Survey of Noise Attitudes
(SoNA): an update

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22nd July 2021

SoNA 2014: CAP 1506

SoNA First Edition published in 2018

Found to have an issue with the underestimation of the L_{Amax} noise dose

Subsequently addressed, re-analysed and the report was revised in light of this

CAP 1506 Second Edition published in July 2021

The L_{Amax} issue…..

- A HAL study found that ANCON underestimated L_{ASmax} noise levels for several important aircraft types, the most prominent being the Airbus A320 family.

- The HAL study also examined the L_{eq} and L_{den} values generated by ANCON and found that they were robust.

- Regarding the results of SoNA 2014, the L_{eq} and L_{den} can be relied upon and the underestimation of L_{ASmax} would only affect the N65 and N70 results.

- Re-calculation of N65 and N70 results and subsequent re-analysis of the data.

SoNA CAP 1506: Second Edition

This revised report uses the updated N65 and N70 values as presented in the results and analysis.

Although the updated results show a stronger association between N65, N70 and noise attitudes than previously stated, the association still remains weaker than that between $L_{Aeq,16h}$, L_{den} and noise attitudes.

**Therefore, the overall conclusions of the SoNA 2014 study remain unchanged.**

SoNA Sleep (CAP 2161)

- Exploratory investigation into the subset of sleep questions within the main questionnaire.

- Aims:

➢ Explore relationships between self-reported sleep disturbance and noise exposure.

➢ Explore any potential relationship between self-reported sleep disturbance and self-reported quality of health.

- Question CAN1vii asks respondents if they are 'bothered, annoyed or disturbed' by aircraft noise in the period 11pm to 7am

SoNA Sleep (2)

- Dose-response relationships were correlated for the following noise indicators:
  - ❖ Average summer night $L_{Aeq,8h}$ (11pm-7am)
  - ❖ Average annual L_{night} (11pm-7am)
  - ❖ Average summer night N60 (11pm-7am)

Logistic regression function for percent highly sleep disturbed for SoNA 2014 night as a function of average annual L_{night} and compared with Miedema pre-1990 and post-1990 studies
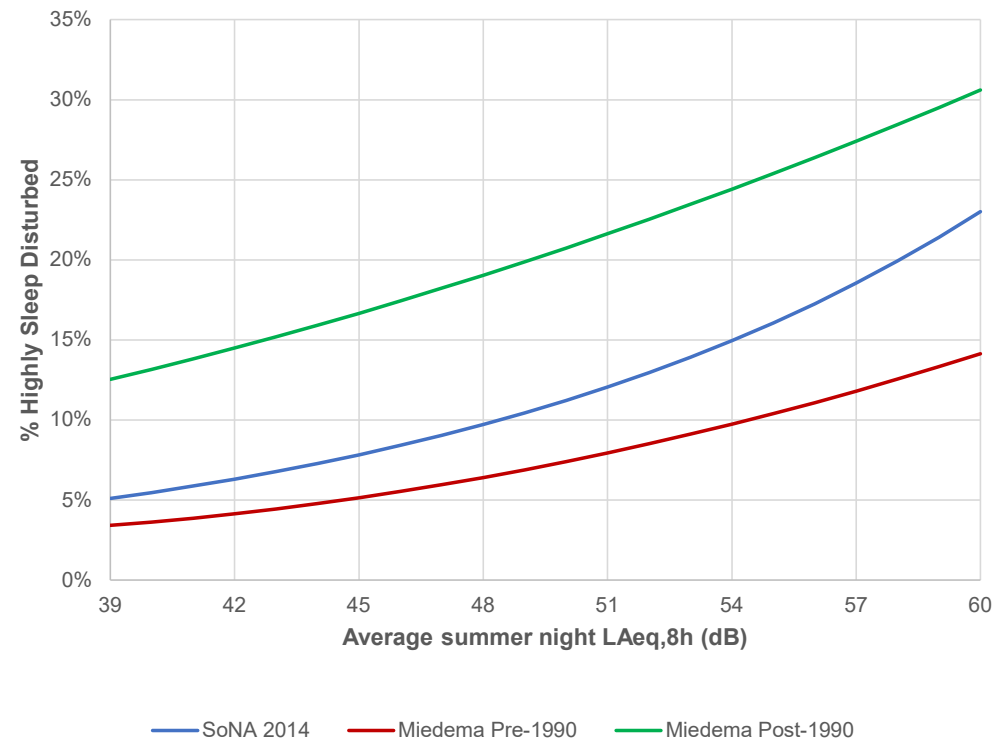
Current work - SoNA Further Analysis: Annoyance

Same study population and includes:

- Exploration of runway alternation and respite.

- Further exploration of non-acoustic factors such as:

  - ❖ Annoyance responses from respondents in dwellings with and without gardens/outside space.

  - ❖ Responses from people living in flats versus houses.

  - ❖ Complaints – association between making complaints, annoyance and noise exposure.

  - ❖ Surroundings (presence of green spaces nearby).

  - ❖ Percentage of time spent at home in the day.

  - ❖ Exploration of whether people were exposed to increased aircraft noise in the year prior to the study.

- Spontaneous dislikes - identification at what noise exposure noise becomes more disliked than other dislike answers.

Current work - SoNA Further Analysis: Sleep

- Further examination of the sleep disturbance element to the study

- examines the use of additional awakenings as a dose function, instead of the $L_{Aeq,8h}$ metric

- Aims:
  - ❖ Investigate alternative night noise metrics and additional awakenings
  - ❖ Correlate responses of number of people affected against number of awakenings
  - ❖ Explore correlation between number of additional awakenings and noise exposure
  - ❖ Examine relationships between self-reported sleep disturbance, additional awakenings and non-acoustic factors.
  - ❖ Explore any relationship between additional awakenings and self-reported quality of health.
  - ❖ Examine any link between self-reported noise sensitivity and the number of additional awakenings.