UIC, 10\textsuperscript{th} Railway Noise Workshop
Auralisation

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Presentation

• Auralisation experience
• Effectiveness in engaging with non-technical stakeholders
• Future development of technology
People don’t understand:
- dB
- Maps

..and don’t trust experts

Traditional information for consultation...
Forms of delivery

- 3D sound recordings
- HS2 Design
- 3D recordings of existing environment along HS2
- SoundLab (strategic stakeholders & consultees)
- Sound Lab Lite (Seminars)
- Sound Booths (Consultation Roadshows)
We never tell any listener what they should decide about what they hear in SoundLab. It is for the listener to decide. We talk about sound and let the listener decide if it is noise. The assessment for HS2 is of “Sound, Noise and Vibration”.
Types of auralisation: Are new HS trains noisier than existing trains?

‘BENCHMARK’ SOUND DEMONSTRATIONS

Listen to:
• Pendolino
• ICE

What will HS2 sound like?
Types of auralisation:
Does mitigation HS trains a better neighbour?

Effect of speed, train specification and barriers,
Observed 150m from line:
- Current train, 300 km/h
- Current train, 360 km/h
- Mitigated train, 360 km/h, with 3m barrier
- Current train, 360 km/h, with 3m barrier

<demostiration>

Effective with media as well as engagement and consultation
Types of auralisation: How will the project affect me?

Greatworth: • Existing • With HS2
Kirkthorpe: • demo
Hollins Green: • demo
Kingsbury: • demo
Normanton: • demo
Worsborough: • demo
Huthwaite: • demo
Sound Demonstrations
Clients & Projects
Non-Technical Stakeholders reached ...
Impact

- Reduced public concern
- Reduced blight
- Positive media
- Increased mitigation
- Reduced objection

“I’d like a 3m noise barrier to control the noise from my children”

“... Among the closest residential buildings to the line will be houses in Aylesbury. We heard demonstrations of modelled train noise passes for that location at the Arup sound lab. Even based on this very proximate location, we found the noise level significantly noticeable, but not such as to be intolerable.”

“The same “3D” sound technique that shaped the acoustics of Copenhagen and Oslo opera houses is recreating the sonic effect of state-of-the-art intercity trains passing through suburban London and prime swaths of home counties countryside”
The Future development of technology...

- Expansion of use
- Larger listening groups (WFS?)
- Mobile solutions
- On line
- R&D, Attitude studies, VfM
- Vibration
- Immersive
- Rolling stock

Good practice guidance:
- Visuals
- Technology & data
- Verification
- Role in decision processes
  - Responsible application
  - Independent review