APPENDIX FI

Supplement to "High Quality Horn Loudspeaker Systems" by Bjørn Kolbrek and Thomas Dunker.

This document contains the complete bibliography of the material in the authors' collection used as source material for the book, though not all of them were used or referenced in the book itself.

Bibliography

- Aarts, R. M., "Enlarging the sweet spot for stereophony by time/intensity trading," 94th Convention of the Audio Engineering Society, Mar 1993, preprint no. 3473
- [2] Aarts, R. M. and Janssen, A. J. E. M., "Spatial impulse responses from a flexible baffled circular piston," *J. Acoust. Soc. Am.*, vol. 129, no. 5, pp. 2952–2959, May 2011
- [3] Aarts, R. M. and Janssen, A. J. E. M., "Sound radiation from a resilient spherical cap on a rigid sphere," *J. Acoust. Soc. Am.*, vol. 127, no. 4, pp. 2262–2273, Apr 2010
- [4] Aarts, R. M. and Janssen, A. J. E. M., "Estimating the velocity profile and acoustical quantities of a harmonically vibrating loudspeaker membrane from on-axis pressure data," *J. Audio Eng. Soc.*, vol. 57, no. 12, pp. 1004–1015, Dec 2009
- [5] Aarts, R. M. and Janssen, A. J. E. M., "Onaxis and far-field sound radiation from resilient flat and dome-shaped radiators," *J. Acoust. Soc. Am.*, vol. 125, no. 3, pp. 1444– 1455, Mar 2009
- [6] Aarts, R. M. and Janssen, A. J. E. M., "Sound radiation quantities arising from a resilient circular radiator," *J. Acoust. Soc. Am.*, vol. 126, no. 4, pp. 1776–1787, Oct 2009
- [7] Aarts, R. M. and Janssen, A. J. E. M., "Approximation of the struve function h₁ occurring in impedance calculations," J. Acoust. Soc. Am., vol. 113, no. 5, pp. 2635–2637, May 2003

- [8] Aarts, R. M. and Janssen, A. J. E. M., "On analytic design of loudspeaker arrays with uniform radiation characteristics," *J. Acoust. Soc. Am.*, vol. 107, no. 1, pp. 287–292, Jan 2000
- [9] Affel, H. A., Chesnut, R. W., and Mills, R. H., "Symposium on wire transmission of symphonic music and its reproduction in auditory perspective: Transmission lines," *Bell System Technical Journal*, vol. 13, pp. 285– 300, Apr 1934
- [10] Agerkvist, F. T., "A study of simple diffraction models," 102nd Convention of the Audio Engineering Society, Mar 1997, preprint no. 4438
- [11] Agerkvist, F. T. and Heuchel, F., "On the interdependence of loudspeaker motor nonlinearities," 145th Convention of the Audio Engineering Society, 2018, convention Paper 10058
- [12] Agullo, J., Barjau, A., and Keefe, D. H., "Acoustic propagation in flaring, axisymmetric horns: I. A New family of unidimensional solutions," Acta Acustica united with Acustica, vol. 85, no. 2, pp. 278–284, 1999. [Online]. Available: http: //www.ingentaconnect.com/content/dav/ aaua/1999/00000085/00000002/art00015
- [13] Albelda, J., Denia, F., Torres, M., and Fuenmayor, F., "A transversal substructuring mode matching method applied to the acoustic analysis of dissipative mufflers," J. Sound Vibr., vol. 303, no. 3–5, pp. 614–631, 2007
- [14] Aldoshina, I. A., Voishvillo, A., and Mazin, V., "Modeling of flux modulation distortion in moving-coil loudspeakers by the finite-element method," 98th Convention of the Audio Engineering Society, Feb 1995, preprint No. 3996
- [15] Aldoshina, I. A., Voishvillo, A., and Mazin, V., "Loudspeaker motor nonlinear modeling

based on calculated magnetic field inside the gap," 97th Convention of the Audio Engineering Society, Nov 1994, preprint no. 3895

- [16] Alfredson, R. J., "The propagation of sound in a circular duct of continuously varying cross-sectional area," J. Sound Vibr., vol. 23, no. 4, pp. 433–442, 1972
- [17] Allison, R., "Imaging and loudspeaker directivity: To beam or not to beam," 99th Convention of the Audio Engineering Society, Oct 1995. [Online]. Available: http: //www.aes.org/e-lib/browse.cfm?elib=7671
- [18] Allison, R. F., "The influence of room boundaries on loudspeaker power output," J. Audio Eng. Soc., vol. 22, no. 5, pp. 314–320, Jun 1974
- [19] Allison, R. F., "Low-frequency responce and efficiency relationships in direct-radiator loudspeaker systems," J. Audio Eng. Soc., vol. 13, no. 1, pp. 62–64, Jan 1965
- [20] Allison, R. F. and Villchur, E., "The audibility of doppler distortion in loudspeakers," 69th Convention of the Audio Engineering Society, May 1981, preprint no.. 1769
- [21] Amir, N., "Solving the wave equation in waveguides of varying cross sections using spherical coordinates," 98th Convention of the Audio Engineering Society, Feb 1995, preprint no. 3985
- [22] Amir, N., Matzner, H., and Shtrikman, S., "Acoustics of a flanged cylindrical pipe using singular basis functions," J. Acoust. Soc. Am., vol. 107, no. 2, pp. 714–724, Feb 2000, convention Paper 5985
- [23] Amir, N., Pagneux, V., and Kergomard, J., "A study of wave propagation in varying cross-section waveguides by modal decomposition. Part II. results," *J. Acoust. Soc. Am.*, vol. 101, no. 5, pp. 2504–2517, May 1997
- [24] Amir, N., Shimony, U., and Rosenhouse, G., "A discrete model for tubular acoustic systems with varying cross section – the direct and inverse problems. Part 1: Theory," *Acoustica*, vol. 81, pp. 450–462, 1995
- [25] Amir, N., Shimony, U., and Rosenhouse, G., "A discrete model for tubular acoustic systems with varying cross section – the direct and inverse problems. Part 2: Experiments," *Acoustica*, vol. 81, pp. 463–474, 1995
- [26] Amir, N. and Starobinski, R., "Finding the eigenmodes of two-dimensional cavities with

two axes of symmetry," Acustica united with Acta Acustica, vol. 82, no. 6, pp. 811–822, Des 1996

- [27] An, K., Shen, Y., and Aiping, Z., "Increasing active radiating factor of high-frequency horns by using staggered arrangement in loudspeaker line array," 126th Convention of the Audio Engineering Society, May 2009, convention Paper no. 7720
- [28] Anazawa, I. G., "Impact of the coupling factor on lossy voice coil impedance," 146th Convention of the Audio Engineering Society, Mar 2019, convention Paper 10153
- [29] Anderson, B. E., "Derivation of moving-coil loudspeaker parameters using plane wave tube techniques," Master's thesis, Brigham Young University, 2003
- [30] Anderson, E., Bai, Z., Dongarra, J. J., Greenbaum, A., McKenney, A., Croz, J. D., Hammarling, S., Demmel, J., Bischof, C. H., and Sorensen, D. C., "LAPACK: a portable linear algebra library for high-performance computers," in *Proceedings Supercomputing* '90, New York, NY, USA, November 12-16, 1990, pp. 2–11. [Online]. Available: https: //doi.org/10.1109/SUPERC.1990.129995
- [31] Ando, A., Hamasaki, K., Nisiguchi, T., and Ono, K., "Perceptual discrimination of very high frequency components in musical sound recorded with a newly developed wide frequency range microphone," 117th Convention of the Audio Engineering Society, Oct 2004, convention Paper 6298. [Online]. Available: http://www.aes.org/ e-lib/browse.cfm?elib=12955
- [32] Ando, Y., "On the sound radiation from semi-infinite circular pipe of certain wall thickness," *Acoustica*, vol. 22, pp. 219–225, 1969/70
- [33] Ando, Y. and Koizumi, T., "Sound radiation from a semi-infinite circular pipe having an arbitrary profile of orifice," J. Acoust. Soc. Am., vol. 59, no. 5, pp. 1033–1039, May 1976
- [34] Andrews, T., "Reality? or soft focus?" in Proceedings of the Institute of Acoustics, vol. 31, Nov 2009
- [35] Anthony, P. and Wright, J., "Finite element analysis in the design of high-quality loudspeakers," 108th Convention of the Audio Engineering Society, Feb 2000, preprint no. 5162

- [36] Antonello, N. and Agerkvist, F. T., "Compensation of the flux modulation distortion using an additional coil in a loudspeaker unit," 137th Convention of the Audio Engineering Society, Oct 2014, convention Paper no. 9160
- [37] Arase, E. M., "Mutual radiation impedance of square and rectangular pistons in a rigid infinite baffle," *The Journal of the Acoustical Society of America*, vol. 36, no. 8, pp. 1521–1525, 1964. [Online]. Available: http://scitation.aip.org/content/ asa/journal/jasa/36/8/10.1121/1.1919236
- [38] Arnold, H. and Elmen, G., "Permalloy, an alloy of remarkable magnetic properties," Journal of the Franklin Institute, vol. 195, no. 5, pp. 621 632, 1923. [Online]. Available: http://www.sciencedirect.com/science/article/B6V04-49WH06P-RB/2/a3a919ceb3e52745e8acc5cab5e53b6b
- [39] Asheim, A. and Svensson, U. P., "An integral equation formulation for the diffraction from convex plates and polyhedra," J. Acoust. Soc. Am., vol. 133, no. 6, pp. 3681– 3691, Jun 2013
- [40] Asheim, A. and Svensson, U. P., "Efficient evaluation of edge diffraction integrals using the numerical method of steepest descent," *J. Acoust. Soc. Am.*, vol. 128, no. 4, pp. 1590–1597, Oct 2010
- [41] Ashley, J. R., "Efficieny does not depend on cone area," J. Audio Eng. Soc., vol. 19, no. 10, pp. 863–865, Nov 1971
- [42] Ashley, J. R., "On the transient response of ideal crossover networks," J. Audio Eng. Soc., vol. 10, no. 3, pp. 241–244, Jul 1962
- [43] Ashley, J. R. and Kaminsky, A. L., "Active and passive filters as loudspeaker crossover networks," *J. Audio Eng. Soc.*, vol. 19, no. 6, pp. 494–502, Jun 1970
- [44] Atherton, W., "Pioneers: 8. Oliver Heaviside (1850-1925): Champion of inductance," *Electronics & Wireless World*, August 1987
- [45] Augspurger, G., "Exponential baffles for custom installations," Audio Engineering, pp. 24–27, 67, Nov 1951
- [46] Augspurger, G. L., "Loudspeakers on damped pipes," J. Audio Eng. Soc., vol. 48, no. 5, pp. 424–436, May 2000

- [47] Augspurger, G. L., "Loudspeakers on damped pipes part one: Modeling and testing; and part two: Behavior," 107th Convention of the Audio Engineering Society, Sep 1999, preprint no.. 5011
- [48] Augspurger, G. L., "Theory, ingenuity, and wishful wizardry in loudspeaker design – a half-century of progress," J. Acoust. Soc. Am., vol. 77, no. 4, pp. 1303–1308, Apr 1985
- [49] Ayers, E. W., Aspinall, E., and Morton, J. Y., "An impedance measuring set for electrical, acoustical and mechanical impedances," *Acustica*, vol. 6, pp. 11–16, 1956
- [50] Bängtson, E., Noreland, D., and Berggren, M., "Shape optimization of an acoustic horn," Uppsala University, Department of Information Technology, Tech. Rep., May 2002
- [51] Bækgaard, E., "A novel approach to linear phase loudspeakers using passive crossover networks," J. Audio Eng. Soc., vol. 25, no. 5, pp. 284–294, May 1977
- [52] Bängtson, E., Noreland, D., and Berggren, M., "Shape optimization of an acoustic horn," *Computer Methods in Applied Mechanics and Engineering*, vol. 192, no. 11–12, pp. 1533 – 1571, 2003. [Online]. Available: http://www.sciencedirect.com/ science/article/pii/S0045782502006564
- [53] Büyükaksoy, A. and Polat, B., "Diffraction of acoustic waves by a semi-infinite cylindrical impedance pipe of certain wall thickness," *Journal of Engineering Mathematics*, vol. 33, pp. 333–352, 1998
- [54] Backman, J., "Dynamic driver current feedback methods," 146th Convention of the Audio Engineering Society, Mar 2019, convention Paper 10152
- [55] Backman, J., "Comparison of dynamic driver current feedback methods," 145th Convention of the Audio Engineering Society, 2018, convention Paper 10059
- [56] Backman, J., "Dynamic driver linearization using current feedback," 144th Convention of the Audio Engineering Society, May 2018, convention Paper no. 9917
- [57] Backman, J., "Comparison of dynamic driver current feedback methods," 145th Convention of the Audio Engineering Society, Oct 2018, convention Paper no. 10059

- [58] Backman, J., "Subwoofers in rooms: Effect of absorptive and resonant room structures," 127th Convention of the Audio Engineering Society, Oct 2009
- [59] Backman, J., "Refinements of transmission line loudspeaker models," 122nd Convention of the Audio Engineering Society, May 2007, convention Paper 7071
- [60] Backman, J., "Improvements of onedimensional loudspeaker models," 123rd Convention of the Audio Engineering Society, Oct 2007, convention Paper 7253
- [61] Backman, J., "Distortion from boundary layers," 103rd Convention of the Audio Engineering Society, Sep 1997, preprint no. 4619
- [62] Backman, J., "A computational model of horn loudspeakers," 94th Convention of the Audio Engineering Society, Mar 1993, preprint no. 3512
- [63] Backman, J., "A computational model of transmission line loudspeakers," 92nd Convention of the Audio Engineering Society, Mar 1992, preprint no.. 3326
- [64] Backman, J., "Computation of diffraction for loudspeaker enclosures," J. Audio Eng. Soc, vol. 37, no. 5, pp. 353–362, 1989.
 [Online]. Available: http://www.aes.org/ e-lib/browse.cfm?elib=6088
- [65] Baer, C. T., Shisler, S. C., and Felser, E. M. (2004) Historical note to the RCA Corporation records (accession 2069), Hagley Museum and Library, Wilmington, DE 19807. Accessed Jan 14, 2016. [Online]. Available: http://findingaids.hagley. org/xtf/view?docId=ead/2069.xml
- [66] Baldock, R., "Acoustic compensation," *Hi-Fi* News, pp. 490–495, Nov 1964
- [67] Ballantine, S., "A logarithmic recorder for frequency response measurements at audiofrequencies," J. Acoust. Soc. Am., vol. 5, no. 1, pp. 10–24, Jul 1933. [Online]. Available: http://scitation.aip.org/content/ asa/journal/jasa/5/1/10.1121/1.1915613
- [68] Ballantine, S., "On the propagation of sound in the general Bessel horn of infinite length," *J. Frankl. Inst.*, vol. 203, pp. 85–103, Jan 1927
- [69] Bank, G. and Hathaway, G. T., "A revolutionary 3-d interferometric vibrational mode display," 66th Convention of the Audio Engineering Society, May 1980,

preprint no 1658. [Online]. Available: http://www.aes.org/e-lib/browse.cfm?elib=3718

- [70] Bank, G. and Hawksford, M. O. J., "Advances in computer modeling of ribbon loudspeakers," 96th Convention of the Audio Engineering Society, Feb 1994, preprint no. 3837. [Online]. Available: http://www.aes. org/e-lib/browse.cfm?elib=6395
- [71] Bank, G. and Wright, J. R., "Radiation impedance calculations for a rectangular piston," *J. Audio Eng. Soc.*, vol. 38, no. 5, pp. 350–354, May 1990
- [72] Bard, D., "Horn loudspeaker nonlinearity comparison and linearization using volterra series," 124th Convention of the Audio Engineering Society, May 2008, convention Paper no. 7318
- [73] Bard, D., Rossi, M., and Del Nobile, M., "Compensation of nonlinearities of horn loudspeakers," 119th Convention of the Audio Engineering Society, Oct 2005, convention Paper no. 6573
- [74] Barjau, A. and Gibiat, V., "Delay lines, Finite Differences and Cellular Automata: Three close but different schemes for simulating acoustical propagation in 1D systems," Acta Acustica united with Acustica, vol. 88, pp. 554–566, 2002
- [75] Barrett, M. and Klementovich, M., Paul Wilbur Klipsch, The Life...The Legend. Rutledge Books, Inc., 2002
- [76] Barton, E. H., "On spherical radiation and vibrations in conical pipes," *Phil. Mag., series 5*, vol. 15, no. 85, pp. 69–81, 1908
- [77] Batsel, M. C., ""high Fidelity": Its significance to the projectionist," *International Projectionist*, vol. 5, pp. 20–21, May 1933
- [78] Batsel, M. C. and Reifsteck, C. N., "Reproducing equipment for motion picture theaters," J. Soc. Mot. Pic. Eng., vol. 28, no. 3, pp. 643–652, Jun 1937
- [79] Bauer, B., "Transformer analogs of diaphragms," J. Acoust. Soc. Am., vol. 23, no. 6, pp. 680–683, Nov 1951
- [80] Bauer, B. B., "Equivalent circuit analysis of mechano-acoustic structures (reprint)," J. Audio Eng. Soc., vol. 24, no. 8, pp. 643–652, Oct 1976
- [81] Bauer, B. B., "On the equivalent circuit of a plane wave confronting an acoustical device," *J. Audio Eng. Soc.*, vol. 24, no. 8, pp. 653– 655, Oct 1976

- [82] Bauer, B. B., "Phasor analysis of some sterephonic phenomena," J. Acoust. Soc. Am., vol. 33, pp. 1536–1539, Nov 1961
- [83] Bauer, B. B., "Equivalent circuit analysis of mechano-acoustic structures," *Trans. IRE PGA*, pp. 112–120, 1954
- [84] Bauer, B. B., "Notes on radiation impedance," J. Acoust. Soc. Am., vol. 15, no. 4, pp. 223–224, Apr 1944
- [85] Baulac, M., Defrance, J., and Jean, P., "Optimization of multiple edge barriers with genetic algorithms coupled with Nelder-Mead local search," *J. Sound Vibr.*, vol. 300, no. 1-2, pp. 71–87, 2007
- [86] Beddel, E. H., "Auditorium acoustics and control facilities for reproductions in auditory perspective," *Bell Laboratories Record*, vol. 12, no. 7, pp. 199–202, Mar 1934
- [87] Beddel, E. H. and Kerney, I., "Symposium on wire transmission of symphonic music and its reproduction in auditory perspective: System adaptation," *Bell System Technical Journal*, vol. 13, pp. 301–308, Apr 1934
- [88] Beer, G. and Watson, J., "Infinite boundary elements," *International Journal for Nu*merical Methods in Engineering, vol. 28, pp. 1233–1247, 1989
- [89] Beers, G. L. and Belar, H., "Frequency modulation distortion in loudspeakers," *Proc. Inst. Rad. Eng.*, pp. 132–138, Apr 1943, also published in J. Soc. Mot. Pic. Eng., vol. 40, no. 4, p. 207. Reprinted in J. Audio Eng. Soc., vol. 29, no. 5, May 1981
- [90] Behar, A. and Taibo, L., "Measurement of the acoustical efficiency of loudspeakers," *Acustica*, vol. 39, pp. 273–275, 1978
- [91] Behler, G. K. and Makarski, M., "On the velocity distribution at the interface of horn driver and horn," 116th Convention of the Audio Engineering Society, May 2004, convention Paper no. 6097
- [92] Behler, G. K. and Makarski, M., "Twoport representation of the connection between horn driver and horn," J. Audio Eng. Soc., vol. 51, no. 10, pp. 883–897, Oct 2003
- [93] Belkin, B. G., "The need for transient distortion measurements in loudspeakers," *Soviet Physics – Acoustics*, vol. 18, no. 2, Oct–Dec 1972

- [94] Beltran, C. I., "Calculated response of a compression driver using a coupled field finite element analysis," 105th Convention of the Audio Engineering Society, Sept 1998, preprint no. 4787
- [95] Benade, A. H., "Equivalent circuits for conical waveguides," J. Acoust. Soc. Am., vol. 83, no. 5, pp. 1764–1769, May 1988
- [96] Benade, A. H., "On woodwind instrument bores," J. Acoust. Soc. Am., vol. 31, no. 2, pp. 137–146, 1959
- [97] Benade, A. H. and Jansson, E. V., "On plane and spherical waves in horns with nonuniform flare part 1," *Acoustica*, vol. 31, pp. 79–98, 1974
- [98] Bennett, J. C., Barker, K., and Edeko, F. O., "A new approach to the assessment of stereophonic sound system performance," *J. Audio Eng. Soc.*, vol. 33, no. 5, pp. 314–321, May 1985
- [99] Benson, J. E., "An introduction to the design of filtered loudspeaker systems," J. Audio Eng. Soc., vol. 23, no. 7, pp. 536–545, Sept 1975
- [100] Bequin, P. and Morfey, C. L., "Weak nonlinear propagation of sound in a finite exponential horn," J. Acoust. Soc. Am., vol. 109, no. 6, pp. 2649–2659, Jun 2001
- [101] Beranek, L. L., "Some remarks on electromechano-acoustical circuits," J. Acoust. Soc. Am., vol. 77, no. 4, pp. 1309–1313, Apr 1985
- [102] Beranek, L. L., Acoustics. McGraw-Hill, 1954, ISBN-10: 088318494X
- [103] Beranek, L. L., "Loudspeakers and microphones," J. Acoust. Soc. Am., vol. 26, no. 5, pp. 618–629, Sep 1954
- [104] Beranek, L. L., "Sound systems for large auditoriums," J. Acoust. Soc. Am., vol. 26, no. 5, pp. 661–675, Sep 1954
- [105] Beranek, L. L. and Mellow, T. J., Acoustics -Sound Fields and Transducers, 2nd ed. Academic Press, 2019, ISBN: 978-0-12-815227-0
- [106] Beranek, L. L. and Mellow, T. J., Acoustics - Sound Fields and Transducers. Academic Press, 2012, ISBN: 978-0-12-391421-7
- [107] Bergassoli, A., Germain, R., and Roure, A., "Solution de quelques problèmes de raccordement de guides acoustiques," *Acoustica*, vol. 34, pp. 306–310voish, 1976

- [108] Berkovitz, R. and Edvardsen, B.-E., "Phase sensitivity in music reproduction," 58th Convention of the Audio Engineering Society, Nov 1977, preprint no. 1294
- [109] Berners, D. and Smith III, J. O., "On the use of Schrödingers equation in the analytic determination of horn reflectance," *Proceedings* of the International Computer Music Conference, 1994
- [110] Berners, D. P., "Acoustics and signal processing techniques for physical modeling of brass instruments," Ph.D. dissertation, Stanford University, 1999
- [111] Berners, D. P. and Smith III, J. O., "Superspherical wave simulation in flaring horns," *Proceedings of the International Computer Music Conference*, 1995
- [112] Bernfeld, B., "Attempts for better understanding of the directional stereophonic listening mechanism," 44th Convention of the Audio Engineering Society, Mar 1973, paper no. C-4
- [113] Bernland, A., Wadbro, E., and Berggren, M., "Shape optimization of a compression driver phase plug," *SIAM Journal of Scientific Computation*, vol. 41, no. 1, pp. B181– B204, 2019
- [114] Bernland, A., Wadbro, E., and Berggren, M., "Acoustic shape optimization using cut finite elements," *Int. J. Numer. Meth. En*gng, 2017
- [115] Berzborn, M. and Smithers, M., "An acoustic model of the tapped horn loudspeaker," 145th Convention of the Audio Engineering Society, Oct 2018, convention Paper no. 10047
- [116] Bettess, P., "Infinite elements," J. Numerical Methods in Engineering, vol. 11, no. 1, pp. 53–64, 1977
- [117] Bezzola, A., "Numerical optimization strategies for acoustic elements in loudspeaker design," 145th Convention of the Audio Engineering Society, Oct 2018, convention Paper 10046
- [118] Bie, D., "Vibration resonances of a titanium loudspeaker diaphragm," 104th Convention of the Audio Engineering Society, May 1998, preprint no. 4642
- [119] Bie, D., "Design and theory of a new midrange horn driver," 93rd Convention of the Audio Engineering Society, Oct 1991, preprint no. 3429

- [120] Bie, D., "Normal modes of some common thin metal diaphragms," 89th Convention of the Audio Engineering Society, Sep 1990, preprint no. 2982
- [121] Biot, M. A. and Tolstoy, I., "Formulation of wave propagation in infinite media by normal coordinates with an application to diffraction," J. Acoust. Soc. Am., vol. 29, pp. 381–391, 1957
- [122] Birt, D. R., "Nonlinearities in moving coil loudspeakers with overhung voice coils," J. Audio Eng. Soc., vol. 39, no. 4, pp. 219–231, Apr 1991
- [123] Bjørnø, L., "Ulineær akustik en oversigt for ikke-specialister," Den Polytekniske Læreanstalt, Lyngby, Avdelingen for Fluid Mekanik, Tech. Rep. AFM 74-20, 1974
- [124] Black, L. J., "A physical analysis of distortion produced by the nonlinearity of the medium," J. Acoust. Soc. Am., vol. 12, pp. 266–267, Oct 1940
- Blackford, L. S., Demmel, J., Dongarra, J., Duff, I., Hammarling, S., Henry, G., Heroux, M., Kaufman, L., Lumsdaine, A., Petitet, A., Pozo, R., Remington, K., and Whaley, R. C., "An updated set of Basic Linear Algebra Subprograms (BLAS)," ACM Trans. Math. Soft., vol. 28-2, pp. 135–151, 2002
- [126] Blasizzo, F., "A new thermal model for loudspeakers," J. Audio Eng. Soc., vol. 52, no. 1/2, pp. 43–55, Jan/Feb 2004
- [127] Blattner, D. G., "Mm-1638 proposed method of testing loud speakers and other sounding devices - case 32184," August 1926
- [128] Blattner, D. G. and Bostwick, L. G., "Loud speakers for use in theaters," J. Soc. Mot. Pic. Eng., vol. 14, no. 4, pp. 161–171, Feb 1930
- [129] Blauert, J. and Laws, P., "Group delay distortions in electroacoustical systems," J. Acoust. Soc. Am., vol. 63, no. 5, pp. 1478– 1483, 1978
- [130] Blind, H., Dorfstatter, W., and Geddes, E., "In pursuit of elusive loudspeaker parameters," 78th Convention of the Audio Engineering Society, May 1985, preprint no. 2234
- [131] de Blok, C. M. and van den Brink, R. F. M., "Direct-reading one-port acoustic nework analyzer," J. Audio Eng. Soc., vol. 41, no. 4, pp. 231–238, Apr 1993

- [132] Bolaños, F., "Measurement and analysis of subharmonics and other distortions in compression drivers," 118th Convention of the Audio Engineering Society, May 2005, convention Paper no. 6517
- [133] Bolaños, F. and Seoane, P., "Target modes in moving assemblies of compression drivers and other speakers," 125th Convention of the Audio Engineering Society, Oct 2008, convention Paper no. 7589
- [134] Boner, C. P., Jones, H. W., and Cunningham, W. J., "Indoor and outdoor response of an exponential horn," J. Acoust. Soc. Am., vol. 10, pp. 180–183, Jan 1939
- [135] Bordoni, P. G., "The conical sound source," J. Acoust. Soc. Am., vol. 17, no. 2, pp. 123– 126, Oct 1945
- [136] Bortoni, C., Filho, S. N., Seara, R., and Bortoni, R., "Real-time voice-coil temperature and cone displacement control of loudspeakers," 117th Convention of the Audio Engineering Society, 2004, convention Paper no. 6249
- [137] Bost, J. R., "A new type of tweeter horn employs a piezo-electric driver," 49th Convention of the Audio Engineering Society, Sep 1974, preprint no. 977
- [138] Bostwick, L. G., "A loudspeaker good to twelve thousand cycles," J. Soc. Mot. Pic. Eng., vol. 16, no. 5, pp. 529–534, May 1931
- [139] Bostwick, L. G., "An efficient loud speaker at the higher audible frequencies," J. Acoust. Soc. Am., vol. 2, no. 2, pp. 242–250, Oct 1930
- [140] Bostwick, L. G., "Acoustic considerations involved in steady state loud speaker measurements," *Bell System Technical Journal*, vol. 8, pp. 135–158, Jan 1929
- [141] Bostwick, L. G., "What is a good loudspeaker?" Bell Laboratories Record, vol. 7, no. 9, May 1929
- [142] Bowler, J. R., Harfield, N., Merricks, N. P., and Woodman, W. J., "A theoretical analysis of eddy-current effects in loudspeaker motors," *J. Audio Eng. Soc.*, vol. 48, no. 7/8, pp. 668–678, Jul/Aug 2000
- [143] Boylestad, R. L., Introductory Circuit Analysis, 9th ed. Prentice Hall International, Inc., 2000, ISBN 0-13-015537-3
- [144] Boynton, G., "What about horns?" Sound Practices, pp. 2–4, 21, Summer 1992

- [145] Bradbury, L. J. S., "The use of fibrous materials in loudspeaker enclosures," J. Audio Eng. Soc., vol. 24, no. 3, pp. 162–170, Apr 1976
- [146] Braden, A. C. P., "Bore optimisation and impedance modelling of brass musical instruments," Ph.D. dissertation, University of Edinburgh, 2006
- [147] Branch, L. E. T., "The design of the moving coil," *The Wireless World*, pp. 601–603, Jun 1928, june 6th
- [148] Breshears, V. and Heinz, R., "An integrated three-way constand directivity speaker array," 101st Convention of the Audio Engineering Society, Nov 1996, preprint no. 4323
- [149] Brettell, G. A., "Damping of horn walls and speaker enclosures," J. Acoust. Soc. Am., vol. 21, p. 141, 1949
- [150] Brick, H., "Application of the Boundary Element Method to combustion noise and half-space problems," Ph.D. dissertation, Chalmers University of Technology, 2009
- [151] Briggs, A. and Maxted, G. R. I., "Acoustical ethereal...april 2013," For the Record, no. 49, 2014
- [152] Briggs, G. A., "Live and recorded music and views on electrostatic speakers," *The Wireless World*, p. 299, Jun 1956
- Briggs, G. and 64 collaborators, Audio Biographies. Wharfedale Wireless Works, Ltd., 1961
- [154] Bright, A., "Analysis of the folded horn," 114th Convention of the Audio Engineering Society, Mar 2003, convention Paper no. 5745
- [155] Bright, A., "Compensating non-linear distortion in an equal-hung voice coil," 111th Convention of the Audio Engineering Society, Sep 2001, convention Paper no. 5411
- [156] Bright, A., Holland, K., and Fahy, F. J., "Analysis of a folded acoustic horn," J. Audio Eng. Soc., vol. 52, no. 10, pp. 1029– 1042, 2004. [Online]. Available: http:// www.aes.org/e-lib/browse.cfm?elib=13023
- [157] Broadhurst, A. D., "Loudspeaker enclosure to simulate an infinite baffle," Acustica, vol. 39, pp. 316–322, 1978
- [158] Brociner, V., "The why and how of horn loudspeakers part 1," Audio, pp. 16–18, 22– 24, Mar 1971

- [159] Brociner, V., "The why and how of horn loudspeakers part 2," Audio, pp. 36, 38, Jun 1971
- [160] Brociner, V. and von Recklinghausen, D. R., "Interrelation of speaker and amplifier design," J. Audio Eng. Soc., vol. 12, no. 2, pp. 124–128, Apr 1964
- [161] Brown Jr., W., "Theory of conical sound radiators," J. Acoust. Soc. Am., vol. 13, no. 1, pp. 20–22, Jul 1941
- [162] Brown, S. G., "Some directions of improvement in the loud-speaking telephone," J. Institution of Electrical Engineers, vol. 62, no. 327, pp. 283–284, 1924
- [163] Brown, W. R., "Power law transfer matrix and the acoustic impedance of gabriel's horn," J. Acoust. Soc. Am., vol. 142, no. 3, pp. 1384–1389, Sept 2017
- [164] Bruneau, A.-M. and Bruneau, M., "Electrodynamic loudspeaker with baffle: Motional impedance and radiation," J. Audio Eng. Soc., vol. 34, no. 12, pp. 970–980, 1986. [Online]. Available: http: //www.aes.org/e-lib/browse.cfm?elib=5232
- [165] Bruneau, A.-M. and Bruneau, M., "Sur la réponse en fréquences des hautparleurs," Acustica, vol. 44, pp. 308–313, 1980
- [166] Bruneau, M. and Venet, G., "Mesure des caractéristiques des haut-parleurs électrodynamiques dans des conditions normales de fonctionnement," Acustica, vol. 44, pp. 314–322, 1980
- [167] Brunet, P., Rimkunas, Z., and Temme, S., "Evaluation of time-frequency analysis methods and their practical applications," 127th Convention of the Audio Engineering Society, Oct 2007, convention paper. [Online]. Available: http://www.aes.org/e-lib/ browse.cfm?elib=14261
- [168] Bryan, M. E. and Parbrook, H. D., "Just audible thresholds for harmonic distortion," *Acustica*, vol. 10, pp. 87–91, 1960
- [169] Buck, M., "Plane wave tubes uses and limitations," 117th Convention of the Audio Engineering Society, Oct 2004, convention Paper no. 6268
- [170] Buck, M., "Dual range horn with acoustic crossover," 21st Conference of the Audio Engineering Society, Russia, Jun 2002

- [171] Buck, M., Andrews, P., Simmons, G., and Saye, S., "A high performance beryllium dome diaphragm assembly for large format compression drivers," *Alma International*, Jan 2011
- [172] Burnett, D. S. and Soroka, W. W., "Tables of rectangular piston radiation impedance functions, with application to sound transmission loss through deep apertures," J. Acoust. Soc. Am., vol. 51, no. 5 (2), pp. 1618–1623, 1969
- [173] Burrows, C. W., "Correlation of the magnetic and mechanical properties of steel," *Bulletin of the Bureau of Standards*, vol. 13, no. 2, pp. 173–210, 1916
- [174] Burton, A. J. and Miller, G. F., "The application of integral equation methods to the numerical solution of some exterior boundary vaoue problems," *Proc. R. Soc. A*, vol. A323, pp. 201–210, 1971
- [175] Butler, J. L. and Sherman, C. H., "Near-field-far-field measurement of loudspeaker response," J. Acoust. Soc. Am., vol. 108, no. 1, pp. 447–448, 2000. [Online]. Available: http://scitation.aip.org/content/asa/ journal/jasa/108/1/10.1121/1.429478
- [176] Butterweck, H. J., "About the doppler effect in acoustic radiation from loudspeakers," *Acustica*, vol. 63, pp. 77–79, 1987
- [177] Button, D. J., "Magnetic circuit design methodologies for dual-coil transducers," J. Audio Eng. Soc., vol. 50, no. 6, pp. 427–441, Jun 2002
- [178] Button, D. J., "Maximum SPL from direct radiators," 97th Convention of the Audio Engineering Society, Nov 1994, preprint no. 3934
- [179] Button, D. J., "Heat dissipation and power compression in loudspeakers," J. Audio Eng. Soc., vol. 40, no. 1/2, pp. 32–41, Jan/Feb 1992
- [180] Button, D. J., "Design parameters and trade-offs in large diameter transducers," 91st Convention of the Audio Engineering Society, Oct 1991, preprint no. 3192
- [181] Cabelli, A., "The acoustic characteristics of duct bends," J. Sound Vibr., vol. 68, no. 3, pp. 369–388, 1980
- [182] Cabelli, A., Shepherd, I., and La Fontaine, R., "Modal filters in rectangular ducts," J. Sound Vibr., vol. 99, no. 2, pp. 285–292, Mar 1985

- [183] Cable, C. R., "The qualification of loudspeaker directivity factor in sound reinforcement system design," J. Audio Eng. Soc., vol. 23, no. 6, pp. 434–441, Jul/Aug 1975
- [184] Cabot, R. C., "Audible effects vs. objective measurements in the electrical signal path," AES 8th International Conference: The Sound of Audio, May 1990, paper No 8-008
- [185] Cain, J. R., Schramm, E., and Cleaves, H. E., "Preparation of pure iron and ironcarbon alloys," *Bulletin of the Berau of Standards*, vol. 13, no. 1, pp. 1–26, 1916
- [186] Campbell, G., The Collected Papers of George Ashley Campbell. American Telegraph and Telephone Company, New York, 1937
- [187] Campbell, G. A., "Physical theory of the electrical wave-filter," *Bell System Technical Journal*, vol. 1, no. 2, pp. 1–32, Nov 1922
- [188] Campos, L. M. B. C., "Some general properties of the exact acoustic fields in horns and baffles," J. Sound Vibr., vol. 95, no. 2, pp. 177–201, 1984
- [189] Candy, J., "Accurate calculation of radiation and diffraction from loudspeaker enclosures at low frequency," J. Audio Eng. Soc, vol. 61, no. 6, pp. 356–365, 2013. [Online]. Available: http://www.aes.org/e-lib/ browse.cfm?elib=16828
- [190] Candy, J. and Futtrup, C., "2018-001 candy futtrup - an added-mass measurement technique for transducer parameter estimation," *J. Audio Eng. Soc.*, vol. 65, no. 12, pp. 1005– 1016, Dec 2017
- [191] Carlisi, M., Di Cola, M., and Manzini, A., "An alternative approach to minimize inductance and related distortions in loudspeakers," 118th Convention of the Audio Engineering Society, May 2005, convention Paper no. 6421
- [192] Carlisle, R. W., "Method of improving acoustic transmission in folded horns," J. Acoust. Soc. Am., vol. 31, no. 8, pp. 1135–1137, Aug 1959
- [193] Carlisle, R. W., "Conditions for wide angle radiation from conical sound radiators," J. Acoust. Soc. Am., vol. 15, no. 1, pp. 44–49, Jul 1943
- [194] Carlsen, I. and Sørsdal, S., "Termiske data for høyttalere," Akustisk Laboratorium, Sintef, Tech. Rep. STF44 A77071, 1977

- [195] Carson, J. R., "Building up of sinusoidal currents in long periodically loaded lines," *Bell* System Technical Journal, vol. 3, Oct 1924
- [196] Carson, J. R. and Zobel, O. J., "Transient oscillations in electric wave filters," *Bell Sys*tem Technical Journal, vol. 2, pp. 1–52, Jul 1923
- [197] Caussé, R., Kergomard, J., and Lurton, X., "Input impedance of brass musical instruments – comparison between experiment and numerical models," J. Acoust. Soc. Am., vol. 75, no. 1, pp. 241–254, Jan 1984
- [198] Celestinos, A. and Nielsen, S. B., "Controlled acoustic bass system (CABS) a method to achieve uniform sound field distribution at low frequencies in rectangular rooms," J. Audio Eng. Soc., vol. 56, no. 11, pp. 915–931, Nov 2008
- [199] Chaigne, A. and Kergomard, J., Acoustics of Musical Instruments. Springer, 2013
- [200] Chapman, C. J., "The asymptotic theory of dispersion relations containing Bessel functions of imaginary order," *Proc. R. Soc. A*, vol. 468, pp. 4008–4023, 2012
- [201] Chappell, D. J., Geaves, G., Henwood, D. J., Harris, P. J., and Chakrabarti, R., "Modeling the transient acoustic field radiated by a loudspeaker," *J. Audio Eng. Soc.*, vol. 56, no. 11, pp. 956–971, Nov 2008
- [202] Cheever, D. H., "A new methodology for audio frequency power amplifier testing based on psychoacoustic data that better correlates with sound quality," Master's thesis, University of New Hampshire, 2001
- [203] Chen, C.-W., Magnetism and Metallurgy of Soft Magnetic Materials. North-Holland Publishing Company, 1977
- [204] Cheney, W. L., "Preparation and properties of pure iron alloys: Ii. magnetic properties of iron-carbon alloys as affected by heat treatment and carbon content," *Scientific Papers* of the Bureau of Standards, vol. 18, pp. 609– 365, 1922
- [205] Cheng, A. H.-D. and Cheng, D. T., "Heritage and early history of the boundary element method," *Engineering Analysis with Bound*ary Elements, vol. 29, no. 3, pp. 268–302, 2005
- [206] Cheng, D. K., Field and Wave Electromagnetics, 2nd ed. Addison-Wesley Publishing Company, 1989

- [207] Cho, Y. C., "Rigorous solutions for sound radiation from circular ducts with hyperbolic horns or infinite baffles," J. Sound Vibr., vol. 69, no. 3, pp. 405–425, 1980
- [208] Christophorou, J., "Low frequency loudspeaker measurements with an accelerometer," J. Audio Eng. Soc., vol. 28, no. 11, pp. 809–816, Nov 1980
- [209] Cinanni, D., "Simulation of horn driver response by direct combination of compression driver frequency response and horn fea," *Proc. 2015 COMSOL Conference in Grenoble*, 2015
- [210] Clark, M., "Audio technology in the United States to 1943 and its relationship to magnetic recording," 94th Convention of the Audio Engineering Society, Mar 1993, preprint no. 3481
- [211] Cochran, J. A., "The asymptotic nature of zeros of cross-product Bessel functions," *Quart. Journ. Mech. and Applied Math.*, vol. 19, pp. 511–522, 1966
- [212] Cochran, J. A., "The analyticity of crossproduct Bessel function zeros," *Proc. Camb. Phil. Soc.*, vol. 62, pp. 215–226, 1966
- [213] Cochran, J. A., "Thee zeros of hankel functions as functions of their order," Numerische Mathematik, vol. 7, pp. 238–250, 1965
- [214] Cochran, J. A., "Remarks on the zeros of cross-product Bessel functions," J. Soc. Indust. Appl. Math., vol. 12, no. 3, pp. 580– 578, Sept 1964
- [215] Cochran, J. A. and Hoffspiegel, J. N., "Numerical techniques for finding ν-zeros of hankel functions," *Mathematics of Computation*, vol. 24, no. 110, pp. 413–422, Apr 1970
- [216] Cohen, A. B., HiFi Loudspeakers and Enclosures. Newnes-Butterworths, London, 1968
- [217] Cohen, A. B., "The mechanics of good loudspeaker design," J. Audio Eng. Soc., vol. 3, no. 2, pp. 176–182, jul 1954
- [218] Cohen, A. B., "Wide angle dispersion of high-frequency sound," *Audio Engineering*, pp. 24–25, 57–59, Dec 1952
- [219] Colin, D., "Frequency delay dispersion," audioXpress, pp. 16–25, Nov 2007
- [220] Coltman, J. W., "Compensating for miter bends in cylindrical tubing," J. Acoust. Soc. Am., vol. 121, no. 5, pp.

