

Sound Reproduction Loudspeakers and Rooms

Floyd E. Toole

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This unique book comprises 22 chapters divided into two sections that address how loudspeakers interact with room acoustics, basic principles of stereo and multi-channel sound reproduction, and the psychoacoustics of loudspeaker evaluation and listening. A detailed bibliography and index are included. The book summarizes the author's 25 plus years experience studying these topics, first as a researcher at the National Research Council of Canada and later as Director of R&D at Harmon International Industries.

A key factor that sets this book apart from other loudspeaker books is the description of how physical factors in sound reproduction ultimately relate to the perceptual listening experience. Richly illustrated, the book conveys topics in a clear lucid style devoid of any mathematics.

The first section deals with the principles of sound behavior in rooms, particularly smaller domestic listening environments. Two major factors, sound reflections and low-frequency reproduction in the listening room, are covered. Effects such as timbre changes, auditory

localization, apparent source width, precedence effect, and the concept of the transition frequency in rooms are described.

Part two focuses on different media, including multi-channel sound reproduction, for listening to music and spoken dialogue. Subjective and objective loudspeaker evaluations, electronic loudspeaker adjustment and optimization, room acoustic treatment, predicting listener preferences from objective measurements, and assembling the reproduction system and listening environment are covered.

One may wonder why a book such as this would be reviewed in a noise control engineering journal. Researchers in sound quality analysis can find much to gain from this book as those who might be working in auralization techniques. I am sure many readers' first interest in acoustics was sparked by loudspeakers and the wonders of music reproduction in the home. There is much to be gained from this book and I cannot recommend it enough to those with an interest in this topic.

Neil Thompson Shade

Acoustical Design Collaborative, Ltd.

Peabody Institute of Johns Hopkins University

Ruxton, MD 21204

neil@akust.com