

*The*  
ELECTRONIC  
ENGINEERING  
MASTER INDEX

A SUBJECT INDEX TO ELECTRONIC ENGINEERING PERIODICALS

January, 1925 to June, 1945

*Edited By*

FRANK A. PETRAGLIA

*Associate Member, I. R. E.*

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IN PREPARATION

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ELECTRONIC ENGINEERING ABSTRACTS  
ELECTRONIC ENGINEERING PATENT INDEX

**THE ELECTRONIC ENGINEERING MASTER INDEX**

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## PREFACE

The ELECTRONIC ENGINEERING MASTER INDEX is a definitive guide to the radio-electronic engineering literature published during the past two decades. No major reference of this type has ever been available to provide radio engineers with a means for gaining ready access to desired technical information. As a result, bibliographical research has until now been a time-consuming task, since too many separate sources had to be consulted. To overcome this difficulty, this "master" compilation brings together *all* sources, in one convenient volume.

The book is divided into two parts: Part I covering the period from January, 1925 to December, 1934; Part II the period from January, 1935 to June, 1945. The titles of all pertinent articles and texts are grouped under conventional electronic subject headings in each part for the respective ten-year periods. Abundant cross references are provided throughout, and as a further means for facilitating investigation an exhaustive cross-index of topics is furnished in the Appendix.

The present compilation contains approximately 15,000 entries, the majority of which are the titles of all engineering articles that have appeared in the leading professional periodicals, such as: *Institute of Radio Engineers, Electronics, Bell System Technical Journal, Electronic Industries, Electrical Communication, RCA Review*, etc. Those remaining constitute the selection from such publications as *Electrical Engineering, General Electric Review, Wireless Engineer, Journal of Applied Physics, Journal of the Institution of Electrical Engineers* and other engineering periodicals in aeronautical, chemical, mechanical and general industrial fields.

To the extensive listings comprising this first edition will be added approximately a third more which had to be discarded because of the paper restrictions in effect when this book went to press. Similarly, it was found necessary to omit the scheduled author index and limit the number of entries from foreign periodicals. With these, and with the addition of new listings for the forthcoming year, the 1946 edition will carry out the publication plan for annual cumulative issues to provide engineers with an up-to-date reference on electronic engineering progress.

FRANK A. PETRAGLIA  
*Editor*

New York City  
September, 1945



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## Key to Abbreviations

abr	abridged	Mar	March
Aug	August	Nov	November
Apr	April	Oct	October
bibliog	bibliography	p	page
comp	compiled or compiler	pl	plate
cond	condensed	pt	part
contd	continued	rev	revised
Dec	December	Sept	September
diag	diagram	sup	supplement
ed	edition or editor	tr	translation or
Feb	February		translator
il	illustrations	v	volume
Jan	January		

Each entry is presented as follows:

Title of article  
Author or authors  
Title of periodical  
Volume number  
Page number  
Month and year

Sample entry:

Method of measuring noise levels on  
short-wave radiotelegraph circuits.  
H. O. Peterson. Proc Inst Radio Eng  
23:128 Feb '25