2497–2498, May 2007. [Online]. Available: https://ccrma.stanford.edu/marl/ Coltman/documents/Coltman-1.45.pdf

- [221] Coltman, J. W., "Acoustic properties of miter bends," Nov 27 2006. [Online]. Available: https://ccrma.stanford.edu/marl/ Coltman/documents/Coltman-1.44.pdf
- [222] Constable, A., "The BTH Company a brief history," British Wintage Wireless Society Bulletin, vol. 2, no. 2, pp. 25–26, Sep 1977
- [223] Cordell, R. R., "Open-loop output impedance and interface intermodulation distortion in audio power amplifiers," 64th Convention of the Audio Engineering Society, Nov 1979, preprint no. 1537
- [224] Cornwell, J., Hitler's Scientists Science, War and the Devil's Pact. Viking, The Penguin Group, 2003
- [225] Corrington, M. S., "Correlation of transient measurements of loudspeakers with listening tests," J. Audio Eng. Soc., vol. 3, no. 1, pp. 35–39, Jan 1955
- [226] Crabbe, H. J. F., "A concrete horn loudspeaker system mk II part 1," *Hi-Fi News*, pp. 456–457, 459, 461, 479, Oct 1967
- [227] Crabbe, H. J. F., "A concrete horn loudspeaker system mk II part 2," *Hi-Fi News*, pp. 614–615, 617–618, Nov 1967
- [228] Crabbe, H. J. F., "Horn type speakers part 1 - elementary theory," *Hi-Fi News*, pp. 361– 362, 1961
- [229] Crabbe, H. J. F., "Horn type speakers part 2
 opening up the pipe," *Hi-Fi News*, pp. 453, 455, 457, 1961
- [230] Crabbe, H. J. F., "Horn type speakers part 3

 small throats and big mouths," *Hi-Fi News*, pp. 519, 521–522, 1961
- [231] Crabbe, H. J. F., "Horn type speakers part 4 - folding problems and some comercial examples," *Hi-Fi News*, pp. 607, 609–610, 1961
- [232] Crabbe, H. J. F., "Horn type speakers part 5 - variations on a theme," *Hi-Fi News*, pp. 664–665, 667, 1961
- [233] Crabbe, H. J. F., "Horn type speakers part 6
 building the bass horns," *Hi-Fi News*, pp. 761, 763, 765, 1961
- [234] Crabbe, H. J. F., "Horn type speakers part 7 - speaker housing and treble horns," *Hi-Fi News*, 1961

- [235] Crabbe, H. J. F., "Horn type speakers part 8
 the finishing touches," *Hi-Fi News*, pp. 25, 27–28, 1961
- [236] Crabbe, H. J. F., "Design for a folded corner horn," *The Wireless World*, pp. 57–62, Feb 1958
- [237] Craft, E. B., "The bell system research laboratories," *Electrical Communication*, vol. 2, no. 3, Jan 1924, reprint published by Western Electric Engineering Department
- [238] Crandall, I. B., Theory of Vibrating Systems and Sound. D. Van Nostrand Co., New York, 1926
- [239] Crandall, I. B. and MacKenzie, D., "Analysis of the energy distribution in speech," *Bell System Technical Journal*, vol. 1, no. 1, 1922
- [240] Crowhurst, N. H., "Puzzlements," Audiocraft Magazine, pp. 24–25, Jan 1958
- [241] Cummings, A., "Sound transmission in 180 degree duct bends of rectangular section," J. Sound Vibr., vol. 41, no. 3, pp. 321–334, 1975
- [242] Cummings, A., "Sound transmission in a folded annular duct," J. Sound Vibr., vol. 41, no. 3, pp. 375–379, 1975
- [243] Cummings, A., "Sound transmission in curved duct bends," J. Sound Vibr., vol. 35, no. 4, pp. 451–477, 1974
- [244] Cummings, A., "Excitation of higher order modes in annular and circular ducts," J. Sound Vibr., vol. 37, pp. 447–451, 1974
- [245] Cunefare, K. A., Koopmann, G., and Brod, K., "A boundary element method for acoustic radiation valid for all wavenumbers," J. Acoust. Soc. Am., vol. 85, no. 1, pp. 39–48, Jan 1989
- [246] Cunningham, W. J., "Non-linear distortion in dynamic loudspeakers due to magnetic effects," J. Acoust. Soc. Am., vol. 21, no. 3, pp. 202–207, May 1949
- [247] Cushman, R., "Audition demonstration," Bell Laboratories Record, vol. 18, no. 9, pp. 273–277, May 1940
- [248] Czerwinski, E., Voishvillo, A., Alexandrov, S., and Terekhov, A., "Air-related harmonic and intermodulation distortion in large sound systems," *J. Audio Eng. Soc.*, vol. 47, no. 6, pp. 427–446, Jun 1999
- [249] Czerwinski, E. J., Buck, M. D., and Duncan, A., "Spruce moose: A slightly bent horn," 79th Convention of the Audio Engineering Society, Oct 1985, preprint no. 2311

- [250] Czerwinski, G. and Renkus, J. A., "The reliability of high frequency compression drivers," 63rd Convention of the Audio Engineering Society, May 1979, preprint no. 1514
- [251] Dahl, H., "Amplification behind the talking movies," *Bell Laboratories Record*, vol. 6, no. 3, pp. 285–288, May 1928
- [252] Dalmont, J.-P., "Acoustic impedance meapart ii: A new calibration surement, Soundmethod." J. Vibr., vol. 243.no. 3, 441 - 459,2001.[Online]. pp. Available: http://www.sciencedirect.com/ science/article/pii/S0022460X00934291
- [253] Dalmont, J.-P., "Acoustic impedance measurements, part 1: a review," J. Sound Vibr., vol. 243, no. 3, pp. 427–439, 2000
- [254] Dalmont, J.-P. and Bruneau, A.-M., "Acoustic impedance measurement: Plane-wave mode and first helical mode contributions," *J. Acoust. Soc. Am.*, vol. 91, no. 5, pp. 3026– 3033, May 1992
- [255] Dalmont, J.-P., Nederveen, C. J., and Joly, N., "Radiation impedance of tubes with different flanges numerical and experimental investigations," *J. Sound Vibr.*, vol. 244, no. 3, pp. 505–534, 2001
- [256] Daniels, D., "What's really new in loudspeakers," 101st Convention of the Audio Engineering Society, Nov 1996, preprint no. 4335
- [257] Daniels, F. B., "On the propagation of sound waves in a cylindrical conduit," J. Acoust. Soc. Am., vol. 22, no. 5, pp. 563–564, Sep 1950
- [258] Danley, T. J. and Mapes-Riordan, D., "The design of a high efficiency servomotor-driven subwoofer," 89th Convention of the Audio Engineering Society, Sep 1990, preprint no. 2978
- [259] Danley, T. J., Rey, C. A., and Whymark, R. R., "A high efficiency servo-motor driven subwoofer," 74th Convention of the Audio Engineering Society, Oct 1983, preprint no. 2043
- [260] Danley, T. J., Whymark, R. R., and Rey, C. A., "The elimination of power compression in servo drive loudspeakers," 81st Convention of the Audio Engineering Society, Nov 1986, preprint no. 2407
- [261] Darlington, P., "Low frequency modelling using 2 port methods," Audio Engineering Society Conference: UK 13th

Conference: Microphones & Loudspeakers, 3 1998. [Online]. Available: http: //www.aes.org/e-lib/browse.cfm?elib=7988

- [262] Davis, D., "Establishing a loudspeaker's directivity figure of merit (dfm)," 54th Convention of the Audio Engineering Society, 1976, preprint no. 1117
- [263] Davis, D., "A proposed standard method of measuring the directivity factor "q" of loudspeakers used in commercial sound work," J. Audio Eng. Soc., vol. 21, no. 7, pp. 571–578, Sep 1973
- [264] Davis, D. and Davis, C., Sound System Engineering, 2nd ed., Black, S., Ed. Howard W. Sams & Co, 1987
- [265] Davis, D. and Patronis, E. J., Sound System Engineering, 3rd ed. Focal Press, 2006
- [266] Davis, D., Patronis, E. J., and Brown, P., Sound System Engineering, 4th ed., Ballou, G., Ed. Focal Press, 2013
- [267] Deer, J. A., Bloom, P. J., and Preis, D., "Perception of phase distortion in all-pass filters," *J. Audio Eng. Soc.*, vol. 33, no. 10, pp. 782– 786, Oct 1985
- [268] Delany, M. E. and Bazley, E. N., "Acoustical properties of fibrous absorbent materials," *Applied Acoustics*, vol. 3, no. 2, pp. 105–116, Apr 1970
- [269] Delgano, R., Geist, K., and Hunter, J., "Tractrix horns: Improved imaging and phasing," Audio, pp. 36–40, Mar 1991
- [270] Delgano, R. and Klipsch, P. W., "A revised low-frequency horn of small dimensions," J. Audio Eng. Soc., vol. 48, no. 10, pp. 922–929, Oct 2000
- [271] Denman, R. P. G., "Loudspeakers and their development," J. Royal Soc. Arts, vol. 77, no. 3991, pp. 668–694, May 1929
- [272] Denman, R. P. G., "In search of quality," The Wireless World, pp. 97–101, 1929, july 31st
- [273] Denny, W. B., "The design and construction of horn loudspeakers," Audio Antology, vol. 2, pp. 99–103, 1952
- [274] Dequand, S., Hulshoff, S. J., Aurégan, Y., Huijnen, J., ter Riet, R., van Lier, L. J., and Hirschberg, A., "Acoustics of 90 degree sharp bends. part ii: Low-frequency aeroacoustical response," Acta Acustica united with Acustica, vol. 90, pp. 13–23, 2004

- [275] Dequand, S., Hulshoff, S. J., Aurégan, Y., Huijnen, J., ter Riet, R., van Lier, L. J., and Hirschberg, A., "Acoustics of 90 degree sharp bends. part i: Low-frequency acoustical response," Acta Acustica united with Acustica, vol. 89, pp. 1029–1037, 2003
- [276] Di Cola, M., "Analysis of directivity anomalies in mid and high frequency horn loudspeakers," 111th Convention of the Audio Engineering Society, Sep 2001, convention Paper no. 5432
- [277] Di Cola, M., Cinanni, D., Manzini, A., Nizzoli, T., and Ponteggia, D., "Design and optimization of high directivity waveguide for vertical array," 127th Convention of the Audio Engineering Society, Oct 2009, convention Paper no. 7955
- [278] Di Cola, M. and Doldi, D., "Horn's directivity related to the pressure distribution at their mouth," 109th Convention of the Audio Engineering Society, Sep 2000, preprint no. 5214
- [279] Di Cola, M., Doldi, D., and Furlan, M., "A new approach to waveguides," 107th Convention of the Audio Engineering Society, Sep 1999, preprint no. 5007
- [280] Di Cola, M., Doldi, D., and Saronni, D., "Horns directivity related to the pressure distribution at their mouth: part 2," 110th Convention of the Audio Engineering Society, May 2001, convention Paper no. 5319
- [281] Dinsdale, J., "Horn loudspeaker design part 1," The Wireless World, pp. 19–24, Mar 1974
- [282] Dinsdale, J., "Horn loudspeaker design part 2," The Wireless World, pp. 133–138, May 1974
- [283] Dinsdale, J., "Horn loudspeaker design part 3," *The Wireless World*, pp. 186–190, Jun 1974
- [284] Dobrucki, A., "Constant component of the loudspeaker diaphragm displacement caused by non-linearities," 84th Convention of the Audio Engineering Society, Mar 1988, preprint no. 2577
- [285] Dobrucki, A. B., "Nontypical effects in an electrodynamic loudspeaker with a nonhomogeneous magnetic field in the air gap and nonlinear suspensions," J. Audio Eng. Soc., vol. 42, no. 7/8, pp. 565–576, Jul/Aug 1994
- [286] Dobrucki, A. B., "Nonlinear distortions of woofers in fundamental resonance region,"

80th Convention of the Audio Engineering Society, Mar 1986, preprint no. 2344

- [287] Dobrucki, A. B., Pruchnicki, P., and Zóltogórski, B., "Computer modeling of a loudspeaker vibrating system," 100th Convention of the Audio Engineering Society, May 1996, preprint no. 4207
- [288] Dodd, M., "Wideband compression driver design. part 2, application to a high power compression driver with a novel diaphragm geometry," 139th Convention of the Audio Engineering Society, Oct-Nov 2015, convention Paper no. 9391
- [289] Dodd, M., "The transient magnetic behaviour of loudspeaker motors," 111th Convention of the Audio Engineering Society, Sep 2001, convention Paper no. 5410
- [290] Dodd, M. A., "The development of a forward radiating compression driver by the application of acoustic, magnetic and thermal finite element methods," 115th Convention of the Audio Engineering Society, Oct 2003, convention Paper 5886
- [291] Dodd, M. A., "A wide dispersion constant directivity dual concentric driver," 92nd Convention of the Audio Engineering Society, Mar 1992, preprint no. 3257
- [292] Dodd, M., Klippel, W., and Oclee-Brown, J., "Voice coil impedance as a function of frequency and displacement," 117th Convention of the Audio Engineering Society, Oct 2004, convention Paper no. 6178. [Online]. Available: http://www.aes.org/e-lib/ browse.cfm?elib=12835
- [293] Dodd, M. and Oclee-Brown, J., "New methodology for the acoustic design of compression driver phase plugs with concentric annular channels," J. Audio Eng. Soc., vol. 57, no. 10, pp. 771–787, Oct 2009
- [294] Dodd, M. and Oclee-Brown, J., "Design of a coincident source driver array with a radial channel phase-plug and novel rigid body diaphragms," 127th Convention of the Audio Engineering Society, Oct 2009, convention paper 7846
- [295] Dodd, M. and Oclee-Brown, J., "A new methodology for the acoustic design of compression driver phase plugs with radial channels," 125th Convention of the Audio Engineering Society, Oct 2008, convention paper no. 7532

- [296] Dodd, M. and Oclee-Brown, J., "A new methodology for the acoustic design of compression driver phase-plugs with concentric annular channels," 123rd Convention of the Audio Engineering Society, Oct 2007, convention Paper no. 7258
- [297] Donsky, D. M. and Cray, B. A., "Horns as particle velocity amplifiers," J. Acoust. Soc. Am., vol. 130, no. 5, pp. EL311–EL315, 2010
- [298] Dornfeld, W. H., "An acoustic lens-horn for signal enhancement in acoustic quality assurance," Annals of CIRP, vol. 30, no. 1, pp. 317–322, 1981
- [299] Douglas, A., Radio Manufacturers of the 1920's, 3rd ed. The Vestal Press, 1995, vol. 2
- [300] Duff, A. W., "Arthur Gordon Websterphysicist, mathematician, linguist, and orator," *American Journal of Physics*, vol. 6, no. 4, pp. 181–194, 1938
- [301] Eargle, J., "Loudspeakers," J. Audio Eng. Soc., vol. 25, no. 10/11, pp. 685–688, Oct/Nov 1977
- [302] Eargle, J. and Gander, M. R., "Historical perspectives and technology overview of loudspeakers for sound reinforcement," J. Audio Eng. Soc., vol. 52, no. 4, pp. 412–432, Apr 2004
- [303] Eargle, J. and Gelow, W., "Performance of horn systems: Low-frequency cut-off, pattern control, and distortion trade-offs," 101th Convention of the Audio Engineering Society, Nov 1996, preprint no. 4330
- [304] Eargle, J. M., The JBL Story 60 Years of Audio Innovation. JBL Professional, 2006
- [305] Early, R. A., Cobb, J. K., and Oijala, J. E., "Design calculations and measurements of a dipole magnet with permendur pole pieces," *Proc. IEEE*, vol. 4, pp. 351–353, 1989
- [306] Edeko, F. O., "Why stereophonic images broaden," *Electronics & Wireless World*, pp. 62–64, Nov 1985
- [307] Edgar, B. C., "The monolith horn," Speaker Builder, no. 6, pp. 12–14, 16, 18, 24–25, 1993
- [308] Edgar, B. C., "Solving the Klipschorn throat riddle," *Speaker Builder*, no. 4, pp. 28, 31, 34–35, 1990
- [309] Edgar, B. C., "The Klipschorn throat revisited or oooops," *Speaker Builder*, no. 6, pp. 91–92, 1990

- [310] Edgar, B. C., "The Show Horn," Speaker Builder, no. 2, pp. 10–12, 14, 16–20, 22–23, 75, 1990
- [311] Edgar, B. C., "The Edgar Midrange horn," Speaker Builder, no. 1, pp. 7–17, 1986
- [312] Edgar, B. C., "An interview with Paul Voigt, part 1," Speaker Builder, no. 3, pp. 12–16, 1981
- [313] Edgar, B. C., "An interview with Paul Voigt, part 2," *Speaker Builder*, no. 4, pp. 14–15, 19–20, 22–24, 1981
- [314] Edgar, B. C., "The traxtrix horn contour," Speaker Builder, no. 2, pp. 9–12, 14–15, 1981
- [315] Ehlert, R. G. Aufsätze, exzerpte, zitate zur geschichte des lautsprechers und der elektroakustischen massenbeschallungen. Internet. [Online]. Available: http://www.medienstimmen.de/
- [316] Ehlert, R. G. (2004) Public-addressstrategien von 1919 bis 1949. [Online]. Available: http://www.medienstimmen.de/
- [317] Eisner, E., "Complete solutions of the Webster horn equation," J. Acoust. Soc. Am., vol. 41, no. 4 (2), pp. 1126–1146, 1966
- [318] Eleftheriades, G. V., Omar, A. S., Katehi, L. P., and Rebeiz, G. M., "Some important properties of waveguide junction generalized scattering matrices in the context of the mode matching technique," *Microwave Theory and Techniques, IEEE Transactions* on, vol. 42, no. 10, pp. 1896–1903, 1994
- [319] Elliot, R. Variable amplifier impedance. Accessed 28.03.2019. [Online]. Available: http://sound.whsites.net/project56.htm
- [320] Ellis, W., "New electrophones for highfidelity sound reproduction," *Radio Engineering*, October 1933
- [321] Elmen, G., "The perminvars, a group of new magnetic alloys," *Bell System Technical Journal*, vol. 7, no. 1, pp. 1–4, Sept 1928
- [322] Elmen, G. and Arnold, H., "Permalloy, an alloy of remarkable magnetic properties," *BSTJ*, May 1923
- [323] Elmen, G. W., "Magnetic alloys of iron, nickel and cobalt," *Bell System Technical Journal*, vol. 15, no. 1, pp. 113–135, 1935
- [324] Elwell, C. F., "Phonofilms, or talking pictures," J. Institution of Electrical Engineers, vol. 62, no. 327, pp. 231–232, 1924

- [325] Ely, H. B., "A shallow horn for theatre use," Bell Laboratories Record, vol. 9, no. 5, pp. 241–243, Jun 1931
- [326] Engebretson, M. and Eargle, J. M., "Stateof-the-art cinema sound reproduction systems: Technology advances and system design considerations," 69th Convention of the Audio Engineering Society, May 1981, preprint no. 1799
- [327] Engebretson, M. E., "Low-frequency sound reproduction," J. Audio Eng. Soc., vol. 32, no. 5, pp. 340–346, May 1984
- [328] Engebretson, M. E. and Hayes, W. L., "Three new compression drivers," Altec Technical Letter no. 231
- [329] Eom, H. and Park, T., "A series solution for acoustic radiation from a flanged circular pipe," *Acustica*, vol. 80, pp. 315–316, 1994
- [330] von Estorff, O., "Efforts to reduce computation time in numerical acoustics - an overview," Acta Acustica United with Acustica, vol. 89, no. 1, pp. 1–13, Jan/Feb 2003
- [331] Etienne, M., "PavillonsIwata made in France: 2 – les premières expérimentations," L'Audiophile, no. 21, Sept 1981
- [332] Eveno, P., Dalmont, J.-P., Caussé, R., and Gilbert, J., "Wave propagation and radiation in a horn: Comparisons between models and measurements," Acta Acustica united with Acustica, vol. 98, pp. 158–165, 2012
- [333] Evensen, K. B., "Høyttalersimulering med mode-basert metode (in Norwegian)," Master's thesis, Norges Teknisk-Naturvitenskapelige Universitet (NTNU), Institutt for fysikk, Trondheim, Norway, 2014
- [334] Evensen, K. B. and Kolbrek, B., "Mode matching method for concentric horns," 62nd Polish Open Seminar on Acoustics,, 2015
- [335] Everest, F. A. and Streicher, R., *The New Stereo Soundbook*. TAB Books, 1992, iSBN: 0-8306-3903-9
- [336] Eyring, C. F., "Reverberation time in "dead" rooms," J. Acoust. Soc. Am., vol. 1, p. 168, 1930
- [337] Félix, S., Dalmont, J.-P., and Nederveen, C. J., "Effects of bending portions of the air column on the acoustical resonances of a wind instrument," *J. Acoust. Soc. Am.*, vol. 131, pp. 4164–4172, 2012

- [338] Félix, S. and Pagneux, V., "Ray-wave correspondence in bent waveguides," *Wave Motion*, vol. 41, pp. 339–355, 2005
- [339] Félix, S. and Pagneux, V., "Sound attenuation in lined bends," J. Acoust. Soc. Am., vol. 116, pp. 1921–1931, 2004
- [340] Félix, S. and Pagneux, V., "Multimodal analysis of acoustic propagation in threedimensional bends," *Wave Motion*, vol. 36, pp. 157–168, 2002
- [341] Félix, S. and Pagneux, V., "Sound propagation in rigid bends: A multimodal approach," J. Acoust. Soc. Am., vol. 110, no. 3, pp. 1329–1337, Sep 2001
- [342] Fagen, E. A., "A figure of merit for horn speaker drivers," J. Audio Eng. Soc., vol. 10, no. 4, pp. 302–305, Oct 1962
- [343] Fahy, F. J., "Rapid method for the measurement of sample acoustic impedance in a standing wave tube," *J. Sound Vibr.*, vol. 97, no. 1, pp. 168–170, 1984
- [344] Farina, A., "Silence sweep: A novel method for measuring electroacoustical devices," 126th Convention of the Audio Engineering Society, May 2009, convention paper no. 7700
- [345] Farina, A., "Advancements in impulse response measurements by sine sweeps," 122nd Convention of the Audio Engineering Society, May 2007, convention Paper no. 7121
- [346] Farina, A., "Simultaneous measurement of impulse response and distortion with a swept-sine technique," 108th Convention of the Audio Engineering Society, Feb 2000, preprint no. 5093
- [347] Farmer, W. J., "High-strength aluminum alloys for diaphragms," *Bell Laboratories Record*, vol. 7, no. 5, pp. 190–195, Jan 1929
- [348] Fastl, H. and Zwicker, E., Psychoacoustics, 3rd ed. Springer, 2007
- [349] Fay, R. D., "Plane sound waves of finite amplitude," J. Acoust. Soc. Am., vol. 23, pp. 222–241, Oct 1931
- [350] Feder, K., "Ein neuer riesenlautsprecher," Die Umschau, Frankfurt a.M., vol. 32, November 1928
- [351] Fehlmann, R., "Phase changes as a means of investigation of wave reflection in horns," Norges Tekniske Høgskole, Tech. Rep., 1990

- [352] Fehlmann, R. F., "Computer simulations and application of numerica techniques for acoustic waves in curved swiss horn," Ph.D. dissertation, Norwegian Institute of Technology, 1994
- [353] Feistel, S., Ahnert, W., Hughes, C., and Olson, B., "Simulating the directivity behaviour of loudspeaker with crossover filters," 123rd Convention of the Audio Engineering Society, Oct 2007, convention Paper 7254
- [354] Feng, X., Shen1, Y., Chen, S., and Zhao137, Y., "Analysis of sound field generated by line arrays with waveguides," 137th Convention of the Audio Engineering Society, Oct 2014, e-Brief no. 156
- [355] Ferguson, J., "Concrete behemoth speakers," Audio, pp. 21–23, 1968
- [356] Ferguson, J., "The concrete monster," Audio, vol. 38, no. 7, pp. 17–18, 51, Jul 1954
- [357] Ferralli, M. W., Moulton, D., Brugger, D., White, J., and Hebrock, S., "Wide dispersion frequency invariant acoustic lens," 79th Convention of the Audio Engineering Society, Oct 1985, preprint no. 2267
- [358] Fidlin, P. F. and Carlson, D. E., "Comparative performance of three types of directional devices used as concert-sound loudspeaker array elements," *J. Audio Eng. Soc.*, vol. 38, no. 4, pp. 271–295, Apr 1990
- [359] Fielder, L. D., "Dynamic-range issues in the modern digital audio environment," J. Audio Eng. Soc., vol. 43, no. 5, pp. 322–339, May 1995
- [360] Fielder, L. D., "Pre- and postemphasis techniques as applied to audio recording systems," J. Audio Eng. Soc., vol. 33, no. 9, pp. 649–658, Sep 1985
- [361] Fielder, L. D. and Benjamin, E. M., "Subwoofer performance for accurate reproduction of music," J. Audio Eng. Soc., vol. 36, no. 6, pp. 443–456, Jun 1988
- [362] Fincham, L. R., "The subjective importance of uniform group delay at low frequencies," 74th Convention of the Audio Engineering Society, Oct 1983, preprint no. 2056
- [363] Findell, I. H., McKenzie, A. R., Negishi, H., and Jewett, M., "Subjective evaluations of preferred loudspeaker directivity," 90th Convention of the Audio Engineering Society, Feb 1991, preprint no. 3076

- [364] Finehout, R., "Pioneering the talkies," American Cinematographer, pp. 36–40, Jan 1998
- [365] Finn, J. J., "New service, supply units to operate in the theatre field," *International Projectionist*, vol. 12, no. 11, pp. 27–30, Nov 1937
- [366] Finn, J. J., "Ex-Erpi employees organize altec corp. and take over all service contracts," *International Projectionist*, vol. 12, no. 12, p. 21, Dec 1937
- [367] Finn, J. J., "Observations anent... some current topics," *International Projectionist*, vol. 10, no. 5, pp. 7–8, May 1936
- [368] Finn, J. J., "The new w.e. 'Mirrophonic' sound-picture equipment," *International Projectionist*, vol. 11, no. 3, pp. 11– 14,29, Sept 1936
- [369] Finn, J. J., "New RCA ultra-violet recording a notable advance in the art," *International Projectionist*, vol. 10, no. 2, pp. 25–26, Feb 1936
- [370] Finn, J. J., "Formidable opposition developes to electrics' servicing," *International Projectionist*, vol. 8, no. 1, pp. 7–8, Jan 1935
- [371] Finn, J. J., "Projectionist extend sound system servicing," *International Projectionist*, vol. 8, no. 2, pp. 17–18, Feb 1935
- [372] Finn, J. J., "Erpi presses service plan; attempts to minimize and misrepresents craft opposition," *International Projectionist*, vol. 8, no. 4, pp. 12–14, Apr 1935
- [373] Finn, J. J., "Erpi abandons its plan for all-inclusive servicing," *International Projectionist*, vol. 9, no. 3, pp. 7–8, Sept 1935
- [374] Finn, J. J., "Atlas bid for Erpi reported; RCA-Erpi peace near," *International Projectionist*, vol. 9, no. 4, pp. 7–8, Oct 1935
- [375] Finn, J. J., "Electrics plan all-inclusive theatre servicing," *International Projectionist*, vol. 7, no. 6, pp. 5–7, Dec 1934
- [376] Firestone, F. A., "A new analogy between mechanical and electrical systems," J. Acoust. Soc. Am., vol. 4, pp. 249–267, Jan 1933
- [377] Fischer, F. A., "Die idealformen der elektroakustischen wandler und die eigenschaften der aus ihnen gebildeten kettenschaltungen," Acustica, vol. 6, pp. 421–424, 1956

- [378] Fitch, C. J., "A three foot roll-type speaker," *Radio News*, pp. 971,1030, Feb 1927
- [379] Flanagan, S., Moore, B. C. J., and Stone, M. A., "Discrimination of group delay in clicklike signals presented via headphones and loudspeakers," J. Audio Eng. Soc, vol. 53, no. 7/8, pp. 593–611, 2005.
 [Online]. Available: http://www.aes.org/ e-lib/browse.cfm?elib=13428
- [380] Flanders, P. B., "A method of measuring acoustic impedance," *Bell System Technical Journal*, vol. 11, pp. 402–410, Jul 1932
- [381] Flannagan, C., Wolf, R., and Jones, W. C., "Modern theater loud speakers and their development," J. Soc. Mot. Pic. Eng., vol. 26, no. 1, pp. 246–264, Mar 1937
- [382] Fleischer, H., "Über die ausgangsimpedanz von hörnern," Acustica, vol. 81, pp. 96–106, 1995
- [383] Fleming, J. A., "An experimental method for the production of vibrations on strings illustrating the properties of loaded or unloaded telephone cables," vol. 25, pp. 61–74, 1914
- [384] Fletcher, E. and Fletcher, D., "Superior HiFi sound," in *Proceedings of the Institute of Acoustics*, vol. 40, Nov 2018
- [385] Fletcher, H., "Hearing, the determining factor for high-fidelity transmission," *Proc. Inst. Rad. Eng.*, vol. 30, no. 6, pp. 266–277, 1942
- [386] Fletcher, H., "The stereophonic sound film system – general theory," J. Acoust. Soc. Am., vol. 13, no. 2, pp. 89–99, Oct 1941
- [387] Fletcher, H., "Stereophonic reproduction from film," *Bell Laboratories Record*, vol. 18, no. 9, pp. 260–265, May 1940
- [388] Fletcher, H., "Symposium on wire transmission of symphonic music and its reproduction in auditory perspective: Basic requirements," *Bell System Technical Journal*, vol. 13, pp. 239–244, Apr 1934
- [389] Fletcher, H., "The nature of speech and its interpretation," *Bell System Technical Journal*, vol. 1, no. 1, 1922
- [390] Fletcher, H., Speech and Hearing. D. Van Nostrand Co., New York, 1920
- [391] Fletcher, H. and Munson, W. A., "Relation between loudness and masking," J. Acoust. Soc. Am., vol. 9, pp. 1–10, Jul 1937

- [392] Fletcher, H. and Munson, W. A., "Loudness definition and measurement," J. Acoust. Soc. Am., vol. 5, pp. 82–108, Oct 1933
- [393] Fletcher, N. H. and Rossing, T., The physics of musical instruments. Springer Science & Business Media, 2012
- [394] Fletcher, N. H. and Rossing, T. D., The Physics of Musical Instruments, 2nd ed. Springer, 1998, ch. 8: Pipes Horns and Cavities, pp. 190–236
- [395] Fletcher, N. H. and Thwaites, S., "Obliquely truncated simple horns: Idealized models for vertebrate pinnae," *Acoustica*, vol. 65, pp. 194–204, 1988
- [396] Foley, A. L., "A photographic study of sound pulses between curved walls and sound amplification by horns," *Phys. Rev., Second Series*, vol. 20, no. 6, pp. 505–512, Dec 1922
- [397] Fontanesi, L. and Salvini, A., "A circuit approach to short circuit ring design for high power woofers," 116th Convention of the Audio Engineering Society, May 2004, convention Paper no. 6096
- [398] Forbes, B. J. and Pike, E. R., "Acoustical Klein-Gordon equation: A time-independent perturbation analysis," *Phys. Rev. Lett.*, vol. 93, no. 5, p. 054301, Jul 2004
- [399] Frank, J., "RCA Photophone High-Fidelity Sound Reproducing Equipment," J. Soc. Mot. Pic. Eng., vol. 27, no. 1, pp. 99–104, Jul 1936
- [400] Franklin, W. S., "Some mechanical analogies in electricity and magnetism," *General Electric Review*, vol. 19, no. 4, pp. 264–269, April 1916
- [401] Frayne, J. G., "Motion picture sound recording," J. Audio Eng. Soc., vol. 24, no. 6, pp. 512–516, Jul/Aug 1976
- [402] Frayne, J. G. and Locanthi, B. N., "Theater loudspeaker system incorporating an acoustic-lens radiator," *Journal of the SMPTE*, vol. 63, pp. 82–85, Sept 1954
- [403] Freehafer, J. E., "The acoustical impedance of an infinite hyperbolic horn," J. Acoust. Soc. Am., vol. 11, pp. 467–476, Apr 1940
- [404] Freehafer, J. E., "The velocity potential of an hyperbolic horn," Ph.D. dissertation, Mass. Inst. Tech., 1937
- [405] Frey, P. and George, P.-L., Mesh generation. John Wiley & Sons, 2013

- [406] Friedl, G., "New motion picture apparatus," J. Soc. Mot. Pic. Eng., vol. 31, no. 5, pp. 511–531, Nov 1938
- [407] Fryer, P. A., "Horn acoustics: Calculation through the horn cutoff frequency," J. Audio Eng. Soc., vol. 51, no. 1/2, pp. 45–51, Jan/Feb 2003
- [408] Furnell, G. D. and Bies, D. A., "Characteristics of modal wave propagation within longitudinally curved acoustic waveguides," *Journal of Sound and Vibration*, vol. 130, pp. 405–423, 1989
- [409] Furnell, G. D. and Bies, D. A., "Matrix analysis of acoustic wave propagation within curved ducting systems," *Journal of Sound* and Vibration, vol. 132, pp. 245–263, 1986
- [410] Futtrup, C. (2016, Apr) Designing loudspeaker boxes. [Online]. Available: http://www.cfuttrup.com/blogspot/ Book_05_Futtrup.pdf
- [411] Futtrup, C., "Losses in loudspeaker enclosures," 130th Convention of the Audio Engineering Society, 2011, preprint no. PP8324
- [412] Gaidarov, A., "A problem of efficiency of loudspeakers," 21st Conference of the Audio Engineering Society, Russia, Jun 2002
- [413] Gander, M. R., "Correction to ground plane acoustic measurement of loudspeaker systems," J. Audio Eng. Soc., vol. 34, no. 1/2, p. 49, Jan/Feb 1986
- [414] Gander, M. R., "Dynamic linearity and power compression in moving-coil loudspeakers," J. Audio Eng. Soc., vol. 34, no. 9, pp. 627–646, Sep 1986
- [415] Gander, M. R., "Ground plane acoustic measurement of loudspeaker systems," J. Audio Eng. Soc., vol. 30, no. 10, pp. 723–731, Oct 1982
- [416] Gander, M. R., "Moving-coil loudspeaker topology as an indicator of linear excursion capability," J. Audio Eng. Soc., vol. 29, no. 1/2, pp. 10–26, Jan/Feb 1981
- [417] Gander, M. R. and Eargle, J. M., "Measurement and estimation of large loudspeaker array performance," J. Audio Eng. Soc., vol. 38, no. 4, pp. 204–220, Apr 1990
- [418] Garity, W. E. and Hawkins, J. N. A., "Fantasound," J. Soc. Mot. Pic. Eng., vol. 37, no. 2, pp. 127–146, Aug 1941

- [419] Gasparini, M., Capucci, E., Cecchi, S., Toppi, R., and Piazza, F., "A comparison of optimization methods for compression driver design," 140th Convention of the Audio Engineering Society, June 2016, convention Paper no. 9508
- [420] Gasparini, M., Cecchi, S., Piazza, F., Capucci, E., and Toppi, R., "Multiphysic modeling and heuristic optimization of compression driver design," 136th Convention of the Audio Engineering Society, Apr 2014, convention Paper no. 9069
- [421] Geaves, G. P. and Henwood, D. J., "Horn optimisation using numerical methods," 100th Convention of the Audio Engineering Society, May 1996, preprint no. 4208
- [422] Geddes, E., "Acoustic lens, their design and application," 61st Convention of the Audio Engineering Society, Nov 1978, preprint no. 1401
- [423] Geddes, E. and Lee, L., Audio Transducers. GedLee LLC, Novi, MI, 2002, ISBN 0-9722085-0-X
- [424] Geddes, E. and Lee, L. (2002) Audio transducers, appendix. [Online]. Available: http://www.gedlee.com/downloads/ AT/Appendix_A.pdf
- [425] Geddes, E., Porter, J., and Tang, Y.,
 "A boundary-element approach to finiteelement radiation problems," J. Audio Eng. Soc., vol. 35, no. 4, pp. 211– 229, Apr 1987. [Online]. Available: http: //www.aes.org/e-lib/browse.cfm?elib=5215
- [426] Geddes, E. R., "Comments on estimating the velocity profile and acoustical quantities of a harmonically vibrating loudspeaker membrane from on-axis pressure data," *J. Audio Eng. Soc.*, vol. 58, no. 4, pp. 308–310, Apr 2010
- [427] Geddes, E. R., "Horn operation," audioXpress, no. 3, p. 42, 2009
- [428] Geddes, E. R., "Solving the horn equation for the OS waveguide," 2009, private communication
- [429] Geddes, E. R., "Directivity in loudspeaker systems," 2009, gedLee, LLC White Paper
- [430] Geddes, E. R., "How horns work revisited," audioXpress, no. 12, pp. 18–23, 2008
- [431] Geddes, E. R. (2008, Apr) Sound quality improvements in compression driver systems

- [432] Geddes, E. R., Premium Home Theater: Design and Construction. GedLee LLC, Novi, MI, 2002
- [433] Geddes, E. R., "On sound radiation from ported enclosures," J. Audio Eng. Soc., vol. 49, no. 3, pp. 117–124, Mar 2001
- [434] Geddes, E. R., "The acoustic lever loudspeaker enclosure," J. Audio Eng. Soc., vol. 47, no. 1/2, pp. 3–13, Jan/Feb 1999
- [435] Geddes, E. R., "Correction to "an introduction to band-pass loudspeaker systems"," J. Audio Eng. Soc., vol. 42, no. 3, p. 152, Mar 1994
- [436] Geddes, E. R., "Sound radiation from acoustic apertures," J. Audio Eng. Soc., vol. 41, no. 4, pp. 214–230, Apr 1993
- [437] Geddes, E. R., "Acoustic waveguide theory revisited," J. Audio Eng. Soc., vol. 41, no. 6, pp. 452–461, Jun 1993
- [438] Geddes, E. R., "On the use of the hankel transform for sound radiation," 93rd Convention of the Audio Engineering Society, Oct 1992, preprint no. 3428
- [439] Geddes, E. R., "An introduction to bandpass loudspeaker systems," J. Audio Eng. Soc., vol. 37, no. 5, pp. 308–342, May 1989
- [440] Geddes, E. R., "Acoustic waveguide theory," J. Audio Eng. Soc., vol. 37, no. 7/8, pp. 554– 569, Jul/Aug 1989
- [441] Geddes, E. R., "Maximum entropy, auto regression, pole-zero modeling... on the use of modern spectral estimation in audio testing," 87th Convention of the Audio Engineering Society, Oct 1989, preprint no. 2883
- [442] Geddes, E. R., "Acoustic waveguide theory," 83rd Convention of the Audio Engineering Society, Oct 1987, preprint no. 2547
- [443] Geddes, E. R., "Source radiation characteristics," J. Audio Eng. Soc., vol. 34, no. 6, pp. 464–478, Jun 1986
- [444] Geddes, E. R., Bauman, P. D., and Adamson, A. B., "Acoustic waveguides – in practice," J. Audio Eng. Soc., vol. 41, no. 6, pp. 462–470, Jun 1993
- [445] Geddes, E. R. and Clark, D., "Computer simulation of horn-loaded compression drivers," J. Audio Eng. Soc., vol. 35, no. 7/8, pp. 556–566, Jul/Aug 1987

