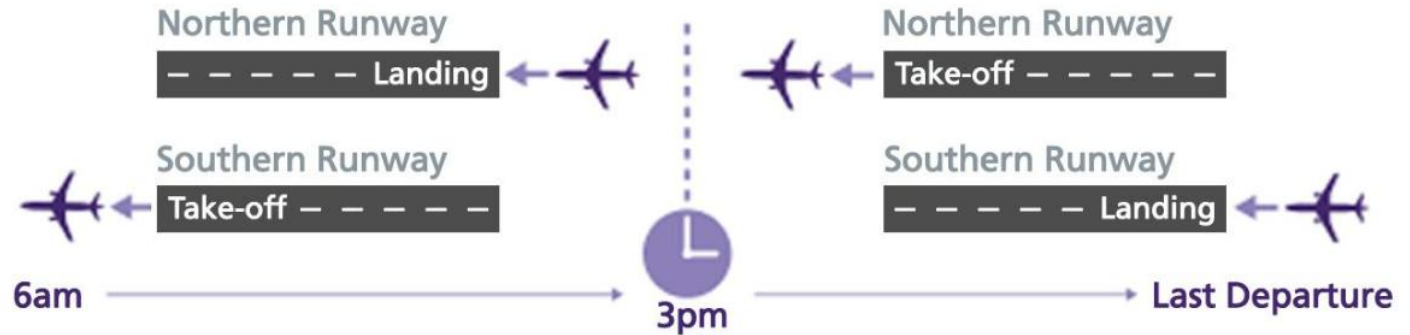
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28th July 2023

SoNA 2014 Annoyance and Respite

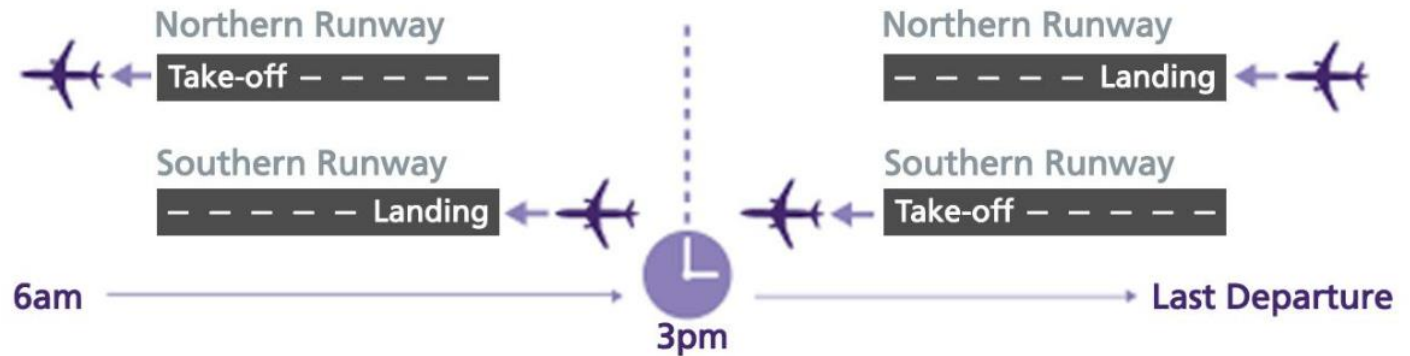
- Further analysis of SoNA 2014 responses at London Heathrow
- Builds on Heathrow noise respite research that identified:
 - less than 4 dB as ‘little or no respite’,
 - at least 4 dB but less than 9 dB as ‘noticeable respite’, and
 - at least 9 dB as ‘meaningful respite’.
- Heathrow work was based on L_{ASmax} differences between successive pairs of aircraft noise events played to test subjects.
 - Practically cannot undertake a test for 16 hours.
 - For acoustic reasons a given decibel respite for L_{ASmax} does not equate to same value of decibel respite for L_{Aeq8h} .
- New report, CAP 2250, published 2 December 2022.