## LIST OF PERIODICALS INDEXED

- Aero Digest**—Aero Digest. \$3; single numbers 50c. Semi-monthly. Aeronautical Digest Publishing Corp, 615 Madison Ave, New York 22, N. Y.
- Aerovox Res W**—Aerovox Research Worker. 50c; single numbers upon request. Aerovox Corporation, New Bedford, Mass.
- Amer Inst Chem Eng Trans**—American Institute of Chemical Engineers. Transactions. \$10; single numbers \$2. Bimonthly. American Institute of Chemical Engineers, 50 E. 41st St, New York, N. Y.
- Amer Jour Sci**—American Journal of Science. \$8; single numbers 60c. Monthly. American Journal of Science, New Haven, Conn.
- Arch Forum**—Architectural Forum. \$4; single numbers \$1. Monthly. Time, Inc, 330 E 22nd St, Chicago 16, Ill.
- Arch Record**—Architectural Record. \$3; single numbers \$1. Monthly. F. W. Dodge Corp, 119 W 40th St, New York, N. Y.
- Aviation**—Aviation. \$3; single numbers 50c. Monthly. McGraw-Hill Pub. Co, Inc, 330 W 42d St, New York 18, N. Y.
- Aviation N**—Aviation News. \$5; single numbers 50c. Weekly. McGraw-Hill Pub. Co, Inc, 330 W 42d St, New York 18, N. Y.
- Bell Lab Rec**—Bell Laboratories Record. \$2; single numbers 25c. Monthly. American Telephone and Telegraph Co, 195 Broadway, New York, N. Y.
- Bell System Tech Jour**—Bell System Technical Journal. \$1.50; single numbers 50c. Quarterly. American Telephone and Telegraph Co, 195 Broadway, New York, N. Y.
- Bens W**—Business Week. \$5; single numbers 20c. Weekly. McGraw-Hill Pub. Co, Inc, 330 W 42d St, New York 18, N. Y.
- CAA Jour**—Civil Aeronautics Journal; issued monthly by the Civil Aeronautics Administration. 50c. Superintendent of Documents, Washington 25, D.C.
- Cer Ind**—Ceramic Industry. \$4; single numbers 50c. Monthly. Industrial Publications, Inc, 59 E Van Buren St, Chicago 5, Ill.
- Chem & Ind**—Chemistry and Industry. £2 15s. single numbers 2s. Weekly. Society of Chemical Industry, 56 Victoria St, London, S.W. 1, England.
- Civil Aero Jour**—Civil Aeronautics Journal; issued monthly by the Civil Aeronautics Administration. 50c. Superintendent of Documents, Washington 25, D. C.
- Communications**—Communications. \$2.00. Monthly. Single numbers 25c. Bryan-Davis Publishing Co, 52 Vanderbilt Ave, New York, N. Y.
- Elec Comm**—Electrical Communication. \$1.50; single numbers 50c. Quarterly. International Telephone & Telegraph Co, 67 Broad St, New York.
- Elec Eng**—Electrical Engineering. \$12; single numbers \$1.50. Monthly. American Institute of Electrical Engineers, 33 W 39th St, New York 18, N. Y.
- Elec Rev (Lond)**—Electrical Review. £2 7s 8d; Canadian subs £2 3s 4d; elsewhere £2 5s 6d; single numbers 9d. Weekly. Electrical Review, Dorset House, Stamford St, London, S.E. 1, England.
- Elec West**—Electrical West. \$2; single numbers 25c. Monthly. McGraw-Hill Co. of California, 68 Post St, San Francisco 4, Calif.
- Elec World**—Electrical World. \$5; single numbers 25c. Weekly. McGraw-Hill Publishing Co, Inc, 330 W 42d St, New York 18, N. Y.
- Electrician**—Electrician. 30s; single numbers 6d. Weekly. Benn Bros, Ltd, Bouverie House, 154 Fleet St, London, E.C. 4, England.
- Electrochem Soc Trans**—The Electrochemical Society Transaction. Electrochemical Society, Columbia University, New York 27, N. Y.
- Electronic Indus**—Electronic Industries. \$3; single numbers 35c. Electronic Industries, 480 Lexington Ave, New York 17, N. Y.
- Electronics**—Electronics. \$5; single numbers 50c. Monthly. McGraw-Hill Pub. Co, Inc, 330 W 42d St, New York 18, N. Y.
- Eng N**—Engineering News-Record. \$5; single numbers 25c. Weekly. McGraw-Hill Pub. Co, Inc, 330 W 42d St, New York 18, N. Y.
- Engineer**—Engineer. £3 3s; Canadian subs £2 18s 6d; single numbers 1s 6d. Weekly. Engineer, 28, Essex St, Strand, London, W.C. 2.
- Engineering**—Engineering. Thick paper ed £3 7s 6d; thin paper ed £3 3s; Canadian subs thick paper ed £3 3s; thin paper ed £2 18s 6d; single numbers 1s 2½d. Weekly. Engineering, Ltd, 35 and 36 Bedford St, Strand, London, W.C. 2, England.
- Factory Management**—Factory Management and Maintenance. \$3; single numbers 35c. Monthly. McGraw-Hill Publishing Co, Inc, 330 W. 42d St, New York 18, N. Y.
- Franklin Inst Jour**—Journal of the Franklin Institute. \$8; single numbers 60c. Monthly. Franklin Institute, Benjamin Franklin Parkway, Philadelphia, Pa.
- Gen Elec Rev**—General Electric Review. \$3; single numbers 30c. Monthly. General Electric Co, Schenectady 5, N. Y.
- Genie Civil**—Le Genie Civil. 280 fr; single numbers 5 fr. Weekly. Genie Civil, 5 Rue Jules Lefebvre, Paris, France.
- Iron Age**—Iron Age. \$8; single numbers 35c. Weekly. Chilton Co, Inc, Chestnut & 56th Sts, Philadelphia, Pa; 100 E 42nd St, New York 17, N. Y.
- Ind Stand**—Industrial Standardization and Commercial Standards Monthly. \$4; single numbers 35c. American Standards Association, 29 W. 39th St, New York, N. Y.
- Jour Acoustical Soc Amer**—Journal of the Acoustical Society of America, 36; single numbers 71.80. Quarterly. American Institute of Physics, 57 W 55th St, New York 22, N. Y.
- Jour Aeronautical Sci**—Journal of the Aeronautical Sciences. \$7; single numbers \$2. Quarterly. Institute of the Aeronautical Sciences, Inc, 30 Rockefeller Plaza, New York 20, N. Y.
- Jour Amer Cer Soc**—Journal of the American Ceramic Society. \$15; single numbers \$1.50. Monthly. American Ceramic Society, 2525 N High St, Columbus 2, Ohio.
- Jour Amer Inst Elec Eng**—See Elec Eng.
- Jour Ap Phys**—Journal of Applied Physics. \$7; single numbers 70c. Monthly. American Institute of Physics, 57 E 55th St, New York 22, N. Y.
- Jour Fr Inst**—See Franklin Inst Jour.
- Jour Inst Elec Eng**—Journal of the Institution of Electrical Engineers. Single numbers £1 5s; £2 7s 6d; £3 6s. Monthly. The Institution, Savoy Place, Victoria Embankment, London, W.C. 2; E.&F.N. Spon, Ltd, 57 Haymarket, London, S.W. 1, England.
- Jour Opt Soc Amer**—Journal of the Optical Society of America. \$7; single numbers 70c. Monthly. American Institute of Physics, Inc, 57 E 55th St, New York 22, N. Y.
- Jour Res Nat Bur Stand**—Journal of Research of the National Bureau of Standards. \$3.50; single numbers 30c. Monthly. Superintendent of Documents, Washington 25, D. C.
- Jour Roy Aeronautical Soc**—Journal of the Royal Aeronautical Society. £4 10s; single numbers 7s 9d. Monthly. Royal Aeronautical Society, 4 Hamilton Place, Piccadilly, London. W. 1, England.