- [446] Geddes, E. R. and Lee, L. W., "Auditory perception of nonlinear distortion – theory," 115th Convention of the Audio Engineering Society, Oct 2003, convention Paper 5890
- [447] Geddes, E. R. and Lee, L. W., "Auditory perception of nonlinear distortion," 115th Convention of the Audio Engineering Society, Oct 2003, convention Paper 5891
- [448] Geddes, E. R., Lee, L. W., and Magalotti, R., "Subjective testing of compression drivers," J. Audio Eng. Soc., vol. 53, no. 12, pp. 1152–1157, Dec 2005
- [449] Geddes, E. R. and Philips, A., "Efficient loudspeaker linear and nonlinear parameter estimation," 91st Convention of the Audio Engineering Society, Oct 1991, preprint no. 3164
- [450] Geddes, E. R. and Porter, J., "Loudspeaker cabinet edge diffraction," 85th Convention of the Audio Engineering Society, Nov 1988, preprint no. 2730
- [451] Geddes, E. R. and Porter, J., "Finite element approximation for low-frequency sound in a room with absorption," J. Acoust. Soc. Am., vol. 83, no. 4, pp. 1431–1435, Apr 1988
- [452] Geertsen, O. N., "A study of finite amplitude distortion of a sound wave in air," J. Acoust. Soc. Am., vol. 25, no. 1, p. 192, 1953
- [453] Geiger, W. E., "Servo control of loudspeaker cone motion using an optical linear displacement sensor," J. Audio Eng. Soc., vol. 52, no. 6, pp. 518–524, Jun 2005
- [454] Gelatt, R., The Fabulous Phonograph 1877-1977. MacMillan Publishing Company, 1977, ch. 16 - Recording Becomes Electric, pp. 219–228
- [455] Gerlach, E., "Vorführung eines neuen Lautsprechers II." Zeitschr. f. techn. Physik, vol. 5, pp. 576–577, 1924
- [456] Gerstgrasser, M. (2008) Introducing "back diaphragm mirror distortion" (BDMD) and its implications to loudspeaker design
- [457] Gerzon, M. A., "Calculating the directivity factor of transducers from limited polar diagram information," J. Audio Eng. Soc., vol. 23, no. 5, pp. 369–373, Jun 1975
- [458] Gigli, A. and Sacerdote, G. G., "Measurements of mechanical impedances by a resonance method," *Acustica*, vol. 6, pp. 180– 185, 1956

- [459] Gilliom, J. R., Boliver, P. L., and Boliver, L. C., "Design problems of high-level cone loudspeakers," *J. Audio Eng. Soc.*, vol. 25, no. 5, pp. 294–299, May 1977
- [460] Gilson, W. E. and Andrea, J. J., "A symmetrical corner speaker," *Audio Engineering*, pp. 16–17, Mar 1950
- [461] Glenn, W. E., "Terminated horn enclosures," *IRE Transactions on Audio*, pp. 143–145, 1956
- [462] Gloukhov, A., "A method of loudspeaker directivity prediction based on Huygens-Fresnel principle," 115th Convention of the Audio Engineering Society, Oct 2003, convention Paper no. 5985
- [463] Godinho, L., Mendes, P. A., Ramis, J., Cardenas, W., and Carbajo, J., "A numerical MFS model for computational analysis of acoustic horns," *Acta Acustica united with Acustica*, vol. 98, no. 6, pp. 916–927, 2012
- [464] Goldman, A., Handbook of Modern Ferromagnetic Materials. Springer Science+Business Media, LLC, 1999, iSBN 978-1-4613-7230-1
- [465] Goldman, S., "Supersonic measurements of the directional characteristics of horns," J. Acoust. Soc. Am., vol. 5, no. 1, pp. 181–195, Jan 1934
- [466] Goldsmith, A. N. and Minton, J. P., "The performance and theory of loudspeaker horns," *Proc. Inst. Rad. Eng.*, vol. 12, pp. 423–478, Aug 1924
- [467] Goldstein, S. and McLachlan, N. W., "Sound waves of finite amplitude in an exponential horn," J. Acoust. Soc. Am., vol. 6, pp. 275– 278, Apr 1935
- [468] Goodfriend, L. S., "Dynamical analogies part i," Audio Engineering, pp. 20, 46–47, Sep 1950
- [469] Goodfriend, L. S., "Dynamical analogies part II," Audio Engineering, pp. 36, 61, Oct 1950
- [470] Goussios, C., Kalliris, G., Dimoulas, C., Papanikolaou, G., and Charalampidis, S.-M.,
 "Improvements of a horn-loaded omnidirectional sound source," 114th Convention of the Audio Engineering Society, Mar 2003, convention Paper no. 5750
- [471] Graham, M. L., "Photophone loudspeaker systems and networks," Internal RCA document

- [472] Graham, M. L., "New high powered sound projectors," *Broadcast News*, no. 27, pp. 4– 5,19, Dec. 1937
- [473] Graveson, G. L., "W.E.'s new 8-system theatre speaker line," *International Projectionist*, vol. 22, no. 10, pp. 5–6, Oct 1947
- [474] Green, I. W. and Maxfield, J. P., "Public address systems," J. Am. Inst. Elec. Eng., vol. 42, pp. 347–358, Apr 1923, reprinted in J. Audio Eng. Soc., vol. 25, no. 4, April 1977
- [475] Greiner, R., "Tone burst testing on selected electronic crossover networks," J. Audio Eng. Soc., vol. 30, no. 7/8, pp. 522–527, Jul/Aug 1982
- [476] Greiner, R. A. and Eggers, J., "The spectral amplitude distribution of selected compact discs," *J. Audio Eng. Soc.*, vol. 37, no. 4, pp. 246–248, 250, 252, 254, 256, 258–275, Apr 1989
- [477] Greiner, R. A. and Melton, D. E., "Observations on the audibility of acoustic polarity," *J. Audio Eng. Soc.*, vol. 42, no. 4, pp. 245– 253, Apr 1994
- [478] Griesinger, D., "Reproducing low frequency spaciousness and envelopment in listening rooms," 145th Convention of the Audio Engineering Society, Oct 2018, convention Paper no. 10063
- [479] Griesinger, D., "The physics of auditory proximity and its effects on intelligibility and recall," 141st Convention of the Audio Engineering Society, Sept 2016, convention Paper 9659
- [480] Griesinger, D. (2013) What is clarity and how can it be measured, presentation to the joint asa-ica meeting in montreal 2013. presentation to the joint ASA-ICA meeting in Montreal 2013. [Online]. Available: |
- [481] Griesinger, D., "Pitch, timbre, source separation, and the myths of loudspeaker imaging," 132nd Convention of the Audio Engineering Society, Apr 2012, convention Paper 8610
- [482] Griesinger, D., "The importance of the direct to reverberant ratio in the perception of distance, localization, clarity, and envelopment," 132nd Convention of the Audio Engineering Society, May 2009, convention Paper 7724
- [483] Griffin, K. M., "Fantasound: A retrospective of the groundbreaking sound system of disney," Master's thesis, Colorado Mesa University, 2008

- [484] Gužas, D., Noise Propagation by Cylindrical Pipes and Means of its Reduction. Science and Encyclopaedia Publishers, Vilnius, 1994
- [485] Guigue, J.-F., "Pavillons Iwata made in France: 1 – la grande aventure," L'Audiophile, no. 21, Sept 1981
- [486] Gunness, D. W., "Improving loudspeaker transient response with digital signal processing," 119th Convention of the Audio Engineering Society, Oct 2005, convention Paper
- [487] Gunness, D. W. and Hoy, W. R., "A spectrogram display for loudspeaker transient response," 119th Convention of the Audio Engineering Society, Sep 2005, convention Paper
- [488] Gunness, D. W. and Hoy, W. R., "Improved loudspeaker array modeling – part 2," 109th Convention of the Audio Engineering Society, Sep 2000, preprint no. 5211
- [489] Gunness, D. W. and Hoy, W. R., "Improved loudspeaker array modeling," 107th Convention of the Audio Engineering Society, Sep 1999, preprint no. 5020
- [490] Hélie, T., "Unidimensional models of acoustic propagation in axisymmetric waveguides," J. Acoust. Soc. Am., vol. 114, no. 5, pp. 2633–2647, Nov 2003
- [491] Hélie, T., Hézard, T., Mignot, R., and Matignon, D., "One-dimensional acoustic models of horns and comparison with measurements," Acta Acustica united with Acustica, vol. 99, no. 6, pp. 960–974, 2013
- [492] Hélie, T. and Rodet, X., "Radiation of a pulsating portion of a sphere: Application to horn radiation," Acta Acustica united with Acustica, vol. 89, no. 4, pp. 567–577, Jul/Aug 2003
- [493] Hague, B., "The leakage flux between parallel pole-cores of circular cross-section," J. Institution of Electrical Engineers, vol. 61, no. 323, pp. 1072–1078, 1923
- [494] Hall, W. M., "An acoustic transmission line for impedance measurement," J. Acoust. Soc. Am., vol. 11, pp. 140–146, Jul 1939
- [495] Hall, W. M., "An investigation of sound fields in regions restricted by finite boundaries," Master's thesis, Mass. Inst. Tech., 1932
- [496] Hall, W. M., "Comments on the theory of horns," J. Acoust. Soc. Am., vol. 3, pp. 552– 561, 1932

- [497] Hall, W. M. and Fay, R. D., "The deterimination of the acoustic output of a telephone receiver from input measurements," J. Acoust. Soc. Am., vol. 5, pp. 46–56, Jul 1933
- [498] Halvorsen, G. T. and Fløholm, S. R., "Foldet horn," Norges Tekniske Høgskole, Tech. Rep., 1976
- [499] Halvorsen, M., "Flux modulation in the electrodynamic loudspeaker," Master's thesis, Technical University of Denmark, Department of Electrical Engineering, 2014
- [500] Halvorsen, M., Tinggaard, C., and Agerkvist, F. T., "Flux modulation in the electrodynamic loudspeaker," 138th Convention of the Audio Engineering Society, May 2015, convention Paper no. 9317
- [501] Hanna, C., "Loudspeakers of high efficiency and load capacity," *Trans. Am. Inst. Elec. Eng.*, pp. 607–614, 1928
- [502] Hanna, C. R., "Theory of the horn-type loud speaker," J. Acoust. Soc. Am., vol. 2, no. 2, pp. 150–156, Oct 1930
- [503] Hanna, C. R., "Theory of the electrostatic loud speaker," J. Acoust. Soc. Am., vol. 2, no. 2, pp. 143–149, Oct 1930
- [504] Hanna, C. R., "On the propagation of sound in the general Bessel horn of infinite length," *J. Frankl. Inst.*, vol. 203, pp. 849–853, Jun 1927
- [505] Hanna, C. R. and Slepian, J., "The function and design of horns for loud speakers (and discussion)," *Trans. Am. Inst. Elec. Eng.*, vol. 43, pp. 393–411, Feb 1924
- [506] Hansen, V. and Madsen, E. R., "On aural phase detection," J. Audio Eng. Soc., vol. 22, no. 1, pp. 10–14, Jan 1974
- [507] Hansen, V. and Madsen, E. R., "On aural phase detection: Part II," J. Audio Eng. Soc., vol. 22, no. 10, pp. 783–788, Dec 1974
- [508] Harari, I., Barbone, P. E., Slavutin, M., and Shalom, R., "Boundary infinite elements for the Helmholtz equation in exterior domains," *International Journal for Numerical Meth*ods in Engineering, vol. 41, pp. 1105–1131, 1998
- [509] Harper, A., "The sound of arrayed loudspeaker systems," Master's thesis, University of Southampton, Faculty of Engineering and the Environment, Institute of Sound and Vibration Research, 2012

- [510] Harris, C. M., Biographical memoirs, Volum 58. National Academy of Sciences, 1989, ch. Harry F. Olson – A Biographical Memoir, pp. 407–423
- [511] Harris, L. E., "Development of a modulation transfer function-based method for evaluating bass reproduction accuracy in professional monitoring loudspeakers," Ph.D. dissertation, University of Southampton, Faculty of Engineering and the Environment, Institute of Sound and Vibration Research, Jul 2015
- [512] Harris, L. E., Newell, P. R., and Holland, K. R., "The 'bass transmission index': A new concept for evaluating loudspeaker performance," in *Proceedings of the Institute of Acoustics*, vol. 40, Nov 2018
- [513] Harris, N. and Hawksford, M., "Introduction to distributed mode loudspeakers (DML) with first-order behavioural modelling," *IEE Proc. Circuits Devices Syst.*, vol. 147, no. 3, pp. 153–157, Jun 2000
- [514] Harris, N. and Hawksford, M. O. J., "Measurement and simulation results comparing the binaural acoustics of various direct radiators," 107th Convention of the Audio Engineering Society, Sep 1999, preprint no. 5015
- [515] Harrison, "The new Wave-Transmission phonograph," *Popular Radio*, vol. IX, no. 1, pp. 3–9, January 1926
- [516] Hartley, ""TU" becomes "decibel"," Bell Laboratories Record, vol. 7, no. 4, pp. 137–139, December 1928, mile of standard cable - TU - decibel - R.V.L. Hartley
- [517] Harvey, F. K. and Schroeder, M. R., "Subjective evaluation of factors affecting twochannel stereophony," *J. Audio Eng. Soc.*, vol. 9, no. 1, pp. 19–28, Jan 1961
- [518] Harwood, H. D., "Loudspeaker distortion with low-frequency signals," J. Audio Eng. Soc., vol. 20, no. 9, pp. 718–728, Nov 1972
- [519] Hassall, J. R. and Zaveri, K., Acoustic Noise Measurements. Brüel & Kjær, 1979
- [520] Hayakawa, J., Iwakura, S., Yamazaki, K., and Matsuoka, S., "Spherical wave front baffle," 82nd Convention of the Audio Engineering Society, Mar 1987, preprint no. 2450
- [521] Hayes, C. D., "Acoustic spectrum shaping utilizing finite hyperbolic horn theory," Jet Propulsion Laboratory, California Institute of Technology, Tech. Rep. 32-1141, Aug 1967

- [522] Haynes, F. H., "Permanent magnet moving coil loud speaker," *The Wireless World*, pp. 60–65, 1930, january 15th
- [523] von Helmholtz, H., On the Sensations of Tone as a Physiological Basis for the Theory of Music, third english ed. ed., (transl.), A. J. E., Ed. Longmans, Green and Co., 1895
- [524] Hendrie, D. A., "Development of bore reconstruction techniques applied to the study of brass wind instruments," Ph.D. dissertation, University of Edinburgh, 2009
- [525] Henricksen, C. A., "Auto Q: A New Directivity Measurement System," 60th Convention of the Audio Engineering Society, May 1978, preprint no. 1360
- [526] Henricksen, C. A., "Phase plug modelling and analysis; radial versus circumferential types," 59th Convention of the Audio Engineering Society, Feb 1978, preprint no. 1328
- [527] Henricksen, C. A., "Ultimate performance of wide-range high-frequency compression drivers," J. Audio Eng. Soc., vol. 24, no. 8, pp. 639–642, Oct 1976
- [528] Henricksen, C. A., "Phase plug modelling and analysis: Circumferential versus radial types," 55th Convention of the Audio Engineering Society, Oct 1976, preprint no. 1140
- [529] Henricksen, C. A. and Ureda, M. S., "The Manta-Ray Horns," J. Audio Eng. Soc., vol. 26, no. 9, pp. 629–634, Sep 1978
- [530] Henricksen, C. A. and Ureda, M. S., "Blasphemy : the Manta-Ray horns!" 58th Convention of the Audio Engineering Society, Nov 1977, preprint no. 1288
- [531] Henwood, D. J., "The boundary-element method and horn design," J. Audio Eng. Soc., vol. 41, no. 6, pp. 485–496, June 1993. [Online]. Available: http://www.aes. org/e-lib/browse.cfm?elib=6995
- [532] Herd, J. F., "The transmission unit and its application to radio measurements," *Experimental Wireless & The Wireless Engineer*, pp. 17–22, Jan 1929
- [533] Heyser, R. C., "Determining the acoustic position for proper phase response of transducers," J. Audio Eng. Soc., vol. 32, no. 1/2, pp. 23–25, Jan/Feb 1984
- [534] Heyser, R. C., "Determination of loudspeaker signal arrival times: Part 1," J. Audio Eng. Soc., vol. 19, no. 9, pp. 734–743, Oct 1971

- [535] Heyser, R. C., "Loudspeaker phase characteristics and time delay distortion: Part 1," *J. Audio Eng. Soc.*, vol. 17, no. 1, pp. 30–41, Jan 1969
- [536] Heyser, R. C., "Loudspeaker phase characteristics and time delay distortion: Part 2," *J. Audio Eng. Soc.*, vol. 17, no. 2, pp. 130– 137, Apr 1969
- [537] Hilliard, J. K., "A brief history of early motion picture sound recording and reproducing practices," J. Audio Eng. Soc., vol. 33, no. 4, pp. 271–278, Apr 1985
- [538] Hilliard, J. K., "A review of early developments in electroacoustics in the USA," 57th Convention of the Audio Engineering Society, May 1977, preprint no. 1264
- [539] Hilliard, J. K., "Electroacoustics to 1940," J. Acoust. Soc. Am., vol. 61, no. 2, pp. 267–273, Feb 1977
- [540] Hilliard, J. K., "Historical review of horns used for audience-type sound reproduction," *J. Acoust. Soc. Am.*, vol. 59, no. 1, pp. 1–8, Jan 1976
- [541] Hilliard, J. K., "Unbaffled loudspeaker column arrays," J. Audio Eng. Soc., vol. 18, no. 6, pp. 672–673, Dec 1970
- [542] Hilliard, J. K., "An improved theater type loudspeaker system," 36th Convention of the Audio Engineering Society, Apr 1969, preprint no. 649
- [543] Hilliard, J. K., "High power low frequency loudspeakers," J. Audio Eng. Soc., vol. 13, no. 3, pp. 229–231, Jul 1965
- [544] Hilliard, J. K., "Notes on how phase and delay distortions affect the quality of speech music and sound effects," *IEEE Transactions on Audio*, pp. 23–25, Mar-Apr 1964
- [545] Hilliard, J. K., "Equipment for stereophonic sound reproduction - panel discussion," J. Soc. Mot. Pic. Eng., vol. 62, pp. 228–238, Mar 1954
- [546] Hilliard, J. K., "Theatre loudspeaker design, performance, and measurement," J. Soc. Mot. Pic. Eng., vol. 52, pp. 629–640, Jun 1949
- [547] Hilliard, J. K., "Portable and semiportable loudspeaker systems for reproducing 16-mm sound on film," J. Soc. Mot. Pic. Eng., vol. 49, no. 5, pp. 431–438, Nov 1947

- [548] Hilliard, J. K., "An analysis of the comparison of beam power and triode tubes used in power amplifiers for driving loudspeakers," *J. Soc. Mot. Pic. Eng.*, vol. 46, pp. 30–36, Jan 1946
- [549] Hilliard, J. K., "A study of theatre loud speakers and the resultant development of the shearer two-way horn system," J. Soc. Mot. Pic. Eng., vol. 27, no. 1, pp. 45–60, Jul 1936
- [550] Hilliard, J. K., "A two-way horn system," *Electronics*, vol. 9, pp. 24–27, 1936
- [551] Hilliard, J. K. and Kimball, H. R., "Dividing networks for loud speaker systems," J. Soc. Mot. Pic. Eng., vol. 27, no. 1, pp. 61–73, Jul 1936
- [552] Hilliard, J. K. and Renkus, J. A., "Development of horn-type moving coil driver unit," *J. Audio Eng. Soc.*, vol. 14, no. 4, pp. 328– 331, Oct 1966
- [553] Hipperson, J., "Low distortion wide bandwidth midrange loudspeakers," in *Proceed*ings of the Institute of Acoustics, vol. 40, Nov 2018
- [554] Hiraga, J., Les Haut-Parleurs, 3rd ed. Dunod, 2000, ISBN 2 10 005268 3. First edition 1980.
- [555] Hiraga, J., "Les recherches de Monsieur Iwata," Le Audiophile, no. 3, Feb 1978
- [556] Hochheiser, S., "What makes the picture talk: AT&T and the development of sound motion picture technology," *IEEE Transactions on Education*, vol. 35, no. 4, pp. 278– 285, Nov 1992
- [557] Hochheiser, S., "AT&T and the developement of sound motion-picture technology," pp. 23–33, 1989
- [558] Hodgson, T., "Single-ended amplifier, feedback and horns: Some history," Sound Practices, pp. 39–42, Spring 1994
- [559] Hodgson, T. H. and Underwood, R. L., "BEM computations of a finite-length acoustic horn and comparison with experiment," in Computational Acoustics and its Environmental Applications, 1997
- [560] Hoersch, V. A., "Non-radial vibrations within a conical horn," *Phys. Rev.*, vol. 25, pp. 218–224, 1925
- [561] Hoersch, V. A., "Theory of the optimum angle in a receiving conical horn," *Phys. Rev.*, vol. 25, pp. 225–229, 1925

- [562] Holland, K. R., "Horn loudspeakers for live sound," Audio Engineering Society 18th UK Conference, 2003
- [563] Holland, K. R., "A study of the physical properties of mid-range loudspeaker horns and their relationship to perceived sound quality," Ph.D. dissertation, University of Southampton, 1992
- [564] Holland, K. R., Fahy, F. J., and Morfey, C. L., "Prediction and measurement of the one-parameter behavior of horns," *J. Audio Eng. Soc.*, vol. 37, no. 5, pp. 315–337, May 1991
- [565] Holland, K. R., Fahy, F. J., and Newell, P. R., "The sound of midrange horns for studio monitors," *J. Audio Eng. Soc.*, vol. 44, no. 1/2, pp. 23–36, Jan/Feb 1996
- [566] Holland, K. R. and Morfey, C. L., "A model of nonlinear propagation in horns," J. Audio Eng. Soc., vol. 44, no. 7/8, pp. 569–580, Jul/Aug 1996
- [567] Holland, K. R. and Newell, P. R., "Loudspeakers, mutual coupling and phantom images in rooms," 103rd Convention of the Audio Engineering Society, Sep 1997, preprint no. 4581
- [568] Holm, J., "Applying the Finite Element Method for modelling loudspeaker waveguide directivity," Master's thesis, Aalto University, May 2010
- [569] Holm, S. and Skramstad, R., "Reduction of distortion in conical horn loudspeakers at high levels," 126th Convention of the Audio Engineering Society, May 2009, convention Paper
- [570] Holmes, T. J., "The "acoustic resistance box" – a fresh look at an old principle," J. Audio Eng. Soc., vol. 34, no. 12, pp. 981–989, Dec 1986
- [571] Holtsmark, J., Lothe, J., Tjøtta, S., and Romberg, W., "Theoretical investigation of sound transmission through horns of small flare, with special emphasis on the exponential horn," Arch. Math. Naturvidenskap, vol. 53, no. 8, pp. 139–181, 1955
- [572] Homentcovschi, D. and Miles, R. N., "A re-expansion method for determining the acoustical impedance and the scattering matrix for the waveguide discontinuity problem," J. Acoust. Soc. Am., vol. 128, no. 2, pp. 628–638, Aug 2010

- [573] Hopkins, H. F., "An improved loud-speaking telephone," *Bell Laboratories Record*, vol. 19, pp. 251–254, Apr 1940
- [574] Hopkins, H. F. and Keith, C. R., "New theater loudspeaker system," J. Soc. Mot. Pic. Eng., vol. 51, no. 4, pp. 385–398, 1948
- [575] Hopkins, H. F. and Stryker, N. R., "A proposed loudness-efficiency rating for loudspeakers and the determination of system power requirements for enclosures," *Proceedings of the IRE*, vol. 36, no. 3, pp. 315–335, 1948
- [576] Hopper, F. L. and Moody, R. C., "Wave propagation and outdoor field tests of a loudspeaker system," J. Soc. Mot. Pic. Eng., vol. 46, no. 2, pp. 115–123, Feb 1946
- [577] Horn, "P.G.A.H. Voigt an anniversary," British Vintage Wireless Society Bulletin, vol. 27, no. 4, pp. 22–25, 2002
- [578] Horn, G., Sound Bites 50 years of Hi-Fi News. IPC Media, 2005, ch. 1. Prehistory: the era of Paul Voigt; Percy Wilson: a gramophone man, pp. 25–32
- [579] Horvat, M. and Prosen, T., "The bends on a quantum waveguide and cross-products of Bessel functions," *Journal of Physics A: Mathematical and Theoretical*, vol. 40, pp. 6349–6379, 2007
- [580] Hoselitz, Ferromagnetic Properties of Metals and Alloys. Oxford at the Clarendon Press, 1952
- [581] Howze, B., "Community midrange drivers: Their design principles and some current applications," UK 2nd Conference of the Audio Engineering Society, 1989, paper no. SRE-11
- [582] Howze, B. and Henricksen, C. A., "A high-efficiency, one-decade midrange loudspeaker," 70th Convention of the Audio Engineering Society, Oct 1981, preprint no. 1848
- [583] Hubbard, J. K., "Subharmonic and nonharmonic distortions generated by high frequency compression drivers," 6th International Conference of the Audio Engineering Society, May 1988, paper no. 6-029
- [584] Hudde, H., "Acoustical higher-order mode scattering matrix of circular nonuniform lossy tubes without flow," J. Acoust. Soc. Am., vol. 85, pp. 2316–2330, 1989

- [585] Hudde, H., "The propagation constant in lossy circular tubes near the cutoff frequencies of higher-order modes," J. Acoust. Soc. Am., vol. 83, no. 4, pp. 1311–1318, Apr 1988
- [586] Hudde, H. and Letens, U., "Scattering matrix of a discontinuity with a nonrigid wall in a lossless circular duct," J. Acoust. Soc. Am., vol. 78, no. 5, pp. 1826–1837, Nov 1985
- [587] Hughes, C., "Progressive degenerate ellipsoidal phase plug," 139th Convention of the Audio Engineering Society, Oct 2015, convention Paper no. 9388
- [588] Hughes, C. E., "A generalized horn design to optimize directivity control & wavefront curvature," 107th Convention of the Audio Engineering Society, Sep 1999, preprint no. 5016
- [589] Hunt, F. L., "Sound pictures in auditory perspective," J. Soc. Mot. Pic. Eng., vol. 31, no. 4, pp. 351–357, Oct 1938
- [590] Hunt, F. L., "Recent progress in the acoustics of sound recording and reproduction for motion pictures," *Rev. Sci. Instr.*, vol. 7, pp. 323–328, Sep 1936
- [591] Hunt, F. V., Origins in Acoustics. Yale University Press, 1978
- [592] Hunt, F. V., *Electroacoustics*. Harvard University Press, 1954
- [593] Hutt, S., "Loudspeaker spider linearity," 108th Convention of the Audio Engineering Society, Feb 2000, preprint no. 5159
- [594] Ianniello, C., "A proposed method for measuring the steady state pure tone directivity factor of loudspeaker in ordinary rooms," *Acustica*, vol. 45, pp. 68–71, 1980
- [595] Ingerslev, F., "Måling af lineær og ulineær forvrængning i elektrodynamiske højtalere," Ph.D. dissertation, Den polytekniske Læreanstalt, 1953
- [596] Inoue, T., "Usefulness in the estimation of the response of finite plane baffles – theory of a developed doublet model, part ii," Acustica, vol. 56, pp. 136–143, 1984
- [597] Inoue, T. and Takeda, T., "The blocked impedance of mass-controlled moving-coil loudspeakers," *Acustica*, vol. 78, pp. 74–83, 1993
- [598] Iversen, N. E., Knott, A., and Andersen, M. A. E., "Relationship between voice coil fill factor and loudspeaker efficiency," *J. Audio*

Eng. Soc., vol. 64, no. 4, pp. 241–252, April 2015

- [599] Iverson, J. K., "The theory of loudspeaker cabinet resonances," J. Audio Eng. Soc., vol. 21, no. 3, pp. 177–180, Apr 1973
- [600] Jacobsen, F. and Juhl, P., "Radiation of sound," Technical University of Denmark, Tech. Rep., Apr 2011. [Online]. Available: http://web-files.ait.dtu.dk/fjac/ p_home_page/notes/Radiation.pdf
- [601] Jacobsen, O., "Some aspects of the self and mutual radiation impedance concept with respect to loudspeakers," J. Audio Eng. Soc., vol. 24, no. 2, pp. 82–92, Mar 1976
- [602] Janovsky, W., "Über den Zusammenhang zwishen Schallempfindung und Shallreiz und seinen Einfluss auf die Hörbarkeit von Verzerrungen," Zeitschr. f. techn. Physik, no. 12, pp. 611–621, 1931
- [603] Jansson, E. V. and Benade, A. H., "On plane and spherical waves in horns with nonuniform flare part 2," *Acoustica*, vol. 31, no. 4, pp. 185–202, 1974
- [604] JBL Professional, "Progressive transition(TM) (PT) waveguides," Technical Notes Volume 1, Number 31, 2002
- [605] Jean, P., "Coupling integral and geometrical representations for vibro-acoustical problems," J. Sound Vibr., vol. 224, no. 3, pp. 475–487, 1999
- [606] Jensen, J., "A new method for evaluating loudspeaker efficiency in the frequency domain," 131st Convention of the Audio Engineering Society, Oct 2011, e-Brief 34
- [607] Jesenik, M., Hamler, A., Kitak, P., and Trlep, M., "Parameters for expressing an analytical magnetization curve obtained using a genetic algorithm," *Presented* at Computing 2013, Jun-Jul 2013. [Online]. Available: https://home.hvt.bme.hu/ ~bilicz/compumag2013/files/pd5-10.pdf
- [608] Johannesen, K. P., "Skru op!" High Fidelity, no. 3, pp. 47–51, 1997
- [609] Johansen, T. F., "On the directivity of horn loudspeakers," J. Audio Eng. Soc., vol. 42, no. 12, pp. 1008–1019, Dec 1994
- [610] Johansen, T. F., "Implementation and use of a numerical technique for studies of directional properties of the sound radiation from horn loudspeakers," Ph.D. dissertation, Norges Tekniske Høgskole, 1991

- [611] Johnsen, A. and Rahbek, K., "A physical phenomenon and its applications to telegraphy, telephony, etc." J. Institution of Electrical Engineers, vol. 61, no. 320, pp. 713–725, 1923
- [612] Johnson, K., Transmission Circuits for Telephonic Communication. D. Van Nostrand Company, 1925, copyright 1924 by Western Electric Company, Inc.
- [613] Jordan, E. J., Loudspeakers. Focal Press, London, 1963, vol. The technique of sound reproduction
- [614] Jurkiewicz, J., Snakowska, A., and Smolik, D., "Acoustic impedance of outlet of a hardwalled unbaffled cylindrical duct for multimode incident wave," Acta Physica Polonica A, vol. 119, pp. 1061–1067, 2011
- [615] Kagawa, Y., Tsuchiya, T., Fujii, B., and Fujioka, K., "Discrete Huygens' model approach to sound wave propagation," *Journal* of sound and vibration, vol. 218, no. 3, pp. 419–444, 1998
- [616] Kagawa, Y., Tsuchiya, T., Fujioka, K., and Takeuchi, M., "Discrete Huygens' model approach to sound wave propagation– reverberation in a room, sound source identification and tomography in time reversal," *Journal of Sound and Vibration*, vol. 225, no. 1, pp. 61–78, 1999
- [617] Kagawa, Y., Yamabuchi, T., and Yoshikawa, T., "Finite element approach to acoustic transmission-radiation systems and application to horn and silencer design," J. Sound Vibr., vol. 69, no. 2, pp. 207–228, 1980
- [618] Kalnins, A. and Naghdi, P. M., "Axisymmetric vibrations of shallow elastic spherical shells," J. Acoust. Soc. Am., vol. 32, no. 3, pp. 342–347, Mar 1960
- [619] Kaminsky, V. J., "The response of loudspeakers to tone bursts," J. Audio Eng. Soc., vol. 13, no. 2, pp. 119–123, Apr 1965
- [620] Kantrowitz, P., "Distortion of highfrequency loudspeakers," J. Audio Eng. Soc., vol. 10, no. 4, pp. 310–317, Oct 1962
- [621] Karlsen, J. R., "Edge diffraction modelling of loudspeaker enclosures," Master's thesis, NTNU, 2005
- [622] Kates, J. M., "Optimum loudspeaker patterns," directional J. Audio Enq. 28.Soc. vol. no. 11. pp. 787 -1980. [Online]. Available: 794. http: //www.aes.org/e-lib/browse.cfm?elib=3948

- [623] Kausel, W., "Computer optimization of brass wind instruments," *Diderot Forum on Mathematics and Music*, 1999, ISBN 3-85403-133-5
- [624] Keefe, D. H., "Acoustical wave propagation in cylindrical ducts: Transmission line parameter approximations for isothermal and nonisothermal boundary conditions," J. Acoust. Soc. Am., vol. 75, no. 1, pp. 58–62, Jan 1984
- [625] Keefe, D. H. and Barjau, A., "Acoustic propagation in flaring, axisymmetric horns: II. numerical results, WKB theory, and viscothermal effects," Acta Acustica united with Acustica, vol. 85, no. 2, pp. 285–293, 1999. [Online]. Available: http: //www.ingentaconnect.com/content/dav/ aaua/1999/00000085/00000002/art00016
- [626] Keefe, D. H. and Benade, A. H., "Wave propagation in strongly curved ducts," J. Acoust. Soc. Am., vol. 74, no. 1, pp. 320–332, Jul 1983
- [627] Keele, D. B., "Maximum efficiency of compression drivers," 117th Convention of the Audio Engineering Society, Oct 2004, convention Paper no. 6193
- [628] Keele, D. B., "Interpolating linear- and logsampled convolution," 117th Convention of the Audio Engineering Society, Oct 2004, convention Paper 6284
- [629] Keele, D. B., "Implementation of straightline and flat-panel constant beamwidth transducer (cbt) loudspeaker arrays using signal delays," 113th Convention of the Audio Engineering Society, Oct 2002, convention Paper no. 5653
- [630] Keele, D. B., "The application of broadband constant beamwidth transducer (CBT) theory to loudspeaker arrays," *109th Convention of the Audio Engineering Society*, Sept 2000, preprint no. 5216
- [631] Keele, D. B., "Maximum efficiency of direct radiator loudspeakers," 91st Convention of the Audio Engineering Society, Oct 1991, preprint no. 3193
- [632] Keele, D. B., "A horn loudspeaker that covers a flat rectangular area from an obligue angle," 74th Convention of the Audio Engineering Society, Oct 1983, preprint no. 2052
- [633] Keele, D. B., "Low-frequency horn design using Thiele-Small driver parameters," 57th Convention of the Audio Engineering Society, May 1977, preprint no. 1250

- [634] Keele, D. B., "An efficiency constant comparison between low-frequency horns and direct-radiators," 54th Convention of the Audio Engineering Society, May 1976, preprint no. 1127
- [635] Keele, D. B., "What's so sacred about exponential horns?" 51st Convention of the Audio Engineering Society, May 1975, preprint no. 1038
- [636] Keele, D. B., "Optimum horn mouth size," 46th Convention of the Audio Engineering Society, Sep 1973, preprint no. 933
- [637] Keele, D. B., "Sensitivity of thiele's vented loudspeaker enclosure alignments to parameter variations," *J. Audio Eng. Soc.*, vol. 24, no. 4, pp. 246–255, May 1972
- [638] Keele, D. B. and Mihelich, R. J., "Suspension bounce as a distortion mechanism in loudspeakers with a progressive stiffness," 112th Convention of the Audio Engineering Society, May 2002, convention Paper no. 5519
- [639] Kellogg, E. W., "History of sound motion pictures (part 1)," J. Soc. Mot. Pic. Telev. Eng., vol. 64, pp. 291–302, Jun 1955
- [640] Kellogg, E. W., "History of sound motion pictures (part 2)," J. Soc. Mot. Pic. Telev. Eng., vol. 64, pp. 356–374, Jul 1955
- [641] Kellogg, E. W., "History of sound motion pictures (part 3)," J. Soc. Mot. Pic. Telev. Eng., vol. 64, pp. 422–437, Aug 1955
- [642] Kellogg, E. W., "Means for radiating large amounts of low frequency sound," J. Acoust. Soc. Am., vol. 3, pp. 94–110, Jul 1931
- [643] Kellogg, E. W., "Loud speaker sound pressure measurements," J. Acoust. Soc. Am., vol. 2, no. 2, pp. 157–200, Oct 1930
- [644] Kemp, J. A., "Theoretical and experimental study of wave propagation in brass musical instruments," Ph.D. dissertation, University of Edinburgh, 2002. [Online]. Available: http://www.kempacoustics.com/thesis2/
- [645] Kemp, J. A., Campbell, D. M., and Amir, N., "Multimodal radiation impedance of a rectangular duct terminated in an infinite baffle," *Acta Acustica united with Acustica*, vol. 87, no. 1, pp. 11–15, Jan/Feb 2001
- [646] Kennelly, A. and Pierce, G., "The impedance of telephone receivers as affected by the motion of their diaphragms," *Proc. Am. Ac. Arts Sci.*, vol. 48, pp. 113–151, Sep 1912

- [647] Kennelly, A. E. and Affel, H. A., "The mechanics of telephone-receiver diaphragms as derived from their motional impedance circles," *Proc. Am. Ac. Arts & Sc.*, vol. 51, pp. 422–484, Nov 1915
- [648] Kennelly, A. E. and Cook, J. H., "The MKS system of units applied to electroacoustics," *J. Acoust. Soc. Am.*, vol. 9, pp. 336–340, Apr 1938
- [649] Kennelly, A. E. and Kurokawa, K., "Acoustic impedance and its measurement," *Proc. Am. Ac. Sci.*, vol. 56, no. 1, pp. 3–42, 1920
- [650] Kennelly, A. E. and Nukiyama, H., "Elecromagnetic theory of the telephone receiver, with special reference to motional impedance," *Proc. A.I.E.E*, vol. 38, no. 4, pp. 491–539, Apr 1919
- [651] Kennelly, A. E. and Taylor, H. O., "Some properties of vibrating telephone diaphragms," *Proc. Am. Phil. Soc.*, vol. 55, pp. 415–460, Apr 1916
- [652] Kergomard, J., "Calculation of discontinuities in waveguides using mode-matching method: an alternative to the scattering matrix approach," J. Acoustique, vol. 4, pp. 111–138, 1991
- [653] Kergomard, J., "General equivalent electric circuits for acoustic horns," J. Audio Eng. Soc., vol. 36, no. 12, pp. 948–955, Dec 1988
- [654] Kergomard, J., "Ondes quasi-stationnaires dans les pavillons avec pertes viscothermiques aux parois: calcul de l'impédance," Acustica, vol. 48, pp. 31– 43, 1981
- [655] Kergomard, J. and Garcia, A., "Simple discontinuities in acoustic waveguides at low frequencies: Critical analysis and formulae," *J. Sound Vibr.*, vol. 114, no. 3, pp. 465–479, May 1987
- [656] Kergomard, J., Garcia, A., Tagui, G., and Dalmont, J., "Analysis of higher order mode effects in an expansion chamber using modal theory and equivalent electrical circuits," J. Sound Vibr., vol. 129, no. 3, pp. 457–475, Mar 1989
- [657] Kergomard, J., Lefebvre, A., and Scavone, P. G., "Matching of fundamental modes at a junction of a cylinder and a truncated cone; application to the calculation of some radiation impedances," *Acta Acustica United with Acustica*, vol. 101, no. 6, pp. 1189–1198, Nov/Dec 2015

- [658] Ketcham, E. V., "Evolution of "the horn"," Audio Antology, pp. 96–98, 1952
- [659] Khan, "High quality music in the home an appreciation by david khan," Norwood Society Quarterly, October 2007
- [660] Kharitonov, A. V., "Torsional ultrasonic concentrators," *Soviet Physics – Acoustics*, vol. 7, pp. 310–311, 1962, english translation. Originally published in Akust. Zh. vol. 7, pp. 387–389 (1961)
- [661] Kikkawa, T., Yukiyoshi, A., and Sakamoto, N., "A new horn loudspeaker design yields low distortion and wide dispersion," 55th Convention of the Audio Engineering Society, Oct 1976, preprint no. 1151
- [662] King, M. J. (2002) Transmission lines ch 1–8
- [663] King, M. J. (2002) Horn theory ch 1–9
- [664] Kingan, M., "A method for the rapid and exact calculation of modal radiation from a circular duct," The 22nd International Congress on Sound and Vibration, Jul 2015
- [665] Kinoshita, S. and Kawamura, T., "The development of a beryllium ribbon tweeter having wide frequency range, high efficiency and high power handling capacity," 75th Convention of the Audio Engineering Society, Mar 1984, preprint no. 2098
- [666] Kinoshita, S. and Locanthi, B. N., "The influence of parasitic resonances on compression driver loudspeaker performance," 61st Convention of the Audio Engineering Society, Nov 1978, preprint no. 1422
- [667] Kinoshita, S., Yoshimi, T., Hamada, H., and Locanthi, B. N., "Design of 48mm beryllium diaphragm compression driver," 60th Convention of the Audio Engineering Society, May 1978, preprint no. 1364. [Online]. Available: http://www.aes.org/ e-lib/browse.cfm?elib=2990
- [668] Kinsler, L. E. and Frey, A. R., Fundamentals of Acoustics, 2nd ed., 1962
- [669] Kinsler, L. E. and Frey, A. R., Fundamentals of Acoustics, 1st ed. John Wiley & Sons, 1950
- [670] Kinsler, L. E., Frey, A. R., Coppens, A. B., and Sanders, J. V., *Fundamentals of Acoustics*, 4th ed. John Wiley & Sons, Inc., 2004
- [671] Kirkup, S., The Boundary Element Method in Acoustics, 2nd ed. Integrated Sound Software, 2007, no. ISBN: 0953403106

