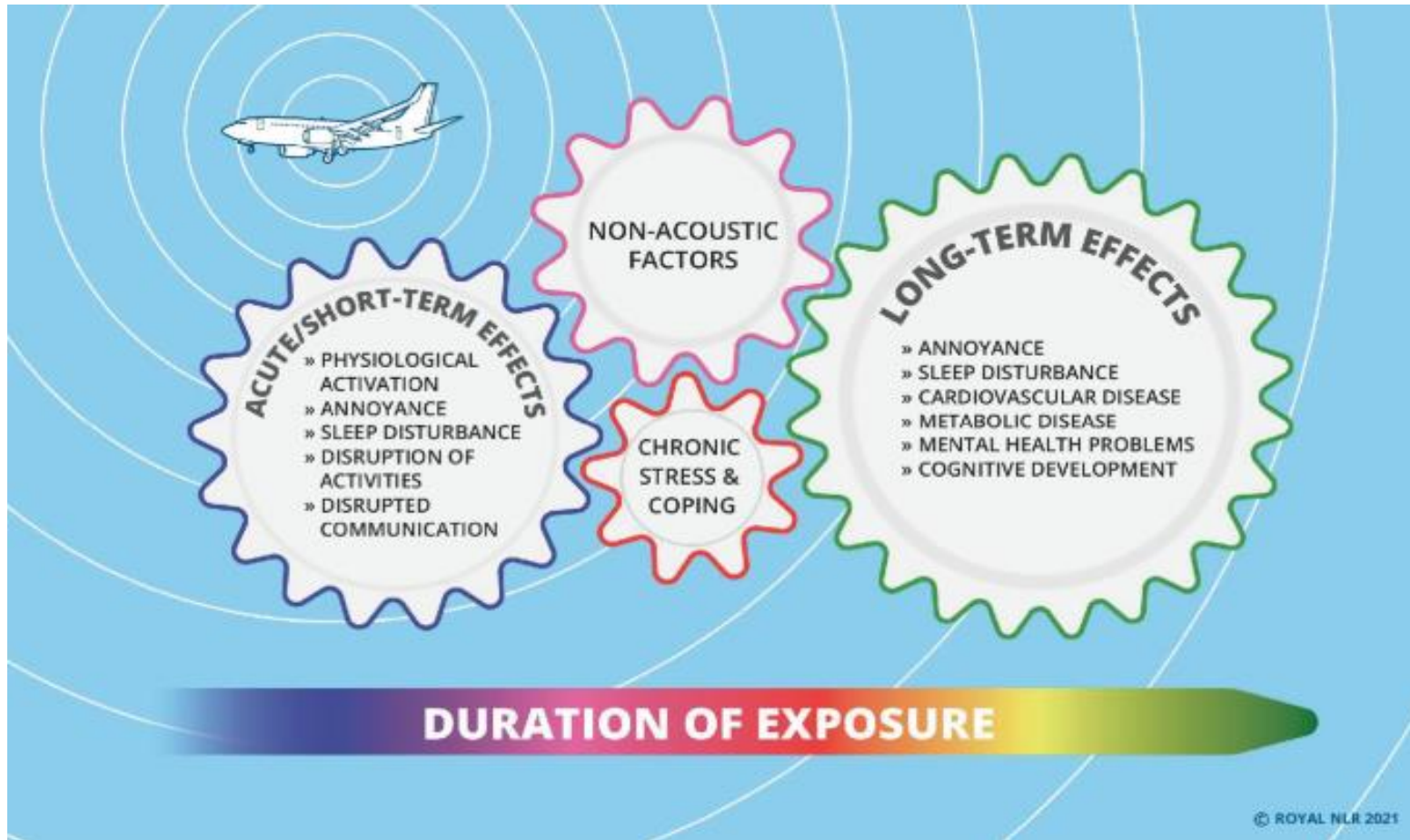


# NACF - Health Deep Dive

## A community perspective – September 2023



## Impact of Aircraft Noise on Health


[Sarah Benz](#) , [Julia Kuhlmann](#), [Sonja Jeram](#), [Susanne Bartels](#), [Barbara Ohlenforst](#) & [Dirk Schreckenberg](#)