## LIST OF PERIODICALS INDEXED—Cont'd

- Jour Soc Motlon Picture Eng**—Journal of Society of Motion Picture Engineers. \$8; single numbers \$1. Monthly. Society of Motion Picture Engineers. Hotel Pennsylvania, New York 1, N. Y.
- Jour Western Soc of Eng**—Journal of the Western Society of Engineers. \$3; single numbers 75c. Quarterly. Western Society of Engineers, 205 W Wacker Drive, Chicago 6, Ill.
- Marine Eng**—Marine Engineering and Shipping Review. \$3; single numbers 35c. Monthly. Simmons-Boardman Publishing Corp, 30 Church st, New York 7, N. Y.
- Mech Eng**—Mechanical Engineering. \$6; single numbers 75c. Monthly. American Society of Mechanical Engineers, 29 W 39th St, New York 18, N. Y.
- Metals & Alloys**—Metals and Alloys. \$2; single numbers 25c. Monthly. Reinhold Publishing Corp, 330 W 42d St, New York 18, N. Y.
- Mod Plastics**—Modern Plastics. \$5; single numbers 50c. Monthly. Modern Plastics Inc, 122 E 42d St, New York 17 (1v:S v27;i-r)
- Nat Research Council Bul**—National Research Council, 2101 Constitution Ave, Washington, D. C. Price list of individual numbers sent on request.
- Phys Rev**—The Physical Review. \$15; single numbers \$1.50. Monthly. American Institute of Physics, Inc, 57 E 55th St, New York 22, N. Y.
- Power**—Power. \$3; single numbers 35c. Monthly. McGraw-Hill Publishing Co, Inc, 330 W 42d St, New York 18, N. Y.
- Proc Inst Radio Eng**—Proceedings of the Institute of Radio Engineers. \$10; single numbers \$1. Monthly. Institute of Radio Engineers, Inc, 330 W 42d St, New York 18, N. Y.
- Product Eng**—Product Engineering. \$5; single numbers 50c. Monthly. McGraw-Hill Publishing Co, Inc, 330 W 42d St, New York 18, N. Y.
- QST**—QST. \$2.50; single numbers 25c. Monthly. American Radio Relay League, West Hartford, Conn.
- Radio N**—Radio News. \$3; single numbers 35c. Monthly. Ziff-Davis Publishing Co, 185 N Wabash Ave, Chicago 1, Ill.
- Rev Sci Instr**—Review of Scientific Instruments. \$5; single numbers 50c. Monthly. American Institute of Physics, 57 E 55th St, New York 22, N. Y.
- Rs Mod Phys**—Reviews of Modern Physics. \$4; single numbers \$1.20. Quarterly. American Institute of Physics, Inc, 57 E 55th St, New York 22, N. Y.
- Ry Age**—Railway Age. \$6; single numbers 25c. Weekly. Simmons-Boardman Publishing Corp, 30 Church St, New York 7, N. Y. Price of Jan. 6 issue \$1.
- S A E Jour**—S.A.E. Journal. \$10; single numbers \$1. Monthly. Society of Automotive Engineers, Inc, 29 W 39th St, New York 18, N. Y.
- Sci Amer**—Scientific American. \$4; single numbers 35c. Monthly. Munn & Co, Inc, 24 W 40th St, New York 18, N. Y.
- Science**—Science. \$6; single numbers 15c. Weekly. American Association for the Advancement of Science, Lancaster, Pa.
- Tech Rev**—Technology Review. \$3.50; single numbers 50c. Monthly (except Aug, Sept, Oct). Massachusetts Institute of Technology, Cambridge 39, Mass.
- Trans A S M E**—Transactions of the American Society of Mechanical Engineers. \$12; single numbers \$1.50. Monthly (except Mar, June, Sept, Dec). American Society of Mechanical Engineers, 29 W. 39th St., New York 18, N. Y.
- VDI**—Zeitschrift des Vereines Deutscher Ingenieure. Berlin, Germany.
- Wireless Eng**—Wireless Engineer. 32s; single numbers 2s 6d. Monthly. Iliffe & Sons, Ltd. Dorset House, Stamford St, London, S.E. 1, England. Formerly Experimental Wireless and The Wireless Engineer.