Heathrow runway alternation

Runway alternation week 1



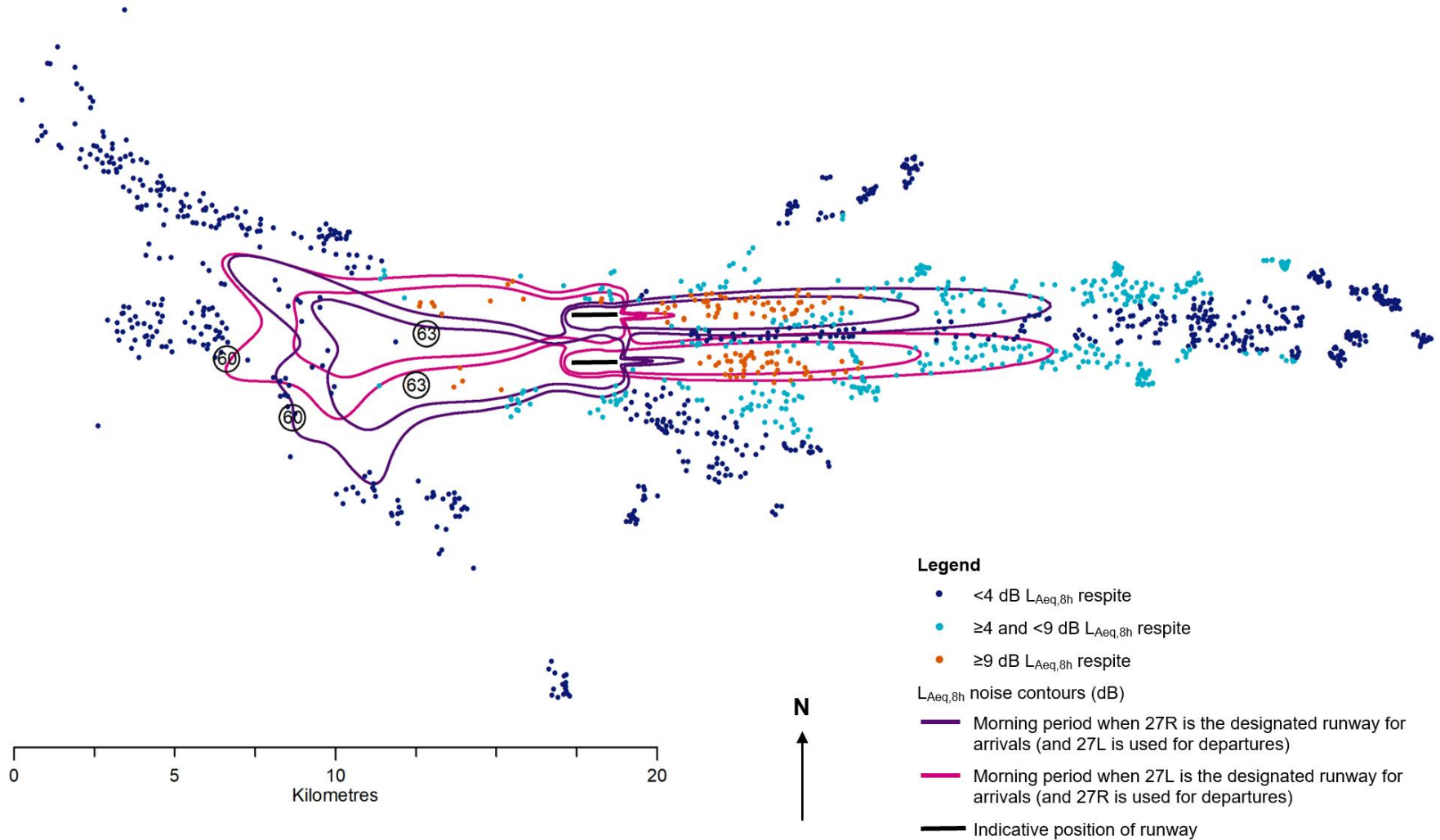
Runway alternation Week 2



Respite categories

- Quantified noise respite for arrival and departure operations
- Because the departure routes are designed to merge into a single track as soon as practical after take-off, few SoNA 2014 respondents experience departure noise respite
- Analysis, therefore, focussed on arrival noise respite
- Based on the Heathrow Respite Working Group research, starting points was to categorise respondents in three groups:
 - Less than 4dB respite
 - 4-9dB respite
 - More than 9dB respite
- Applied to both differences in average 8 hour L_{Aeq8h} and L_{ASmax}