- [672] Kirkup, S. (2000) BEMLAP: BEM for Laplace Problems. [Online]. Available: http://www.boundary-element-method. com/laplace/manual/index.htm
- [673] Kirkup, S. and Thompson, A., "Computing the acoustic field of a radiating cavity by the Boundary Element - Rayleigh Integral Method (BERIM)," *Proceedings* of the World Congress on Engineering, vol. 2, 2007. [Online]. Available: http: //www.kirkup.info/papers/SKAT07.pdf
- [674] Kirkup, S. M. and Jones, M., "Computational methods for the acoustic modal analysis of an enclosed fluid with application to a loudspeaker cabinet," *Applied Acoustics*, vol. 48, no. 4, pp. 275–299, 1996
- [675] Kirkup, S. M., Thompson, A., Kolbrek, B., and Yazdani, J., "Simulation of the acoustic field of a horn loudspeaker by the Boundary Element-Rayleigh Integral Method," *Journal* of Computational Acoustics, vol. 21, no. 1, pp. 1–17, 2013
- [676] Kishk, A. and Lim, C.-S., "Comparative analysis between conical and gaussian profiled horn antennas," *Progress In Electromagnetics Research*, vol. 38, pp. 147–166, 2002
- [677] Klapholz, J., "Fantasia innovations in sound," J. Audio Eng. Soc., vol. 39, no. 1/2, pp. 66–70, Jan/Feb 1991
- [678] Klapholz, J., "The history of sound reinforcement," 6th International Conference of the Audio Engineering Society, pp. 15–20, 1988
- [679] Klapman, S., "Interaction impedance of a system of circular pistons," J. Acoust. Soc. Am., vol. 11, pp. 289–295, Jan 1940
- [680] Kleiner, M., *Electroacoustics*. CRC Press, 2013
- [681] Kleiner, M. and Tichy, J., Acoustics of Small Rooms. CRC Press, 2014, iSBN: 13-978-0-415-77930-2
- [682] Klepper, D. L. and Steele, D. W., "Constant directional characteristics from a line source array," J. Audio Eng. Soc., vol. 11, no. 3, pp. 198–202, Jul 1963
- [683] Klepper, D. L. B. Y. Y., "Subjective loudspeaker testing for accuracy," J. Audio Eng. Soc., vol. 52, no. 10, pp. 1060–1061, Oct 2004
- [684] Klippel, W., "Measurement and visualization of loudspeaker cone vibration," 121st Convention of the Audio Engineering Society, Oct 2006, convention Paper no. 6882

- [685] Klippel, W., "Tutorial: Loudspeaker nonlinearities — causes, parameters, symptoms," *J. Audio Eng. Soc.*, vol. 54, no. 10, pp. 907– 939, Oct 2006
- [686] Klippel, W., "Large signal performance of tweeters, micro speakers and horn drivers," 118th Convention of the Audio Engineering Society, May 2005, convention Paper no. 6422
- [687] Klippel, W., "Loudspeaker nonlinearities causes, parameters, symptoms," 119th Convention of the Audio Engineering Society, Oct 2005, convention Paper no. 6584
- [688] Klippel, W., "Measurement and application of equivalent input distortion," J. Audio Eng. Soc., vol. 52, no. 9, pp. 931–947, Sep 2004
- [689] Klippel, W., "Measurement of impulsive distortion, rub and buzz and other disturbances," 118th Convention of the Audio Engineering Society, Mar 2003, no. 5734
- [690] Klippel, W., "Diagnosis and remedy of nonlinearities in electrodynamical transducers," 109th Convention of the Audio Engineering Society, Sep 2000, preprint no. 5261
- [691] Klippel, W., "Distortion analyzer a new tool for assessing and improving electrodynamic transducer," 108th Convention of the Audio Engineering Society, Feb 2000, preprint no. 5109
- [692] Klippel, W., "Modeling the nonlinearities in horn loudspeakers," J. Audio Eng. Soc., vol. 44, no. 6, pp. 470–480, Jun 1996
- [693] Klippel, W., "Compensation for nonlinear distortion of horn loudspeakers by digital signal processing," J. Audio Eng. Soc., vol. 44, no. 11, pp. 964–972, Nov 1996
- [694] Klippel, W., "Nonlinear system identification for horn loudspeakers," J. Audio Eng. Soc., vol. 44, no. 10, pp. 811–820, Oct 1996
- [695] Klippel, W., "Nonlinear system models for horn loudspeakers," 99th Convention of the Audio Engineering Society, Oct 1995, preprint no. 4083
- [696] Klippel, W., "Parameter measurement and identification of the nonlinear system structure on horn loudspeakers," 99th Convention of the Audio Engineering Society, Oct 1995, preprint no. 4084
- [697] Klippel, W., "Nonlinear wave propagation in horns and ducts," J. Acoust. Soc. Am., vol. 98, no. 1, pp. 431–436, Jul 1995

- [698] Klippel, W., "Nonlinear large-signal behavior of electrodynamic loudspeakers at low frequencies," J. Audio Eng. Soc., vol. 40, no. 6, pp. 483–496, Jun 1992
- [699] Klippel, W., "Dynamic measurement and interpretation of the nonlinear parameters of electrodynamic loudspeakers," J. Audio Eng. Soc., vol. 38, no. 12, pp. 944–955, Dec 1990
- [700] Klippel, W. and Schlechter, J., "Distributed mechanical parameters of loudspeakers part 1: Measurements," J. Audio Eng. Soc., vol. 57, no. 7/8, pp. 500–511, Jul/Aug 2009
- [701] Klipsch, P. W., "A low-frequency horn of small dimensions," J. Audio Eng. Soc., vol. 27, no. 3, pp. 142–148, Mar 1979, (Reprint of the original JASA paper, with introductions by J.K. Hilliard and P.W. Klipsch)
- [702] Klipsch, P. W., "Speech for the AES Silver Medal," J. Audio Eng. Soc., vol. 26, 1978
- [703] Klipsch, P. W., "A note on modulation distortion coaxial and spaced tweeter-woofer loudspeaker systems," J. Audio Eng. Soc., vol. 24, no. 3, pp. 186–187, Apr 1976
- [704] Klipsch, P. W., "A note on modulation distortion two frequencies radiated from the same diaphragm," J. Audio Eng. Soc., vol. 24, no. 3, pp. 187–188, Apr 1976
- [705] Klipsch, P. W., "Loudspeaker distortion," 1976
- [706] Klipsch, P. W., "Modulation distortion in loudspeakers part 3," J. Audio Eng. Soc., vol. 20, no. 10, pp. 827–828, Dec 1972
- [707] Klipsch, P. W., "Delay effects in loudspeakers," J. Audio Eng. Soc., vol. 20, no. 8, pp. 634–637, Oct 1972
- [708] Klipsch, P. W., "Modulation distortion in loudspeakers part 2," J. Audio Eng. Soc., vol. 18, no. 1, pp. 29–33, Feb 1970
- [709] Klipsch, P. W., "Loudspeaker performance," *The Wireless World*, pp. 50–52, Feb 1970
- [710] Klipsch, P. W., "Modulation distortion in loudspeakers," J. Audio Eng. Soc., vol. 17, no. 2, pp. 194, 196, 198, 200, 202, 204, 206, Apr 1968
- [711] Klipsch, P. W., "LaScala," 12th Spring Convention of the Audio Engineering Society, Apr 1965, preprint no. 372

- [712] Klipsch, P. W., "A new high-frequency horn," *IEEE Transactions on Audio*, pp. 202–206, Nov-Dec 1963
- [713] Klipsch, P. W., "Stereo geometry tests," *IRE Transactions on Audio*, pp. 174–176, Nov-Dec 1962
- [714] Klipsch, P. W., "Eight cardinal points in loudspeakers for sound reproduction," *IRE Transactions on Audio*, pp. 204–209, Nov-Dec 1961
- [715] Klipsch, P. W., "A speaker system with bass back-loading of unusual parameter values," *IRE Transactions on Audio*, pp. 120–123, Jul-Aug 1960
- [716] Klipsch, P. W., "Wide-stage stereo," IRE Transactions on Audio, pp. 93–96, Jul-Aug 1959
- [717] Klipsch, P. W., "Room dimensions for optimum listening and the half-room principle," *IRE Transactions on Audio*, pp. 14–15, Jan-Feb 1958
- [718] Klipsch, P. W., "Loudspeaker developments," Trans. IRE PGA, pp. 16–22, May.-Jun 1953
- [719] Klipsch, P. W., "A high quality loudspeaker of small dimensions," J. Acoust. Soc. Am., vol. 17, no. 3, pp. 254–258, Jan 1946
- [720] Klipsch, P. W., "A note on acoustic horns," Proc. Inst. Rad. Eng., pp. 447–449, Jul 1945
- [721] Klipsch, P. W., "Improved low frequency horn," J. Acoust. Soc. Am., vol. 14, pp. 179– 182, Jan 1943
- [722] Klipsch, P. W., "A low-frequency horn of small dimensions," J. Acoust. Soc. Am., vol. 13, pp. 137–144, Oct 1941
- [723] Kochend⁵orfer, F. and Voishvillo, A., "Comparative static and dynamic fea analysis of single and dual voice coil midrange transducers," 139th Convention of the Audio Engineering Society, Oct 2015
- [724] Kochendⁱorfer, F. and Voishvillo, A., "Nonlinear flux modulation effects in moving coil transducers," 137th Convention of the Audio Engineering Society, Oct 2014, convention Paper no. 9162
- [725] Kock, W. E. and Harvey, F. K., "Refracting sound waves," J. Acoust. Soc. Am., vol. 21, no. 5, pp. 471–481, Sep 1949

- [726] Kolbrek, B., "Large horns and small rooms do they 'play nicely' together?" 146th Convention of the Audio Engineering Society, Mar 2019, convention Paper 10132
- [727] Kolbrek, B., "Analysis of front loaded low frequency horn loudspeakers," 144th Convention of the Audio Engineering Society, May 2018, convention Paper no. 9910
- [728] Kolbrek, B., "Extensions to the mode matching method for horn loudspeaker simulation," Ph.D. dissertation, Norges Teknisk-Naturvitenskapelige Universitet (NTNU), Institutt for elektronikk og telekommunikasjon, Trondheim, Norway, 2016
- [729] Kolbrek, B., "Modal impedances and the boundary element method: An application to horns and ducts," 139th Convention of the Audio Engineering Society, Oct 2015, convention Paper no. 9369
- [730] Kolbrek, B., "Horns near reflecting boundaries," 139th Convention of the Audio Engineering Society, Oct/Nov 2015, convention Paper no. 9412
- [731] Kolbrek, B., "Using mode matching methods in horn loudspeaker simulation," in *Proceed*ings of Forum Acusticum 2014, 2014
- [732] Kolbrek, B., "Development of horn loudspeakers before 1940," in *Proceedings of Fo*rum Acusticum 2014, 2014
- [733] Kolbrek, B., "Modal sound propagation in curved horns of rectangular crosssection," Master's thesis, Norges Teknisk-Naturvitenskapelige Universitet (NTNU), Institutt for elektronikk og telekommunikasjon, Trondheim, Norway, 2013. [Online]. Available: http://ntnu.diva-portal. org/smash/record.jsf?pid=diva2:649777
- [734] Kolbrek, B., "Modal propagation in acoustic horns," Norwegian University of Science and Technology, (Unpublished), 2012. [Online]. Available: kolbrek.hoyttalerdesign.no/ images/misc/evaluation_mpm_2012_bk.pdf
- [735] Kolbrek, B., "Simulation of sound propagation in an axisymmetric duct," Norwegian University of Science and Technology, (Unpublished), 2011. [Online]. Available: kolbrek.hoyttalerdesign.no/images/misc/ kolbrek_simulation_of_sound_propagation_ in_an_axisymmetric_duct.pdf
- [736] Kolbrek, B., "Horn theory: An introduction, part 1," audioXpress, pp. 6, 8–17, March 2008

- [737] Kolbrek, B., "Horn theory: An introduction, part 2," audioXpress, pp. 20–29, April 2008
- [738] Kolbrek, B., Evensen, K. B., and Svensson, U. P., "Simulating axisymmetric concave radiators using mode matching methods," J. Audio Eng. Soc., vol. 64, no. 5, pp. 311–319, May 2016
- [739] Kolbrek, B. and Svensson, U. P., "Modeling non-shoebox shaped rooms with the mode matching method," 140th Convention of the Audio Engineering Society, Jun 2016, convention Paper no. 9506
- [740] Kolbrek, B. and Svensson, U. P., "Using mode matching methods and edge diffraction in horn loudspeaker simulation," Acta Acustica united with Acustica, vol. 101, no. 4, pp. 760–774, Jul/Aug 2015
- [741] Koopmann, G. and Fahnline, J., Designing Quiet Structures. Academic Press, 1997
- [742] Kowalski, R. J., "RCA's 'FANTASOUND' system as used for Disney's 'Fantasia'," *International Projectionist*, vol. 15, no. 11, pp. 20–21, 24, Nov 1940
- [743] Kowalski, R. J., "'fantasound" soundheads and amplifiers," *International Projectionist*, vol. 15, no. 12, pp. 7–8, Dec 1940
- [744] Kozina, O. and Makarov, G., "Transient processes in the acoustic fields generated by a piston membrane of arbitrary shape," *Soviet Physics – Acoustics*, vol. 7, no. 1, pp. 39–43, 1961
- [745] Kozlov, V. F. and Fedorov, A. V., "Acoustic properties of rarefied gases inside pores of simple geometries," *J. Acoust. Soc. Am.*, vol. 117, no. 6, pp. 3402–3412, 2005
- [746] Krauss, G. J., "On the audibility of group distortion at low frequencies," 88th Convention of the Audio Engineering Society, Mar 1990, preprint no. 2894
- [747] Kreskovsky, J., "Design an active transientperfect second-order crossover," audioXpress, no. 12, pp. 36–39, Dec 2002
- [748] Kreskovsky, J., "A transient perfect secondorder passive crossover," audioXpress, no. 5, May 2001
- [749] Kristiansen, U. R., "Sound radiation from axisymmetric sources of complex shape," J. Sound Vibr., vol. 113, no. 1, pp. 204–207, 1987

- [750] Kristiansen, U. R. and Johansen, T. F., "The horn loudspeaker as a screen-diffraction problem," J. Sound Vibr., vol. 133, no. 3, pp. 449–456, 1989
- [751] Kristiansen, U. R. and Viggen, E. M., Computational Methods in Acoustics. Department of Electronics and Telecommunications, NTNU, 2010
- [752] Krokstad, A., Music and Communication. Acoustics Research Centre, Norwegian University of Science and Technology, 2011, a publication in the series "Reflections on sound"
- [753] Krokstad, A., Akustikk for ingeniører. NTNU, 1999
- [754] Kuhnle, J., "Impedansberegning for akustiske horn," Elektronikklaboratoriet ved NTH, Tech. Rep. STF44 A73206, 1973
- [755] Kumada, M., Iwashita, Y., Aoki, M., and Sugiyama, E., "The strongest permanent dipole magnet," in *Proceedings of the 2003 Particle Accelerator Conference*, 2003
- [756] Kuttruff, H., Room Acoustics, 5th ed. Spon Press, London and New York, 2009, ISBN 0-203-87637-7
- [757] Kyouno, N., Sakai, S., Morita, S., Yamabuchi, T., and Kagawa, Y., "Acoustic radiation of a horn loudspeaker by the finite element method – acoustic characteristics of a horn loudspeaker with an elastic diaphragm," 69th Convention of the Audio Engineering Society, May 1981, preprint no. 1756. [Online]. Available: http: //www.aes.org/e-lib/browse.cfm?elib=5141
- [758] LaFevre, M. and Stillwell, P., "Desperately seeking an efficient speaker," *Sound Practices*, pp. 34–38, Spring 1994
- [759] Lambert, R. F., "Acoustical study of the tractrix horn, part I," J. Acoust. Soc. Am., vol. 26, pp. 1024–1028, Nov 1954
- [760] Lambert, R. F., "Acoustical study of the tractrix horn, part II," J. Acoust. Soc. Am., vol. 26, pp. 1029–1033, Nov 1954
- [761] Lampton, M., "Transmission matrices in electroacoustics," Acoustica, vol. 39, pp. 239–251, 1978
- [762] Lane, C. E., "Phase distortion in telephone apparatus," *Bell System Technical Journal*, vol. 9, no. 7, pp. 493–521, Jul 1930

- [763] Lange, T., "Die eigenfrequenzen von trichtern," Acustica, vol. 5, pp. 323–330, 1954
- [764] Lansing, J. B., "New permanent magnet public address loudspeaker," J. Soc. Mot. Pic. Eng., vol. 46, no. 3, pp. 212–219, Mar 1946
- [765] Lansing, J. B., "The duplex loudspeaker," J. Soc. Mot. Pic. Eng., vol. 43, no. 3, pp. 168– 173, Sep 1944
- [766] Lansing, J. B. and Hilliard, J. K., "An improved loudspeaker for theaters," J. Soc. Mot. Pic. Eng., vol. 45, pp. 339–349, Nov 1945
- [767] Larson, J., DellaSaia, G., and Keele, Jr., D. B., "A tutorial on the audibility of loudspeaker distortion at bass frequencies," 143rd Convention of the Audio Engineering Society, Oct 2017, e-Brief 378
- [768] Lawrence, M. J., High-Quality Loudspeaker Engineering, 2nd ed., 2018, ISBN: 978-1-291-40753-2
- [769] Leach, M. W., "Electro-acoustic analogous circuit models for filled enclosures," J. Audio Eng. Soc., vol. 37, no. 7/8, pp. 586–592, Jul/Aug 1989
- [770] Leach, W. M., "Impedance compensation networks for the lossy voice-coil inductance of loudspeaker drivers," J. Audio Eng. Soc., vol. 52, no. 4, pp. 358–365, Apr 2004
- [771] Leach, W. M., "Loudspeaker voice-coil inductance losses: Circuit models, parameter estimation, and effect on frequency response," J. Audio Eng. Soc., vol. 50, no. 6, pp. 442–450, Jun 2002
- [772] Leach, W. M., "A two-port analogous circuit and SPICE model for Salmon's family of acoustic horns," J. Acoust. Soc. Am., vol. 99, no. 3, pp. 1459–1464, Mar 1996
- [773] Leach, W. M., "The differential time-delay distortion and differential phase-shift distortion as measures of phase linearity," J. Audio Eng. Soc., vol. 37, no. 9, pp. 709–715, Sept 1989
- [774] Leach, W. M., "On the specification of moving coil drivers for low-frequency hornloaded loudspeakers," J. Audio Eng. Soc., vol. 27, no. 12, pp. 950–959, Dec 1979
- [775] Leach, W. M., "On the specification of moving coil drivers for low-frequency hornloaded loudspeakers," 61st Convention of

the Audio Engineering Society, Nov 1978, preprint no. 1405

- [776] Lee, H., "A new time and intensity tradeoff function for localization of natural sound sources," 128th Convention of the Audio Engineering Society, May 2010, convention paper no. 8149
- [777] Lee, L. W. and Geddes, E. R., "Audibility of linear distortion with variations in sound pressure level and group delay," Oct 2006, convention Paper no. 6888
- [778] Lee, R., "Is linear phase worthwhile?" 68th Convention of the Audio Engineering Society, Mar 1981, preprint no. 1732
- [779] Leembrugen, G. and Scott, J., "Loudspeaker impedance non-linearity and bi-wiring," 4th Australian Regional Convention of the Audio Engineering Society, Aug 1993, preprint no. 3693
- [780] Leet, L. N., "Organ pipes," J. Acoust. Soc. Am., vol. 3, pp. 242–262, Oct 1931
- [781] Lemaitre, G., Letinturier, B., and Gazengel, B., "Model and estimation method for predicting the sound radiated by a horn loudspeaker – with application to a car horn," *Applied Acoustics*, vol. 69, no. 1, pp. 47–59, Jan 2008
- [782] Lenk, A., "Die vierpolersatzschaltbilder der elektromechanischen wandler," Acustica, vol. 6, pp. 303–316, 1956
- [783] Leupold, H. A. and Potenziani II, E., "A permanent magnet circuit design primer," Army Research Laboratory, Tech. Rep. ARL-TR-946, 1996
- [784] Levine, D. R., Calza, P., Di Cola, M., Martignon, P., and Chisari, L., "Influence of horn's surface temperature on its directivity control," 145th Convention of the Audio Engineering Society, Oct 2018, e-Brief no 482
- [785] Levine, H., "On the radiation impedance of a rectangular piston," J. Sound Vibr., vol. 89, no. 4, pp. 447–455, 1983
- [786] Levine, H., "On the radiation impedance of a rectangular piston," J. Sound Vibr., vol. 89, no. 4, pp. 447–455, 1982
- [787] Levine, H. and Schwinger, J., "On the radiation of sound from an unflanged circular pipe," *Phys. Rev.*, vol. 73, no. 4, pp. 383–406, Feb 1948

- [788] Levinson, N. and Goldsmith, L. T., "Vitasound," J. Soc. Mot. Pic. Eng., vol. 37, no. 2, pp. 147–153, Aug 1941
- [789] Levy, S. E. and Carlisle, R. W., "Generation of intense audio sound fields utilizing arrays of multiple-driver horns," *J. Acoust. Soc. Am.*, vol. 33, no. 7, pp. 936–940, Jul 1961
- [790] Levy, S. E. and Carlisle, R. W., "Compact arrays of high power drivers for generating intense sound fields," 12th Annual Meeting of the Audio Engineering Society, 1960, preprint no.. 141
- [791] Levy, S. E., Carlisle, R. W., and Sharp, B., "Three new high efficiency speakers for PA use," 10th Annual Meeting of the Audio Engineering Society, Sep 1958, preprint no.. 63
- [792] Levy, S. E. and Matsuoka, E., "Two new horns and drivers covering high frequencies," 10th Annual Meeting of the Audio Engineering Society, Sep 1958, preprint no.. 64
- [793] Li, W. L., "An analytical solution for the selfand mutual radiation resistances of a rectangular plate," *Journal of sound and vibration*, vol. 245, no. 1, pp. 1–16, 2001
- [794] Lian, R., "Vårluft om høsten, current drive (?) m/tilbehør," Presentet at the meeting of the Norwegian AES group, Nov 1998
- [795] Lian, R., "Distortion mechanisms in the electrodynamic motor system," 84th Convention of the Audio Engineering Society, Mar 1988, preprint no. 2572
- [796] Lian, R., "Non-linear time delay distortion in loudspeakers," 47th Convention of the Audio Engineering Society, Mar 1974, preprint no. A-4
- [797] Licklider, J. C. R., "A duplex theory of pitch perception," J. Acoust. Soc. Am., vol. 23, no. 1, p. 147, 1951
- [798] Liebich, R. E. and King, J. A., "Development of a full-range transducer assembly for the generation of high intensity sound," 10th Annual Meeting of the Audio Engineering Society, Sep 1958, preprint no.. 71
- [799] Liffen, "The 1930 demonstration broadcast receiver and loudspeaker at the Science Museum, London," Bulletin of the British Vintage Wireless Society, vol. 31, no. 4, pp. 5– 10, Winter 2006

- [800] Lindemann, O. A., "Transient fluid reaction on a baffled plane piston of arbitrary shape," *The Journal of the Acoustical Society of America*, vol. 55, no. 4, pp. 708–717, Apr 1974
- [801] Lindemann, O. A., "Radiation impedance of a long narrow rectangular piston in a plane baffle," J. Acoust. Soc. Am., vol. 52, no. 3, pp. 1045–1048, Oct 1972
- [802] Lindsay, R. B., "The filtration of sound, i," J. App. Phys., vol. 9, pp. 612–687, Oct 1938
- [803] Lindsay, R. B., "Finite acoustic filters," J. Acoust. Soc. Am., vol. 8, no. 4, pp. 211–216, Apr 1937
- [804] Lindsley, J. W., "Further adventures of an audion purist," Audio, pp. 19–20, 1968
- [805] Linkwitz, S., "Which loudspeaker parameters are important to create the illusion of a live performance in the living room?" 113th Convention of the Audio Engineering Society, Oct 2002, convention Paper no. 5637
- [806] Linkwitz, S., "Active crossover networks for noncoincident drivers," J. Audio Eng. Soc., vol. 24, no. 1, pp. 2–8, Feb 1976
- [807] Lippert, W. K. R., "Wave transmission around bends of different angles in rectangular ducts," Acustica, vol. 5, pp. 275–278, 1955
- [808] Lippert, W. K. R., "A method of measuring discontinuity effects in ducts," Acustica, vol. 4, no. 2, pp. 307–312, 1954
- [809] Lippert, W. K. R., "The measurement of sound reflection and transmission at rightangled bends in rectangular ducts," *Acustica*, vol. 4, no. 2, pp. 313–319, 1954
- [810] Lipshitz, S. P., Pocock, M., and Vanderkooy, J., "On the audibility of midrange phase distortion in audio systems," *J. Audio Eng. Soc.*, vol. 30, no. 9, pp. 580–595, Sep 1982
- [811] Lipshitz, S. P. and Vanderkooy, J., "Use of frequency overlap and equalization to produce high-slope linear-phase loudspeaker crossover networks," J. Audio Eng. Soc., vol. 33, no. 3, pp. 114–126, Mar 1985
- [812] Lipshitz, S. P. and Vanderkooy, J., "In-phase crossover network design," 74th Convention of the Audio Engineering Society, Oct 1983, preprint no. 2051

- [813] Lipshitz, S. P. and Vanderkooy, J., "A family of linear-phase crossover networks of high slope derived by time delay," *J. Audio Eng. Soc.*, vol. 31, no. 1/2, pp. 2–20, Feb 1983
- [814] Lipshitz, S. P., Vanderkooy, J., and Heyser, R. C., "Comments on -determining the acoustic position for proper phase response of transducers- and author's reply," *J. Audio Eng. Soc.*, vol. 33, no. 6, pp. 463–466, Jun 1985
- [815] Liski, J., M'akivirta, A., and V'alim'aki, V., "Audibility of loudspeaker group-delay characteristics," 144th Convention of the Audio Engineering Society, May 2018, convention Paper no. 10008
- [816] Liu, Y., Fast multipole boundary element method: theory and applications in engineering. Cambridge university press, 2009
- [817] Llamazares, B., "Direct approximate thirdorder response synthesis of vented-box loudspeaker systemps," J. Audio Eng. Soc., vol. 52, no. 11, pp. 1170–1175, Nov 2004
- [818] Locanthi, B., "Application of electrical circuit analogies to loudspeaker design problems (reprint)," J. Audio Eng. Soc., vol. 19, no. 9, pp. 778–785, Sep 1971, (Originally published 1952)
- [819] Locanthi, B., Madkawa, K., Sugano, K., Fukura, H., and Koyano, S., "Development of a loudspeaker system with omni-directional horn loaded high polymer tweeter," 58th Convention of the Audio Engineering Society, Nov 1977, preprint no. 1302
- [820] Long, E. M., "Design parameters of a dual woofer loudspeaker system," J. Audio Eng. Soc., vol. 17, no. 5, pp. 515–524, Oct 1969
- [821] Lykhne, A. M., "Theory of horns," Soviet Physics – Doklady, vol. 4, pp. 651–652, 1959, english translation. Originally published in Dokl. Akad. Nauk (SSSR) vol. 126, pp. 1232-1233
- [822] Møller, H., "Loudspeaker phase measurements, transient response and audible quality," Brüel & Kjær Application note no. 17-198
- [823] Møller, H., "Phase response of loudspeakersmeasured with phase meter and digital delay line," 48th Convention of the Audio Engineering Society, May 1974, preprint no. 962

- [824] Møller, H., Minnaar, P., Olesen, S. K., Christensen, F., and Plogsties, J., "On the audibility of all-pass phase in electroacoustical transfer functions," *J. Audio Eng. Soc.*, vol. 55, no. 3, pp. 115–134, Mar 2007
- [825] McRitchie, D. (2004) JBL 435BE. [Online]. Available: http://www.audioheritage.org/ html/projectmay/technology/435be.htm
- [826] Maa, D.-Y., "A general reactance theorem for electrical, mechanical, and acoustical systems," *Proc. Inst. Rad. Eng.*, pp. 365–371, Jul 1943
- [827] Maezawa, S., "On the three-dimensional corrections for one-dimensional theory of acoustic horn," *Reports of the Faculty of Engineering, Yamanashi University*, pp. 69–79, 1957
- [828] Magalotti, R., Zuccatti, C., and Pasini, P., "Building a plane-wave tube: Experimental and theoretical aspects," *J. Audio Eng. Soc.*, vol. 47, no. 7/8, pp. 506–601, Jul/Aug 1999
- [829] Makarski, M., "Tools for the professional development of horn loudspeakers," Ph.D. dissertation, Rheinisch-Westfärlischen Technischen Hochschule Aachen, 2006
- [830] Makarski, M., "Simulation of harmonic distortion in horns using an extended BEM postprocessing," 119th Convention of the Audio Engineering Society, Oct 2005, convention Paper no. 6591
- [831] Makarski, M., "Do higher order modes at the horn driver's mouth contribute to the sound field of a horn loudspeaker?" 117th Convention of the Audio Engineering Society, Oct 2004, convention Paper no. 6188
- [832] Makarski, M., "Determining two-port parameters of horn drivers using only electrical measurements," 116th Convention of the Audio Engineering Society, May 2004, convention Paper no. 6098
- [833] Malecki, I., Physical Foundations of Technical Acoustics. Pergamon Press, 1969
- [834] Mallaroni, B., Mattei, P.-O., and Kergomard, J., "Complex resonance frequencies of a finite, circular radiating duct with an infinite flange," 2009. [Online]. Available: HAL:http://hal.archives-ouvertes.fr/ hal-00402870/en/
- [835] Malter, L., "Loudspeakers and theater sound reproduction," J. Soc. Mot. Pic. Eng., vol. 14, no. 6, pp. 611–622, Jun 1930

- [836] Mapes-Riordan, D., "Horn modeling with conical and cylindrical transmission-line elements," *J. Audio Eng. Soc.*, vol. 41, no. 6, pp. 471–484, Jun 1993
- [837] Margolis, G., , and Small, R. H., "Personal calculator programs for approximate ventedbox and closed-box loudspeaker system design," *J. Audio Eng. Soc.*, vol. 29, no. 6, pp. 421–441, Jun 1981
- [838] Martín Román, S. R., Svensson, U. P., Šlechta, J., and Smith, J. O., "A hybrid method combining the edge source integral equation and the boundary element method for scattering problems," *J. Acoust. Soc. Am.*, vol. 139, no. 4, p. 2202, 2016, abstract. [Online]. Available: http://scitation.aip.org/content/asa/ journal/jasa/139/4/10.1121/1.4950568
- [839] Martin, K. D., "Sound-source recognition: A theory and computational model," Ph.D. dissertation, Massachusetts Institute of Technology, 1999. [Online]. Available: http://sound.media.mit.edu/Papers/ kdm-phdthesis.pdf
- [840] Martin, P. A., "On Websters horn equation and some generalizations," J. Acoust. Soc. Am., vol. 116, no. 3, pp. 1381–1388, Sep 2004
- [841] Martin, W. and Clark, A., "Use of public address system with telephone lines," *Transactions of the American Institute of Electrical Engineers*, vol. 42, pp. 75–85, Feb 1923
- [842] Martin, W. H. and Fletcher, H., "High quality transmission and reproduction of speech and music," *Trans. Am. Inst. Elec. Eng.*, vol. 43, pp. 384–392, Feb 1924, also publised in Journal of the A.I.E.E., Vol 43, 3, March 1924, pp 230-238
- [843] Martinez, J., Croañes, J., Monllor, F., and Ramis, J., "Comparison of different methods for the subjective sound quality evaluation of compression drivers," 126th Convention of the Audio Engineering Society, 2009, convention Paper no. 7718
- [844] Mason, W. P., Electromechanical Transducers and Wave Filters. D. Van Nostrand Co., New York, 1942
- [845] Mason, W. P., "Approximate networks of acoustic filters," J. Acoust. Soc. Am., vol. 2, pp. 263–272, Jan 1930
- [846] Massa, F., "Some personal recollections of early experiences on the new frontier of electroacoustics during the late 1920s and early

1930s," J. Acoust. Soc. Am., vol. 77, no. 4, pp. 1296–1302, Apr 1985

- [847] Massa, F., "Horn type loudspeakers a quantitative discussion of some fundamental requirements in their design," *Proc. Inst. Rad. Eng.*, vol. 26, no. 6, pp. 720–733, 1938
- [848] Massa, F., "Efficiency of horn loud speakers," *Electronics*, vol. 10, pp. 30–32, Apr 1937
- [849] Massa, F., "Loudspeakers for high-fidelity large scale reproducion of sound," J. Acoust. Soc. Am., vol. 8, pp. 126–132, Oct 1936
- [850] Massa, F., "Loud speaker design," *Electronics*, vol. 9, pp. 20–24, Feb 1936
- [851] Massa, F., "Loud speaker measurements," *Electronics*, vol. 9, pp. 18–21, 56, July 1936
- [852] Mateljan, I., LIMP program for the loudspeaker impedance measurement and loudspeaker parameters estimation. [Online]. Available: http://artalabs.hr/
- [853] MATLAB. (2011) The Mathworks, Inc. Natick, Massachusetts. [Online]. Available: http://www.mathworks.com/
- [854] Matusiak, G. P., "The fundamentals of loudspeaker radiation and acoustic quality," 128th Convention of the Audio Engineering Society, May 2010, convention Paper 8010
- [855] Mawardi, O. K., "A physical approach to the generalized loudspeaker problem," J. Acoust. Soc. Am., vol. 26, no. 1, pp. 1–14, Jan 1954
- [856] Mawardi, O. K., "Generalized solutions of Webster's horn theory," J. Acoust. Soc. Am., vol. 21, no. 4, pp. 323–330, Jul 1949
- [857] Mawardi, O. K., "Measurement of acoustic impedance," J. Acoust. Soc. Am., vol. 21, no. 2, pp. 84–91, Mar 1949
- [858] Maxfield, J. P., "The vitaphone an audible motion picture," *Bell Laboratories Record*, pp. 200–204, 1926
- [859] Maxfield, J. P., Colledge, A. W., and Friebus, R. T., "Pick-up for sound motion pictures (including stereophonic)," J. Soc. Mot. Pic. Eng., vol. 30, no. 6, pp. 666–679, 1938, reprint
- [860] Maxfield, J. P. and Flannagan, C., "Wide range reproduction in theaters," J. Soc. Mot. Pic. Eng., vol. 26, no. 1, pp. 67–78, Jan 1936

- [861] Maxfield, J. P. and Harrison, H. C., "Methods of high quality recoding and reproduction of music and speech based on telephone research," *Bell System Technical Journal*, vol. 5, pp. 493–523, Jul 1926
- [862] Mazin, V., "Modeling of magnetic hysteresis and its influence on harmonic distortion in electrodynamic loudspeakers," 106th Convention of the Audio Engineering Society, May 1999, preprint no. 4865
- [863] Mazin, V. and Lee, Y. S., "Non-uniform voice coil winding for electrodynamic loudspeaker," 116th Convention of the Audio Engineering Society, May 2004, convention Paper no. 6152
- [864] McBean, D. J., "Private communication"
- [865] McClain, E. F. and Leach, W. M., "Comments on reactance annulling in horn-loaded loudspeaker systems – and author's reply," J. Audio Eng. Soc., vol. 29, no. 7/8, pp. 523– 524, Jul/Aug 1981
- [866] McCurrie, R. A., Ferromagnetic Materials -Structure and Properties. Academic Press, 1994, iSBN: 0-12-482495-1
- [867] McGinn, R. E., "Stokowski and Bell Telephone Laboratories," *Technology and Culture*, vol. 24, pp. 38–75, Jan 1983
- [868] McKenzie, M., "Loudspeaker transducers without cone breakup," *Voice Coil*, vol. 21, no. 8, pp. 25–27, Jun 2009
- [869] McLachlan, N. W., "Reproduction of transients by a horn loud speaker," *The Wireless Engineer*, vol. 14, pp. 168–174, Apr 1937
- [870] McLachlan, N. W., The New Acoustics. Oxford University Press, 1936
- [871] McLachlan, N. W., Elements of Loudspeaker Practice. Oxford University Press, 1935
- [872] McLachlan, N. W., Bessel Functions for Engineers. Oxford, 1935
- [873] McLachlan, N. W., Loud Speakers. Oxford, 1934
- [874] McLachlan, N. W., "On the symmetrical modes of vibration of truncated conical shells; with applications to loud-speaker diaphragms," Proc. Phys. Soc. London, 1932
- [875] McLachlan, N. W., "Magnetic damping of the moving coil," *The Wireless World*, pp. 243–245, 1930, march 5th

- [876] McLachlan, N. W., "The loudspeaker diaphragm," *The Wireless World*, pp. 586–588, 1930, june 4th
- [877] McLachlan, N. W., "Velocity of sound in loudspeaker diaphragms," *The Wireless World*, pp. 503–504, 1930, october 29th
- [878] McLachlan, N. W., "Transients alias attack, pt. 2," *The Wireless World*, pp. 385–388, 1929, april 10th
- [879] McLachlan, N. W., "Transients alias attack, pt. 1," *The Wireless World*, pp. 346–348, 1929, april 3rd
- [880] McLachlan, N. W., "Transients in loud speakers and amplifiers, pt. 1," *The Wireless World*, pp. 118–121, 1929, august 7th
- [881] McLachlan, N. W., "Transients in loud speakers and amplfiers, pt. 2," *The Wireless World*, pp. 154–157, 1929, august 14th
- [882] McLachlan, N. W., "The output stage and the moving coil," *The Wireless World*, pp. 154–157, 1928, august 8th
- [883] McLachlan, N. W., "The impedance of a moving coil loud speaker," *The Wireless World*, pp. 729–732, 1928, november 28th
- [884] McLachlan, N. W., "Resonance in moving coil loud speakers," *The Wireless World*, pp. 539–542, 1928, october 17th
- [885] McLachlan, N. W. and McKay, A. T., "Transient oscillations in a loudspeaker horn," *Proceedings of the Cambridge Philosophi*cal Society, Mathematical and Physical Sciences, vol. 32, pp. 265–275, 1936
- [886] McLean, J. S., Post, J. T., and Hixon, E. T., "A theoretical and experimental investigation of the throat impedance characteristics of constant directivity horns," J. Acoust. Soc. Am., vol. 92, no. 5, pp. 2509–2550, Nov 1992
- [887] McProud, C. G., "Two-way speaker system part 1," Audio, vol. 31, no. 10, pp. 18–22, Nov 1947
- [888] McProud, C. G., "Two-way speaker system part 2," Audio, vol. 31, no. 11, pp. 17–19, 35, Dec 1947
- [889] McRitchie, D. and Schell, S., The History and Legacy of JBL. JBL, 2006
- [890] Mead, S. P., "Phase distortion and phase distortion correction," *Bell System Technical Journal*, April 1928