# ELECTRONIC ENGINEERING

## MASTER INDEX

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### ACOUSTICS

- Acoustic and light characteristics of sound screens. B. Kreuzer. *il Electronics* 1:420 Dec '30
- Acoustic considerations involved in steady-state loud speaker measurements. L. G. Bostwick. *Bell Sys Tech Jour* 8:135 Jan '29
- Acoustic treatment of sound picture theaters. V. A. Schlenker. *il Electronics* 2:625 May '31
- Acoustical problems of sound picture engineering. W. A. MacNair. *Proc Inst Radio Eng* 19:1606 Sept '31
- Acoustically compensated volume control for radio and phonograph sets. I. Wolff and J. F. Cornell. *il Electronics* 6:50 Feb '33
- Design and construction of broadcast studios. O. B. Hanson and R. M. Morris. *Proc Inst Radio Eng* 19:17 Jan '31
- Electronics' chart of sound levels. *Electronics* 4:43 Feb '32
- Emergency acoustic treatment for armory. *il Electronics* 7:40 Feb '34
- Engineering acoustics; radio receiver auxiliaries. *Electrician* 110:519 Apr 21 '33
- Measurement of acoustic impedance and the absorption coefficient of porous materials. E. C. Wente and E. H. Bedell. *Bell Sys Tech Jour* 7:1 Jan '28
- Method of measuring acoustic impedance. P. B. Flanders. *Bell Sys Tech Jour* 11:402 July '32
- Modern treatment of broadcasting acoustics. S. K. Wolf. *il Electronics* 4:14 Jan '32
- On the collection of sound in reverberant rooms, with special reference to the application of the ribbon microphone. Harry F. Olson. *Proc Inst Radio Eng* 21:655 May '33
- Perforated steel sheets pass sound waves. *Electronics* 4:222 Aug '33
- Planning the NBC studios for Radio City. O. B. Hanson. *Proc Inst Radio Eng* 20:1296 Aug '32
- Radio acoustic ranging. Davis Belcher. *il Electronics* 6:308 Nov '33
- Radio broadcasting station KOA. J. J. Farrell. *il Gen Elec Rev* 37:448 Oct '34
- Some studies in radio broadcast transmission. Ralph Bown, De Loss K. Martin, and Ralph K. Potter. *Proc Inst Radio Eng* 14:57 Feb '26. Errata 14:160 Apr '26
- Soundings from a plane by acoustic echo. *Electronics* 7:49 Feb '34
- Studio practice in noiseless recording. G. Lewin. *Electronics* 3:146 Oct '31
- Study of the regular combination of acoustic elements, with applications to recurrent acoustic filters, tapered acoustic filters, and horns. W. P. Mason. *Bell Sys Tech Jour* 6:258 Apr '27
- WCAU's acoustic features. *Electronics* 4:358 Dec '32

See also

Broadcasting Studios  
Sound Picture Engineering

AERIALS. See Antennas

### AERONAUTICAL Radio

- Aeronautic radio research at the Bureau of Standards. *Science* 72:573 Dec '30
- Aeronautic radio on the Federal airways system. *Air Commerce Bul* 5:127 Nov '33
- Aeronautical radio communications. E. Sibley. *Jour Amer Inst Elec Eng* 49:918 Nov '30
- Air transport communication. R. L. Jones and F. M. Ryan. *diags Jour Amer Inst Elec Eng* 49:50 Jan '30
- Aircraft radio installations. Malcolm P. Hanson. *Proc Inst Radio Eng* 16:921 July '28
- Aircraft radio research. *Jour Fr Inst* 210:246 Aug '30
- Aircraft radio stations. *Radio N* 16:301 Nov '34
- Airway radio progress. M. Todel. *Aviation* 27:979 Nov 16 '29
- Airways communication service. E. B. Craft. *Bell System Tech Jour* 7:797 Oct '28
- Apparent night variations with crossed-coil radio beacons. Harden Pratt. *Proc Inst Radio Eng* 16:652 May '28
- Applications of radio in air navigation. J. H. Dellinger. *il diags Mech Eng* 49:29 Jan '27; Abstract. *Sci Amer* 136:276 Apr '27
- Aviation communication. J. S. Richardson. *Proc Inst Radio Eng* 18:2143 Dec. '30
- Bibliography on aircraft radio. C. B. Joliffe and Elizabeth M. Zandonini. *Proc Inst Radio Eng* 16:985 July '28
- Civil aviation signal services; considerations affecting the choice of wavelengths. N. F. S. Hecht and H. L. Crowther. *Wireless Eng* 10:596 Nov '33
- Communication problems in scheduled air transportation. H. Hoover, jr. *Aero Digest* 16:64 June '30
- Communications on an international airline; Pan American Airways. *map Aviation* 31:435 Nov '32
- Developments in aviation radio. R. Sparks. *Radio N* 15:400 Jan '34
- Developments in the electrical industry during 1932; aviation. J. Liston. *Gen Elec Rev* 36:15 Jan '33
- Developments of radio aids to air navigation. J. H. Dellinger and Harden Pratt. *Proc Inst Radio Eng* 16:890 July '28
- Engine-ignition shielding for radio reception in aircraft. H. Diamond and F. G. Gardner. *Proc Inst Radio Eng* 18:840 May '30
- Flying by radio beacon. J. R. Irwin. *Radio N* 11:1014 May '30
- Flying the radio ranges. *diags map Air Commerce Bul* 4:135 Sept 15 '32

