



Book Review

The Effects of Low Frequency Noise and Vibration on People, Colin H. Hansen (Ed.). Multi-Science Publishing Co. Ltd., Brentwood (2007). ix + 416pp., £42.50, ISBN: 0906522 45 5

Here we have a compilation of papers previously published in the Journal of Low Frequency Noise, Vibration and Active Control,¹ between years 2000 (Vol. 19) and 2005 (Vol. 24). The 29 papers included give the feel of any multi-authored book, as put together by an editor. However, papers are selected from existing, peer reviewed, material, rather than specially commissioned, which is a much easier editorial task. The book represents about 30% of the parent journal over the five volumes from which the papers are selected. In this it mirrors the typical division of interests in the journal.

Chapters are:

1. Perception thresholds for low frequency noise. Four papers.
2. Effect of low frequency noise on people in terms of annoyance and sleep deprivation. Fourteen papers.
3. Physiological effects of low frequency noise. Six papers.
4. Perception thresholds for low frequency vibration and the effect of low frequency vibration on people in terms of comfort and annoyance. Two papers.
5. Physiological and health effects of low frequency vibration. Three papers.

Thirteen of the 29 papers are from Japan and seven from Scandinavia, which reflects the international scene in current work on subjective effects of low frequency noise and vibration.

The authors are largely from the physical sciences but also include psychologists, although there appear to be none from a medical background. The papers in Chapters 1 and 2 deal with self-reported, subjective responses during perception and annoyance investigations. In Chapter 3, on physiological effects, three papers describe body surface vibration induced by low frequency noise, two the effects on cognitive skills and mental performance, and one includes measurements of effects on blood pressure and heart rate, consequent on an hour long exposure to high levels (110 dB) at 2 and 4 Hz.

The two papers in Chapter 4 cover aspects of effects and perception of whole-body vibration.

The three papers in Chapter 5 are oriented to physiological effects—hand arm vibration disease and effects of whole-body vibration on heart rate, respiratory rate and salivation.

There is a great deal of misunderstanding on the effects of low frequency noise on people. Public perception is that low frequency noise and infrasound are ‘dangerous’ at any decibel level, even when below hearing threshold, whilst the opposite view is that the ear is the most sensitive detector of sound in the body and if you cannot hear a sound it does not affect you.

The book is recommended as an account of how people actually perceive and respond to low frequency noise during controlled experiments at levels ranging from hearing threshold to clearly audible. It also describes the complaints of disturbance from low frequency noise in their homes, which are made by a small number of people, and assesses the consequential effects on their well-being.

¹Dr. Leventhall was the Founding Editor of the Journal of Low Frequency Noise and Vibration and editor from volumes 1 to 18.

There is a place for the book in the library of any institution that has an interest in the effects of noise and vibration on people and their well-being, either in the home or in the workplace.

Geoff Leventhall
150 Craddocks Avenue, Ashted, Surrey KT21 1NL, UK
E-mail address: geoff@activenoise.co.uk