- [891] Mechel, F. P., Formulas of Acoustics. Springer, 2001
- [892] Mechel, F. P., "The corner source model," Acta Acustica United with Acustica, vol. 86, no. 6, pp. 957–969, Nov/Dec 2000
- [893] Mechel, F. P., "Modal solutions in circular and annular ducts with locally or bulk reacting lining," Acustica united with Acta Acustica, vol. 84, no. 2, pp. 201–222, Mar/Apr 1998
- [894] Mellow, T. J. and K"arkk"ainen, L., "On the sound field of a conical horn in a sphere, free space and an infinite baffle," unpublished manuscript
- [895] Mellow, T. J. and Kärkkäinen, L., "Expansions for the radiation impedance of a rectangular piston in an infinite baffle," *J. Acoust. Soc. Am.*, vol. 140, no. 4, pp. 2867–2875, Oct 2016
- [896] Merhaut, J., "More on "impulse measurement of horn-type loudspeaker drivers"," J. Audio Eng. Soc., vol. 35, no. 3, pp. 144–145, Mar 1987
- [897] Merhaut, J., "Impulse measurement of horntype loudspeaker drivers," J. Audio Eng. Soc., vol. 34, no. 4, pp. 245–254, Apr 1986
- [898] Merhaut, J., Theory of Electroacoustics. McGraw-Hill, 1981, ISBN 0-07-041478-5
- [899] Merhaut, J., "Horn-loaded electrostatic loudspeaker," J. Audio Eng. Soc., vol. 19, no. 10, pp. 840–846, Nov 1971
- [900] Merhaut, J. and Skvor, Z., "An analog network of a cavity below the diaphragm in electro-acoustic transducers," *Monitor – Proceedings of the IREE Australia*, vol. 37, no. 3, 1976
- [901] Merilärinen, E., Current Driving of Loudspeakers. Print-on-demand service, 2010
- [902] Merit, B. and Novak, A., "Magnet-only loudspeaker magnetic circuits: A solution for significantly lower current distortion," J. Audio Eng. Soc., vol. 63, no. 6, pp. 463–474, Jun 2015. [Online]. Available: http://www. aes.org/e-lib/browse.cfm?elib=17825
- [903] Meyer, D. G., "Computer simulation of loudspeaker directivity," J. Acoust. Soc. Am., vol. 32, no. 5, pp. 294–315, May 1984
- [904] Meyer, E., "Die Klangspektren der Musikinstrumente," Zeitschr. f. techn. Physik, no. 12, pp. 606–611, 1931
- [905] Meyer, J. D., "Low distortion horn-driver system," 64th Convention of the Audio Engineering Society, Nov 1979, preprint no. 1527
- [906] Miles, J., "The reflection of sound due to a change in cross section of a circular tube," J. Acoust. Soc. Am., vol. 16, no. 1, pp. 14–19, Jul 1944
- [907] Miles, J., "Applications and limitations of mechanical-electrical analogies, new and old," J. Acoust. Soc. Am., vol. 14, pp. 183– 192, Jan 1943
- [908] Miles, J. W., "The diffraction of sound due to right-angled joints in rectangular tubes," J. Acoust. Soc. Am., vol. 19, no. 4, pp. 572–579, Jul 1947. [Online]. Available: http://scitation.aip.org/content/ asa/journal/jasa/19/4/10.1121/1.1916523
- [909] Miles, J. W., "The equivalent circuit for a bifurcated cylindrical tube," *The Journal of the Acoustical Society of America*, vol. 19, no. 4, pp. 579–584, Jul 1947. [Online]. Available: http://scitation.aip.org/content/ asa/journal/jasa/19/4/10.1121/1.1916524
- [910] Miles, J. W., "The analysis of plane discontinuities in cylindrical tubes. Part I," J. Acoust. Soc. Am., vol. 17, no. 3, pp. 259–271, Jan 1946. [Online]. Available: http://scitation.aip.org/content/asa/ journal/jasa/17/3/10.1121/1.1916327
- [911] Miles, J. W., "The analysis of plane discontinuities in cylindrical tubes. Part II," J. Acoust. Soc. Am., vol. 17, no. 3, pp. 272–284, Jan 1946. [Online]. Available: http://scitation.aip.org/content/asa/ journal/jasa/17/3/10.1121/1.1916328
- [912] Miller, D. C., Anectotal History of the Science of Sound. The Macmillan Company, New York, 1935
- [913] Mills, J., A Fugue in Cycles and Bels. D. Van Nostrand Co., New York, 1935
- [914] Mills, P. G. L. and Hawksford, M. O. J., "Distortion reduction in moving-coil loudspeaker systems using current-drive technology," J. Audio Eng. Soc., vol. 37, no. 3, pp. 129–148, Mar 1989
- [915] Milosevic, M. A. and Gmitrovic, M. V., "Optimization procedure for computer designing of horn loudspeaker," 80th Convention of the Audio Engineering Society, Mar 1986, preprint no. 2360

- [916] Miner, R. C., "More data on the WE Mirrophonic speaker system," *International Projectionist*, pp. 20, 22, Oct 1937
- [917] Miner, R. C., "Notes on ERPI's stereophonic sound picture system," *International Projectionist*, pp. 22–23, Nov 1937
- [918] Miner, R. C., "Diphonic loudspeaker for Mirrophonic sound systems," *Bell Laboratories Record*, vol. 16, pp. 53–55, Oct 1937
- [919] Mithoff, W. T., "Building a 36-inch cone speaker," *Radio News*, pp. 1348–1351,1388, May 1927
- [920] Mittra, R. and Lee, S. W., Analytical Techniques in the Theory of Guided Waves. The MacMillan Company, 1971
- [921] Mohammed, A., "Equivalent circuits of solid horns undergoing longitudinal vibrations," J. Acoust. Soc. Am., vol. 38, no. 5, pp. 862–866, Nov 1965
- [922] Mohsen, A., Piscoya, R., and Ochmann, M., "The application of the dual surface method to treat the nonuniqueness in solving acoustic exterior problems," *Acta Acustica United with Acustica*, vol. 97, no. 4, pp. 699–707, 2011
- [923] Moir, J., "The measurement of loudspeaker efficiency," 47th Convention of the Audio Engineering Society, Feb 1974, preprint no. A-1
- [924] Moir, J., "Doppler distortion in loudspeakers," *The Wireless World*, pp. 65–69, Apr 1974
- [925] Moir, J., "Doppler distortion in loudspeakers," 46th Convention of the Audio Engineering Society, Sep 1973, preprint no. 925
- [926] Moir, J., High Quality Sound Reproduction. Chapman & Hall Ltd, 1961
- [927] Moir, J., "Standing waves in listening rooms," *The Wireless World*, pp. 254–259, Jun 1958
- [928] Moir, J., "Phase shift and sound quality," *The Wireless World*, pp. 165–168, Apr 1956
- [929] Moir, J., "Loudspeaker diaphragm control," *The Wireless World*, pp. 252–255, Jul 1951
- [930] Moir, J., "Transients and loudspeaker damping," *The Wireless World*, pp. 161–170, May 1950
- [931] Moir, J., "Optimum frequency range," Electronic Engineering, pp. 98–99, Mar 1948

- [932] Moir, J., "Perfect vs. pleasing reproduction," Audio Engineering, pp. 24–27, 41, 43, June 1947
- [933] Moir, J., Heyser, R. C., and Preis, D., "On differential time delay (comments on -some useful graphical relationships- and -linear distortions-) and authors' replies," *J. Audio Eng. Soc.*, vol. 24, no. 9, p. 752, Nov 1976
- [934] Molloy, C., "N-parameter ducts," J. Acoust. Soc. Am., vol. 57, no. 5, pp. 1030–1035, May 1975
- [935] Molloy, C. T., "Design of spherical radiators capable of producing prescribed directivity patterns," J. Acoust. Soc. Am., vol. 43, no. 3, pp. 592–609, 1968
- [936] Molloy, C. T., "Use of four-pole parameters in vibration calculations," J. Acoust. Soc. Am., vol. 29, no. 7, pp. 842–853, Jul 1957
- [937] Molloy, C. T., "Response peaks in finite horns," J. Acoust. Soc. Am., vol. 22, no. 5, pp. 551–557, Sep 1950
- [938] Molloy, C. T., "The lined tube as an element of acoustic circuits," J. Acoust. Soc. Am., vol. 21, no. 4, pp. 413–418, Jul 1949
- [939] Molloy, C. T., "Calculation of the directivity index for various types of radiators," J. Acoust. Soc. Am., vol. 20, no. 4, pp. 387–405, Jul 1948
- [940] Moore, B. C., "Masking in the human auditory system," in Collected Papers on Digital Audio Bit-Rate Reduction, 1993
- [941] Moore, C. J., "The asymmetric radiation patterns of interacting duct modes," Acustica, vol. 47, pp. 22–26, 1980
- [942] Morgan, K. F. and Shea, T. E., "The electrical engineering of sound picture systems," *Trans. Am. Inst. Elec. Eng.*, vol. 49, pp. 105– 116, 1930
- [943] Morgans, R., Hansen, C., Zander, A., and Murphy, D., "The sound field at the mouth of a horn," *Twelfth International Congress* on Sound and Vibration, Jul 2005
- [944] Morgans, R. C., "Optimisation techniques for horn loaded loudspeakers," Ph.D. dissertation, University of Adelaide, 2004
- [945] Morita, S., "Comments on acoustic radiation of a horn loudspeaker by the finite element method – a consideration of the acoustic characteristic of horns and author's reply," J. Audio Eng. Soc., vol. 28, no. 12, p. 900, Dec 1980

- [946] Morita, S., Kyono, N., Sakai, S., Yamabuchi, T., and Kagawa, Y., "Acoustic radiation of a horn loudspeaker by the finite element method – a consideration of the acoustic characteristic of horns," J. Audio Eng. Soc., vol. 28, no. 7/8, pp. 482–489, Jul/Aug 1980
- [947] Morse, P. M., Vibration and Sound, 2nd ed. McGraw-Hill, 1948
- [948] Morse, P. M. and Bolt, R. H., "Sound waves in rooms," *Rev. Modern Physics*, vol. 16, no. 2, pp. 69–150, Apr 1944
- [949] Morse, P. M. and Feshback, H., Methods of Theoretical Physics. McGraw-Hill, 1953
- [950] Morse, P. M. and Ingard, U., Theoretical Acoustics. McGraw-Hill, 1986
- [951] Muehleisen, R. T., "Reflection, radiation, and coupling of higher order modes at discontinuities in finite length rigid walled rectangular ducts," Ph.D. dissertation, The Pennsylvania State University, 1996
- [952] Murphy, D. J., "Axisymmetric model of a moving-coil loudspeaker," J. Audio Eng. Soc., vol. 41, no. 9, pp. 679–690, Sep 1993. [Online]. Available: http://www.aes. org/e-lib/browse.cfm?elib=6987
- [953] Murphy, D. J. and Morgans, R., "Modelling acoustic horns with FEA," 128th Convention of the Audio Engineering Society, May 2010, convention Paper no. 8076
- [954] Murphy, D. J. and Morgans, R., "Modelling compression drivers using T-matrices and Finite Element Analysis," *119th Convention of the Audio Engineering Society*, Oct 2005, convention paper no. 6580. [Online]. Available: http://www.aes.org/e-lib/ browse.cfm?elib=13308
- [955] Murray, F. M., "An application of Bob Smith's phasing plug," 61st Convention of the Audio Engineering Society, Nov 1978, preprint no. 1384
- [956] Murray, F. M. and Durbin, H. M., "Threedimensional diaphragm suspensions for compression drivers," J. Audio Eng. Soc., vol. 28, no. 10, pp. 720–725, Oct 1980
- [957] Murray, J., "The quadratic-throat waveguide: A white paper on an invention by charles e. hughes," Peavey Electronics Corporation, Tech. Rep., 2000
- [958] Myers, A. and Parks, R., "How to measure a horn," *The Galpin Society Journal*, vol. 48, pp. 193–199, Mar 1995

- [959] Nadel, B., The Western Electric Loud Speaker and Horn Compendium, ser. Museum of Sound. The Historical Institute for the Study of Sound, 1997, vol. 2
- [960] Nadell, A., "Analysis of modern theatre sound reproducing units," *International Projectionist*, pp. 14, 17–19, 29–31, Jan 1938
- [961] Nadell, A., "Speaker development an index to andvances in sound-picture art," *International Projectionist*, vol. 11, no. 1, pp. 7–8, 11, Jul 1936
- [962] Nagarkar, B. N. and Finch, R. D., "Sinusoidal horns," J. Acoust. Soc. Am., vol. 50, no. 1 (1), pp. 23–31, 1971
- [963] Nahin, P. J., Oliver Heaviside: Sage in Solitude - The Life, Work, and Times of an Electrical Genius of the Victorian Age, Cotellessa, R., Ed. IEEE Press, 1988
- [964] Nakamura, T., Nakamura, A., and Takeuchi, R., "Simulation for nonlinear propagation of finite amplitude sound wave through a circular pipe," *Acustica*, vol. 38, pp. 331–333, 1977
- [965] Nederveen, C. J., Acoustical aspects of woodwind instruments. Fritz Knuf, Amsterdam, 1969
- [966] Nederveen, C. J. and Dalmont, J., "Corrections to the plane-wave approximation in rapidly flaring horns," *Acta Acustica United with Acustica*, vol. 94, no. 3, pp. 461–473, May/June 2008
- [967] Neumann, H., "Ein und Ausschwingvorgärnge an elektrodynamischen Lautsprechern mit starken Magnetfeldern," *Zeitschr. f. techn. Physik*, no. 12, pp. 627–632, 1931
- [968] Newcomb, A. L., "Home installation and performance of an exponential low-frequency horn," *IEEE Transactions on Audio and Electroacoustics*, vol. 15, no. 4, pp. 198–200, Dec 1967
- [969] Newell, P., Studio Monitoring Design. Focal Press, London, 1995
- [970] Newell, P. and Holland, K., Loudspekers for Music Recording and Reproduction, 2nd ed. Routledge, 2019
- [971] Newell, P. and Holland, K. R., "Round the horn," *Speaker Builder*, no. 8, pp. 24–26, 28, 30, 34, 36, 65, 1994

- [972] Newman, R. J., "Aspects related to the significance of diaphragm excursion," 80th Convention of the Audio Engineering Society, Mar 1986, preprint no. 2342
- [973] Newman, R. J., "A high quality all horn type transducer," 40th Convention of the Audio Engineering Society, Apr 1971, preprint no. 784
- [974] Newman, R. J., Keele, D. B., Carlson, D. E., Long, J., Frye, K. H., and Ruhlen, M. S., "An important aspect of underhung voicecoils: A technical tribute to ray newman," 121st Convention of the Audio Engineering Society, Oct 2006, convention Paper no. 6911
- [975] Newman, Raymond J.; Fidlin, P. F., "New magnetic system designs for soundreinforcement loudspeaker applications," J. Audio Eng. Soc, vol. 37, no. 4, pp. 215–225, 1989. [Online]. Available: http: //www.aes.org/e-lib/browse.cfm?elib=6093
- [976] Nilsson, B., "Acoustic transmission in curved ducts with varying crossections," *Proc. Royal Soc. London*, vol. 458, pp. 1555–1574, 2001
- [977] Nomoto, I., Iwahara, M., and Onoye, H., "A technique for observing loudspeaker wavefront propagation," J. Audio Eng. Soc., vol. 24, no. 1, pp. 9–13, Jan/Feb 1976
- [978] Noreland, D., "Numerical techniques for acoustic modelling and design of brass wind instruments," Ph.D. dissertation, Uppsala University, 2003, summary
- [979] Noreland, D., "A numerical method for acoustic waves in horns," Acta Acustica united with Acustica, vol. 88, pp. 576–586, 2002
- [980] Noreland, D., Udawalpola, R., Seaone, P., Wadbro, E., and Berggren, M., "An efficient loudspeaker horn designed by numerical optimisation: an experimental study," Umeå University, 901 87 Umeå, Sweden, Tech. Rep. UMINF 10.1, Jan 2010
- [981] Noreland, J. O. D., Udawalpola, M. R., and Berggren, O. M., "A hybrid scheme for bore design optimization of a brass instrument," *J. Acoust. Soc. Am.*, vol. 128, no. 3, pp. 1391–1400, Sept 2010
- [982] Norton, E. L., "Design of finite networks for uniform frequency characteristics," Western Electric Co., Tech. Rep., 1926
- [983] Novak, J. F., "Performance of enclosures for low-resonance high-compliance loudspeakers," J. Audio Eng. Soc., vol. 7, no. 1, pp. 29–37, Jan 1959

- [984] Nyquist, H. and Brand, S., "Measurement of phase distortion," *Bell System Technical Journal*, vol. 9, no. 7, pp. 522–549, Jul 1930
- [985] O'Day, M., "Function of horn in acoustics (abstract)," *Phys. Rev.*, vol. 23, p. 328, Aug 1928
- [986] O'Handley, R. C., Modern Magnetic Materials – Principles and Applications. John Wiley & Sons, 2000
- [987] Oclee-Brown, J., "Wideband compression driver design, part 1: A theoretical approach to designing compression drivers with nonrigid diaphragms," 139th Convention of the Audio Engineering Society, Oct-Nov 2015, convention Paper no. 9386
- [988] Oclee-Brown, J., "A general approach for the acoustic design of compression drivers with "narrow" channels and rigid diaphragms," in 137 Convention of the Audio Engineering Society, Oct 2014, convention Paper 9165. [Online]. Available: http://www.aes.org/ e-lib/browse.cfm?elib=17488
- [989] Oclee-Brown, J., "Loudspeaker compressiondriver phase-plug design," Ph.D. dissertation, University of Southampton, November 2012. [Online]. Available: http: //eprints.soton.ac.uk/348798/
- [990] Ohkawa, M. and Yoshii, H., "Horn speaker having continuously changing cross section," 2nd Regional Convention of the Audio Engineering Society, Jun 1987, preprint no. 2664
- [991] Ohm, G. S., "Noch ein paar worte über die definition des tones," Ann. Phys. Chem., vol. 62, pp. 1–18, 1844
- [992] Ohm, G. S., "Über die definition des tones, nebst daran geknüpfter theorie der sirene und ähnlicher tonbildender vorrichtungen," Ann. Phys. Chem., vol. 59, pp. 513–565, 1843
- [993] Oie, S., Takeuchi, R., and Shindo, T., "Sound radiation from concave radiator in an infinite baffle," *Acustica*, vol. 46, no. 3, pp. 268–275, Nov 1980
- [994] Olney, B., "A method of eliminating cavity resonance, extending low frequency response and increasing acoustic damping in cabinet type loudspeakers," J. Acoust. Soc. Am., vol. 8, pp. 104–111, Oct 1936
- [995] Olney, B. J., "The acoustical labyrinth," *Electronics*, vol. 10, pp. 24–27, 36, April 1937

- [996] Olsen, E. S. and Thorborg, K., "Diaphragm area and mass nonlinearities of cone loudspeakers," 99th Convention of the Audio Engineering Society, Oct 1995, preprint no. 4082
- [997] Olsen, K. M. and Stoffers, R. C., "Effect of carbon content on the magnetic properties of iron-30% cobalt-15% chromium alloys," *Journal of Applied Physics*, vol. 42, no. 4, pp. 1792–1793, 1971
- [998] Olson, H. F., "Loudspeakers," IRE Transactions on Audio, pp. 730–737, May 1962
- [999] Olson, H. F., Elements of Acoustical Engineering, 2nd ed. D. Van Nostrand Co., New York, 1957
- [1000] Olson, H. F., "A review of twenty-five years of sound reproduction," J. Acoust. Soc. Am., vol. 26, no. 5, pp. 637–643, Sept 1954
- [1001] Olson, H. F., Musical Engineering. McGraw-Hill, 1952
- [1002] Olson, H. F., Elements of Acoustical Engineering, 2nd ed. D. Van Nostrand Co., New York, 1947
- [1003] Olson, H. F., "The action of a direct radiator loudspeaker with a non-linear cone suspension system," J. Acoust. Soc. Am., vol. 16, no. 1, pp. 1–4, Jul 1944
- [1004] Olson, H. F., "A horn consisting of manifold exponential sections," J. Soc. Mot. Pic. Eng., vol. 30, no. 5, pp. 511–518, May 1938
- [1005] Olson, H. F., "Horn loud speakers part i," *RCA Review*, pp. 68–83, 1937
- [1006] Olson, H. F., "Horn loud speakers part II," RCA Review, pp. 263–277, 1937
- [1007] Olson, H. F., "Recent developments in theater loudspeakers of the directional baffle type," J. Soc. Mot. Pic. Eng., vol. 18, no. 5, pp. 571–583, May 1932
- [1008] Olson, H. F., "A new high-efficiency theatre loudspeaker of the directional baffle type," J. Acoust. Soc. Am., vol. 2, pp. 485–498, Apr 1931
- [1009] Olson, H. F. and Hackley, R., "Combination horn and direct radiator loudspeaker - a complete description of the 64-A unit," *Broadcast News*, no. 27, pp. 8–9, 14–15, Dec. 1937
- [1010] Olson, H. F. and Hackley, R., "Combination horn and direct radiator loud-speaker," *Proc. Inst. Rad. Eng.*, vol. 24, no. 12, pp. 1557– 1566, Dec 1936

- [1011] Olson, H. F. and Massa, F., "A compound horn loudspeaker," J. Acoust. Soc. Am., vol. 8, pp. 48-52, Jul 1936
- [1012] Olson, H. F. and Massa, F., "On the realistic reproduction of sound with particular reference to sound motion pictures," J. Soc. Mot. Pic. Eng., vol. 23, no. 2, pp. 63–81, Aug 1934
- [1013] Olson, H. F. and Massa, F., Applied Acoustics. P. Blakiston's son & co., inc., Philadelphia, 1934. [Online]. Available: https://babel.hathitrust.org/cgi/pt? id=wu.89050884915;view=2up;seq=8
- [1014] Olson, H. F. and Preston, J., "Wide-range loudspeaker developments," J. Soc. Mot. Pic. Eng., vol. 47, no. 4, pp. 327-352, Oct 1946
- [1015] Olson, H. F. and Wolff, I., "Sound concentrator for microphones," J. Acoust. Soc. Am., vol. 1, no. 3A, pp. 410-417, Apr 1930
- [1016] Oohashi, T., Nishina, E., Kawai, N., Fuwamoto, Y., and Imai, H., "Highfrequency sound above the audible range affects brain electric activity and sound perception," 91st Convention of the Audio Engineering Society, Oct 1991, preprint no. 3207
- [1017] Opitz, M. and Barnert, R., "Modern development tools for dynamic transducers," 111th Convention of the Audio Engineering Society, Sep 2001, convention Paper no. 5438
- [1018] Ortiz, S., Kolbrek, B., Cobo, P., González, L. M., and Colina, C. d. l., "Point source loudspeaker design: Advances on the inverse horn approach," J. Audio Eng. Soc, vol. 62, no. 5, pp. 345-354, 2014. [Online]. Available: http://www.aes.org/ e-lib/browse.cfm?elib=17245
- [1019] Osborne, W., "Higher mode propagation of sound in short curved bends of rectangular cross-section," J. Sound Vibr., vol. 45, no. 1, pp. 39-52, 1976
- [1020] Osborne, W., "Errata-calculation of the angular propagation constant for a bend," J. Sound Vibr., vol. 38, no. 4, p. 497, 1975
- [1021] Osborne, W., "Calculation of the angular propagation constant for a bend," J. Sound Vibr., vol. 37, no. 1, pp. 65–77, 1974
- [1022] Overley, J. P., "Energy distribution in music," IRE Transactions on Audio, pp. 120-123, Sep-Oct 1956
- [1023] PAFEC FE, "User manual," pACSYS Ltd., [1035] Parow, K., "The All-Fun horn," Speaker Strelley Hall, Nottingham UK.

- [1024] Pagneux, V., "Multimodal admittance method in waveguides and singularity behavior at high frequencies," Journal of Computational and Applied Mathematics, vol. 234, pp. 1834–1841, 2010
- [1025] Pagneux, V., Amir, N., and Kergomard, J., "A study of wave propagation in varying cross-section waveguides by modal decomposition. Part I. Theory and validation," J. Acoust. Soc. Am., vol. 100, no. 4, pp. 2034-2048, Oct 1996
- [1026] Paige, T. S. and Hamid, M. A. K., "Horntype electrothermal loudspeakers," IEEE Transactions on Audio and Electroacoustics, vol. 20, no. 3, pp. 218-222, Aug 1972
- [1027] Panzer, J., "Radiation impedance of cones at high frequencies," 112th Convention of the Audio Engineering Society, May 2002, convention Paper no. 5520. [Online]. Available: http://www.aes.org/e-lib/ browse.cfm?elib=11422
- [1028] Panzer, J. and Campbell, R. H., "Multiple driver modeling with a modern lumped element simulation program," 102nd Convention of the Audio Engineering Society, Mar 1997, preprint no. 4441
- [1029] Panzer, J. and Ferekidis, L., "The use of continuous phase for interpolation, smoothing and forming mean values of complex frequency response curves," 116th Convention of the Audio Engineering Society, May 2004, convention Paper 6005
- [1030] Panzer, J. W. and Harris, N., "Distributed mode loudspeaker simulation model," 104th Convention of the Audio Engineering Society, May 1998, preprint no. 4739
- [1031] Panzer, J. W. and Harris, N., "Distributedmode loudspeaker radiation simulation," 105th Convention of the Audio Engineering Society, Sep 1998, preprint no. 4783
- [1032] Parker, R. J., Permanent Magnet Guidelines, Magnetic Materials Producers Association Std. MMPA PGM-88
- [1033] Parker, R. J., "Trends in loudspeaker magnet structures," 15th Annual Meeting of the Audio Engineering Society, Oct 1964, preprint no. 293
- [1034] Parker, R. J. and Studders, R. J., Permanent Magnets and Their Application. John Wiley & Sons, Inc., 1962
- Builder, no. 5, pp. 10-19, 1999

- [1036] Pass, N., "Speaker cables: Science or snake oil," Speaker Builder, no. 2, pp. 1–6, 1980
 [1051] Pocock, L. C., "Theory of loud-speaker design: Some factors affecting faithful and effi-
- [1037] Passman, B. and Ward, J., "A new theater sound system," J. Soc. Mot. Pic. Eng., vol. 56, no. 5, pp. 527–537, May 1951
- [1038] Patronis, E. T., "The georgia institute of thechnology stadium sound system," J. Audio Eng. Soc., vol. 23, no. 8, pp. 630–634, Oct 1975
- [1039] Peacock, H. B., "Predicted transmission curves of acoustic wave filters," *Phys. Rev.*, vol. 23, pp. 525–527, 1924
- [1040] Petrie, A. F., "A new wide angle direct radiator tweeter," 10th Annual Meeting of the Audio Engineering Society, Sep 1958, preprint no. 68
- [1041] Pettit, I. C., "Magnetic materials," Reprint from Bell Laboratories Record
- [1042] Petyt, M., Theoretical Acoustic and Numerical Techniques. Springer Verlag Wien–New York, 1983, ch. Finite Element Techniques for Acoustics, pp. 51–103
- [1043] Phelps, W. D., "Power transmission loss in exponential horns and pipes with wall absorption," J. Acoust. Soc. Am., vol. 12, pp. 68–74, Jul 1940
 Oct 2007, convention Paper no 7204
 Oct 2007, convention Paper no 7204
 Oct 2007, convention Paper no 7204
 Interpret and provide the second se
- [1044] Pierce, A. D., Acoustics. Acoustical Society of America, New York, 1994
- [1045] Pierce, J. R., Almost All About Waves. The Massachusetts Institute of Technology, 1974
- [1046] Piron, M., "Dynamic analysis of fast-acting solenoid actuators," Ph.D. dissertation, University of Glasgow, Mar 1999
- [1047] Plach, D. J., "Design factors in horn-type speakers," J. Audio Eng. Soc., vol. 1, no. 4, pp. 276–281, Oct 1953
- [1048] Plach, D. J. and Williams, P. B., "Hornloaded loudspeakers," *Proceedings of the National Electronics Conference*, vol. 7, pp. 108–114, 1951
- [1049] Plitnik, G. R. and Strong, W. J., "Numerical method for calculating input impedances of the oboe," *The Journal of the Acoustical Society of America*, vol. 65, no. 3, pp. 816–825, 1979
- [1050] Pocock, "Cabinet or baffle?" The Wireless World, pp. 201–202, 1936, august 28th

- 1051] Pocock, L. C., "Theory of loud-speaker design: Some factors affecting faithful and efficient reproduction," J. Institution of Electrical Engineers, vol. 62, no. 327, pp. 268–270, 1924
- [1052] Pocock, L. C., "Theory of loud-speaker design: Some factors affecting faithful and efficient reproduction," *Proc. Phys. Soc. London*, vol. 36, pp. 120–123, 1923
- [1053] Pokrovskii, V., Ulinich, F., and Savvinykh, S., "Non-local reflection in waveguides of varying cross section," *Soviet Physics – Doklady*, vol. 4, pp. 108–110, 1959, english translation. Originally published in Dokl. Akad. Nauk (SSSR) vol. 124, pp. 304–306
- [1054] Pokrovskii, V., Ulinich, F., and Savvinykh, S., "Local reflection in waveguides of variable cross section," *Soviet Physics – Doklady*, vol. 3, pp. 580–583, 1958, english translation. Original published in Dokl. Akad. Nauk (SSSR) vol. 120, pp. 504–506
- [1055] Ponteggia, D. and Cola, M. D., "Timefrequency characterization of loudspeaker responses using wavelet analysis," 123rd Convention of the Audio Engineering Society, Oct 2007, convention Paper no 7204
- [1056] Poppe, M. C., "The K-coupler: A new acoustical-impedance transformer," *IEEE Transactions on Audio and Electroacoustics*, vol. 14, no. 4, pp. 163–167, Dec 1966
- [1057] Porter, H. L., "The acoustic problems of the gramophone," *Proc. Phys. Soc. London*, vol. 36, pp. 129–131, 1923
- [1058] Porter, J. and Geddes, E. R., "Loudspeaker cabinet edge diffraction," J. Audio Eng. Soc., vol. 37, no. 11, pp. 908–918, Nov 1989
- [1059] Post, J. T. and Hixon, E. T., "A modeling and measurement study of acoustic horns," Ph.D. dissertation, University of Texas, May 1994
- [1060] Post, J. T., Hixon, E. T., and Mapes-Riordan, D., "Comments on "horn modeling with conical and cylindrical transmissionline elements" and author's reply," *J. Audio Eng. Soc.*, vol. 42, no. 6, pp. 497–498, Jun 1994
- [1061] Prévost, J., "Le dressage des escargots ou le retour au naturel," L'Audiophile, pp. 11–23. [Online]. Available: http://jipihorn. free.fr/Documents/Articles%20a%20nous/ Dressage%20escargots%20partie%201.pdf

- [1062] Prévost, J. Le dressage des escargots le retour. [Online]. Available: http://jipihorn. free.fr/Documents/Articles%20a%20nous/ Dressage%20escargots%20partie%202.pdf
- [1063] Preis, D., "Phase distortion and phase equalization in audio signal processing: A tutorial review," J. Audio Eng. Soc., vol. 30, no. 11, pp. 774–794, Nov 1982
- [1064] Preis, D., "Measures and perception of phase distortion in electroacoustical systems," in *IEEE International Conference on Acoustics, Speech, and Signal Processing*, 1980, pp. 490–493
- [1065] Preis, D., "Linear distortion," J. Audio Eng. Soc., vol. 24, no. 5, pp. 346–367, Jun 1976
- [1066] Preisman, A., "Loudspeaker damping part 1," Audio Engineering, pp. 22–23, 37–38, Mar 1951
- [1067] Preisman, A., "Loudspeaker damping part 2," Audio Engineering, pp. 24, 26, 39–45, Apr 1951
- [1068] Press, W. H., Flannery, B. P., Teukolsky, S. A., and Vetterling, W. T., Numerical Recipes - The Art of Scientific Computing, 3rd ed. Cambridge University Press, 2007, iSBN-10: 0521880688
- [1069] Press, W. H., Flannery, B. P., Teukolsky, S. A., and Vetterling, W. T., Numerical Recipes in Pascal. Cambridge University Press, 1989
- [1070] Pribyl, P. and Holan, D., "Impulse measurements of acoustic impedance of horns," 92nd Convention of the Audio Engineering Society, Mar 1992, preprint no. 3270
- [1071] Price, H., "New sound-picture laboratory," Bell Laboratories Record, vol. 8, no. 6, pp. 257–262, Feb 1930
- [1072] Pritchard, R., "Mutual acoustic impedance between radiators in an infinite rigid plane," J. Acoust. Soc. Am., vol. 32, no. 6, pp. 730– 737, Jun 1960
- [1073] Putland, G. R., "Thermal time constants and dynamic compressibility of air in fiberfilled loudspeaker enclosures," J. Audio Eng. Soc., vol. 46, no. 3, pp. 139–151, Mar 1998
- [1074] Putland, G. R., "Modeling of horns and enclosures for loudspeakers," Ph.D. dissertation, University of Queensland, Dec 1996

- [1075] Putland, G. R., "Every one-parameter acoustic field obeys Webster's horn equation," J. Audio Eng. Soc., vol. 41, no. 6, pp. 435–451, Jun 1993
- [1076] Putland, G. R., "Comments on "Acoustic waveguide theory" and author's reply," J. Audio Eng. Soc., vol. 39, no. 6, pp. 469–472, Jun 1991
- [1077] Pyle, R. W., "Effective lenght of horns," J. Acoust. Soc. Am., vol. 57, no. 6, pp. 1309– 1317, 1975
- [1078] Pyle, R. W., "Duality principle for horns (abstract)," J. Acoust. Soc. Am., vol. 37, no. 6, pp. 1178–1178, 1965. [Online]. Available: http://scitation.aip.org/content/ asa/journal/jasa/37/6/10.1121/1.1939401
- [1079] Pyle, R. W., "Solid torsional horns," Office of Naval Research, Tech. Rep. 408983, May 1963
- [1080] Quaegebeur, N. and Chaigne, A., "Mechanical resonances and geometrical nonlinearities in electrodynamic loudspeakers," J. Audio Eng. Soc., vol. 56, no. 6, pp. 462–472, Jun 2008
- [1081] Ródenas, J. A., Aarts, R. M., and Janssen, A. J. E. M., "Derivation of an optimal directivity pattern for sweet spot widening in stereo sound reproduction," *J. Acoust. Soc. Am.*, vol. 113, no. 1, pp. 267–278, Jan 2003
- [1082] Raczynski, B. (2013, Mar) Some attributes of linear-phase loudspeakers. [Online]. Available: http://www.linkwitzlab.com/Attributes_ Of_Linear_Phase_Loudspeakers.pdf
- [1083] Ramadan, O. and Oztoprak, A. Y., "Unconditionally stable Crank-Nicolson waveequation PML formulations for truncating FDTD domains," *Electrical Engineering*, vol. 89, pp. 89–93, 2006
- [1084] Rankine, A. O., "General principles involved in the accurate reproduction of sound by means of a loud-speaker," J. Institution of Electrical Engineers, vol. 62, no. 327, pp. 265–268, 1924
- [1085] Rankine, A. O., "General principles involved in the accurate reproduction of sound by means of a loud-speaker," *Proc. Phys. Soc. London*, vol. 36, pp. 115–119, 1923
- [1086] Rasetshwane, D. M., Neele, S. T., Allen, J. B., and Shera, C. A., "Reflectance of acoustic horns and solution of the inverse

problem," J. Acoust. Soc. Am., vol. 131, [1101] Riegger, H., "Zur Teorie des Lautsprechno. 3, pp. 1863–1873, Mar 2012 ers," Wissenschaftliche Veröffentlichungen

- [1087] Rausch, M., Lerch, R., Kaltenbacher, M., and Landes, H., "Optimization of electrodynamic loudspeaker-design parameters by using a numerical calculation scheme," Acustica united with Acta Acustica, vol. 85, no. 3, pp. 412–419, May/Jun 1999
- [1088] Rayleigh, J. W. S., "On the propagation of sound in narrow tubes of variable section," *Phil. Mag.*, vol. 31, pp. 89–96, 1916
- [1089] Rayleigh, J. W. S., The Theory of Sound, 2nd ed. Dover Publications, 1894, vol. 2
- [1090] Rayleigh, J. W. S., "On the theory of resonance," *Phil. Trans. Royal Soc. London*, vol. 161, pp. 77–118, Nov 1871
- [1091] Razavy, M., "Localized and propagating modes in acoustical waveguides with variable cross section," J. Acoust. Soc. Am., vol. 95, no. 5, pp. 2371–2377, May 1994
- [1092] RCA, "RCA Deluxe theatre sound systems, types PG-140A/PG-142A/PG-143A," 1940
- [1093] RCA Engineering Products Department, "Type PG-301 and 301A four magnetic-track stereoscope motion picture sound system -Exhibitor's installation instructions," 2C8-48.25, Nov 1953
- [1094] RCA Installation and Service division, "Loudspeaker mechanisms," 2C2-2.2, May 1937, second edition
- [1095] RCA Installation and Service division, "Description of mechanisms," Photophone Data no. 50, April 1936, first edition
- [1096] Reichardt, W., Grundlagen der Technischen Akustik. Akademische Verlagsgesellshaft, Geest & Portig K.-G., 1968
- [1097] Reichardt, W. and Lenk, A., "Die vierpolersatzchaltbilder der elektromechanishen wandler," Acustica, vol. 5, no. 1, pp. 1–6, 1954
- [1098] Rettinger, M. and Stevens, S. M., "Sound reinforcement in the hollywood bowl," Audio, pp. 15–17,38, Feb 1947
- [1099] Rice, C. W. and Kellogg, E. W., "Notes on the development of a new type of hornless loudspeaker," J. Am. Inst. Elec. Eng., vol. 44, no. 9, pp. 982–991, Sept 1925
- [1100] Richardson, E. G., Technical Aspects of Sound. Elsevier, 1953

- 101] Riegger, H., "Zur Teorie des Lautsprechers," Wissenschaftliche Veröffentlichungen aus dem Siemens-Konzern, vol. 3, pp. 67– 100, 1924, part 2
- [1102] Riegger, H., "Über klanggetreue Shallaufname, Verstärkung und Wiedergabe," Zeitschr. f. techn. Physik, vol. 5, pp. 577– 580, 1924
- [1103] Rife, D. D., "Modulation transfer function measurement with maximum-length sequences," J. Audio Eng. Soc., vol. 41, no. 10, pp. 779–790, Oct 1993
- [1104] Rife, D. D. and Vanderkooy, J., "Transferfunction measurement with maximumlength sequences," J. Audio Eng. Soc., vol. 37, no. 6, pp. 419–444, Jun 1989
- [1105] Riggs, S. and Geddes, E. R., "A two microphone technique for the measurement of acoustic waveguide impedance," 87th Convention of the Audio Engineering Society, 1989, preprint no. 2878
- [1106] Riley, J., "Whispering across the hudson river," *Radio News*, April 1928
- [1107] Rintelen, C. and Andreoli, R. L., "BlueThunder," Sound Practices, pp. 6–9, Winter 1994
- [1108] Risbo, L., Agerkvist, F. T., Tinggaar, C., Halvorsen, M., and Putzeys, B., "Force factor modulation in electro dynamic loudspeakers," 141st Convention of the Audio Engineering Society, Sept 2016, convention Paper no. 9607
- [1109] Roberts, J., "Reconsider baby the promise of horns in the contemporary situation," *Sound Practices*, pp. 5–8, Fall 1994
- [1110] Robin, J. E., "Something for nothing: How much will it cost?" *International Projectionist*, vol. 8, no. 1, pp. 10, 34, Jan 1935
- [1111] Robineau, P. and Vaucher, R., "Analysis of nonlinearities in compression drivers and horns," 89th Convention of the Audio Engineering Society, Feb 1995, preprint no. 3998
- [1112] Robinson, D. W. and Dadson, R. S., "A re-determination of the equal-loudness relations for pure tones," *Bristish Journal of Applied Physics*, vol. 7, pp. 166–181, May 1956
- [1113] Robinson, R. A., "An electroacoustic analysis of transmission line loudspeakers," Ph.D. dissertation, School of Electrical and Computer Engineering, Georgia Institute of Technology, 2007

- [1114] Rocard, Y., General dynamics of vibrations. Ungar, New York, 1960
- [1115] Rocard, Y., "Sur la propagation des ondes donores d'amplitude finie," Comptes Rendus Hebd. Seances Acad. Sci., vol. 196, pp. 161– 164, 1933
- [1116] Rogers, P. H. and Van Buren, A. L., "New approach to a constant beamwidth transducer," J. Acoust. Soc. Am., vol. 64, no. 1, pp. 38–43, Jul 1978
- [1117] Rosner, A. and King, L. S., "New mobile sound reinforcement system for the metropolitan opera-new york philharmonic orchestra park concerts," J. Audio Eng. Soc., vol. 25, no. 9, pp. 566–572, Sep 1977
- [1118] Rossi, M., Acoustics and electroacoustics. Artech House, Norwood, MA, 1987, ISBN 0-89006-255-2
- [1119] Rostafinski, W., "Analysis of propagation of waves of acoustic frequencies in curved ducts," J. Acoust. Soc. Am., vol. 56, no. 1, pp. 11–15, Jul 1974
- [1120] Roters, H. C., Electromagnetic Devices. John Wiley & Sons, 1941
- [1121] Rottgart, K., "Elektrische Anziehung nach Johnsen-Rahbek und ihre Anwendung," Zeitschr. f. techn. Physik, vol. 2, pp. 315– 328, 1921
- [1122] Round, H. J., "Loud speaker horn design," The Wireless World and Radio Review, pp. 490–491, Jul 1924, july 23
- [1123] Roure, A., "Propagation du son dans des conduits a section continuement variable
 application a la determination des frequences propres de certains volumes complexes," in *Proceedings Euromech 94*, Sept 1977
- [1124] Roure, A., "Propagation guidée, étude des discontinuités," Ph.D. dissertation, Universit'e Aix-Marseille, 1976
- [1125] Routledge, R., Discoveries and Inventions of the 19th Century (1890, 1989 Reprint). Bracken Books, 1989
- [1126] Rudnik, I., "On the attenuation of high amplitude waves of stable saw-tooth form propagated in horns," J. Acoust. Soc. Am., vol. 30, no. 4, pp. 339–342, Apr 1958
- [1127] Rumsey, Francis; Auld, R., "Stokowski and the evolution of recording techniques," J. Audio Eng. Soc, vol. 60, no. 7/8, pp.