**AERONAUTICAL Radio—Continued**

- Function of aircraft radio. H. Hoover, jr. map Aero Digest 16:61 Jan; 60 Feb '30
- Guiding planes by radio. C. J. Madsen. Elec Jour 29:1114 Mar '32
- Improvements in frequency multipliers for aircraft radio. E. G. Watts. Electronics 4:124 Apr '32
- Improvements on the federal airways. R. Martin. map Aero Digest 25:14 Aug '34
- Investigation of the attenuation of electromagnetic waves and the distances reached by radio stations in the wave bands 200-2000 meters. H. Fassbender, F. Eisner and G. Kurlbaum. Proc Inst Radio Eng 19:1446 Aug '31
- Modern radio equipment for air mail and transport use. A. P. Beréjkoff and C. G. Frick. Proc Inst Radio Eng 20:1284 Aug '32
- New type of transmitting antenna developed for radio range beacons. diags Air Commerce Bul 4:33 July 15 '32
- Provision of radio facilities for aircraft communication. E. L. Nelson and F. M. Ryan. S A E Jour 26:326 Mar '30
- Radio aboard the DO-X. II Radio N 12:789 Mar '31
- Radio aloft; in private and transport flying. J. B. Brennan, jr. maps Radio N 14:140 Sept '32
- Radio beacons for transpacific flights. Clayton C. Shangraw. Proc Inst Radio Eng 16:1203 Sept '28
- Radio communication in the sub-Arctic. J. Montagnes. Airway Age 11:804 June '30
- Radio developments applied to aircraft. J. H. Dellinger and H. Diamond. Mech Eng 51:509 July '29
- Radio equipment on the DO-X. M. Eddy. II diags Radio N 13:478 Dec '31
- Radio for the private owner. H. E. Young. Aero Digest 19:44 Sept '31
- Radio guidance. J. E. Miller. Proc Inst Radio Eng 20:1752 Nov '32
- Radio in aircraft; installation and service. H. W. Roberts. II diags Radio N 16:340 Dec '34
- Radio in air-transport operation. H. Hoover, jr. S A E Jour 26:321 Mar '30
- Radio lighthouses for airports; 4-meter beam transmitter, aimed vertically. J. R. Irwin. Radio N 11:1084 June '30
- Radio on the world's airlines. H. Hoover, jr. Aero Digest 17:38 Sept '30; 18:42 Jan '31
- Radio's flying salesroom; aircraft radio facilities badly needed at most airports. Henry. Radio N 11:621 Jan '30
- Radio's role in the annual air corps maneuvers. C. H. Howard. II Radio N 13:651 Feb '32
- Recent developments in vacuum tube transmitters. B. R. Cummings. Proc Inst Radio Eng 13:49 Feb '25
- Safety in aerial navigation through radio communication. E. T. Allen. Mech Eng 52:847 Sept '30
- Second report of Liaison committee on aeronautic radio research. Air Commerce Bul 3:185 Oct 15 '31
- Shielding the radio on private airplanes. P. O'Connor. Aero Digest 24:47 Apr '34
- Simultaneous transmission of voice and aural radio range signals. Air Commerce Bul 5:268 May '34
- Some technical notes on Lindbergh's Lockheed. diags Aero Digest 24:46 Feb '34
- Sound to measure airplane heights. Electronics 3:646 May '31
- Soundings from a plane by acoustic echo. Electronics 7:49 Feb '34
- Suppressing ignition-interference on radio-equipped aircraft. E. A. Robertson and L. M. Hull. II S A E Jour 27:78 Discussion. 84 July '30
- The civil airways and their radio facilities. H. J. Walls. Proc Inst Radio Eng 17:2141 Dec '29
- Third report of Liaison committee on aeronautic radio research. Air Commerce Bul 4:555 May 15 '33
- Typical wireless apparatus used on British and European airways. Edward H. Furnival. Proc Inst Radio Eng 17:2123 Dec. '29
- Uses of radio as an aid to air navigation. J. H. Dellinger. Jour Amer Inst Elec Eng 48:105 Feb '29

**AIDS to Aviation**

- Aeronautic radio beacon improvements. Radio Serv Bul 157:24 Apr '30
- Air service radio beacon. II Aviation 20:331 Mar 8, '26
- Aircraft radio beacon development. G. K. Burgess. Aviation 24:1764 June 18, '28
- Air navigation facilities. F. C. Hinsburg. diags Aviation 29:69 Aug '30
- Airport radio transmitter. E. M. Knott. Aviation Eng 7:22 Dec '32
- Air route radio services in Great Britain. C. B. Carr. Aviation 27:834 Oct 26 '29
- Airway radio progress. M. Codel. Aviation 27:979 Nov 16 '29
- Applications of radio in air navigation. J. H. Dellinger. II diags Mech Eng 49:29 Jan '27
- Applying the radio range to the airways. F. G. Kear and W. E. Jackson. U S Bur Stand Jour Research 4:371 Mar '30
- Applying the visual double-modulation type radio range to the airways. H. Diamond. U S Bur Stand Jour Research 4:265, Feb '30
- Automatic steering control for airplanes. Sci Amer 151 July '34
- Automatic volume control for aircraft radio receivers. W. S. Hinman, jr. diags U S Bur Stand Jour Research 7:37 July '31
- Aviation communication. J. Stuart Richardson. Proc Inst Radio Eng 18:2143 Dec '30
- Cause and elimination of night effects in radio range-beacon reception. H. Diamond. U S Bur Stand Jour Research 10:7 Jan '33
- Characteristics of airplane antennae for radio range-beacon reception. H. Diamond and G. L. Davies. diags U S Bur Stand Jour Research 6:901 May '31
- Controlling army pursuit planes by radio. C. Howard. Radio N 12:424 Nov '30
- Course indicator of pointer type for the visual radio range-beacon system. F. W. Dunmore. U S Bur Stand Jour Research 7:147 July '31
- Development of a visual type of radio range transmitter having a universal application to the airways. W. E. Jackson and S. L. Bailey. diags Proc Inst Radio Eng 18:2059 Dec '30
- Development of radio aids for civil airways. Radio Serv Bul 121:19 Apr '27

