Respite from Aviation Noise - Introduction to and update on current research

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Associate Director
Why do we need research on Respite?

- UK Policy refers to respite as a principle but there is no guidance on its definition, implementation or delivery.
- Communities currently overflown demand a break from noise.
- Airspace is being modernised - a respite strategy may be needed due to increased concentration of noise along route centre lines.

However there is no clear agreement on what respite means and how to deliver it effectively.
Progress

RWG set up "to provide advice to Heathrow Airport on the management and assessment of respite from aircraft noise”.
- Understand and agree formal definition(s) of respite;
- Investigate current practice in the management of respite;
- Identify indicators for the management of respite including measures of success;
- Identify any gaps in knowledge for the management of respite;
- Establish a common level of understanding between different stakeholders of the scope and opportunities to implement respite as part of noise management programmes at Heathrow.
- Propose actions to Heathrow Noise Forum.

Full scientific scoping paper agreed with recommendations for research

Research programme started and explained here
What were the main outcomes from the State of the Art review of Respite from Aircraft Noise?

• We do not fully understand what the community value as respite.
  Research needs: Understanding what the community value as effective respite is a priority before any other work in developing an effective respite strategy for Heathrow Airport.

• There is currently no clear, consistent or universally accepted definition of respite.

• There is no universal formula for the successful implementation of an effective respite strategy.

• We are not, at present, in a position to recommend a single acoustic metric for describing respite. We have a candidate list of objective measures for subsequent testing.

• There is a vital need for a strong and effective community engagement and communication plan for successful implementation of any respite strategy.
**RWG: Recommended Priorities**

What do the community value as effective respite?

- Are there any objective measures that can describe the noise environment that helps reflect community perception?
- How can respite, as valued by the community, be delivered by airports and be operationally feasible and cost effective?
The RWG recommended the following research

**Overall Objective**
To better understand the key characteristics of an effective respite strategy for Heathrow Airport and its local communities, consistent with efficient operations. But what is community valued respite?

**Stage 1**

**Question 1**
By how far do you need to spatially change routes to make a perceived difference

**Laboratory Work**
To explore the discernible differences between noise characteristics of different flight operations

**Question 2**
What are the optimal temporal patterns required?

**Qualitative Fieldwork**
To explore preferences for temporal distribution of overflights using focus groups, in depth interviews and SP techniques

**Stage 2**

Using the emerging set of principles from Stage 1, follow on work on practical implementation and assessment of community engagement options
Lab work

Phase L1 – Preparation
- Sound simulation presentation prepared.
- Development of a library of sound stimuli

Phase L2 – Pilots (arrivals)
- Establishing ranges of noise stimuli and the
- Development of the procedure for control of the sound stimuli presentation system.
- Questionnaire design
- Development of experimental methodology
- Tests
- Analysis

NOTE
Lab work

Phase L3a and b – Pilots (departures)

3a - Additional recordings
3b – Pilot tests

After completion of these pilots, the design for the main tests will be finalised. Additional sound stimuli may be required. An option for additional pilots should be considered at this stage if required with any additional listeners to be taken from the total allowance.

At this stage of the work, preliminary findings will be used to help design the topic guide of fieldwork Phase F2.

Phase L4/L5 – Full Simulations Tests A and B

Up to 50 participants
Fieldwork

Phase F1: Preparation

Determine the practical options for operating different respite routes through discussion with Heathrow’s flight performance team.

Select areas with different patterns of overflights, with a range of heights and distances from key SID centre lines, both east and west of the airport, and for arrivals and departures.

Phase F2: Design

Recruitment

Design and test topic guide
Fieldwork

Phase F3/F4: Fieldwork

6-8 week period during which the balance up to 150 respondents will be interviewed.

10-15 representative respondents per area?
Key Roles for Respite Research

**Project Management Lead (Non-technical)**
- Andy Knowles, Anderson Acoustics
  - Finance
  - Contracts
  - Compliance with Schedule
  - Risk Awareness
  - Co-ordination with Technical Director and consortium project managers

**Project Management (Non-technical)**
- **Arup Lead**
  - Brendan Creavin, Arup

**Project Management (Non-technical)**
- **Systran Lead**
  - Paul Le Masurier, Systra

**Technical Director**
- Nicole Porter, AA
  - Overall responsibility for technical direction of project

**Lab Work Task Manager**
- Brendan Creavin (Arup) and Ian Flindell (Systran)
  - Responsibility for coordinating lab work and leading lab team

**Lab Team**
- Paul Adams (Arup), Paul Le Masurier and Ian Flindell (Systran)

**Field Work Task Manager**
- Paul Le Masurier (Systran)
  - Responsibility for coordinating field work and leading lab team

**Fieldwork Team**
- Systran including Ian Flindell

**Peer Review Group**
- Liaison through Nicole Porter, AA and Brendan Creavin, Arup
  - Meetings as required ahead of project and for each deliverable

**Stakeholder Engagement Group**
- Liaison through Nicole Porter via Heathrow Noise Forum and Community Noise Forum

**Heathrow Governance Groups**
- Liaison through Rick Norman and Jane Dawes (HAL)
  - Nicole Porter to provide presentation update for use by HAL (Monthly)

**Project Working Group**
- Chair Nicole Porter AA
  - Systran (Paul Le Masurier, Ian Flindell, Paul Hooper)
  - Arup (Paul Adams, Brendan Creavin, Richard Greer)
  - HAL (Rachel Thomas, Rick Norman, Jane Dawes)
Membership of PRG

Dirk Schreckenberg
Dr. Uwe Mueller
Prof. Callum Thomas
Stephen Turner
Prof. Stephen Stansfeld

Zeus GmbH
German Aerospace Centre (DLR)
Manchester Metropolitan University
Stephen Turner Acoustics Limited
Queen Mary, University of London
The Peer Review Group shall oversee the scientific robustness of the research into respite from aircraft noise as proposed by the Respite Working Group (RWG) and conducted by the Research Consortium led by Anderson Acoustics Ltd with SYSTRA and Arup.
Progress to date

SET UP:
• Peer Review Group – First meeting held April 27th to agree Terms of Reference with visit to SoundLab to observe pilot tests (arrivals). Positive feedback provided.

L1/L2:
• Collation of library of stimuli for arrivals - complete
• Full (dry run) with technicians from Arup/Andersons/HAL held 5th April 2016.
• First tests on members of the public held 13th April.
• Technical note on L1/L2 prepared and submitted to PRG for discussion

L3a:
• Departure noise recordings complete.
Planned work for May 2016 (and June)

L1/L2:
- Pilot tests with updated methodology design to be carried out (1 in May, 2 in June).

L3a/b
- Lab tests with departures stimuli planned for June

F1: prep work
- Mainly planned for June (Practical options, geographic locations, topic guide).