627–630, 2012. [Online]. Available: http://www.aes.org/e-lib/browse.cfm?elib=16370

- [1128] Rypinski, B., "An afternoon with john k. hilliard," J. Audio Eng. Soc., vol. 37, no. 7/8, pp. 605–607, 628–629, Jul/Aug 1989
- [1129] Saad, Y. and Schultz, M. H., "GMRES: a generalized minimal residual algorithm for solving nonsymmetric linear systems," *Siam J. Sci. Stat. Comput.*, vol. 7, no. 3, pp. 856– 869, Jul 1986
- [1130] von Said, A., "Modenfilter f
 ür schallmessung im rechteckigen kanal," Acustica, vol. 50, pp. 51–56, 1982
- [1131] Salava, T., "Measurement of input impedance of loudspeaker horns," J. Audio Eng. Soc., vol. 29, no. 6, pp. 416–420, Jun 1981
- [1132] Salava, T., "The transient distortion of loudspeakers and its evalution," *IEEE Transactions on Audio and Electroacoustics*, vol. AU-15, no. 4, pp. 182–188, Dec 1967
- [1133] Salmon, V., "Efficiency of direct-radiator loudspeakers," Audio Engineering, pp. 13– 14, 42, Aug 1951
- [1134] Salmon, V., "Generalized plane wave horn theory," J. Acoust. Soc. Am., vol. 17, no. 3, pp. 199–211, Jan 1946
- [1135] Salmon, V., "A new family of horns," J. Acoust. Soc. Am., vol. 17, no. 3, pp. 212– 218, Jan 1946
- [1136] Salmon, V., "The sound field and radiation impedance of a hyperbolic horn," Ph.D. dissertation, Mass. Inst. Tech., 1938
- [1137] Salvatti, A., "Virtual acoustic prototypingpractical applications for loudspeaker development," 129th Convention of the Audio Engineering Society, Nov 2010, convention Paper no. 8213
- [1138] Sandeman, E. K., "The relative importance of each frequency region in the audible spectrum - measurements on loud-speakers," J. Institution of Electrical Engineers, vol. 62, no. 327, pp. 275–278, 1924
- [1139] Sandeman, E. K., "The relative importance of each frequency region in the audible spectrum - measurements on loud-speakers," *Proc. Phys. Soc. London*, vol. 36, pp. 132– 138, 1923
- [1140] Sanford, R. L., Permanent Magnets, National Bureau of Standards Std. C448, August 1944

- [1141] Sanial, A. J., "Graphs for exponential horn [1153] Schmidt, H., "Über eine neuartige Lautdesign," RCA Review, pp. 97–102, 1938
- [1142] Santee, H. B., "Installation and adjustment of western electric sound-projector systems," Bell Laboratories Record, vol. 7, no. 3, pp. 112-116, Nov 1928
- [1143] de Santis, E. M. and Henin, S., "Perception and thresholds of nonlinear distortion using complex signals," Aalborg Universitys, Tech. Rep., 2007
- [1144] de Santis, E. M. and Henin, S., "Perception & thresholds of nonlinear distortion using complex signals," Master's thesis, Aalborg University, 2007
- [1145] Sato, K., "On the acoustical properties of conical horns (pt 2): On the sound field due to a conical horn with a source at its vertex (in japanese)," Report of the Aeronautical Research Institute, Tokyo Imperial University, vol. 5, no. 64, pp. 261-285, Nov 1930
- [1146] Sato, K., "On the sound field due to a conical horn with a source at the vertex," Japanese Journal of Physics, vol. 5, no. 3, pp. 103-109, 1929
- [1147] Sato, K., "On the acoustical properties of conical horns (in Japanese)," Report of the [1160] Schroeder, A., "W. E. extended frequency Aeronautical Research Institute, Tokyo Imperial University, vol. 4, no. 42, pp. 1–19, Jun 1928
- [1148] Satoh, K., Takewa, H., and Iwasa, M., "The measuring method of dynamic force-todisplacement characteristics for loudspeaker suspension system and driving force," 107th Convention of the Audio Engineering Society, Sep 1999, preprint no. 5023
- [1149] Scavone, G. P., "Modeling wind instrument sound radiation using digital waveguides," in Proc. of the ICMC (1999). Citeseer, 1999, pp. 355-358
- [1150] Schaft, H., "A solid state high frequency compression horn," J. Audio Eng. Soc., vol. 14, no. 3, pp. 258-262, Jul 1966
- [1151] Schenck, H. A., "Improved integral formulation for acoustic radiation problems," J. Acoust. Soc. Am., vol. 44, no. 1, pp. 41–58, 1968
- [1152] Schildbach, M., "Audio technology in berlin to 1943: Headphones and Loudspeakers," 94th Convention of the Audio Engineering Society, Mar 1993

- sprecherkombination," Funk und Ton, no. 5, pp. 226-232, 1950
- [1154] Schmidt, S., Wadbro, E., and Berggren, M., "Large-scale three-dimensional acoustic horn optimization," SIAM Journal on Scientific Computing, vol. 38, no. 6, pp. B917–B940, 2016
- [1155] Schmitt, R., "Causes of nonlinear compression driver distortions and their audibility," 99th Convention of the Audio Engineering Society, Oct 1995, preprint no. 4131
- [1156] Schmitt, R. and Klippel, W., "Modeling of the nonlinear behavior of a horn loaded compression driver system," 92nd Convention of the Audio Engineering Society, Mar 1992, preprint no. 3256
- [1157] Schneider, A. W., "Sound systems at the two new york world's fairs," J. Audio Eng. Soc., vol. 16, no. 2, pp. 141–148, Apr 1968
- [1158] Schottky, W., "Trichterlautsprecher," Germany Patent 606 087, filed, 1930, issued March 18, 1934
- [1159] Schottky, W., "Vorführung eines neuen Lautsprechers I." Zeitschr. f. techn. Physik, vol. 5, pp. 574–576, 1924
- range equipment," International Projectionist, vol. 5, no. 2, pp. 7–9, Apr 1933
- [1161] Schuhmacher, A. and Rasmussen, K. B., "Modelling of horn-type loudspeakers for outdoor sound reinforcement systems," Applied Acoustics, vol. 56, pp. 25-37, 1999
- [1162] Schurer, H., "Linearization of electroacostic transducers," Ph.D. dissertation, University of Twente Enschede, 1997
- [1163] Schurer, H., Berkhoff, A. P., Slump, C. H., and Herrmann, O. E., "Modeling and compensation of nonlinear distortion in horn loudspeakers," 96th Convention of the Audio Engineering Society, Feb 1994, preprint no. 3819
- [1164] Schurer, H., de Bree, H.-E., Slump, C. H., and Herrmann, O. E., "Comparision of two menthods of measurements of horn input impedance," University of Twente, Dept. of Electrical Eng., Tech. Rep., 2000
- [1165] Schurer, H., de Bree, H.-E., Slump, C. H., and Herrmann, O. E., "Comparison of two methods for measurement of horn input impedance," J. Audio Eng. Soc., vol. 46, no. 12, pp. 1119–1125, Dec 1998

- [1166] Scibor-Marchocki, R. I., "Analysis of Hypex horns," J. Acoust. Soc. Am., vol. 27, no. 5, pp. 939–946, Sep 1955
- [1167] Scott, H. J., "The hyperbolic transmission line as a matching section," *Proc. Inst. Rad. Eng.*, pp. 1654–1657, Nov 1953
- [1168] Scott, J. and Lemon, G., "Non-linear distortions of loudspeaker radiators in closed enclosures," 5th Australian Regional Conference of the Audio Engineering Society, Apr 1995, preprint no. 4027
- [1169] Scott-Taggart, J., Thermionic Tubes in Radio Telegraphy and Telephony. The Wireless Press, Ltd., 1924
- [1170] Scriven, E. O., "Symposium on wire transmission of symphonic music and its reproduction in auditory perspective: Amplifiers," *Bell System Technical Journal*, vol. 13, pp. 278–284, Apr 1934
- [1171] Scriven, E. O., "A sound projector system for use in motion picture theaters," *Bell System Technical Journal*, vol. 8, no. 1, pp. 196–208, Jan 1929
- [1172] Scriven, E. O., "Sound projector system for motion picture theaters," *Bell Laboratories Record*, vol. 7, no. 3, pp. 106–111, 1928
- [1173] Secor, H. W., "What is the best loud speaker and why," *Radio News*, pp. 1106–1107,1165, Mar 1927
- [1174] Selamet, A., Ji, Z. L., and Kach, R. A., "Wave reflections from duct terminations," J. Acoust. Soc. Am., vol. 109, no. 4, pp. 1304–1311, Apr 2001
- [1175] Seybert, A. F., Soenarko, B., Rizzo, F. J., and J., S. D., "A special integral equation formulation for acoustic radiation and scattering for axisymmetric bodies and boundary conditions," J. Acoust. Soc. Am., vol. 80, pp. 1241–1247, 1986
- [1176] Sha, K., Yang, J., and Gan, W.-S., "A simple calculation method for the selfand mutual-radiation impedance of flexible rectangular patches in a rigid infinite baffle," *Journal of Sound and Vibration*, vol. 282, no. 1–2, pp. 179–195, 2005. [Online]. Available: http://www.sciencedirect.com/ science/article/pii/S0022460X04001488
- [1177] Shanefield, D., Lipshitz, S. P., Pocock, M., and Vanderkooy, J., "Comments on -on the audibility of midrange phase distortion in

audio systems- and authors' reply," J. Audio Eng. Soc., vol. 31, no. 6, pp. 447–448, Jun 1983

- [1178] Shaw, E. A. G., "Acoustic horns with spatially varying density or elasticity," J. Acoust. Soc. Am., vol. 50, no. 3, pp. 830– 840, 1971
- [1179] Shaw, E. A. G., "The acoustic wave guide. i. an apparatus for the measurement of acoustic impedance using plane waves and higher order mode waves in tubes," J. Acoust. Soc. Am., vol. 25, no. 2, pp. 224–230, Mar 1953
- [1180] Shaw, E. A. G., "The acoustic waveguide. II. some specific normal acoustic impedance measurements of typical porous surfaces with respect to normally and obliquely incident waves," J. Acoust. Soc. Am., vol. 25, no. 2, pp. 231–235, Mar 1953
- [1181] Shen, Y., An, K., and Ou, D., "The relation between active radiating factor and frequency responses of loudspeaker line arrays part 2," 123rd Convention of the Audio Engineering Society, Oct 2007, convention Paper no. 7191
- [1182] Shen, Y., Ou, D., and An, K., "The relation between active radiating factor and frequency responses of loudspeaker line arrays," 122nd Convention of the Audio Engineering Society, May 2007, convention Paper no. 7058
- [1183] Sherman, C. H. and Butler, J. L., "Analysis of harmonic distortion in electroacoustic transducers," J. Acoust. Soc. Am., vol. 98, no. 3, pp. 1596–1611, Sep 1995
- [1184] Sherman, C. H. and Butler, J. L., "Harmonic distortion in moving coil transducers caused by generalized coulomb damping," J. Acoust. Soc. Am., vol. 96, no. 2, pp. 937–943, 1994. [Online]. Available: http://scitation.aip.org/content/asa/ journal/jasa/96/2/10.1121/1.410267
- [1185] Sherman, C. H. and Butler, J. L., "Perturbation analysis of nonlinear effects in moving coil transducers," J. Acoust. Soc. Am., vol. 94, no. 5, pp. 2485–2496, 1993. [Online]. Available: http://scitation.aip.org/content/asa/journal/jasa/94/5/10.1121/1.407384
- [1186] Sherman, C. H., Butler, J. L., and Butler, A. L., "Analysis of harmonic distortion in electroacoustic transducers under indirect drive conditions," *J. Acoust. Soc. Am.*, vol. 101, no. 1, pp. 297–314, Jan 1997

- [1187] Shindo, T., Yoshioka, T., and Fukuyama, K., "Calculation of sound radiation from an unbaffled, rectangular-cross-section horn loudspeaker using combined analytical and boundary-element methods," J. Audio Eng. Soc., vol. 38, no. 5, pp. 340–349, May 1990
- [1188] Siciliano, J. A., "How to give your woofer a lie detector test," 60th Convention of the Audio Engineering Society, May 1978, preprint no. 1368
- [1189] Siegman, A., "Quasi fast Hankel transform," Optics Letters, vol. 1, no. 1, pp. 13–15, Jul 1977
- Siemens, W., Wissenshcaftliche und Technishe Arbeiten. Verlag von Julius Springer, 1891, vol. II, published by Elibron Classics, 2006, ISBN 0-543-76004-9
- [1191] Sifuentes, J., "Preconditioning the integral formulation of the Helmholtz equation via deflation," Master's thesis, Rice University, Houston, Texas, 2006
- [1192] da Silva, A. R., "Numerical studies of aeroacoustic aspects of wind instruments," Ph.D. dissertation, Computational Acoustic Modeling Laboratory, McGill University, Montreal, Quebec, Canada, 2008
- [1193] Silva, F., Guillemain, P., Kergomard, J., Mallaroni, B., and Norris, A., "Approximation formulae for the acoustic radiation impedance of a cylindrical pipe," *J. Sound Vibr.*, vol. 322, no. 1-2, pp. 255–263, 2009
- [1194] Simons, W., "1926 twenty years of horn progress – 1946," International Projectionist, vol. 21, pp. 52–54, Jul, Sect. 2 1946
- [1195] Simpson, A. J., "Auditory perception of dynamic range in the nonlinear system," 128th Convention of the Audio Engineering Society, May 2010, convention Paper no. 8103
- [1196] Sinclair, R., "Optimization of two-segment exponential horns," 63rd Convention of the Audio Engineering Society, May 1979, preprint no. 1509
- [1197] Sinclair, R., "The dispersion of re-entrant exponential horns," 60th Convention of the Audio Engineering Society, May 1978, preprint no. 1371
- [1198] Sioles, G. W., "Tweeter design considerations," J. Audio Eng. Soc., vol. 4, no. 3, pp. 105–109, Jul 1956

- [1199] Sivian, L. J., Dunn, H. K., and White, S. D., "Absolute amplitudes and spectra of certain musical instruments and orchestras," J. Acoust. Soc. Am., vol. 2, pp. 330–371, Jan 1931
- [1200] Sivian, L. J. and White, S. D., "Minimum audible sound fields," J. Acoust. Soc. Am., vol. 4, pp. 288–321, Apr 1933
- [1201] Skudrzyk, E. J., Foundations of acoustics. Springer Verlag Wien–New York, 1971
- [1202] Small, R. H., "Measurement of loudspeaker amplitude modulation distortion," 114th Convention of the Audio Engineering Society, Mar 2003, convention Paper no. 5731
- [1203] Small, R. H., "Suitability of low-frequency divers for horn-loaded loudspeaker systems," 57th Convention of the Audio Engineering Society, May 1977, preprint no. 1251
- [1204] Small, R. H., "Vented-box loudspeaker systems – part III: Synthesis," J. Audio Eng. Soc., vol. 21, no. 7, pp. 549–554, Sept 1973
- [1205] Small, R. H., "Direct-radiator loudspeaker system analysis," J. Audio Eng. Soc., vol. 20, no. 6, pp. 383–395, Jun 1972
- [1206] Small, R. H., "Closed-box loudspeaker systems part I: Analysis," J. Audio Eng. Soc., vol. 20, no. 10, pp. 798–808, Dec 1972
- [1207] Small, R. H., "Efficiency of direct radiator loudspeaker systems," J. Audio Eng. Soc., vol. 19, no. 10, pp. 862–863, Nov 1971
- [1208] Small, R. H., "Constant-voltage crossover network design," J. Audio Eng. Soc., vol. 19, no. 1, pp. 12–19, Jan 1971
- [1209] Smith III, J. O., "A basic introduction to digital waveguide synthesis (for the technically inclined)," Center for Computer Research in Music and Acoustics (CCRMA), Stanford University., 2006. [Online]. Available: http://ccrma.stanford.edu/~{}jos/swgt
- [1210] Smith, A. P., "Electronic crossover networks and their contribution to improved loudspeaker transient response," J. Audio Eng. Soc., vol. 19, no. 8, pp. 674–679, Sep 1969
- [1211] Smith, B. H., "An investigation of the air chamber of horn type loudspeakers," J. Acoust. Soc. Am., vol. 25, no. 2, pp. 305– 312, Mar 1953
- [1212] Smith, B. H., "Distributed source horn," Audio Antology, vol. 2, pp. 104–105, 1952

- [1213] Smith, B. H. and Selsted, W. T., "A loudspeaker for the range from 5 to 20kc," Audio Engineering, pp. 16–18, Jan 1950
- [1214] Smith, D., Keele, D. B., and Eargle, J., "Improvements in monitor loudspeakers," J. Audio Eng. Soc., vol. 31, no. 6, pp. 408–422, Jun 1983
- [1215] Smith, I. M. and Griffiths, D. V., Programming the finite Element Method. John Wiley & Sons, 1988
- [1216] Snakowska, A., Analiza pola akustycznego falowodu cylindrycznego z uwzględnieniem zjawisk dyfrakcyjnych na wylocie (Analysis of the acoustic field of a cylindrical duct considering diffraction at the open end, in Polish). Rzeszów, 2007
- [1217] Snakowska, A., "The acoustic far field of an arbitrary Bessel mode radiating from a semiinfinite unflanged cylindrical wave-guide," *Acoustica*, vol. 77, pp. 53–62, 1992
- [1218] Snakowska, A., "Impedancja wylotu rury cylindrycznej bez odgrody dla fali płaskiej padającej na wylot," Archivum Akustyki (Archives of Acoustics, Polish Edition), vol. 13, no. 3, pp. 223–234, 1978
- [1219] Snakowska, A., Idczak, H., and Bogusz, B., "Modal analysis of the acoustic field radiated from an unflanged cylindrical duct – theory and measurement," *Acoustica*, vol. 82, pp. 201–206, 1996
- [1220] Snakowska, A., Jurkiewicz, J., and Gorazd, L., "Single mode directivity characteristics of the multimode sound wave radiated from unflanged cylindrical duct – theory and experiment," 62nd Polish Open Seminar on Acoustics,, 2015
- [1221] Snakowska, A. and Wyrzykowski, R., "Calculation of the acoustical field of a semiinfinite cylindrical wave-guide by means of the green function expressed in cylindrical coordinates," *Archives of Acoustics*, vol. 11, no. 3, pp. 261–285, 1986
- [1222] Snakowska, A. and Wyrzykowski, R., Wybrane zagadnienia teorii dyfrakcji (Selected topics of the theory of diffraction, in Polish). Wydawnictwo Wyższej Skoły Pedagogicznej w Rzesowie, 1984
- [1223] Snow, W. B., "Impedance-matched or optimum?" J. Audio Eng. Soc, vol. 5, no. 2, pp. 66–70, Apr 1957. [Online]. Available: http: //www.aes.org/e-lib/browse.cfm?elib=279

- [1224] Snow, W. B., "Basic principles of stereophonic sound," J. Soc. Mot. Pic. Eng., vol. 61, no. 5, pp. 567–589, Nov 1953
- [1225] Snow, W. B., "Audible frequency ranges of music, speech, and noise," *Bell System Technical Journal*, vol. 10, pp. 616–627, Oct 1931
- [1226] Sodaro, J. S., "Exponential horn design," Radio and Television News, pp. 71–73, Nov 1953
- [1227] Soffel, A. R., "How pitch changes with loudness," *Bell Laboratories Record*, vol. 15, no. 5, pp. 145–148, Jan 1937
- [1228] Soffel, A. R., "Sound reinforcing system for the hollywood bowl," *Bell Laboratories Record*, vol. 16, pp. 225–228, Mar 1937
- [1229] Sorolla, E., Mosig, J. R., and Mattes, M., "Algorithm to calculate a large number of roots of the cross-product of Bessel functions," *Journal of LaTeX class files*, vol. 6, pp. 1–10, 2012
- [1230] Souther, H. T., "Design elements for improved bass response in loudspeaker systems," Audio Antology, vol. 2, pp. 92–96, 1952
- [1231] Southern, A., Murphy, D., Campos, G., and Dias, P., "Finite difference room acoustic modelling on a general purpose graphics processing unit," *128th Convention of the Audio Engineering Society*, 2010, convention Paper no. 8028
- [1232] Sowerby, A. L. M., "Matching valve and loud speaker," *The Wireless World*, pp. 548–551, 1930, may 28th
- [1233] Sponable, E. I., "Historical development of sound films part 1 and 2," J. Soc. Mot. Pic. Eng., vol. 48, no. 4, pp. 275–303, Apr 1947
- [1234] Sponable, E. I., "Historical development of sound films part 3–7," J. Soc. Mot. Pic. Eng., vol. 48, no. 5, pp. 407–422, May 1947
- [1235] Sridhar, R., Tylka, J. G., and Choueiri, E. Y., "Metrics for constant directivity," 140th Convention of the Audio Engineering Society, June 2016, convention Paper no. 9501
- [1236] Ståhl, K. E., "Synthesis of loudspeaker mechanical parameters by electrical means: A new method for controlling low-frequency loudspeaker behavior," J. Audio Eng. Soc., vol. 29, no. 9, pp. 587–596, Sep 1981

- [1237] Standards Division, RCA Photophone, Inc, "RCA Photophone System," *The Motion Picture Projectionist*, vol. 2, no. 6, pp. 8–10, 17, 20–23, 26–27, Mar 1929
- [1238] Stedman, C. K., "A new treatment of the horn-diaphragm coupling chamber for receiver measruements," J. Acoust. Soc. Am., vol. 7, pp. 265–270, Apr 1936
- [1239] Steinberg, J. C., "The stereophonic sound film system – pre- and post-equalization of compandor systems," J. Acoust. Soc. Am., vol. 13, no. 2, pp. 107–114, Oct 1941
- [1240] Steinberg, J. C., "Effects of phase distortion on telephone apparatus," *Bell System Technical Journal*, vol. 9, no. 7, pp. 550–566, Jul 1930
- [1241] Steinberg, J. C. and Snow, W. B., "Symposium on wire transmission of symphonic music and its reproduction in auditory perspective: Physical factors," *Bell System Techni*cal Journal, vol. 13, pp. 245–258, Apr 1934
- [1242] Stenzel, H., "Die Akustische Strahlung der Rechteckigen Kolbenmembran," Acustica, vol. 2, no. 6, pp. 263–281, 1952
- [1243] Stenzel, H., Leitfaden zur Berechnung von Schallvorgängen. Verlag von Julius Springer, 1939
- [1244] Stenzel, H., "Über die Theorie und Anwendung des Hornlautsprechers," Zeitschr. f. techn. Physik, no. 12, pp. 621–627, 1931
- [1245] Stepanishen, P. R., "The impulse response and time dependent force on a baffled circular piston and a sphere," J. Sound Vibr., vol. 26, no. 3, pp. 287–298, 1973
- [1246] Stevens, R. D. and Vanderkooy, J., "A novel single-microphone method of measuring acoustical impedance in a tube," 115th Convention of the Audio Engineering Society, Oct 2003, convention Paper no. 5901
- [1247] Stevenson, A. F., "Exact and approximate wave equations for wave propagation in acoustic horns," J. App. Phys., vol. 22, no. 12, pp. 1461–1463, Dec 1951
- [1248] Stewart, G. W., "Comments on Hoersh's theory of the optimum angle of a receiving conical horn," *Phys. Rev.*, vol. 25, pp. 230–231, 1925
- [1249] Stewart, G. W., "Influence of a branch line upon acoustic transmission of a conduit," *Phys. Rev.*, vol. 26, pp. 668–690, 1925

- [1250] Stewart, G. W., "Acoustic wave filters," *Phys. Rev.*, vol. 25, pp. 90–98, 1925
- [1251] Stewart, G. W., "Acoustic wave filters," *Phys. Rev.*, vol. 23, pp. 520–524, 1924
- [1252] Stewart, G. W., "A variable single band acoustic wave filter," *Phys. Rev.*, vol. 22, pp. 502–505, 1923
- [1253] Stewart, G. W., "Acoustic wave filters," *Phys. Rev.*, vol. 20, no. 6, pp. 528–551, 1922
- [1254] Stewart, G. W., "The performance of conical horns," *Phil. Mag.*, vol. 16, no. 4, pp. 313– 326, 1920
- [1255] Stewart, G. W. and Lindsay, R. B., Acoustics. D. Van Nostrand Co., New York, 1930
- [1256] Stokes, G. G., "On the communication of vibration from a vibrating body to a surrounding gas," *Phil. Trans. Royal Soc. London*, vol. 158, pp. 447–463, 1868
- [1257] Strahm, C. N., "Complete analysis of single and multiple loudspeaker enclosures," 81st Convention of the Audio Engineering Society, Nov 1986, preprint no. 2419
- [1258] Strayer, J., "Private e-mail correspondence with Thomas Dunker," 1996
- [1259] Strnat, K. J., "Modern permanent magnets for applications in electro-technology," *Proceedings of the IEEE*, vol. 78, no. 6, p. 923, Jun 1990
- [1260] Stroh, W. R., "Phase shift in loudspeakers," *IRE Transactions on Audio*, vol. AU-7, pp. 120–124, Sep-Oct 1959
- [1261] Struck, C. J., "ZFIT: A matlab tool for Thiele-Small parameter fitting and optimization," 129th Convention of the Audio Engineering Society, Nov 2010, preprint no. 8220
- [1262] Struck, C. J., Thorborg, K., and Unruh, A. D., "An improved electrical equivalent circuit model for dynamic moving coil transducers," 122nd Convention of the Audio Engineering Society, May 2007, convention Paper no. 7063. [Online]. Available: http:// www.aes.org/e-lib/browse.cfm?elib=14048
- [1263] Stupak Jr., J. J., "Methods of magnetizing permanent magnets," EMCW Coil Winding Show, Oct 2000
- [1264] Sun, Z., Gimenez, G., Vray, D., and Denis, F., "Calculation of the impulse response of a rigid sphere using the physical optic method and modal method jointly," J. Acoust. Soc. Am., vol. 89, no. 1, pp. 10–18, 1991

- [1265] Sutherland, G. A., "Auditorium acoustics and the loud-speaker," J. Institution of Electrical Engineers, vol. 62, no. 327, pp. 280– 283, 1924
- [1266] Sutherland, G. A., "Auditorium acoustics and the loud-speaker," Proc. Phys. Soc. London, vol. 36, pp. 142–148, 1923
- [1267] Suzuki, H., "Mutual radiation impedance of a double-disk source and its effect on the radiated power," J. Audio Eng. Soc., vol. 34, no. 10, pp. 780–788, Oct 1986
- [1268] Suzuki, H., Morita, S., and Shindo, T., "On the perception of phase distortion," J. Audio Eng. Soc., vol. 28, no. 9, pp. 570–574, Sep 1980
- [1269] Suzuki, H. and Shibata, S., "Amplitude and frequency modulation distortions of a loudspeaker," J. Audio Eng. Soc., vol. 32, no. 4, pp. 246–253, Apr 1984
- [1270] Suzuki, H. and Tichy, J., "Radiation and diffraction effects of convex and concave domes," J. Audio Eng. Soc., vol. 29, no. 12, pp. 873–881, Dec 1981
- [1271] Suzuki, K. and Nomoto, I., "Computerized analysis and observation of the vibration modes of a loudspeaker cone," J. Audio Eng. Soc., vol. 30, no. 3, pp. 98–106, Mar 1982
- [1272] Svean, J. and Sørsdal, S., "Temperatur i høyttalere ved musikk- og støysignaler," Akustisk Laboratorium, Sintef, Tech. Rep. STF44 A74061, 1974
- [1273] Svensson, U. P. (2013) Edge diffraction toolbox for matlab. [Online]. Available: http://www.iet.ntnu.no/~{}software/index.html
- [1274] Svensson, U. P., "Lecture notes for tt4170 audio technology," 2010
- [1275] Svensson, U. P., Calamia, P., and Nakanishi, S., "Frequency-domain edge diffraction for finite and infinite edges," *Acta Acustica united with Acustica*, vol. 95, pp. 568–572, 2009
- [1276] Svensson, U. P., Fred, R. I., and Vanderkooy, J., "An analytic secondary source model of edge diffraction impulse responses," J. Acoust. Soc. Am., vol. 106, no. 5, pp. 2331– 2344, Nov 1999
- [1277] Svensson, U. P., Nakano, M., Sakagami, K., and Morimoto, M., "Effects of wall reflections of the sound radiation from a kettledrum: A numerical study," *International* Symposium on Musical Acoustics, June 1998

- [1278] Svensson, U. P., Sakagami, K., and Morimoto, M., "Line integral model of transient radiation from planar pistons in baffles," *Acoustica*, vol. 87, pp. 307–315, 2001
- [1279] Svensson, U. P. and Wendlandt, K., "The influence of a loudspeaker cabinet's shape on the radiated power," *Proc. Baltic Acoustic* 2000, Journal of Vibroengineering, no. 3(4), pp. 189–192, 2000
- [1280] Tønsberg, T., "Basshorn," Norges Tekniske Høgskole, Tech. Rep., 1979
- [1281] Türetken, B., Büyükaksoy, A., and Demir, A., "Radiation of sound waves from a rigid stepped cylindrical waveguide," *Journal of Engineering Mathematics*, vol. 46, pp. 33– 54, 2003
- [1282] Tacikowski, M., LeCoze, J., Driver, J., and Kobylansk, A., "The effect of trace elements additions on the character of the grain boundary population in high purity alpha iron," Journal de Physique IV, Colloque C7, supll. Journ. Phys. III, vol. 5, pp. 247–253, nov 1995
- [1283] Talley, C. E. and Kautzky, R. W., "A modern sound-reinforcement system for theaters," J. Soc. Mot. Pic. Eng., vol. 50, no. 2, pp. 149– 161, Feb 1948
- [1284] Tan, C.-T., Moore, B. C. J., and Zacharov, N., "The effect of nonlinear distortion on the perceived quality of music and speech signals," *J. Audio Eng. Soc.*, vol. 51, no. 11, pp. 1012–1031, Nov 2003
- [1285] Tanaka, S., "On the acoustic folded horns," Science Reports of the Research Institutes, Tohoku Unviversity, Ser. A. Physics, chemistry and metallurgy, no. 1, pp. 243–248, 1949
- [1286] Tanner, R. H., "The impact of acoustics on music," Audio Engineering, pp. 21, 49–55, Nov 1950
- [1287] Tappan, P. W., "Loudspeaker enclosure walls," J. Audio Eng. Soc., vol. 10, no. 3, pp. 224–231, Jul 1962
- [1288] Tappan, P. W., "Analysis of a low-frequency loudspeaker system," J. Audio Eng. Soc., vol. 7, no. 1, pp. 38–46, Jan 1959
- [1289] Tarnoczy, T., "Sound focussing lenses and waveguides," Ultrasonics, pp. 115–127, Jul/Sept 1965
- [1290] Technical notes and research briefs, "Giant horn for space flight center tests," J. Acoust. Soc. Am., vol. 40, no. 2, pp. 504–505, 1966

- [1291] Terman, F. E., Radio Engineers' Handbook. McGraw-Hill Book Company, 1943
- [1292] The Baroda Bard and Ray, "How to knock your socks off with 5 watts – some general observations," *Sound Practices*, pp. 35–38, Fall 1994
- [1293] Thiele, A. N., "Some thoughts on the dynamics of reproduced sound," J. Audio Eng. Soc., vol. 53, no. 1/2, pp. 130–132, Jan/Feb 2005
- [1294] Thiele, A. N., "Phase considerations in loudspeaker systems," 110th Convention of the Audio Engineering Society, May 2001, convention Paper no. 5307
- [1295] Thiele, A. N., "Force conversion factors of a loudspeaker driver," J. Audio Eng. Soc., vol. 41, no. 9, pp. 701–703, Sep 1993
- [1296] Thiele, A. N., "Loudspeakers in vented boxes, part i," J. Audio Eng. Soc., vol. 19, no. 5, pp. 382–391, May 1971
- [1297] Thiele, A. N., "Loudspeakers in vented boxes, part II," J. Audio Eng. Soc., vol. 19, no. 6, pp. 471–483, Jun 1971
- [1298] Thiessen, G. J., "Resonance characteristics of a finite catenoidal horn," J. Acoust. Soc. Am., vol. 22, no. 5, pp. 558–562, Sep 1950
- [1299] Thompson, S. C. and Warren, D. M., "Analog circuit model for loudspeakers including eddy current behavior and suitable for time domain simulation," 143rd Convention of the Audio Engineering Society, Oct 2017, convention Paper no. 9826
- [1300] Thorborg, K. and Futtrup, C., "Frequency dependence of the loudspeaker suspension (a follow up)," J. Audio Eng. Soc, vol. 61, no. 10, pp. 778–786, 2013. [Online]. Available: http://www.aes.org/e-lib/ browse.cfm?elib=16970
- [1301] Thorborg, K. and Futtrup, C., "Electrodynamic transducer model incorporating semiinductance and means for shorting AC magnetization," J. Audio Eng. Soc., vol. 59, no. 9, pp. 612–627, Sep 2010
- [1302] Thorborg, K., Tinggaard, C., Agerkvist, F., and Futtrup, C., "Frequency dependence of damping and compliance in loudspeaker suspensions," J. Audio Eng. Soc., vol. 58, no. 6, pp. 472–486, Jun 2010. [Online]. Available: http://www.aes.org/e-lib/ browse.cfm?elib=15507

- [1303] Thorborg, K. and Unruh, A. D., "Electrical equivalent circuit model for dynamic moving-coil transducers incorporating a semi-inductor," J. Audio Eng. Soc., vol. 56, no. 9, pp. 696–709, Sep 2008
- [1304] Thrasher, F. M., Okay for sound...How the Screen Found its voice, Thrasher, F., Ed. Duell, Sloan and Pearche, New York, 1946
- [1305] Thuras, A. L., "A sensitive method of measuring magnetic flux in small areas remove this one replace by 1937-021," J. Acoust. Soc. Am., vol. 9, p. 74, Jul 1937, abstract
- [1306] Thuras, A. L., "A sensitive method of measuring magnetic flux in small areas," J. Acoust. Soc. Am., vol. 9, p. 74, Jul 1937, abstract
- [1307] Thuras, A. L., "Loudspeakers and microphones for auditory perspective," *Bell Lab*oratories Record, vol. 12, no. 7, pp. 203–208, Mar 1934
- [1308] Thuras, A. L., "A new loud-speaking receiver," *Bell Laboratories Record*, vol. 6, no. 1, pp. 205–209, Mar 1928
- [1309] Thuras, A. L., "An efficient driving coil for loud speakers," *Bell Laboratories Record*, vol. 6, pp. 409–410, 1928
- [1310] Thuras, A. L., Jenkins, R. T., and O'Neil, H. T., "Extraneous frequencies generated in air carrying intense sound waves," *Bell System Technical Journal*, vol. 14, pp. 159–172, Jan 1935, also published in JASA, vol. 6, pp. 173-180.
- [1311] Thurmond, B., "Horn layout simplified," J. Audio Eng. Soc., vol. 35, no. 12, pp. 976–983, Dec 1987
- [1312] Thurmond, B., "Measured performance of loudspeaker combinations," 58th Convention of the Audio Engineering Society, Nov 1977, preprint no. 1284
- [1313] Ting, L. and Miksis, M. J., "Wave propagation through a slender curved tube," J. Acoust. Soc. Am., vol. 74, no. 2, pp. 631– 639, Aug 1983
- [1314] Toole, F. E., Sound Reproduction. Focal Press, London, 2008
- [1315] Toole, F. E., "Direction and space the final frontiers," 1997
- [1316] Torick, E., "Highlights in the history of multichannel sound," J. Audio Eng. Soc., vol. 48, no. 1/2, pp. 27–31, Jan/Feb 1998

- [1317] Tsuchiya, T., Kagawa, Y., Doi, M., and Tsuji, T., "Finite element simulation of nonlinear acoustic generation in a horn loudspeaker," J. Sound Vibr., vol. 266, pp. 993– 1008, 2002
- [1318] Tyndall, J., Sound. D. Appleton and Company, 1903
- [1319] Udawalpola, R. and Berggren, M., "Optimization of an acoustic horn with respect to efficiency and directivity," *In*ternational Journal for Numerical Methods in Engineering, vol. 73, no. 11, pp. 1571–1606, 2008. [Online]. Available: http://dx.doi.org/10.1002/nme.2132
- [1320] Underhill, C. N., Solenoids, Electromagnets and Electromagnetic Windings, 2nd ed. D. Van Nostrand Co., New York, 1921
- [1321] Unknown, "Quality in sound," Radio Today, 1940
- [1322] Unknown, "A radio voice that a million could hear," *Popular Radio*, March 1928
- [1323] Unknown, "New loud-speaker sends voice over a mile away," *Reading Eagle*, January 23. 1928
- [1324] Urban, M., Heil, C., Pignon, C., Combet, C., and Bauman, P., "The distributed edge dipole (DED) model for cabinet diffraction effects," J. Audio Eng. Soc., no. 10, pp. 1043–1059, Oct 2004
- [1325] Ureda, M. S., "On the movement of a horn's acoustic center," 106th Convention of the Audio Engineering Society, May 1999, preprint no. 4986
- [1326] Ureda, M. S., "The effects of horn acoustic center on array directivity," 104th Convention of the Audio Engineering Society, May 1998, preprint no. 4756
- [1327] Ureda, M. S., "Apparent apex," 102nd Convention of the Audio Engineering Society, Mar 1997, preprint no. 4467
- [1328] Ureda, M. S., "Wave field synthesis with horn arrays," 100th Convention of the Audio Engineering Society, May 1996, preprint no. 4144
- [1329] Ureda, M. S., "Directivity response of horn arrays," 98th Convention of the Audio Engineering Society, Feb 1995, preprint no. 3963
- [1330] Ureda, M. S., "Amplitude and signal delay shading of vertical horn arrays," 99th Convention of the Audio Engineering Society, Oct 1995, preprint no. 4061

- [1331] Ureda, M. S., "Directivity phase response of horns," 94th Convention of the Audio Engineering Society, Mar 1993, preprint no. 3593
- [1332] Ureda, M. S., "Apparent apex theory," 61st Convention of the Audio Engineering Society, Nov 1978, preprint no. 1403
- [1333] Uzzle, T., "Coverage of altec lansing loudspeakers," Altec Technical Letter no. 255, Jun 1981
- [1334] von V. Asehoff, "Phantasie und wirklichkeit in der frÄCEhgeschichte der akustik," Acustica, vol. 42, no. 3, pp. 121–132, 1979
- [1335] Vanderkooy, J., "The inertial air load of a loudspeaker diaphragm," 124th Convention of the Audio Engineering Society, May 2008, convention Paper no. 7317
- [1336] Vanderkooy, J., "A simple theory of cabinet edge diffraction," J. Audio Eng. Soc., vol. 39, no. 12, pp. 923–933, Des 1991
- [1337] Vanderkooy, J., "A model of loudspeaker driver impedance incorporating eddy currents in the pole structure," J. Audio Eng. Soc., vol. 37, no. 3, pp. 119–128, Mar 1989
- [1338] Vanderkooy, J. and Lipshitz, S. P., "Power response of loudspeakers with noncoincident drivers-the influence of crossover design," J. Audio Eng. Soc., vol. 34, no. 4, pp. 236–244, Apr 1986
- [1339] Veneklasen, P. S., "Physical measurements of loudspeaker performance," J. Soc. Mot. Pic. Eng., vol. 52, no. 6, pp. 641–656, Jun 1949
- [1340] Vickers, E., "The loudness war," J. Audio Eng. Soc., vol. 59, no. 5, pp. 346–351, May 2011
- [1341] Vigran, T. E., "Conical apertures in panels; sound transmission and enhanced absorption in resonator systems," Acta acustica united with Acustica, vol. 90, pp. 1170–1177, 2004
- [1342] Vigran, T. E., "Q-verdi og absorbsjon for enkle helmholtzresonatorer," Akustisk Laboratorium NTH, Tech. Rep., 1966
- [1343] Vogt, H., "Über die Erzeugung von Schallvorgärngen durch das Elektrostatische Feld," Zeitschr. f. techn. Physik, no. 12, pp. 632–638, 1931
- [1344] Voigt, B., "Eine Metode zur Untersuchung der Schwingungen von Membranen, im besonderen von Lautsprechermembranen," *Zeitschr. f. techn. Physik*, no. 2, pp. 76–85, 1931