- Devimeter for air courses not on regular radio beacon beam path. Aero Digest 20:55 Jan '32
- Engine-ignition shielding for radio reception in aircraft. H. Diamond and F. G. Gardner. II diags U S Bur Stand Jour Research 4:415 Mar '30
- Flying an airplane in fog. J. H. Doolittle. S A E Jour 26:318 Mar '30
- Flying by radio beacon. J. R. Irwin. Radio N 11:1014 May '30
- Flying the radio ranges. diags Map Air Commerce Bul 4:135 Sept 15 '32
- Fog landing developments. Radio Serv Bul 154 Jan '30
- How my radio helped me break the transcontinental air record. F. M. Hawks. diag Radio N 11:797 Mar '30
- Improvement on the federal airways. R. Martin. Map Aero Digest 25:14 Aug '34
- Light-weight aircraft radio. Sci Amer 148 Jan '33
- Modern radio equipment for air mail and transport use. A. P. Berejkoff and C. G. Fick. Proc Inst Radio Eng 20:1284 Aug '32
- New aircraft beacon; visual type indicator for Croydon aerodrome. Electrician 107:756 Nov 27 '31
- Radio aids to air navigation. C. F. Green and H. L. Becker. bibliog diags Elec Eng 52:307 May '33
- Radio and safety. C. B. Jolliffe. Ann Amer Acad 142:sup67 Mar '29
- Radio antennas and high speed ships. Aviation 33:178 June '34
- Radio approach system assists airmen to land under low ceilings. Map Air Commerce Bul 5:165 Jan '34
- Radiobeacon and receiving system for blind landing of aircraft. H. Diamond and F. W. Dunmore. U S. Bur Stand Jour Research 5:897 Oct '30
- Radio beacons for transpacific flights. Clayton C. Shangraw. Proc Inst Radio Eng 16:1203 Sept '28
- Radio charts the air-course; Boeing system. H. K. Hudson. II Radio N 12:708 Feb '31
- Radio developments applied to aircraft. J. H. Dellinger and H. Diamond. Mech Eng 51:509 July '29
- Radio direction finder for use on aircraft. W. S. Hinman, jr. pl diags U S Bur Stand Jour Research 11:733 Dec '33
- Radio direction finder for use on airplanes. Elec Eng 52:779 Nov '33
- Radio equipment on the DO-X. M. Eddy. II diags Radio N 13:478 Dec '31
- Radio files the air-ways; elaborate coast-to-coast network of TAT-Maddux lines. S. Gleason. Radio N 12:608 Jan '31
- Radio guidance. J. E. Miller. Proc Inst Radio Eng 20:1752 Nov '32
- Radio in air-transport operation. H. Hoover, jr. S A E Jour 26:321 Mar '30; Aviation 28:447 Mar 1 '30
- Radio on the world's airlines. H. Hoover, jr. II Aero Digest 17:38 Sept '30; 18:42 Jan '31
- Radio system for fog landings. W. Selkoff. diags Aviation Eng 8:23 Apr '33
- Radio system for landing aircraft during fog. H. Diamond. II Electronics 2-3:158 June '33
- Safety in aerial navigation through radio communication. E. T. Allen. Mech Eng 52:847 Sept '30
- Simultaneous radiotelephone and visual range beacon for the airways. F. G. Kear and G. H. Wintemute. diags pls U S Bur Stand Jour Research 7:261 Aug '31; Abstract. Science 74:sup14 Oct 9 '31
- System of radio aids for fog landings. H. H. Blee. Aero Digest 22:27 Apr '33
- Tuned-reed course indicator for the four- and twelve-course aircraft radio range. F. W. Dunmore. Proc Inst Radio Eng 18:963 June '30; Same. U S Bur Stand Jour Research 4:351 Mar '30
- Twenty-watt aircraft transmitter. A. P. Bock. II diag map Proc Inst Radio Eng 19:1569 Sept '31
- Two-way radio communication in air transport service. H. Hoover, jr. Aero Digest 16:62 Apr 57; May '30
- Ultra-short-wave radio tests. J. Lyman. Aero Digest 21:24 Aug '32
- Unidirectional radiobeam for aircraft. E. Z. Sttowell. U S Bur Stand Jour Research 1:1011 Dec '28
- Uses of radio as an aid to air navigation. J. H. Dellinger. Jour Amer Inst Elec Eng 48:105 Feb. '29
- Wireless apparatus for aircraft. C. B. Cave. Jour Roy Aeronautical Soc 34:794 Sept '30
- Wireless equipment of the Manchester air port. Engineering 136:222, 228 Sept 1 '33
- 12-course radio range for guiding aircraft with tuned reed visual indication. H. Diamond and F. G. Kear. U S Bur Stand Jour Research 4:351 Mar '30

**AIDS to Navigation.** See Marine Radio

#### **AIRCRAFT Antennas**

- An aircraft radio receiver for use with rigid antenna. F. H. Drake. Proc Inst Radio Eng 17:306 Feb '29
- Advantages of trailing antennas for aircraft radio. C. F. Jenkins. Aviation 28:1170 June 14 '30
- Characteristics of airplane antennas for radio-range beacon reception. H. Diamond and G. L. Davies. U. S. Bur Stand Jour Res 6:901 May '31
- Constants of aircraft trailing antennas. L. A. Hyland. Proc Inst Radio Eng 17:2230 Dec '29
- Maintaining the directivity of antenna arrays. F. G. Kear. Proc Inst Radio Eng 22:847 Nov '34
- Radio antennas and high speed ships. Aviation 33:178 June '34

#### **AIRCRAFT Receivers**

- Aircraft radio equipment. II Elec Rev (Lond) 101:198 July 29 '27
- Aircraft radio receivers and broadcast service. J. C. Hromada. II Airway Age 11:922 July '30
- Airways communication service. E. B. Craft. Bell Sys Tech Jour 7:797 Oct '28
- Modern radio equipment for air mail and transport use. A. P. Berejkoff and C. G. Fick. II diag Proc Inst Radio Eng 20:1284 Aug '32