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## Context

### Heathrow's current noise footprint and Airspace Modernisation

- Heathrow's poor location for a hub airport means that enormous numbers of people are already seriously impacted by noise from Heathrow. Apart from communities under arrival and departure flight paths many people live in close proximity and are badly affected by ground noise (especially at night).
- UK Airspace Modernisation presents a very serious threat and could result in radical adverse effects in living conditions for people living under Heathrow's flight paths many miles from the airport. Due to Heathrow's situation in the middle of densely built-up and established residential communities, these impacts could be enormous
- Based on international and UK evidence (including Heathrow's 2014 trials) AM has the potential to drastically impact on quality of life and blight communities
- Major changes are being planned in the absence of an accepted understanding of the health and quality of life impacts or even a reliable or trusted survey of noise attitudes
- The DfT's current noise policies are based on inappropriate noise thresholds and metrics, particularly in relation to health and annoyance. These policies apparently bear little (or no) relation to WHO advice
- The potential implications are serious and need to be addressed through objective and independent research
- The following three slides set out statements from the Secretary of State for Transport, ICCAN (following its abolition), the report of Heathrow's PBN advisors (Taylor Airey),



Extract of letter  
dated 31 August  
2021 from Secretary  
of State to CAA Chief  
Executive

'You will be aware that there remains considerable interest within Parliament, among members of the public and community groups and industry on issues related to aircraft noise. Winding down ICCAN does not represent any weakening of the Government's aviation noise policy and Transport Ministers will need to have continued access to impartial advice on noise impacts.'

# ICCAN's review of SoNA 14

## Key recommendations

Our detailed recommendations can be found on pages 18 - 21. In summary, we recommend that:

- A new, regular attitudinal survey is begun before the end of 2021, and repeated frequently.
- The new surveys should be commissioned, run and analysed independent of Government, regulators and industry. We consider it appropriate for ICCAN to take on this role, working closely with relevant stakeholders.
- ICCAN will find a sustainable and equitable solution to funding the surveys, which involves government and industry, but does not impinge of the independence of our ownership and management of the surveys.
- Improvements should be made for the new surveys using lessons learned from SoNA.
- ICCAN will run a development study to identify the best way to implement improvements for the new surveys.

# Taylor Airey's PBN benchmarking report for Heathrow March 2020

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## This study has identified recommendations for airports introducing PBN, and for UK Government

Policy	<p><b>1</b> <b>Recommendation for UK Government:</b> UK government policy offers no definitive statement on the preference for flight path dispersion/concentration and the resultant health impacts. Currently the guidance is vague &amp; non-committal (eg around concentration vs. dispersion; the definition of respite, etc.) Policy detail would allow all stakeholders to optimise proposals against clear objectives.</p>
Design / Assessment	<p><b>2</b> <b>Recommendation for UK Government/UK CAA:</b> There is insufficient joint sponsorship, accountability, authority and responsibility for the airspace changes affecting the London area. The UK airspace change process has resulted in a highly fragmented and complicated situation with multiple sponsors, governance bodies and coordination groups; this makes it difficult for sponsors and confusing/burdensome for stakeholders. More robust governance is needed. FMS limitations to multiple PBN routes should be challenged in appropriate governance groups (eg ACOG).</p>
Engagement	<p><b>3</b> <b>Recommendation for UK Government &amp; airspace change sponsors:</b> The standard metrics used to assess noise (and to a lesser extent local air quality) impact are under strong challenge, as is their transparency and relevancy. More meaningful metrics are needed, responsive to the needs of the affected community.</p> <p><b>4</b> <b>Recommendation for airspace change sponsors:</b> Engagement is a continuous process and relies on honesty, transparency and empathy. The earlier in the process that flight paths are identified and the affected communities are engaged in a genuine consultation, the greater is the opportunity to take feedback into account and modify the design. This relies on targeted communications to affected communities and a willingness to be open with all stakeholders.</p>