- [1345] Voigt, P. G. A. H., "A controversial idea from england," pp. 40, 43, Oct 1950
 [1356] Voishvillo, A. and Kochend[']orfer, F., "Application of static and dynamic magnetic fi-
- [1346] Voishvillo, A., "New engineering method for design and optimization of phasing plug and dome-shaped compression chamber of horn drivers," 146th Convention of the Audio Engineering Society, Mar 2019, e-Brief 517
- [1347] Voishvillo, A., "Horn driver based on annular diaphragm and the side-firing compression chamber," 145th Convention of the Audio Engineering Society, Oct 2018, convention Paper 10050
- [1348] Voishvillo, A., "Dual diaphragm asymmetric compression drivers," 139th Convention of the Audio Engineering Society, Oct 2015, convention Paper 9392
- [1349] Voishvillo, A., "Identification compression driver parameters based on a concept of diaphragm's frequency-dependent area," in 137 Convention of the Audio Engineering Society, Oct 2014, convention Paper 9164.
 [Online]. Available: http://www.aes.org/ e-lib/browse.cfm?elib=17487
- [1350] Voishvillo, A., "Application of matrix analysis to identification of mechanical and acoustical parameters of compression drivers," in 135th Convention of the Audio Engineering Society, Oct 2013, convention paper 8988. [Online]. Available: http:// www.aes.org/e-lib/browse.cfm?elib=17036
- [1351] Voishvillo, A., "Dual diaphragm compression drivers," 131st Convention of the Audio Engineering Society, Oct 2011, convention paper 8502
- [1352] Voishvillo, A., "Simulation of horn driver response by combination of matrix analysis and FEA," 129th Convention of the Audio Engineering Society, Nov 2010, convention Paper no. 8214
- [1353] Voishvillo, A., "Assessment of nonlinearity in transducers and sound systems from THD to perceptual models," 121st Convention of the Audio Engineering Society, Oct 2006, convention Paper no. 6910
- [1354] Voishvillo, A., "Nonlinear versus parametric effects in compression drivers," 115th Convention of the Audio Engineering Society, Oct 2003, convention Paper no. 5912
- [1355] Voishvillo, A., Kákonyi, B., and McLaughlin, B., "Comparison of horn drivers' nonlinear distortion measured by different methods," 146th Convention of the Audio Engineering Society, Mar 2019, e-Brief 516

- 1356] Voishvillo, A. and Kochend'orfer, F., "Application of static and dynamic magnetic finite element analysis to the design and optimization of moving coil transducer motors." 135th Convention of the Audio Engineering Society, Oct 2013, convention Paper 8989
- [1357] Voishvillo, A. and McLaughlin, B., "Evaluation of efficiency and voltage sensitivity in horn drivers," 145th Convention of the Audio Engineering Society, Oct 2018, convention Paper 10061
- [1358] Voishvillo, A., Terekhov, A., Czerwinski, G., and Alexandrov, S., "Graphing, interpretation, and comparison of the results of loudspeaker nonlinearity measurement," 113th Convention of the Audio Engineering Society, Oct 2002, convention Paper no. 5639
- [1359] Voishvillo, A. G., "Compression drivers' phasing plugs," 141st Convention of the Audio Engineering Society, Sept 2016, convention Paper 9618
- [1360] Voishvillo, A. G., "Comparative analysis of nonlinear distortion in compression drivers and horns," 117th Convention of the Audio Engineering Society, Oct 2004, no. 6192
- [1361] Voishvillo, A. G., "Nonlinearity in horn drivers – where the distortion comes from?" 113th Convention of the Audio Engineering Society, Oct 2002, convention Paper no. 5641
- [1362] Voishvillo, A. G. and Mazin, V., "Finiteelement method of modeling of eddy currents and their influence on nonlinear distortion in electrodynamic loudspeakers," 99th Convention of the Audio Engineering Society, Oct 1995, preprint no. 4085
- [1363] Voishvillo, A. G. and Olyushin, M., "Computer modeling of air distortion in compression chamber of horn drivers with centrally supported diaphragm," 99th Convention of the Audio Engineering Society, Oct 1995, preprint no. 4062
- [1364] Voishvillo, A. G. and Santorine, A. W., "Horn drivers – alternative approach to moving assembly topology," Nov 1994, preprint no. 3896
- [1365] Voishvillo, A. G., Santorine, A. W., and Olyushin, M. V., "Computer modelling and design of compression drivers based on a centrally supported diaphragm," 98th Convention of the Audio Engineering Society, Feb 1995, preprint no. 3997

- [1366] Volkmann, J. E., "1Kw cylindrical wavefront speaker with folded modular horn for new york worlds fair," J. Audio Eng. Soc., vol. 16, no. 2, pp. 136–140, Apr 1968
- [1367] Von Recklinghausen, D. R., "Mismatch between power amplifier and loudspeaker loads," J. Audio Eng. Soc., vol. 6, no. 4, pp. 220–224, Oct 1958
- [1368] Vyaznikov, N. F. and Ivanyuk, G. I., "Annealing of magnetically soft iron," *Metallovedenie i Termicheskaya*, pp. 45–46, Jan 1959
- [1369] Wadbro, E., "On the far-field properties of an acoustic horn," Department of Information Technology, Uppsala University, Tech. Rep. 2006-042, Sep 2006
- [1370] Wadbro, E. and Berggren, M., "Topology optimization of an acoustic horn," *Computer Methods in Applied Mechanics and Engineering*, vol. 196, no. 1– 3, pp. 420 – 436, 2006. [Online]. Available: http://www.sciencedirect.com/ science/article/pii/S0045782506001745
- [1371] Wadbro, E., Udawalpola, R., and Berggren, M., "Shape and topology optimization of an acoustic horn-lens combination," *Journal* of Computational and Applied Mathematics, vol. 234, pp. 1781–1787, 2009
- [1372] Wagner, K. W., "Die theorie des kettenleiters nebst anwendungen. (wirkung der verteilten kapazität in widerstandssätzen.)," Archiv fur Elektrotechnik, vol. 3, no. 10, pp. 315–332, Oct 1915
- [1373] Waldman, W., "Nonlinear least squares estimation of Thiele-Small parameters from impedance measurements," 94th Convention of the Audio Engineering Society, Mar 1993, preprint no. 3511
- [1374] Waldman, W., "Simulation and optimization of multiway loudspeaker systems using a personal computer," J. Audio Eng. Soc., vol. 36, no. 9, pp. 651–663, Sep 1988
- [1375] Waldrop, F. and Borkin, J., "Television and its effect upon the motion picture theatre," *International Projectionist*, vol. 13, no. 10, pp. 12–14, Oct 1938
- [1376] Ward, J., "Wide Range: Its significance to the projectionist," *International Projectionist*, vol. 5, no. 2, pp. 13–14, Apr 1933
- [1377] Ware, J. A. and Aki, K., "Continuous and discrete inverse-scattering problems in a stratified elastic medium i plane waves

at normal incidence," J. Acoust. Soc. Am., vol. 45, no. 4, pp. 911–921, 1969

- [1378] Waterhouse, R. V., "Output of a sound source in a reverberation chamber and other reflecting environments," *The Journal of the Acoustical Society of America*, vol. 30, no. 1, pp. 4–13, Jan 1958
- [1379] Watkins, S., "Madam, will you talk," Bell Laboratories Record, vol. 24, no. 8, pp. 289– 295, Aug 1946
- [1380] Watkins, S. S. A. and Fetter, C. H., "Some aspects of a western electric sound recording system," J. Soc. Mot. Pic. Eng., vol. 14, no. 5, pp. 520–530, May 1930
- [1381] Weaver, J. E. and Leach, W. M., "Optical measurement of loudspeaker driver large signal displacement," J. Audio Eng. Soc., vol. 26, no. 3, pp. 145–148, Mar 1978
- [1382] Webster, A. G., "Experiments on the vibration of air in conical horns," *Proc. Nat. Ac. Sci.*, vol. 6, pp. 316–320, 1920
- [1383] Webster, A. G., "Acoustical impedance and the theory of horns and of the phonograph," *Proc. Nat. Ac. Sci.*, vol. 5, no. 7, pp. 275– 282, Jul 1919
- [1384] Weedon, K. E., "Eksponentialhornet," Norsk Radio, pp. 55–59, 1929
- [1385] Weibel, E. S., "On Webster's horn equation," J. Acoust. Soc. Am., vol. 27, no. 4, pp. 726– 727, Jul 1955
- [1386] Weinstein, L. A., The Theory of Diffraction and the Factorization Method. The Golem Press, 1969
- [1387] Weiss, E., "Audio technology in berlin to 1943: Microphones, read," in Audio Engineering Society Convention 94, Mar 1993. [Online]. Available: http://www.aes. org/e-lib/browse.cfm?elib=6661
- [1388] Wente, E. C., "Contributions of telephone research to sound pictures," J. Soc. Mot. Pic. Eng., vol. 27, no. 2, pp. 188–194, Aug 1936
- [1389] Wente, E. C., "Acoustical instruments," J. Acoust. Soc. Am., vol. 7, pp. 1–15, Jul 1935
- [1390] Wente, E. C., "The sensitivity and precision of the electrostatic transmitter for measuring sound intensities," *Phys. Rev.*, vol. 19, no. 5, pp. 498–503, 1922
- [1391] Wente, E. C., "A condenser transmitter as a uniformly sensitive instrument for the absolute measurement of sound intensity," *Phys. Rev.*, vol. 10, no. 1, pp. 39–63, 1917

- [1392] Wente, E. C. and Bedell, E., "The measurement of acoustic impedance and the absorption coefficient of porous materials," *Bell System Technical Journal*, vol. 7, no. 1, pp. 1–10, Jan 1928
- [1393] Wente, E. C., Bedell, E. H., and Swartzel, K. D., "A high speed level recorder for acoustic measurements," J. Acoust. Soc. Am., vol. 6, no. 3, pp. 121–129, Jan 1935
- [1394] Wente, E. C., Biddulph, R., Elmer, L. A., and Anderson, A. B., "Mechanical and optical equipment for the stereophonic sound film system," *J. Acoust. Soc. Am.*, vol. 13, no. 2, pp. 100–106, Oct 1941
- [1395] Wente, E. C. and Thuras, A. L., "A highefficiency receiver for a horn-type loudspeaker of large power capacity (reprint, with introduction by J. K. Hilliard)," J. Audio Eng. Soc., vol. 26, no. 3, pp. 139–144, Mar 1978
- [1396] Wente, E. C. and Thuras, A. L., "Symposium on wire transmission of symphonic music and its reproduction in auditory perspective: Loudspeakers and microphones," *Bell System Technical Journal*, vol. 13, pp. 259–277, Apr 1934, reprinted in J. Audio Eng. Soc., vol. 26, no. 7/8, Jul/Aug 1977
- [1397] Wente, E. C. and Thuras, A. L., "Movingcoil telephone receivers and microphones," *Bell System Technical Journal*, vol. 10, pp. 565–576, Oct 1931
- [1398] Wente, E. C. and Thuras, A. L., "A highefficiency receiver for a horn-type loudspeaker of large power capacity," *Bell System Technical Journal*, vol. 7, pp. 140–153, Jan 1928
- [1399] Werner, R. E. and Carrell, R. M., "Application of negative impedance amplifiers to loudspeaker systems," J. Audio Eng. Soc., vol. 6, no. 4, pp. 240–243, Oct 1958
- [1400] Wheeler, H. A., "Transmission lines with exponential taper," Proc. Inst. Rad. Eng., pp. 65–71, Jan 1939
- [1401] White, J., *The PA Bible*, 1980, ch. The Constant Directivity White Horn White Paper
- [1402] White, J. E., "A method for measuring source impedance and tube attenuation," J. Acoust. Soc. Am., vol. 22, no. 5, pp. 565–567, Sep 1950
- [1403] White, S., "Horn-type loudspeakers," Audio Engineering, pp. 25–38,34, May 1948

- [1404] White, S. J., "High-efficiency 3-way speaker system," J. Audio Eng. Soc., vol. 3, no. 3, pp. 155–159, Jul 1955
- [1405] White, T. W., "Vintage professional loudspeakers their care renovation and use," J. Audio Eng. Soc., vol. 40, no. 11, pp. 905– 916, Nov 1992
- [1406] Wiener, F. M., "On the relation between the sound fields radiated and diffracted by plane obstacles," J. Acoust. Soc. Am., vol. 23, no. 6, pp. 697–700, May 1951
- [1407] Wiener, F. M., "Phase distortion in electroacoustic systems," J. Acoust. Soc. Am., vol. 13, no. 2, pp. 115–123, Oct 1941
- [1408] Wiik, T. H., "Basstransientgjengivelse en viktig faktor," *Hifi og Elektronikk*, pp. 16– 18, 1977
- [1409] Wiik, T. H., "Transient distortion and harmonic distortion of loudspeaker systems due to nonlinear force factor and stiffness," 56th Convention of the Audio Engineering Society, Mar 1977, preprint no. 1205
- [1410] Wilcox, H., "Development and use of the sound-motion picture, part i," *International Projectionist*, vol. 3, no. 3, pp. 16, 30–33, Sept 1932
- [1411] Wilcox, H., "Development and use of the sound motion picture, part ii," *International Projectionist*, vol. 3, no. 4, pp. 8, 10,32–34, Oct 1932
- [1412] Wilkins, C. A., "Reducing loudspeaker distortion," *Radio and Television News*, pp. 48– 50, 160, 1955
- [1413] Williams, A. B., Electronic Filter Design Handbook. McGraw-Hill, 1981, ISBN 0-07-070430-9
- [1414] Williams, E. G., Fourier Acoustics. Academic Press, 1999
- [1415] Williams, S., "Recent developments in the recording and reproduction of sound," *Journal of the Franklin Institute*, vol. 202, no. 4, pp. 413 – 448, 1926. [Online]. Available: http://www.sciencedirect.com/ science/article/pii/S0016003226906534
- [1416] Wilson, D. K., "Simple, relaxational models for the acoustical properties of porous media," J. Sound Vibr., vol. 50, no. 3, pp. 171– 188, 1997
- [1417] Wilson, G. L., "More on the measurement of the directivity factor," J. Audio Eng. Soc., vol. 22, no. 3, pp. 180, 182, Apr 1974

- [1418] Wilson, G. L., "Directivity factor," J. Audio Eng. Soc., vol. 21, no. 10, pp. 828, 830, 833, Dec 1973
- [1419] Wilson, P., The Gramophone Jubilee Book, 1975, ch. Reproducing the Record, pp. 24–36
- [1420] Wilson, P., "Technical talk cabinets for speakers II," *The Gramophone*, p. 354, Dec 1937
- [1421] Wilson, P., "Technical talk cabinets for speakers IV," The Gramophone, pp. 446– 447, Mar 1937
- [1422] Wilson, P., "Technical talk cabinets for speakers III," *The Gramophone*, p. 400, Feb 1937
- [1423] Wilson, P., "Technical report Voight horn," The Gramophone, p. 510, May 1935
- [1424] Wilson, P., "Technical talk More about horns," The Gramophone, p. 76, Jul 1935
- [1425] Wilson, P., "Tractrix horns," The Gramophone, pp. 119–120, Aug 1935
- [1426] Wilson, P., "Technical talk," The Gramophone, pp. 415–416, Mar 1934
- [1427] Wilson, P., "Technical talk," The Gramophone, pp. 455–456, Apr 1934
- [1428] Wilson, P., "Technical talk," The Gramophone, pp. 492–493, May 1934
- [1429] Wilson, P., "Technical talk," The Gramophone, pp. 30–31, Jun 1934
- [1430] Wilson, P., "Technical talk," The Gramophone, pp. 67–68, Jul 1934
- [1431] Wilson, P., "Technical talk," The Gramophone, pp. 113–114, Aug 1934
- [1432] Wilson, P., "Technical talk june," The Gramophone, pp. 39–40, Jun 1932
- [1433] Wilson, P., "Technical talk," The Gramophone, pp. 49–50, Jun 1930
- [1434] Wilson, P., "Technical talk july," The Gramophone, pp. 199–200, Sep 1930
- [1435] Wilson, P., "Questions and answers," The Gramophone, p. 208, Sep 1930
- [1436] Wilson, P., "Technical talk," The Gramophone, pp. 247–248, Oct 1930
- [1437] Wilson, P., "Technical talk," The Gramophone, pp. 303–304, Nov 1930

- [1438] Wilson, P. and Webb, G. W., Modern Gramophones and Electrical Reproducers. Cassell and Co., London, 1929
- [1439] Wilson, P. and Wilson, G. L., "Horn theory and the phonograph," J. Audio Eng. Soc., vol. 23, no. 3, pp. 194–199, Apr 1975
- [1440] Wind, J., Wijnant, Y., and de, A. B., "Fast evaluation of the Rayleigh integral and applications to inverse acoustics," in *Thirteenth International Congress on Sound and Vibration, ICSV 13*, 2006. [Online]. Available: http://doc.utwente.nl/58885/
- [1441] Wolf, S. K. and Sette, W. J., "Acoustic power levels in sound picture reproduction," *J. Acoust. Soc. Am.*, vol. 2, pp. 384–398, Jan 1931
- [1442] Wolff, I. and Malter, L., "Directional radiation of sound," J. Acoust. Soc. Am., vol. 2, no. 2, pp. 201–233, Oct 1930
- [1443] Wood, A., Acoustics. Blackie & Son, London, 1947
- [1444] Wright, J., "Finite element analysis as a loudspeaker design tool," in Audio Engineering Society Conference: UK 13th Conference: Microphones & Loudspeakers, Mar 1998. [Online]. Available: http://www. aes.org/e-lib/browse.cfm?elib=7992
- [1445] Wright, J. R., "Fundamentals of diffraction," J. Audio Eng. Soc., vol. 45, no. 5, pp. 348– 356, May 1997
- [1446] Wright, J. R., "A software investigation of the radiation impedance of disc, cone and dome pistons," J. Sound Vibr., vol. 35, pp. 179–202, 1992
- [1447] Wright, J. R., "An empirical model for loudspeaker motor impedance," J. Audio Eng. Soc, vol. 38, no. 10, pp. 749–754, 1990. [Online]. Available: http://www.aes. org/e-lib/browse.cfm?elib=6011
- [1448] van Wulfften Palthe, D. W., "Doppler effect in loudspeakers," Acustica, vol. 28, pp. 5–11, 1973
- [1449] Wysoczanski, W., "Ton-and-a-quarter of sound," Audio, pp. 19–23, 62–63, 1964
- [1450] Xu, X. and Guo, Y.-J., "A loudspeaker with dual coils and dual magnetics," J. Audio Eng. Soc., vol. 57, no. 11, pp. 951–956, Nov 2009
- [1451] Yarbrough, E. M., "A simple roll-type loud speaker," *Radio News*, pp. 41,91, 1927

- [1452] Yashima, N., Kyouno, N., Ishida, M., Nishino, K., and Takeuchi, S., "Response improvement of the acoustic transfer function of a horn loudspeaker using digital signal processing technology," *IEEE Transactions* on Consumer Electronics, vol. 41, no. 3, pp. 901–908, Aug 1995
- [1453] Yeow, K. W., "Webster's wave equation in two dimensions," J. Acoust. Soc. Am., vol. 56, no. 1, pp. 19–21, Jul 1974
- [1454] Young, F. J., "The natural frequencies of musical horns," Acta Acustica united with Acustica, vol. 10, no. 2, pp. 91–97, 1960
- [1455] Young, F. J. and Young, B. H., "Impedance of tapered structures," J. Acoust. Soc. Am., vol. 33, no. 9, pp. 1206–1210, Sep 1961
- [1456] Young, F. J. and Young, B. H., "Smoothly and step tapered structures," J. Acoust. Soc. Am., vol. 33, p. 813, 1961
- [1457] Young, J. C. and Margolis, G., "A personal calculator program for low-frequeny horn design using Thiele-Small driver parameters," 62nd Convention of the Audio Engineering Society, Mar 1979, preprint no. 1433
- [1458] Yuasa, Y. and Greenberg, S., "The beryllium dome diaphragm-its use, manufacture and importance in loudspeaker systems," 52nd Convention of the Audio Engineering Society, Oct 1975, preprint no 1087
- [1459] Zóltogórski, B., "Non-linear distortions of loudspeaker radiators in closed enclosures," 106th Convention of the Audio Engineering Society, May 1999, preprint no. 4894
- [1460] Zóltogórski, B., "Moving boundary conditions and nonlinear propagation as sources of nonlinear distortions in loudspeakers," J. Audio Eng. Soc., vol. 41, no. 9, pp. 691–700, Sep 1993
- [1461] Zamorski, T., "Propagation of sound waves of finite amplitude at frequencies below the cut-off frequency," Archives of Acoustics, vol. 22, no. 4, pp. 411–421, 1997
- [1462] Zamorski, T., "Simple waves with finite amplitude in axially-symmetrical channels with annular cross-section," Archives of Acoustics, vol. 19, no. 3, pp. 405–418, 1994
- [1463] Zamorski, T., "Waves with finite amplitude in Bessel horns," Archives of Acoustics, vol. 15, no. 3-4, pp. 531–542, 1990

- [1464] Zamorski, T., "An analysis of acoustic wave radiation conditions within the structural system of an axial dynamic generator," *Archives of Acoustics*, vol. 12, no. 2, pp. 129– 147, 1987
- [1465] Zamorski, T., "The blurred cut-off frequency of acoustic horns," Archives of Acoustics, vol. 6, no. 2, pp. 135–146, 1981
- [1466] Zamorski, T. and Wyrzykowski, R., "Przybliżone metody rozwiązania równania propagacji fali akustycznej w tubach," Archiwum Akystyki (Archives of Acoustics, Polish Edition), vol. 16, no. 3, pp. 301–314, 1981
- [1467] Zamorski, T. and Wyrzykowski, R., "Approximate methods for the solution of the equation of acoustic wave propagation in horns," *Archives of Acoustics*, vol. 6, no. 3, pp. 237–285, 1981
- [1468] Zhang, S. and Jin, J., Computation of Special Functions. John Wiley & Sons, Inc., 1996
- [1469] Zienkiewicz, O. C., The Finite Element Method. McGraw-Hill Book Company, London, 1977
- [1470] Zobel, O. J., "Distortion correction in electrical circuits with constant resistance recurrent networks," *Bell System Technical Journal*, July 1928
- [1471] Zobel, O. J., "Theory and design of uniform and composite electric wave filters," *Bell System Technical Journal*, vol. 2, no. 1, pp. 1–46, Jan 1923
- [1472] Zorumski, W. E., "Generalized radiation impedances and reflection coefficients of circular and annular ducts," J. Acoust. Soc. Am., vol. 54, no. 6, pp. 1667–1673, 1973
- [1473] Zuccatti, C. and Bandiera, M., "Dynamics distortion loudspeaker sensitivity modulation generated by audio signals," J. Audio Eng. Soc., vol. 57, no. 5, pp. 338–348, May 2009
- [1474] Zverev, A. I., Handbook of Filter Synthesis. John Wiley & Sons, New York, 1967, ISBN-10 0-471-74942-7
- [1475] Abramowitz, M. and Stegun, I. A., Eds., Handbook of Mathematical Functions, 1970
- [1476] Anderson, L. I., Ed., Nikola Tesla on His Work with Alternating Currents and Their Application to Wireless Telegraphy, Telephony, and Transmission of Power. Twenty First Century Books, Breckenridge, Colorado, 1992

- [1477] Buschow, K. J. H., Ed., Handbook of Magnetic Materials. Elsevier, 2002, vol. 14
- [1478] Christopoulos, C., Ed., The Transmission Line Modeling Method: TLM. IEEE Press, 1995
- [1479] Fagen, M. D., Ed., A History of Engineering and Science in the Bell System — Electronic Technology 1925-1975. Bell Telephone Laboratories, Inc., 1985
- [1480] Fagen, M. D., Ed., A History of Engineering and Science in the Bell System — The Early Years (1875–1925). Bell Telephone Laboratories, Inc., 1975
- [1481] Fagen, M. D., Ed., Impact A compilation of Bell System innovations in science and engineering which have helped create new industries and new products, 1971
- [1482] Fischer, F. and Lichte, H., Eds., Tonfilm: Aufnahme und Wiedergabe nach dem Klangfilm-Verfahren (System Klangfilm -Tobis). Hirzel, 1931
- [1483] Iardella, A. B., Ed., Western Electric and the Bell System. Western Electric Company, 1964
- [1484] Kessler, K. and Harris, S., Eds., Sound Bites - 50 years of Hi-Fi News. IPC Media Group, 2005
- [1485] O'Neill, E. F., Ed., A History of Engineering and Science in the Bell System — Transmission Technology (1925–1975). AT&T Bell Laboratories, 1985
- [1486] Pursell, C. W., Ed., Technology in America
 A History of Individuals and Ideas. The MIT Press, 1990
- [1487] Research Council of the Academy of Motion Picture Arts and Sciences, Ed., *Motion Picture Sound Engineering*. D. Van Nostrand Co., New York, 1938
- [1488] Thiele, H. H. K., Ed., 50 Jahre Stereo-Magnetbandtechnik - Die Entwicklung der Audio Technologie in Berlin und den USA von den Anfängen bis 1943. Audio Engineering Society, 1993
- [1489] Wolfarth, E. P., Ed., Handbook of Magnetic Materials. North-Holland Publishing Company, 1982, vol. 3, iSBN: 978-0-444-86378-2
- [1490] Wolfarth, E. P., Ed., Handbook of Magnetic Materials. North-Holland Publishing Company, 1980, vol. 2, iSBN: 978-0-444-85312-7

- [1491] "Armco pure iron datasheet," AK Steel International, Tech. Rep. Product Information 8-10. [Online]. Available: www.aksteel.eu
- [1492] e-Magnets UK Ferrite/Ceramic Data Sheet
- [1493] "vitavox" entry in grace's guide to british industrial history. [Online]. Available: https: //www.gracesguide.co.uk/Vitavox
- [1494] "TheCambridge Scientific Instrument Company, Ltd : Electrical Instruments (catalogue)," book no. 4053
- [1495] Harvey fletcher, biography. ETHW. [Online]. Available: http://ethw.org/Harvey_Fletcher
- [1496] Acoustics Normal equal-loudness-level contours, ISO Std. ISO226:2003
- [1497] Arthur c. keller, an oral history conducted in 1973 by julian d. tebo, ieee history center, hoboken, nj, usa. [Online]. Available: http: //ethw.org/Oral-History:Arthur_C._Keller
- [1498] Sound's false dawn
- [1499] Lansing heritage website. [Online]. Available: http://www.audioheritage.org
- [1500] Joseph maxfield, an oral history conducted in 1973 by frank a. polkinghorn, ieee history center, hoboken, nj, usa. [Online]. Available: http://ethw.org/Oral-History: Joseph_Maxfield
- [1501] Harry f. olson, an oral history conducted in 1975 by mark heyer, ieee history center, hoboken, nj, usa. [Online]. Available: http: //ethw.org/Oral-History:Harry_F._Olson
- [1502] "Po yun enterprise co., ltd products catalogue"
- [1503] Magnetic Circuit Design, TDK, 2012, e371
- [1504] Irving wolff, an oral history conducted in 1976 by mark heyer, ieee history center, hoboken, nj, usa. [Online]. Available: https://ethw.org/Oral-History:Irving_Wolff
- [1505] Alloy Digest ASM Handbooks Online. ASM International, 2015. [Online]. Available: http://products.asminternational.org/
- [1506] AES Information Document Plane-Wave Tubes: Design and Practice, Audio Engineering Society Std. AES-1id-2012, 2012
- [1507] AES2-2012: AES standard for acoustics -Methods of measuring and specifying the performance of loudspeakers for professional applications - Drive units, Audio Engineering Society Std. AES2-2012, 2012

- [1508] "Can you really hear it? Psychoacoustics in action," J. Audio Eng. Soc., vol. 55, no. 1/2, pp. 75–79, Jan/Feb 2007
- [1509] "Cone midrange compression drivers," JBL Professional Technical Notes Vol. 1, No. 30, 2002
- [1510] "Conductivity and resistivity values for aluminum & alloys," Compiled by the Collaboration for NDT Education, Mar 2002.
 [Online]. Available: https://www.nde-ed. org/GeneralResources/MaterialProperties/ ET/Conductivity_Al.pdf
- [1511] ISO-10534-2:1998(E) Acoustics Determination of sound absorption coefficient and impedance in impedance tubes – Part 2: Transfer-function method, ISO Std. ISO-10534-2:1998(E), Nov 1998
- [1512] "Frank Massa 1906–1990," J. Acoust. Soc. Am., vol. 92, no. 4, p. 2265, Oct 1992
- [1513] Permanent Magnet Materials. Philips Electronic Components and Materials Division, 1984
- [1514] "In Memoriam: Peter L. Jensen," J. Audio Eng. Soc., p. 96, 1962
- [1515] "New Westrex sound reproducing equipment," *International Projectionist*, vol. 29, no. 7, p. 13, Jul 1954
- [1516] "Dual concentric loudspeaker," The Wireless World, p. 334, 1949
- [1517] "Voigt permanent-magnet loudspeaker," The Wireless World, p. 130, Mar 1949
- [1518] "New Westrex sound systems 15–100w feature advanced design units," *International Projectionist*, vol. 23, no. 5, pp. 20–21, May 1948
- [1519] "Design of acoustic exponential horns," Audio Engineering, pp. 286–287, Sep 1947
- [1520] "Jensen technical monograph no. 5 horn type-loud speakers," 1946
- [1521] "Historic firsts: The orthophonic phonograph," Bell Laboratories Record, vol. 24, pp. 300–301, 1946
- [1522] "Historic firsts: The Ortophonic phonograph," Bell Laboratories Record, vol. 24, pp. 300–301, 1946
- [1523] "The biennial award given to dr. Vincent Salmon," J. Acoust. Soc. Am., vol. 18, no. 1, pp. 217–218, Jul 1946

- [1524] "Jensen technical monograph number five horn-type loud speakers," July 1945
- [1525] "News of the month: ERPI merges with Western Electric," Bell Laboratories Record, 1941
- [1526] Handbook for Projectionists, 2nd ed. RCA Photophone, 1941
- [1527] "Stereophonic recording of enhanced music," Bell Laboratories Record, vol. 18, no. 9, pp. 258–259, May 1940
- [1528] Proposed Report Telephone Investigation. United States Government Printing Office, Washington, 1938
- [1529] "WE Mirrophonic ad," 1936
- [1530] "Contributors to this issue: W. l. betts," Bell Laboratories Record, vol. 14, no. 8, p. 279, April 1936
- [1531] "Bell Telephone Laboratories," *Electronics*, vol. 9, pp. 2–16, Sept 1936
- [1532] "Projectionists score wide service work gains," *International Projectionist*, vol. 8, no. 3, pp. 20–21, Mar 1935
- [1533] "The reproduction of orchestral music in auditory perspective," *Bell Laboratories Record*, pp. 254–261, 1933
- [1534] Jahrbuch des Forschungs-Instituts der Allgemeinen Elektricitäts-Gesellschaft 1931-1932.
 Julius Springer, Berlin, 1933, vol. III
- [1535] "News of the month," Bell Laboratories Record, vol. 11, no. 9, pp. ii–iii, May 1933
- [1536] "Erpi theatre contract held illegal and void," International Projectionist, vol. 5, pp. 22, 28–30, Jun 1933
- [1537] "Acoustical society hears vertical recordings," *Bell Laboratories Record*, vol. 10, no. 10, p. 370, June 1932
- [1538] "Contributors to this issue: L. G. Bostwick,
 W. P. Mason," *Bell Laboratories Record*,
 vol. 9, no. 9, p. 459, May 1932
- [1539] "Contributors to this issue: H. C. Harrison," Bell Laboratories Record, vol. 10, no. 11, p. 403, Jul 1932
- [1540] "Contributors to this issue: A. L. Thuras," Bell Laboratories Record, vol. 10, no. 9, p. 340, May 1932
- [1541] Special work sheet no. 2, Sound Pictures: Reproducing Units for Sound Pictures, Radio and Television Institute, Inc., 1931

- [1542] Jahrbuch des Forschungs-Instituts der Allgemeinen Elektricitäts-Gesellschaft 1930.
 Julius Springer, Berlin, 1931, vol. II
- [1543] AEG Mitteilungen, 1931
- [1544] "Contributors to this issue: D. G. Blattner," Bell Laboratories Record, vol. 9, no. 7, Mar 1931
- [1545] "Die beste Wiedergabe: Mit Hornlautsprecher," Funkschau, no. 13, p. 98, Mar 1931
- [1546] "News and pictures of the month: Leopold stokowski visits the laboratories (picture)," *Bell Laboratories Record*, vol. 10, no. 3, Nov 1931
- [1547] Jahrbuch des Forschungs-Instituts der Allgemeinen Elektricitäts-Gesellschaft 1928– 1929. Julius Springer, Berlin, 1930, vol. I
- [1548] "Bell telephone laboratories : a description of the laboratory research organization of the bell system," Laboratories, Bureau of Publication, New York, 1930
- [1549] "News and pictures of the month: S. p. grace demonstrates the call-announcer system (picture)," *Bell Laboratories Record*, vol. 8, no. 5, p. 237, Jan 1930
- [1550] Handbook for Projectionists. RCA Photophone, 1930
- [1551] "Coil drive horn loud-speakers," The Wireless World, pp. 599–600, 1928, june 6th
- [1552] "New loud-speaker sends voice over a mile away," *Reading Eagle*, p. 10, Jan 23 1928
- [1553] Umschau, no. 45, p. 920ff, 1928
- [1554] "Contributors to this issue: E. C. Wente," Bell System Technical Journal, vol. 7, p. 159, 1928
- [1555] "The Vitaphone tells tales of itself," *Bell Laboratories Record*, pp. 126–128, 1927
- [1556] "Sound recording and reproducing," Bell Laboratories Record, pp. 95–101, 1926
- [1557] "Discussion at spring convention: "a new type of hornless loud speaker"," J. Am. Inst. Elec. Eng., vol. 44, no. 9, pp. 1015–1020, Sept 1925
- [1558] "Discussion on "loud-speakers for wireless and other purposes" at the joint meeting of the institution and the physical society of london, 29 november, 1923," J. Institution of Electrical Engineers, vol. 62, no. 327, pp. 285–298, 1924

- [1559] "Further communications to the discussion on "loud-speakers for wireless and other purposes"," J. Institution of Electrical Engineers, vol. 62, no. 328, pp. 373–375, 1924
- [1560] "Discussion on "the leakage flux between parallel pole-cores of circular cross-section"," J. Institution of Electrical Engineers, vol. 62, no. 327, pp. 247–248, 1924
- [1561] "Discussion on loud-speakers for wireless and other purposes," *Proc. Phys. Soc. London*, vol. 36, pp. 211–240, 1923
- [1562] Arnold, H. D., "Philadelphia tests of the high quality reproduction of orchestral music," Memorandum, Mach 9 1932
- [1563] Bell Tel. Lab., I., "Spiral Horns Engineering Description," May 17 1934
- [1564] David G. Blattner, "Changes in design of 596 type loud speking telephone – case 35470," Memorandum to A. C. Link, May 2 1933, 322-DGB-816949-AAX
- [1565] David G. Blattner, "MM-3898 Cost study of 596 type loud speaking telephone – Case 35470," Memorandum, May 8 1933
- [1566] David G. Blattner, "MM-3955 Cost study of 596 type loud speaking telephone – Case 35470," Memorandum, June 28 1933
- [1567] David G. Blattner, "Report of Comparative Tests of 12-A, 13-A and 15-A Types of Horns – Case 53901," Memorandum, April 19 1929
- [1568] David G. Blattner, "MM-1587 Receiver and Horn Tests at Manhattan Opera House – Case 33218," Memorandum, July 2 1926
- [1569] David G. Blattner, "MM-1628 Equalizer for 555 type receiver and 12-a or 13-a horn – Case 33218," Memorandum, August 9 1926
- [1570] David G. Blattner, "MM-1638 Proposed method of testing loud speakers and other sounding devices – Case 32184," Memorandum, August 16 1926
- [1571] Bostwick, L. G., "MM-37-2-2 Outdoor measurements on new low frequency loud speaker model per esxx-753087 – Case 35686," Memorandum, Jan 12 1937
- [1572] Bostwick, L. G., "MM-36-7-10 Proposed horn type low frequency speaker for theaters – case 35686," Memorandum, Jan 9 1936
- [1573] Bostwick, L. G., "MM-35-7-90 Horn type low frequency speakers of moderate length – case 35686," Memorandum, Dec 3 1935

- [1574] Bostwick, L. G., "MM-2495 High frequency loud speakers – Case 32184," Memorandum, July 16 1929
- [1575] Bostwick, L. G., "MM-2411 555-W receiver improvements – Case 32184," Memorandum, May 7 1929
- [1576] Cobb, L. J., "MM-3494 Testing requirements for D-93695 special high frequency loud speaking telephone – case 32184 – cross reference case 33065-108," Memorandum, December 28 1931
- [1577] Cobb, L. J., "MM-3489 A proposed specification covering a machine test for D-93695 special high frequency loud speaking telephone - case 32184 - cross reference case 33065-108," Memorandum, December 28 1931
- [1578] DeCoste, J. B., "Adhesives for the assembly of the no. 596 loud speaking telephone," Bell Telephone Laboratories, Laboratory Report 41996, March 13 1934
- [1579] Flannagan, C., "Improvements in Loudspeakers and other equipment – Case 53901," Memorandum, Mar 28 1931
- [1580] Flanders, P. B. and Quarles, D. A., "MM-913 Horn theory - case 32184," Memorandum, March 13 1924
- [1581] Flanders, P. B. and Quarles, D. A., "MM-949 Horn theory - case 32184," Memorandum, April 23 1924
- [1582] Fletcher, H., "MM-1439 Method of rating loud speakers for reproducing music – case 32184," Memorandum, Mar 10 1926
- [1583] Frederick, H. A., "Considerations regarding frequent failures of 596 and 597 type loud speakers in sound picture systems – case 35470," Memorandum, January 9 1934, 322-DGB-AAX
- [1584] Frederick, H. A., "Response characteristics of spread mouth horn – Case 32184," Memorandum, September 21 1931
- [1585] Hanscom, "Public address and music reproducing system," BTL Publicity Dept., Oct 1929
- [1586] Hartley, R. L. V., "MM-1439 Discussion of methods of rating loud speakers for reproducing music – case 32184," Memorandum, Apr 6 1926
- [1587] Hopkins, H. F., "MM-2946 Loud speaking receiver design – case 32184," Memorandum, Oct 15 1930

- [1588] Hopkins, H. F., "MM-2939 Flux measurements on 555 receiver magnet - case 32184," Memorandum, Oct 25 1930
- [1589] Hopkins, H. F., "MM-2343 Work at Gotham Theatre – Case 32184," Memorandum, February 14 1929
- [1590] Hopkins, H. F., "MM-2347 Work at Gotham Theatre – Case 32184," Memorandum, February 14 1929
- [1591] Hopkins, H. F., "MM-2350 Work at Gotham Theatre – Case 32184," Memorandum, February 18 1929
- [1592] Hopkins, H. F., "MM-2286 Work at Gotham Theatre – Case 32184," Memorandum, January 9 1929
- [1593] Hopkins, H. F., "MM-2313 Work at the Gotham Theatre – Case 32184," Memorandum, February 5 1929
- [1594] Hopkins, H. F., "MM-2292 Tests at Gotham Theatre – Case 32184," Memorandum, January 14 1929
- [1595] Hopkins, H. F., "MM-2365 Gotham Theatre tests – Case 32184," Memorandum, May 20 1929
- [1596] Hopkins, H. F., "MM-2289 Proposed tests at the Gotham Theatre – Case 32184," Memorandum, December 22 1928
- [1597] Hopkins, H. F., "MM-2290 Gotham Theatre tests – Case 32184," Memorandum, December 29 1928
- [1598] Keller, A. C., "Sound recording and reproducing," keller files, AT&T Archives, Box 84 10 03
- [1599] Keller, A. C., "Biography," keller files, AT&T Archives, Box 84 10 03
- [1600] Keller, A. C., "Biography of Henry Charles Harrison," Aug 30 1954, keller files, AT&T Archives, Box 84 10 03
- [1601] King, J. H., "MM-39-322-8 300 cycle 120 degrees horn - Case 52905," Memorandum, June 1 1939
- [1602] Kuhn, J. J., "555-W receivers case 53901," Memorandum, June 7 1928
- [1603] Kuhn, J. J., "Equipment for the vitaphone company – case 33634," Memorandum, Oct 27 1926
- [1604] Leveridge, W. J., "12-A and 13-A Horns for Vitaphone – Case 33218," Memorandum, Jul 27 1926, (311-WJL-7/27/26-AAS2)

- [1605] Leveridge, W. J., "12-A and 13-A Horns for Vitaphone – Case 33218," Memorandum, Jul 29 1926, (311-WJL-7/29/26-BB1)
- [1606] Leveridge, W. J., "12-A and 13-A Horns for Vitaphone – Case 33218," Memorandum, Jul 27 1926, (7/27/26-311-WJL-YU2)
- [1607] Leveridge, W. J., "Horns for Vitaphone Case 33218," Memorandum, Jul 27 1926, (311-WJL-7/27/26-YZ2)
- [1608] Leveridge, W. J., "12-A and 13-A Horns for Vitaphone – Case 33218," Memorandum, Jul 27 1926, (311-WJL-7/27/26-ZB2)
- [1609] Marion, F. R., "LET Tests, Fleetwood Theatre, NYC – Case 53901," Memorandum, Sept 23 1935
- [1610] Swickard, A. E., "Memorandum pressure distribution in the throats of loudspeakers – Case 35686," Memorandum, June 17 1936
- [1611] Thuras, A. L., "MM-36-8-76 High frequency loss in the 594a loud speaker telephone – Case 35686," Memorandum, July 21 1936
- [1612] Thuras, A. L., "MM-1769 Flux distribution in the air-gap of an electromagnet with curved pole faces," Memorandum, Feb 9 1927
- [1613] Thuras, A. L., "MM-1804 Flux distribution in the air-gap of a high flux density field unit for use with the 555-W receiver," Memorandum, Mar 24 1927
- [1614] Thuras, A. L., "MM-1793 Flux distribution in the air-gap of a 555-W permanent magnet receiver with special iron pole-pieces," Memorandum, Mar 11 1927
- [1615] Thuras, A. L., "MM-1700 Magnetic flux distribution in the air-gap of electromagnets," Memorandum, Oct 6 1926
- [1616] Thuras, A. L., "MM-1721 Temperature rise in the moving coil of the 555-W receiver," Memorandum, Dec 20 1926
- [1617] Thuras, A. L., "MM-965 Case 32184," Memorandum for file, Apr 23 1924, mechanical impedance measurements of a 6-A horn
- [1618] "Equipment Bulletin, section 4.22," Western Electric/E.R.P.I.
- [1619] "General Equipment Bulletin," Western Electric Company Ltd., London
- [1620] Items of Interest. Hawthorne Plant, 1931-33, vol. 13