**AIRCRAFT Receivers—Continued**

- Problems of aircraft radio. Z. Bouck. *il Radio N* 11:18 July '29
- Radio beacon receiving system for blind landing of aircraft. J. H. Dellinger and F. W. Dunmore. *Proc Inst Radio Eng* 19:585 Apr '31
- Radio equipment on the airship Norge. *il Aviation* 20:907 June 14 '26
- Radio in transatlantic flight. J. Irwin. *il Radio N* 8:348 Oct '26
- Radio on the Byrd and Wilkins' planes. D. D. Lane. *il Aviation* 26:556 Feb 23 '29
- RCA Victor airport radio receiver. *il Aero Digest* 24:51 Feb '34
- Receiving sets for aircraft beacon and telephony. Haraden Pratt and H. Diamond. *il diags U. S. Bur Stand Jour Res* 1:543 Oct '28
- Safety in the air; new lightweight radio receiver for small airplanes. *il Electrician* 108:91 Jan 22 '32; *Elec Rev (Lond)* 110:126 Jan 22 '32

**AIRCRAFT Transmitters**

- Applications of radio in air navigation. J. H. Dellinger. *il diags Mech Eng* 49:29 Jan '27
- From Argentina to Australia, aviators talk by radiophone. *il Dun's Int Rev* 56:51 Sept '30
- Latest in flying laboratories; illustrations of the Ford plane used at Bell laboratories. *Radio N* 11:607 Jan '30
- Power equipment for aircraft radio transmitters. J. D. Miner. *Proc Inst Radio Eng* 19:59 Jan '31
- T.A.T.-Maddux two-way radio communication. G. E. Everett. *il Aviation* 28:752 Apr 12 '30
- Twenty watt aircraft transmitter. A. P. Bock. *il diag Proc Inst Radio Eng* 19:1569 Sept '31
- Two-way communication in air transport service. H. Hoover, jr. *il Aero Digest* 16:62 Apr '30
- Voice or code in aircraft radio? W. G. Logue. *il Aviation* 28:1213 June 21 '30
- Wireless on aircraft. *il Electrician*. 95:498 Oct 30 '25

**ALLOCATION, Frequency**

- Analysis of broadcasting station allocation. J. H. Dellinger. *Proc Inst Radio Eng* 16:1477 Nov '28
- Considerations affecting the licensing of high-frequency stations. S. C. Hooper. *Proc Inst Radio Eng* 16:1240 Sept '28
- Empirical standards for broadcast allocation. A. D. Ring. *Proc Inst Radio Eng* 20:611 Apr '32
- Radio stations of the world on frequencies above 1500 kilocycles. Federal Radio Commission. *Proc Inst Radio Eng* 16:1575 Nov '28. Correction 17:8 Jan '29
- Second meeting of the International Technical Consulting Committee on radio communication, Copenhagen, 1931. *Proc Inst Radio Eng* 19:2219 Dec '31
- Some principles of broadcast frequency allocation. L. E. Whittmore. *Proc Inst Radio Eng* 17:1343 Aug '29
- Technical considerations involved in the allocation of short waves; frequencies between 1.5 and 30 megacycles. Lloyd Espenschied. *Proc Inst Radio Eng* 16:773 June '28

*See also*

**Laws and Regulations****AMMETERS. See Part II, Ammeters****AMPLIFICATION, Amplifiers**

- An analysis of regenerative amplification. V. D. Landon and K. W. Jarvis. *Proc Inst Radio Eng* 13:709 Dec '25
- An efficient tuned r. f. transformer. F. H. Drake and G. H. Browning. *Proc Inst Radio Eng* 13:709 Dec '25
- Amplification and detection of ultra-short electric waves. K. Okabe. *Proc Inst Radio Eng* 18:1028 June '30
- Amplification of weak currents and their application to photo-electric cells. G. Ferrie, R. Jonaust and R. Resny. *Proc Inst Radio Eng* 13:461 Aug '25
- Amplifier for measuring small currents. R. D. Bennett. *Rev Sci Instr* 1:466 Aug '30
- Amplifier systems for the measurement of ionization by single particles. J. R. Dunning. *diags Rev Sci Instr* 5:387 Nov '34
- Amplifiers for alternating-current bridges. W. A. Ford and H. W. Bousman. *Gen Elec Rev* 37:224 May '34
- Analysis of distortion in resistance amplification. E. B. Moullin. *Exp Wireless* 8:118 Mar '31
- Application of the Class B audio amplifier to A-C operated receivers. Loy E. Bartin. *Proc Inst Radio Eng* 20:1085 July '32
- Audio-frequency compensation methods. J. G. Aceves. *il Electronics* 2:224 Dec '31
- Auditory perspective—amplifiers. E. O. Scriven. *Bell System Tech Jour* 13:278 Apr '34
- Automatic neutralization of the variable grid bias in a direct current feed-back amplifier. P. B. Carwile and F. A. Scott. *Rev Sci Instr* 1:203 Apr '30
- Balanced d.c. amplifying circuits. L. A. Turner. *Rev Sci Instr* 4:665 Dec '33
- Balanced electrometer tube and amplifying circuit for small direct currents. G. P. Harnwell and S. N. Van Voorhis. *Rev Sci Instr* 5:244 July '34
- Bridge type push pull amplifiers. Leonard Tulauskas. *il Electronics* 6:134 May '33
- Calculation of class C amplifier and harmonic generator performance of screen-grid and similar tubes. F. E. Terman and J. H. Ferns. *Proc Inst Radio Eng* 22:359 Mar '34
- Cascaded direct-coupled tube systems operated from alternating current. E. H. Loftin and S. Y. White. *diags Proc Inst Radio Eng* 18:669 Apr '30
- Certain factors limiting the volume efficiency of repeated telephone circuits. L. G. Abraham. *Bell System Tech Jour* 12:517 Oct '33
- Class B amplifier distortion. C. L. Farrar. *il Electronics* 4:196 June '32
- Cross modulation in R-F amplifiers. S. Harris. *diags Proc Inst Radio Eng* 18:350 Feb '30
- Degree of amplitude modulation; some notes on practical measurement. L. F. Gaudernack. *Wireless Eng* 11:293, 362 June-July '34
- Design of non-distorting power amplifiers. E. W. Kellogg. *diags Jour Amer Inst Elec Eng* 44:490 May 25; Discussion. 44:645 June '25
- Determination of grid driving power in radio-frequency power amplifiers. H. P. Thomas. *Proc Inst Radio Eng* 21:1134 Aug '33
- Die leitwertdiagramme des elektronenrohrenverstärkers im wechselstromkreis. Kafka. *Electro-tech Zeit* 46:745 May 14 '25