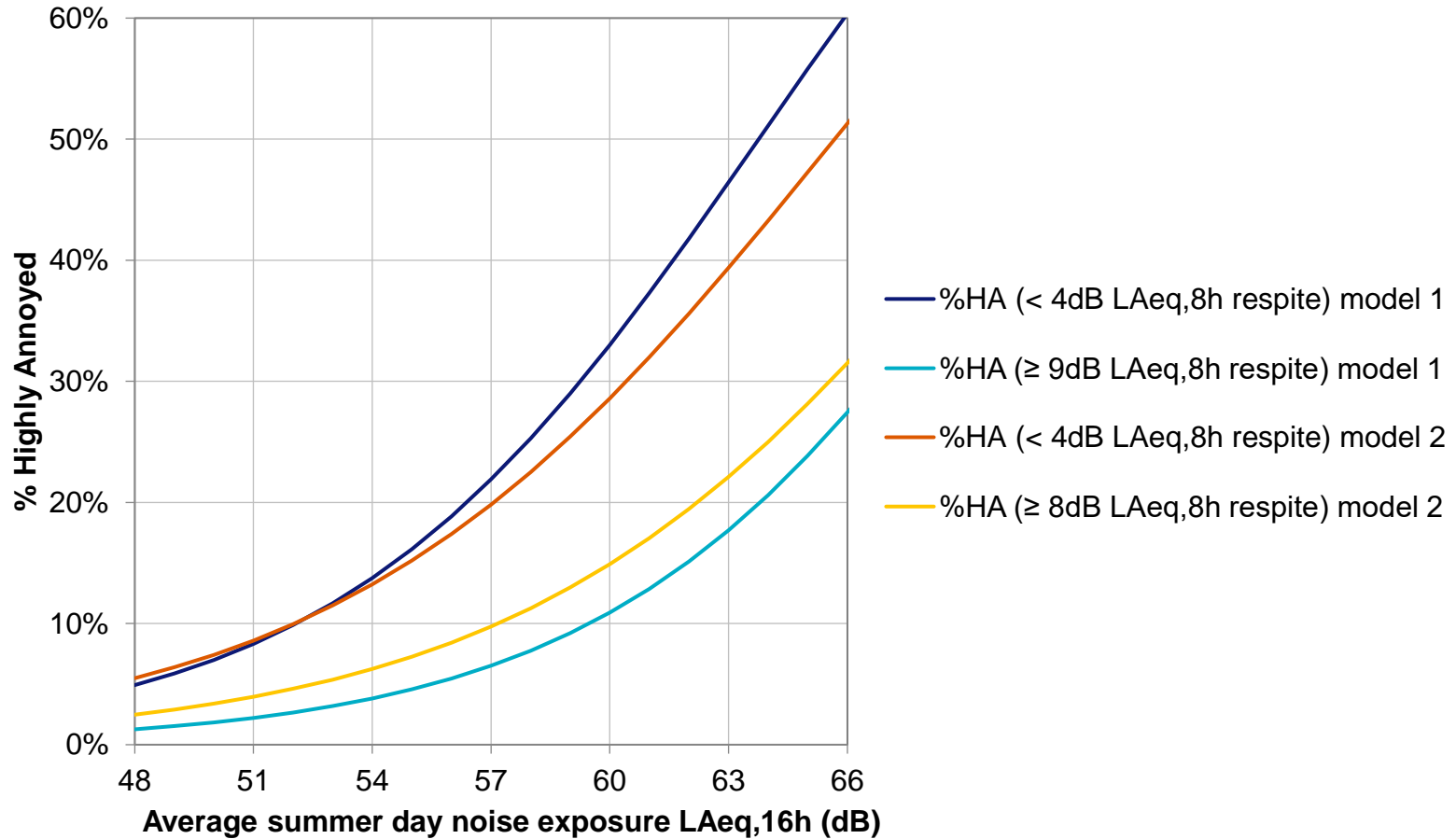
Respondent respite map based on $L_{Aeq,8h}$



Respite analysis outcomes

$L_{Aeq,8h}$ respite (dB)	L_{ASmax} respite (dB)	SoNA 2014 findings
9.0	11.3	Has a significant effect on being highly annoyed
8.0	10.2	Has a significant effect on being highly annoyed
7.0	9.0	Does not have a significant effect on being highly annoyed
6.1	8.0	Does not have a significant effect on being highly annoyed

Respite effect on % Highly Annoyed



Summary

- Noise respite of 8dB and 9dB $L_{Aeq,8h}$ was found to have a statistically significant effect on the likelihood of a respondent describing themselves as highly annoyed
- For residents experiencing at least 8 dB $L_{Aeq,8h}$ noise respite, 10% highly annoyed accorded with an average summer day noise exposure of 57 dB $L_{Aeq,16h}$, a shift of 5 dB $L_{Aeq,16h}$, for the same annoyance response.
- For residents experiencing at least 9 dB $L_{Aeq,8h}$ noise respite, 10% highly annoyed accorded with an average summer day noise exposure of 59.5 dB $L_{Aeq,16h}$, a shift of 7.5 dB $L_{Aeq,16h}$ for the same annoyance response.
- For residents experiencing no landing noise respite, 10% highly annoyed accorded with an average summer day noise exposure of 52 dB $L_{Aeq,16h}$.
- The findings remained statistically significant after controlling for noise sensitivity and socio-economic status.