- [1621] Items of Interest. Hawthorne Plant, 1929-30, vol. 11
- [1622] Apparatus Standards Drafting and Design. Issued by the Apparatus Drafting Department, Bell Telephone Laboratories, 463 West St., New York, 1936
- [1623] Widerange Standard Reproducing Equipment List, 1st ed., Electrical Research Products, Inc., Jan 15 1936
- [1624] Items of Interest. Hawthorne Plant, 1936, vol. 14
- [1625] Items of Interest. Hawthorne Plant, 1929, vol. 10
- [1626] "Annual Production Estimate," Feb 1st 1929
- [1627] Items of Interest. Hawthorne Plant, 1928, vol. 9
- [1628] "Public address systems 551-W receiver and 11-a horn," 1926, (Preliminary draft, case 30145-K)
- [1629] Abrahams, A. I., "Loud speaker unit," US Patent 1 888 442, filed May 21, 1929, issued Nov. 22, 1932
- [1630] Abrahams, A. I., "Diaphragm for acoustic devices," US Patent 1 832 608, filed Nov. 12, 1930, issued Nov. 17, 1931
- [1631] Abrahams, A. I., "Loud speaker horn," US Patent 1 781 489, filed Jan. 22, 1929, issued Nov. 11, 1930
- [1632] Abrahams, A. I., "Electromagnetic driving unit," US Patent 1711514, filed May 28, 1928, issued May 7, 1929
- [1633] Adamson, A. B., "Axially propagating mid and high frequency loudspeaker systems," US Patent 6 628 796, filed Jan 14, 2002, issued Sep 30, 2003
- [1634] Adamson, A. B., "Loudspeaker design," US Patent 4 975 965, filed Oct 14, 1988, issued Dec 4, 1990
- [1635] Alexander, E. J., Staley, D. B., and Shaw, C. C., "Audio speaker system employing an axi-symmetrical horn with wide dispersion angle characteristics over an extended frequency range," US Patent 7 203 329, filed Feb. 11, 2004, issued Apr. 10, 2007
- [1636] Alexandrov, S., "Compression driver," US Patent 5 878 148, filed Feb. 10, 1997, issued Mar. 2, 1999

- [1637] Auerhaan, J. J., "Amplifying horn," US Patent 1 885 403, filed Aug. 23, 1929, issued Nov. 1, 1932
- [1638] Auerhaan, J. J., "Amplifying horn," US Patent 1 832 851, filed Aug. 23, 1929, issued Nov. 24, 1931
- [1639] Baldwin, N., "Telephone-receiver," US Patent 957 403, filed Jul 1, 1909, issued May 10, 1910
- [1640] Ballantine, S., "Piezoelectric loudspeaker," US Patent 2 102 668, filed Jun. 14, 1933, issued Dec. 21, 1937
- [1641] Betts, W. L., "Acoustic device," US Patent 2 058 555, filed Mar. 17, 1934, issued Oct. 27, 1936
- Bie, D. D., "Phasing plug for compression driver," US Patent 5 117 462, filed Mar. 20, 1991, issued May 26, 1992
- [1643] Blackburn, J. F., "Loudspeaker," US Patent 2 183 528, filed Aug. 14, 1937, issued Dec. 19, 1939
- [1644] Blattner, D. G., "Acoustic device," US Patent 2 058 208, filed Dec. 21, 1935, issued Oct. 20, 1936
- [1645] Blattner, D. G., "Horn," US Patent 2 001 089, filed Apr. 7, 1933, issued May 14, 1935
- [1646] Blattner, D. G., "Acoustic device," US Patent 1 996 743, filed Apr. 25, 1934, issued Apr. 9, 1935
- [1647] Blattner, D. G., "Sound translating device," US Patent 1917012, filed Feb. 5, 1931, issued Jul. 4, 1933
- [1648] Blattner, D. G., "Acoustic device," US
 Patent 1 853 955, filed Jun. 25, 1930, issued
 Apr. 12, 1932
- [1649] Bostwick, L. G., "Vibration transmitting device," US Patent 1 967 223, filed Jan. 6, 1933, issued Jul. 24, 1934
- [1650] Bostwick, L. G., "Sound reproducing device," US Patent 1907723, filed Sep. 28, 1929, issued May 9, 1933
- [1651] Bostwick, L. G., "Sound translating device," US Patent 1 895 411, filed Oct 4, 1930, issued Jan 31, 1933
- [1652] Brami, J., "Sound reproducing system," US Patent 2 907 837, filed Sep 18, 1956, issued Oct 6, 1959

- [1653] Brawley, J. S., "Internal lens system for loudspeaker waveguides," US Patent 7 278 513B2, filed Jun 26, 2002, issued Oct 9, 2007
- [1654] Button, D. J., "Shorting rings in dual-coil dual-gap loudspeaker drivers," US Patent 6 847 726B2, filed Apr. 9, 2003, issued Jan 25, 2005
- [1655] Button, D. J. and Salvatti, A. V., "Twostage phasing plug system in a compression driver," US Patent 7 072 481B2, filed Jul. 31, 2001, issued Jul. 4, 2006
- Button, L. R., "Sound reproducing device," US Patent 1 506 562, filed Dec. 20, 1919, issued Aug. 26, 1924
- [1657] Campbell, "Electric wave filter," USA Patent 1 227 113, filed Jul. 15, 1915, issued May 22, 1917
- [1658] Capps, F. L., "Talking machine," US Patent 1 216 656, filed Jun. 17, 1915, issued Feb. 20, 1917
- [1659] Capps, F. L., "Telephone," US Patent 441 396, filed Apr 7, 1890, issued Nov 25, 1890
- [1660] Carlson, D. E., "High output loudspeaker system," US Patent 4 923 031, filed Feb 26, 1986, issued May 8, 1990
- [1661] Carson, J. R., Clark, A. B., and Mills, J.,
 "Loading system," US Patent 1 564 201, filed Jun 4, 1921, issued Dec 8, 1925
- [1662] Cesati, M., "Horn loudspeaker," US Patent $3\,866\,710,$ filed Nov 1, 1972, issued Feb 18, 1975
- [1663] Chave, D. M., "Loudspeakers," US Patent 2 975 852, filed Jan. 3, 1955, issued Mar. 21, 1961
- [1664] Colby, J. W., "Mechanical telephone," US Patent 371551, filed Apr. 11, 1887, issued Oct. 18, 1887
- [1665] Cuttriss, C. and Redding, J., "Telephone," US Patent 242 816, filed Nov. 28, 1877, issued Jun. 14, 1881
- [1666] Czerwinski, E. J., "Loudspeaker and horn with an additional transducer," US Patent 6 343 134, filed Mar. 14, 2000, issued Jan. 29, 2002
- [1667] Czerwinski, E. J., Karstensen, T., Armstrong, K., Voishvillo, A., and Megyeri, L. M., "Horn loaded pleated ribbon high frequency acoustic transducer with substantially uniform coupling," US Patent

 $6\,205\,228,$ filed May 7, 1999, issued Mar 20, 2001

- [1668] Czerwinski, E. J. and Voishvillo, A. G.,
 "High frequency compression drivers," US Patent 6 320 970, filed Sep. 16, 1999, issued Nov. 20, 2001
- [1669] Danley, T. J., "Sound reproduction with improved low frequency characteristics," US Patent 2009/0087008 A1, filed Mar. 14, 2007, issued Apr. 2, 2009
- [1670] Danley, T. J. and Skuran, B. J., "Sound reproducing apparatus and method for optimizing same," US Patent 2004/0 238 268 A1, filed Mar. 13, 2004, issued Dec. 2, 2004
- [1671] Danley, T. J. and Skuran, B. J., "Sound reproduction employing unity summation aperture loudspeakers," US Patent 6 411 718B1, filed Apr 28, 1999, issued Jun 25, 2002
- [1672] Decaux, L. R., "Loud-speaking device," US Patent 1 715 057, filed May 9, 1927, issued May 28, 1929
- [1673] Dimitrov, D. K., "Annular diaphragm compression driver," US Patent 9 008 343B2, filed Mar 13, 2013, issued Apr 14, 2015
- [1674] Dodd, M., "Loudspeaker," US Patent 8 479 873B2, filed Jul 21, 2008, issued Jul 9, 2013
- [1675] Dodd, M., "Acoustic horns for loudspeakers," US Patent 6116373, filed May 22, 1998, issued Sep. 12, 2000
- [1676] Donarski, M. A., "Equal expansion rate symmetric acoustic transformer," US Patent 8 761 425, filed Aug 4, 2010, issued Jun 24, 2014
- [1677] Drawbaugh, D., "Speaking trumpet for receiving telephones," US Patent 272 866, filed Dec 5, 1882, issued Feb 27, 1883
- [1678] Durbin, H. M., "Diaphragm suspension construction," US Patent 4 324 312, filed Oct. 1, 1979, issued Apr. 13, 1982
- [1679] Eaves, W. C., "Sound projecting apparatus," US Patent 2 435 535, filed Jan. 10, 1944, issued Feb. 3, 1948
- [1680] Egerton, H. C., "Phonograph horn, etc," US Patent 1 475 623, filed Mar. 6, 1919, issued Nov. 27, 1923
- [1681] Egerton, H. C., "Telephone apparatus," US Patent 1 365 898, filed Jan 8, 1918, issued Jan 18, 1921

- [1682] Elcome, W., "Design of a font type," US Patent 40 862, filed Jun. 25, 1910, issued Sep. 6, 1910
- [1683] Elmen, G. W., "Magnetic material and appliance," US Patent 1739752, filed Dec. 28, 1928, issued Dec. 17, 1929
- [1684] Ely, H. B., "Accoustic horn," US Patent 1728 480, filed Aug. 13, 1928, issued Sep. 17, 1929
- [1685] Evans, A. D., "Loudspeaker cabinet having an integrally constructed horn," US Patent 3 982 607, filed Jan. 28, 1975, issued Sep. 28, 1976
- [1686] Farrand, C. L., "Sound propagating device," US Patent 2175 833, filed Dec. 11, 1937, issued Oct. 10, 1939
- [1687] Farrand, C. L., "Acoustic device," US Patent 2 127 110, filed Aug 3, 1936, issued Aug 16, 1938
- [1688] Finch, E. D., "Improvement in mechanical telephones," US Patent 216 840, filed May 11, 1879, issued Jun. 24, 1879
- [1689] Flanders, P. B., "Method and apparatus for measuring acoustical impedances," US Patent 1 795 647, filed Feb. 19, 1929, issued Mar. 10, 1931
- [1690] Frederick, H. A., "Acoustic device," US Patent 1 955 800, filed May 5, 1923, issued Apr. 24, 1934
- [1691] Geddes, E. R., "Waveguide phase plug," US Patent 7 708 112, filed Nov 10, 2005, issued May 4, 2010
- [1692] Geddes, E. R., "Acoustic waveguide for controlled sound radiation," US Patent 7 068 805, filed Jul 11, 2003, issued Jun. 27, 2006
- [1693] Geddes, E. R., "Phase plug with optimum aperture shapes," US Patent 7095868B2, filed Feb. 10, 2003, issued Aug. 22, 2006
- [1694] Geddes, E. R., "Acoustic waveguide for controlled radiation," US Patent 7068 805, filed Jul. 11, 2005, issued Jun 27, 2006
- [1695] Geddes, E. R., "Compression driver plug," US Patent 2006/0034475 A1, filed Aug. 16, 2004, issued Feb. 16, 2006, (Application)
- [1696] Geddes, E. R., "Low frequency transducer enclosure," US Patent 6782112, filed Apr. 15, 1998, issued Aug. 24, 2004

- [1697] Geddes, E. R., "Transducer with multiple phase plugs," US Patent 2004/0066947 A1, filed Oct. 4, 2002, issued Apr. 8, 2004, (Application)
- [1698] Geddes, E. R., "Method for quantifying the polar response of transducers," US Patent 20 030 069 710, filed Sep. 24, 2001, issued Apr. 10, 2003, (Application)
- [1699] Geddes, E. R., "Method for determining trasducer linear operational parameters," US Patent 6 269 318, Jul. 31, 1999
- [1700] Geddes, E. R., "Transducer flux optimization," US Patent 5 343 533, filed Mar. 25, 1993, issued Aug. 30, 1994
- [1701] Gelow, W. J. and Werner, B. M., "Highfrequency loudspeaker module for cinema screen," US Patent 6 466 680, filed Jun 28, 2000, issued Oct 15, 2002
- [1702] Gerlach, E., "Electrodynamic loud speaker," US Patent 1934184, filed Dec. 26, 1931, issued Nov. 7, 1933
- [1703] Gerlach, E., "Acoustic device," US Patent 1 667 149, filed Nov. 5, 1926, issued Apr. 24, 1928
- [1704] Gerlach, E., "Electrodynamic loud speaking apparatus," US Patent 1 557 356, filed Jan. 12, 1924, issued Oct. 13, 1925
- [1705] Gillum, G. C. and Klipsch, P. W., "Low frequency folded exponential horn loudspeaker apparatus with bifurcated sound path," US Patent 4 210 223, filed Jan. 25, 1978, issued Jul. 1, 1980
- [1706] Graham, E. A., "Horn, trumpet, or like acoustic amplifier," US Patent 1 613 511, filed Oct. 18, 1928, issued Jan. 4, 1927
- [1707] Grissinger, E., "Sound-projecting apparatus and method," US Patent 1 477 556, filed Jul. 12, 1921, issued Dec. 18, 1923
- [1708]Hamada, H., "Horn loadspeaker," US Patent
 $5\,233\,136,$ filed Jul. 28, 1992, issued Aug. 3, 1993
- [1709] Hamada, H., Tanaka, Y., Tamadera, A., and Iwazumi, T., "Loudspeaker having a yoke, magnet, cylindrical throat, and spacer plate configuration," US Patent 5878149, filed Nov. 5, 1997, issued Mar. 2, 1999
- [1710] Hamada, H., Tanaka, Y., Tamadera, A., and Iwazumi, T., "Loudspeaker having a yoke, magnet, cylindrical throat, and spacer plate configuration," US Patent 5878149, filed Nov 5, 1997, issued Mar 2, 1999

- [1711] Hanna, C. R., "Multiple-inlet horn," US Patent 1715703, filed May 8, 1925, issued Jun. 4, 1929
- [1712] Harrison, H. C., "Sound measuring system," US Patent 1968448, filed Feb 24, 1928, issued Jul 31, 1934
- [1713] Harrison, H. C., "Talking motion picture system," US Patent 1847181, filed Dec. 27, 1923, issued Mar. 1, 1932
- [1714] Harrison, H. C., "Electromagnetic system," US Patent 1 773 082, filed Dec. 6, 1923, issued Aug. 12, 1930
- [1715] Harrison, H. C., "Sound-translating system," US Patent 1757459, filed May 2, 1923, issued May 6, 1930
- [1716] Harrison, H. C., "Acoustic device," US Patent 1 757 712, filed Jul. 31, 1926, issued May 6, 1930
- [1717] Harrison, H. C., "Acoustic horn," US Patent 1 747 830, filed Oct. 6, 1928, issued Feb. 18, 1930
- [1718] Harrison, H. C., "Piston diaphragm having tangential corrugations," US Patent 1734624, filed Apr. 16, 1926, issued Nov. 5, 1929
- [1719] Harrison, H. C., "Acoustic device," US
 Patent 1 730 425, filed Oct. 11, 1927, issued
 Oct. 8, 1929
- [1720] Harrison, H. C., "Acoustic device," US Patent 1 726 105, filed Aug 11, 1927, issued May 27, 1929
- [1721] Harrison, H. C., "Device for the transmission of mechanical vibratory energy," US Patent 1 678 116, filed Oct. 16, 1923, issued Jul. 24, 1928
- [1722] Harrison, H. C., "Energy translation system," US Patent 1689339, filed Dec. 15, 1923, issued Oct. 30, 1928
- [1723] Harrison, H. C., "Electromagnetic device," US Patent 1 632 134, filed Nov. 30, 1923, issued Jun. 14, 1927
- [1724] Harrison, H. C., "Phonic diaphragm," US Patent 1 632 068, filed Jun. 19, 1923, issued Jun. 14, 1927
- [1725] Harrison, H. C., "Sound box," US Patent 1 572 387, filed Jul. 20, 1923, issued Feb. 9, 1926
- [1726] Harrison, H. C., "Acoustic device," US Patent 1 562 165, filed Jul. 17, 1925, issued Nov. 19, 1925

- [1727] Hartsfield, W., "Convertible loudspeaker system," US Patent 2815086, filed Feb. 18, 1954, issued Dec. 3, 1957
- [1728] Hartsfield, W. L., "Compressional-wave lens," US Patent 2848058, filed Oct 29, 1954, issued Aug 19, 1958
- [1729] Heil, C., "Sound wave guide," US Patent 5 163 167, filed Feb 28, 1989, issued Nov 10, 1992
- [1730] Henricksen, C. A., "Acoustical transformer for horn-type loudspeaker," US Patent 4050 541, filed Apr 21, 1976, issued Sep 27, 1977
- [1731] High, J. S., "Translating device," US Patent 1 794 957, filed Oct. 20, 1927, issued Mar. 3, 1931
- [1732] Hopkins, H. F., "Electrodynamic transducer and connector therefor," US Patent 2 538 621, filed Apr 23, 1945, issued Jan 16, 1951
- [1733] Hopkins, H. F., "Diaphragm for electroacoustic transducers," US Patent 2549091, filed Oct 17, 1946, issued Apr 25, 1951
- [1734] Hopkins, H. F., "Sound translating apparatus," US Patent 2 098 291, filed Jan 30, 1937, issued Nov 9, 1937
- [1735] Houghton, V. T., "Acoustic diaphragm," US Patent 1 829 355, filed Jul 29, 1930, issued Oct 27, 1931
- [1736] Jones, W. C., "Sound reproducer," US Patent 1717158, filed Apr. 18, 1928, issued Jun. 11, 1929
- [1737] Kalin, W., "Sound translating device," US Patent 1987 445, filed Feb. 12, 1932, issued Jan. 8, 1935
- [1738] Kalin, W., "Sound translating device," US Patent 1916 223, filed Feb. 12, 1932, issued Jul. 4, 1933
- [1739] Kamatani, Y. and Fuke, N., "Speaker unit with an improved acoustic equalizer," US Patent 5 757 942, filed Oct. 31, 1996, issued May 26, 1998
- [1740] Kawamura, S., "Electroacoustic transducer," US Patent 3 563 337, filed Mar 3, 1969, issued Feb 16, 1971
- [1741] Keele, D. B., "Defined coverage loudspeaker horn," US Patent 4580655A, filed Oct. 5, 1983, issued Apr. 8, 1986

- [1742] Keele, D. B., "Loudspeaker horn," US Patent 4 308 932, filed May 6, 1980, issued Jan. 5, 1982
- [1743] Keele, D. B., "Horn loudspeaker," US Patent 4 071 112, filed Sep. 30, 1975, issued Jan. 31, 1978
- [1744] Keller, A. C., "Sound box for phonic diaphragms," US Patent 1884724, filed Jun. 19, 1923, issued Oct. 25, 1932
- [1745] Kellogg, E. W., "Sound reproducing apparatus," US Patent 1795214, filed Mar. 27, 1924, issued Mar. 3, 1931
- [1746] Kellogg, E. W., "Sound-reproducing apparatus," US Patent 1 707 617, filed Jan. 9, 1925, issued Apr. 2, 1929
- [1747] Kinoshita, S., "Horn type loudspeaker," US Patent 4 469 921, filed Mar 9, 1982, issued Sep 4, 1984
- [1748] Klayman, A. I., "High efficiency low frequency speaker system," US Patent 5 177 329, filed May 29, 1991, issued Jan. 5, 1993
- [1749] Klayman, A. I., "Low distortion pyramidal dispersion speaker," US Patent 3 930 561, filed Jun. 7, 1974, issued Jan. 6, 1976
- [1750] Klipsch, P. W., "Crossover network for optimizing efficiency and improving response of loudspeaker system," US Patent 4 237 340, filed Oct. 5, 1978, issued Dec. 2, 1980
- [1751] Klipsch, P. W., "Loud-speaker horn," US Patent 2 537 141, filed Jun. 15, 1948, issued Jan. 9, 1951
- [1752] Klipsch, P. W., "Loud speaker," US Patent 2 373 692, filed Oct. 3, 1942, issued Apr. 17, 1945
- [1753] Klipsch, P. W., "Horn for loudspeaker," US Patent 2 310 243, filed Feb. 5, 1940, issued Feb. 9, 1943
- [1754] Kock, W. E., "Sound wave refractor," US Patent 2684724, filed Oct 1, 1948, issued Jul 27, 1954
- [1755] Koiwa, K. and Kohashi, M., "Horn unit for a speaker," US Patent 3 935 925, filed Nov. 2, 1973, issued Feb. 3, 1976
- [1756] Kubota, H., "Sound wave guide structure for speaker system and horn speaker," US Patent 7 735 599, filed Mar 25, 2006, issued Jun 15, 2010

- [1757] Lesage, P., "Loudspeaker for high frequencies," US Patent 5 875 252, filed Jun 6, 1996, issued Feb 23, 1999
- [1758] Levy, S. E., "Reflex type loudspeakers," US Patent 2 746 558, filed Jun 24, 1952, issued May 22, 1956
- [1759] Levy, S. E., "Horn for loudspeakers," US Patent 2 751 996, filed Apr. 29, 1953, issued Jun. 26, 1956
- [1760] Levy, S. E., White, S. J., and Cohen, A. B.,
 "Acoustic device," US Patent 2 690 231, filed
 Mar. 9, 1950, issued Sep. 28, 1954
- [1761] Maekawa, K. and Tamura, Y., "Loudspeaker with flat frequency response," US Patent 3 867 586, filed Oct 19, 1972, issued Feb 18, 1975
- [1762] Manley, F. A., "Sound dispersion device with internal divergent acoustical lens," US Patent 2 805 728, filed Aug 27, 1953, issued Sep 10, 1957
- [1763] Manzini, A., Prati, S., and Storchi, U., "Equalizer, or phase plug, for electro-acoustic transducers," US Patent 20 050 105 753A1, filed Apr 22, 2003, issued May 19, 2005
- [1764] Marion, F. R., "Sound reproducing apparatus," US Patent 2 089 391, filed Jun 12, 1936, issued Aug 10, 1937
- [1765] Matsuoka, E., "Speaker driver," US Patent 2 832 844, filed Apr 29, 1957, issued Apr 29, 1958
- [1766] Merhaut, J., "Electrostatic horn loudspeaker," Patent 3 590 169, filed Apr 17, 1968, issued Jun 29, 1971
- [1767] Merrill, A. P. and Hays, J. W., "Telephone," US Patent 669 944, filed Jan. 10, 1900, issued Mar. 12, 1901
- [1768] Meyer, J. D., "Horn speaker and method for producing low distortion sound," US Patent 4 152 552, filed Jan. 23, 1978, issued May 1, 1979
- [1770] Minton, J. P., "Filter system for loudspeakers," US Patent 2 084 160, filed Jun. 9, 1925, issued Jun. 15, 1937
- [1771] Minton, J. P., "Loud speaker," US Patent 1 827 994, filed Jun. 12, 1925, issued Oct. 20, 1931

- [1772] Murray, F. M., "Acoustic diaphragm," US Patent 4 655 316, filed Mar. 13, 1985, issued Apr. 7, 1987
- [1773] Nakazono, J., Kodama, A., and Tsuchiya, Y., "Loudspeaker driver unit," US Patent 4 143 738, filed Jan 26, 1978, issued Mar 13, 1979
- [1774] Norton, E. L., "Sound reproducer," US Patent 1 792 655, filed May 31, 1929, issued Feb. 17, 1931
- [1775] Norton, E. L., "Wave filter," US Patent 1 681 554, filed Nov. 24, 1924, issued Aug. 21, 1928
- [1776] Oclee-Brown, J. A. and Dodd, M. A.,
 "Electroacoustic diaphragm," US Patent 2016/0014519 A1, filed Feb 19, 2014, issued Jan 14, 2016
- [1777] Olney, B., "Sound reproducing system," US Patent 2 031 500, filed Sep. 17, 1934, issued Feb. 18, 1936
- [1779] Olson, H. F., "Loud-speaker," US Patent
 2 224 919, filed Mar. 31, 1937, issued Dec.
 17, 1940
- [1780] Olson, H. F., "Sound reproducing apparatus," US Patent 2174163, filed Apr. 30, 1937, issued Sep. 26, 1939
- [1781] Onishi, M., "Sound-wave path-length correcting structure for speaker system," US Patent 7 631 724, filed Mar 22, 2008, issued Dec 15, 2009
- [1782] Pape, H. G., "Combined sound reproducer and lighting fixture," US Patent 1 272 843, filed Dec. 17, 1914, issued Jul. 16, 1918
- [1783] Peveto, R. S. and Clements, P. R., "Exponential horn speaker," US Patent 4171734, filed Nov. 10, 1977, issued Oct. 23, 1979
- [1784] Pollák, A., "Apparatus for strengthening weak electrical currents," US Patent 939 625, filed Aug. 7, 1908, issued Nov. 9, 1909
- [1785] Pridham, E. S. and Jensen, P. L., "Electrodynamic receiver," US Patent 1 448 279, filed Apr. 28, 1920, issued Mar. 13, 1923
- [1786] Putnam, M. T., "High frequency horn," US Patent 4 381 831, filed Oct. 28, 1980, issued May 3, 1983

- [1787] Ranger, R., "Stereophonic sound distributor," US Patent 3065816, filed Mar. 10, 1958, issued Nov. 27, 1962
- [1788] Rice, C. W., "Sound reproducing apparatus," US Patent 1631646, filed Mar. 7, 1924, issued Jun 27, 1927
- [1789] Robineau, P. and Vincenot, E., "Electroacoustic motor for horns," US Patent 4 628 155, filed Oct. 19, 1984, issued Dec. 9, 1986
- [1790] Round, H. J., "Telephone and the like," US Patent 1 690 840, filed Jan 3, 1925, issued Nov 6, 1928
- [1791] Rowe, H. N., "Electrodynamic speaker unit," US Patent 2 025 127, filed Sep 1, 1934, issued Dec 24, 1935
- [1792] Ruff, M., "Amplifier circuit with negative feedback," US Patent 2004/258 256 A1, filed Dec. 16, 2003, issued Dec. 23, 2004, (Application)
- [1793] Salmon, V., "Acoustic horn," US Patent 2 338 262, filed Jul. 23, 1942, issued Jan. 4, 1944
- [1794] Sandeman, E. K., "Loud speaker," US Patent 1 984 550, filed May 25, 1929, issued Dec. 18, 1934
- [1795] Sarbacher, R. I., "Horn support," US Patent 1 837 491, filed Dec. 19, 1929, issued Dec. 22, 1931
- [1796] Schlenker, V. A., "Acoustic apparatus," US Patent 1 931 886, filed Aug. 30, 1926, issued Oct. 24, 1933
- [1797] Schlenker, V. A., "Acoustic device," US Patent 1 862 582, filed Aug. 2, 1928, issued Jun. 14, 1932
- [1798] Schlenker, V. A., "Acoustic device," US Patent 1 882 974, filed May 22, 1928, issued Oct. 18, 1932
- [1799] Schlenker, V. A., "Acoustic device," US Patent US1 738 322, filed Aug. 17, 1927, issued Dec. 3, 1929
- [1800] Scrantom, D. H. G., "Apparatus for amplifying and distributing sound waves," US Patent 1 852 793, filed Nov. 24, 1928, issued Apr. 5, 1932
- [1801] Siemens, E. W., "Magneto-electric apparatus," US Patent 149 797, filed Jan. 20, 1874, issued Apr. 14, 1874

- [1802] Sinclair, R., "Two-section exponential acoustical horn," US Patent 4176731, filed Nov. 21, 1977, issued Dec. 4, 1979
- [1803] Slepian, J., "Sound-generating device," US Patent 1 684 975, filed Jun. 16, 1926, issued Sep. 18, 1928
- [1804] Slepian, J. and Hanna, C. R., "Acoustic horn," US Patent 1623561, filed Feb. 4, 1924, issued Apr. 5, 1927
- [1805] Smythe, E. H., "Acoustic device," US Patent 1 871 243, filed Aug. 15, 1931, issued Aug. 9, 1932
- [1806] Smythe, E. H., "Acoustic device," US Patent 1 813 208, filed Nov. 26, 1926, issued Jul. 7, 1931
- [1807] Smythe, E. H. and Flanders, P. B., "Apparatus for the measurement of acoustic impedance," US Patent 1816 917, filed Mar. 1, 1929, issued Aug. 4, 1931
- [1808] Snow, W. B., "Sound reproducing system," US Patent 2137032, filed Sep. 30, 1936, issued Nov. 15, 1938
- [1809] Spragins, J. D., "Loudspeaker," US Patent 3 027 964, filed Jun 24, 1958, issued Apr 3, 1962
- [1810] Steinberger, L., "Telephone receiver," US Patent 1 366 606, filed Feb. 27, 1919, issued Jan. 25, 1921
- [1811] Stenger, W. C., "Sound control chamber," US Patent 1843524, filed May 5, 1930, issued Feb. 2, 1932
- [1812] Terhune, L. L., "Horn for receiving and delivering sound," US Patent 814 891, filed May 22, 1903, issued Mar. 13, 1906
- [1813] Thompson, R. E., "Sound reproducing instrument," US Patent 1710035, filed Mar. 13, 1926, issued Apr. 23, 1929
- [1814] Thuras, A. L., "Acoustic device," US Patent 2 171 733, filed Oct. 6, 1937, issued Sep. 5, 1939
- [1815] Thuras, A. L., "Acoustic device," US Patent 2 041 157, filed Jul. 13, 1932, issued May 19, 1936
- [1816] Thuras, A. L., "Sound translating device," US Patent 2037 185, filed Mar. 28, 1933, issued Apr. 14, 1936
- [1817] Thuras, A. L., "Sound translating device," US Patent 1954966, filed Jan. 31, 1931, issued Apr. 17, 1934

- [1818] Thuras, A. L., "Sound translating device," US Patent 1 869 178, filed Aug. 15, 1930, issued Jul. 26, 1932
- [1819] Thuras, A. L., "Sound translating device," US Patent 1847702, filed May 2, 1931, issued Mar. 1, 1932
- [1820] Thuras, A. L., "Electrodynamic device," US Patent 1 707 544, filed Aug. 4, 1926, issued Apr. 2, 1929
- [1821] Thuras, A. L., "Electrodynamic device," US Patent 1 729 806, filed Apr. 26, 1928, issued Oct. 1, 1929
- [1822] Villchur, E. M., US Patent 2 775 309, filed Mar 15, 1954, issued Dec 25, 1956
- [1823] Voishvillo, A. G., "Aperture patterns and orientations for optimization of phasing plug performance in compression drivers," US Patent 2015/0373445 A1, Dec 24, 2015, patent Application
- [1824] Voishvillo, A. G., "Dual compression drivers and phasing plugs for compression drivers," US Patent 8 280 092B2, filed Sep 30, 2010, issued Oct 2, 2012
- [1825] Voishvillo, A. G. and Kochendoerfer, F., "Electrodynamic loudspeaker with conducting elements," US Patent 2015/0078610 A1, Aug 1, 2014, patent Application
- [1826] Volkmann, J. E., "Acoustical apparatus," US Patent 2 458 038, filed Aug. 29, 1942, issued Jan. 4, 1949
- [1827] Weckler, J., "Electroacoustic apparatus for reproducing lowest to medium frequencies," US Patent 4853964, filed Jan. 7, 1988, issued Aug. 1, 1989
- [1828] Weil, M., "Sound amplifying system," US Patent 1 820 996, filed Dec. 8, 1925, issued Sep. 1, 1931
- [1829] Wente, E. C., "Horn," US Patent 2135610, filed Nov. 13, 1936, issued Nov. 8, 1938
- [1830] Wente, E. C., "Calculating device," US Patent 2 098 326, filed Apr 10, 1935, issued Nov 9, 1937
- [1831] Wente, E. C., "Sound translating device," US Patent 2 037 187, filed Mar. 28, 1933, issued Apr. 14, 1936
- [1832] Wente, E. C., "Acoustic device," US Patent 1 992 268, filed Apr. 11, 1933, issued Feb. 26, 1935

- [1833] Wente, E. C., "Sound radiator," US Patent 1 970 926, filed Apr. 11, 1933, issued Aug. 21, 1934
- [1834] Wente, E. C., "Acoustic device," US Patent 1 930 915, filed Jul. 13, 1932, issued Oct. 17, 1933
- [1835] Wente, E. C., "Acoustic device," US Patent 1 812 389, filed Apr. 1, 1925, issued Jun. 30, 1931
- [1836] Wente, E. C., "Method and apparatus for determining the properties of acoustic materials," US Patent 1743414, filed Jul. 13, 1926, issued Jan. 14, 1930
- [1837] Wente, E. C., "Acoustic device," US Patent 1 707 545, filed Aug. 4, 1926, issued Apr. 2, 1929
- [1838] Wente, E. C., "Translating device," US Patent 1 638 555, filed May 1, 1923, issued Aug. 9, 1927
- [1839] Werner, B. M., "Constant coverage waveguide," US Patent 7 936 892, filed Jan 14, 2002, issued May 3, 2011
- [1840] Werner, B. M., "Horn-loaded compression driver system," US Patent 7 039 211, filed Mar 28, 2003, issued May 2, 2006
- [1841] Williams, S. T., "Sound amplifier," US Patent 194349, filed Apr. 6, 1928, issued Jan. 16, 1934
- [1842] Williard, C. L., Geddes, E. R., and Benedict, R. H., "Temperature-environment-resistant transducer suspension," US Patent 5 455 396, Oct. 3, 1994
- [1843] Wolff, I., "Sound reproducer," US Patent 1 865 735, filed Apr. 1, 1929, issued Jul. 5, 1932
- [1844] Wolff, I., May, P., and Ringel, A., "Auditorium loud speaker," US Patent 1866831, filed Aug. 3, 1928, issued Jul. 12, 1932
- [1845] Woolf, W. L. and Cornwell, L. B., "Acoustic device," US Patent 1962374, filed Sep 24, 1929, issued Jun 12, 1934
- [1846] Young, "Diaphragm for sound producing instruments," US Patent 1 926 187, filed Jul 23, 1931, issued Sep. 12, 1933
- [1847] Balmain, C. H., "Improvements in gramophones," GB Patent 177 215, filed Dec. 25, 1920, issued March 14, 1922
- [1848] Beatty, W. E., "Improvements in or relating to acoustic horns," GB Patent 297 151, filed June 17, 1927, issued Sept. 17, 1928

- [1849] Blumlein, A. D., "Improvements in and relating to sound-transmission, soundrecording and sound-reproducing systems," GB Patent 394325, filed Dec 14, 1931, issued Jun 14, 1933
- [1850] Brown, S. G., "Improvements in or relating to aural apparatus," GB Patent 179 688, filed Nov 4, 1921, issued May 17, 1922
- [1851] Columbia Graphophone Company, "Improvements in sound amplifiers," GB Patent 277 193, filed Nov. 10, 1926, issued Sept. 15, 1927
- [1852] Flanders, P. B., "Improvements in acoustic horns," GB Patent 245 415, filed Sept. 24, 1925, issued Dec. 24, 1926
- [1853] Graham, E. A., "Improvements in or relating to acoustic amplifiers or radiators," GB Patent 246 634, filed Dec. 11, 1924, issued Feb. 4, 1926
- [1854] Graham, E. A., "Improvements in loud speaking telephones," GB Patent 222 961, filed May 12, 1923, issued Oct. 13, 1924
- [1855] Harrison, H. C., "Improvements in acoustic horns," GB Patent 213 528, filed Oct. 32, 1923, issued Feb. 2, 1925
- [1856] Minton, J. P. and Ringel, A. S., "Improvements in loud speaking telephones," GB Patent 238,558, filed Aug 13, 1926, issued March 18, 1925
- [1857] Mitchell, F. A., "Improvements in sound amplifiers," GB Patent 306 166, filed Aug. 18, 1927, issued Feb. 18, 1929
- [1858] Moir, J. and Paterson, D. R., "Acoustic diaphragm," GB Patent 494 726, filed Mar 28, 1937, issued Oct 28, 1938
- [1859] Pedley, A., "Improvements in the sound horns of sound recording and reproducing instruments," GB Patent 197 437, filed Nov 21, 1922, issued May 17, 1923
- [1860] Round, Henry Joseph (Marconi's Wireless Telegraph Company, L., "Improvements in or relating to the cathodes of vacuous tubes suitable for use in wireless telegraphy," GB Patent 6476, filed Dec. 29, 1914, issued May 27, 1915
- [1861] Sandeman, E. K., "Loud speakers and the like," GB Patent 322 470, filed Aug 29, 1928, issued Nov. 29, 1929

- [1862] Standard Telephone & Cables, Ltd., "Improvenents in horns for acoustical instruments," GB Patent 265 060, filed Sep. 22, 1925, issued Jan. 24, 1927
- [1863] Van Opstal, J. J. L., "Improvements in or relating to phonograph horns," GB Patent 288 647, filed Apr. 15, 1928, issued Apr. 25, 1929
- [1864] Victor Talking Machine Company, "Improvements in sound amplifying horns," GB Patent 283 860, filed Jan. 14, 1928, issued May 3, 1928
- [1865] Voigt, P. G. A. H., "Improvements in moving coil loudspeakers," GB Patent 667 170, filed Nov. 26, 1952, issued Feb. 27, 1948
- [1866] Voigt, P. G. A. H., "Improved means of distributing sound," GB Patent 404037, filed May 29, 1933, issued Jan 11, 1934
- [1867] Voigt, P. G. A. H., "Improvements in or relating to moving coil loudspeakers," GB Patent 413 758, filed Jan. 27, 1933, issued Jul 26, 1934
- [1868] Voigt, P. G. A. H., "Improvements in horns for acoustic instruments," GB Patent 278 098, filed Oct. 5, 1926, issued Jul. 5, 1927
- [1869] Voigt, P. G. A. H., "Improvements in or relating to sound reproducers," GB Patent 238 310A, filed May 20, 1924, issued Aug 20, 1925
- [1870] Western Electric Company Inc., "Improvements in sound projecting systems," GB Patent 574 370, filed Dec. 23, 1943, issued Jan. 2, 1946
- [1871] Young, A. and Young, L., "Improvements in and relating to electro-dynamic devices for interconverting electrical oscillations and sound waves," GB Patent GB654364, filed June 23, 1947, issued June 13, 1951
- [1872] Young, A. and Young, L., "Electro-dynamic devices for interconverting electrical oscillation and sound waves," GB Patent GB563 756, filed Dec. 24, 1943, issued Aug. 29, 1944
- [1873] Young, A. and Young, L., "Acoustic horns," GB Patent GB500 493, filed Aug. 9, 1937, issued Feb. 9, 1939
- [1874] Young, A. and Young, L., "Electro-dynamic devices for interconverting electrical oscillations and sound waves," Young and Young Patent GB460064, filed Dec. 13, 1935, issued Jan. 20, 1937

- [1875] Young, A. and Young, L., "Improvements in and relating to magnet systems," UK Patent GB460 265, filed Jul. 7, 1936, issued Jan. 25, 1937
- [1876] Young, A. and Young, L., "Improvements in or relating to sound reproducing instruments," Patent GB410 960, filed Dec. 8, 1933, issued May 31, 1934
- [1877] Young, A. and Young, L., "Improvements in and relating to sound reprducing instruments," Patent GB400 343, filed Jun. 13, 1933, issued Oct. 26, 1933
- [1878] Young, A. and Young, L., "Improvements in or relating to diaphragm for sound re-

producing instruments," Patent GB399556, filed Apr. 10, 1933, issued Oct. 9, 1933

- [1879] Young, L. and Young, A., "Improvements in and relating to electro-dynamic devices for converting electrical oscillations into sound waves," GB Patent GB654 378, filed Sept. 10, 1947, issued June 13, 1951
- [1880] Young, L. and Young, A., "Improvements in or relating to acoustic horns for sound reproducing instruments," GB Patent 403 634, filed June 22, 1932, issued Dec. 22, 1933

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