

# AES JOURNAL OF THE AUDIO ENGINEERING SOCIETY AUDIO/ACOUSTICS/APPLICATIONS

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- Sound Radiation from Acoustic Apertures** ..... Earl R. Geddes 214  
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- Direct-Reading One-Port Acoustic Network Analyzer** ..... C. M. de Blok and R. F. M. van den Brink 231  
*The authors describe an instrument for measuring the reflection coefficient of an acoustic one-port. Analogous to a voltage generator with a known series impedance, the instrument is compact, useful from 1 Hz to 100 Hz, and a substitute for lengthy conventional standing-wave-tube equipment.*
- AUDIMIR: Directional Hearing at Microgravity** ..... Alexander Persterer, Martin Opitz, Christian Koppensteiner, M. Nefjodova, Christian Müller, and Meinhard Berger 239  
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- Distortion Immunity of MLS-Derived Impulse Response Measurements**.....Chris Dunn and Malcolm Omar Hawksford 314  
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- Methods for Multiple Wavetable Synthesis of Musical Instrument Tones**.....Andrew Horner, James Beauchamp, and Lippold Haken 336  
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- Real-Time Implementation of Asymmetrical Frequency-Modulation Synthesis**.....B. T. G. Tan and S. L. Gan 357  
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*One might suppose—viewing the span of time in which acoustical horns have found use in musical instruments, hearing aids, phonographs, loudspeakers—that horn theory had become settled, complete, well understood, and an easy guide in the design of new applications. But this is not so. Uncertain theoretical beginnings are still in the process of review and amendment, and the following papers are forceful contributions to that essential business.*

**Every One-Parameter Acoustic Field Obeys Webster's Horn Equation**.....Gavin R. Putland 435  
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**Acoustic Waveguide Theory Revisited**.....Earl R. Geddes 452  
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**Acoustic Waveguides—In Practice**.....Paul D. Bauman, A. B. Adamson, and Earl R. Geddes 462  
*The primary purpose of a horn is to control directivity. For a given mouth area, throat area, and length, variation of the horn contour yields nearly trivial differences in response, despite differences in driver loading. Acoustic waveguides (oblate spheroidal horns) demonstrate stable coverage, smooth response, and low incoherence.*

**Horn Modeling with Conical and Cylindrical Transmission-Line Elements**.....Dan Mapes-Riordan 471  
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**The Boundary-Element Method and Horn Design**.....D. J. Henwood 485  
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- A New Approach to Assignable Control-Surface Design** ..... Michael Paul Stavrou 556  
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- An Engineering Study of the Four-Multiply Normalized Ladder Filter** ..... Dana C. Massie 564  
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- A Dual-Channel MLS-Based Test System for Hearing-Aid Characterization** ..... T. Schneider and D. G. Jamieson 583  
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- Moving Boundary Conditions and Nonlinear Propagation as Sources of Nonlinear Distortions in Loudspeakers** ..... Bronislaw Zoltogorski 691  
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**Excess Spacing Loss with Alfenol-Core and Ferrite-Core Magnetic Tape Reproducing Heads** ..... John G. (Jay) McKnight 141  
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- Roundoff Error Analysis of Digital Filters** ..... Udo Zölzer 232  
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- Observations on the Audibility of Acoustic Polarity** ..... R. A. Greiner and Douglas E. Melton 245  
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