## Concerns in relation to the regulatory framework

- Lack of accountability and arm's length independent health related research. Research and policy making is DfT led communities need to see the evidence of active involvement from the Government's Environment and Health Departments
- Lack of trust in relation to the role of the CAA - which is inherently conflicted and was responsible for the flawed SoNA 14 - leading to a lack of confidence in terms of carrying out a new Noise Attitude Survey
- Timescales for undertaking research and adoption by the DfT of up-to-date policies are likely to be too late having regard to proposed AM timescales
- Absence of a local evidence base – this is a critical factor, especially given the scale of the potential health and quality of life impacts around Heathrow
- The DfT admitted to the NACF that no research has been undertaken in relation to the impact of highly concentrated or curved PBN flight paths. This is despite AM being all about concentration and potentially radical change

## Areas to be taken into account in a 'deep dive' on health issues around Heathrow

- ICAO advises that overall long term LAeq metrics (on which UK policy is currently based) only account for 30% of community annoyance. What are the other 'non-acoustic' factors, what are their impacts and how should they be evaluated (time of day, concentration, lower flight heights, broken sleep patterns, lack of trust, etc.)?
- What does 'annoyance' really mean? How is it to be monetised? Concerns have been raised that the term 'annoyance' is used to play down real long-term health impacts, especially factors such as stress, which have long term physical and mental health consequences.
- What is the difference between being 'highly annoyed', 'very annoyed' or 'annoyed'? When and how are such questions asked and analysed in noise attitude surveys?

It's much more than an “annoyance.”



“Chronic noise, even at low levels, can cause annoyance, sleep disruption, and stress that contribute to cardiovascular disease, cerebrovascular disease, metabolic disturbances, exacerbation of psychological disorders, and premature mortality.”



“Noise interferes with cognition and learning, contributes to behavior problems, and reduces achievement and productivity.”

- - American Public Health Association, *Noise as a Public Health Hazard*, 2021

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# Repeated noise harms health.

*Repeated noise events prime the vasculature for developing endothelial damage, no tolerance development.*

-- Thomas Munzel, MD, Professor, Chief of Cardiology, University Medical Center, Mainz



The FAA's thresholds for significant impact and residential compatibility do not account for repeated noise.

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## Specific areas of health-related research required

- Mental health impacts caused by noise from aviation and the extent these affect physical wellbeing and quality of life. This should include impacts on child development
- Night, early morning and late evening flights – what are the effects of sleep deprivation and disruption and associated health issues? What are the impacts on children and the vulnerable people? What are the particular impacts on those living nearest the airport?
- The impact of significant change in the noise environment over long-established residential communities. International research indicates this could cause the equivalent of 6-9 dBA<sub>Leq</sub> of additional impact. If there are to be ‘winners and losers’ there should be differentiation in the way increases and reductions in noise levels are assessed?
- The social and health impacts of living under highly concentrated flight paths arising from PBN – there is already considerable evidence to draw from, including the introduction of NextGen in the US, as well as Heathrow’s 2014 trials. In addition to noise, the public health effects of concentration of Ultra Fine Particles and NOX falling from concentrated flight paths over highly populated residential areas such as around Heathrow should be reviewed. Why have these factors not been investigated by the DfT or the CAA prior to commitment to AM and how will this be addressed now?

## Additional issues that should be addressed

- The extent to which adverse impacts increase with increased noise levels and how this will be factored into ACP cost benefit decision making (this effect is highlighted in ANG 17)
- How can respite be used best to minimise health impacts and annoyance – especially at low altitude (sub 7000 ft)?
- The extent to which current dispersal patterns can be replicated to minimise significant adverse health and quality of life impacts
- Whether vectored departures at low altitude can play a part in minimising adverse health and quality of life impacts (especially now it is accepted by Heathrow that vectoring will continue for arrivals)
- Generally, how ‘noise sewers’ (a term used by the former CAA chief executive) will be avoided