- Diversified uses of amplifiers. *Il Electronics* 7:34 Feb '34
- Direct-coupled amplifier for action currents. E. L. Garceau and A. Forbes. *Rev Sci Instr* 5:10 Jan '34
- Distortionless amplification of electrical transients. C. W. Oatley. *Exp Wireless* 8:244, 307 May-June '31
- Effect of output load upon frequency distortion in resistance amplifiers. H. A. Thomas. *Exp Wireless* 8:11 Jan '31
- Essential factors in the design of receiver and amplifier systems. *Aerovox Res W.* May to Dec inc '30
- Exact compensation for the effect of A and B battery changes when using the vacuum tube as a DC amplifier. R. C. Dearle and L. A. Matheson. *diags Rev Sci Instr* 1:215 Apr '30
- Experimental study of the tetrode as a modulated radio-frequency amplifier. H. A. Robinson. *Proc Inst Radio Eng* 20:131 Jan '32
- Extensively used patents relating to amplifying circuits. *Electronics* 4:221 July '32
- Filter type interstage amplifier coupling. W. G. Stone. *Il Electronics* 6:194 July '33
- Fluctuation noise in vacuum tubes. G. L. Pearson. *Bell System Tech Jour* 13:634 Oct '34
- Fourier analysis of radio-frequency power amplifier wave forms. L. B. Hallman, jr. *Proc Inst Radio Eng* 20:1640 Oct '32. Discussion, Frederick Emmons Terman and L. B. Hallman, jr. 21:726 May '33
- Gas discharge tube as intervalve coupling; application for d.c. amplification. H. Smith and E. G. Hill. *Wireless Eng* 11:359 July '34
- Gauging black light by radio circuits. C. C. Clark and C. A. Johnson. *Radio N* 12:980 May '31
- Graphical analysis of output tube performance. C. E. Kilgour. *Proc Inst Radio Eng* 19:42 Jan '31
- Heavy duty industrial amplifier tube. C. B. Upp. *Il Electronics* 4:162 May '32
- High audio power from relatively small tubes. L. E. Barton. *Proc Inst Radio Eng* 19:1131 July '31; Discussion. 19:1884 Oct '31
- High gain a.c.-d.c. amplifier. E. R. Meissner. *Il Electronics* 6:195 July '33
- High gain amplifier. *Il Electronics* 7:54 Feb '34
- High-gain amplifiers for electronic measurement. *Electronics* 4:319 Oct '32
- High-gain, high-fidelity laboratory amplifier. J. M. Hollywood and M. P. Wilder; S. G. Taylor. *Radio N* 16:206, 282-344 Oct-Dec '34
- Improved single tube balanced d-c amplifier. *Il Electronics* 7:159 May '34
- Interaction in amplifiers. L. Bainbridge. *Exp Wireless* 8:18 Jan '31
- Limits to amplification. J. B. Johnson and F. B. Llewellyn. *diag Elec Eng* 53:1449 Nov '34
- Maximum amplification in capacity-coupled circuits. W. van B. Roberts. *Electronics* 2:20 July '31
- Measurement of small alternating voltages at audiofrequencies. E. A. Johnson and C. Neitzert. *Rev Sci Instr* 5:196 May '34
- Method for realizing the full amplification factor of high mu tubes. O. H. A. Schmitt. *diag Rev Sci Instr* 4:661 Dec '33
- Modern phototubes and their characteristics. H. B. Stevens and M. J. Brown. *Radio N* 12:874 Apr '31
- One tube balanced circuit for d.c. amplifier. *Il Electronics* 4:318 Oct '32
- Optimum operating conditions for class C amplifiers. W. L. Everitt. *diag Proc Inst Radio Eng* 22:152 Feb '34
- Oscillation in tuned radio-frequency amplifiers. B. J. Thompson. *Proc Inst Radio Eng* 19:421 Mar '31
- Output amplifiers for 110-d.c. receivers. J. R. Nelson. *Il Electronics* 4:128 Apr '32
- Output networks for radio-frequency power amplifiers. W. L. Everitt. *Proc Inst Radio Eng* 19:725 May '31
- Performance of output pentodes. J. M. Glessner. *Proc Inst Radio Eng* 19:1391 Aug '31
- Phototube amplifiers. *Electronics* 2:634 May '31
- Portable detector for radium. L. F. Curtiss. *U S Bur Stand Jour Research* 12:379 Mar '34
- Push-push amplification. C. E. Kilgour. *Il Electronics* 4:82 Mar '32
- Push pull amplifier graphics. C. E. Kilgour. *Il Electronics* 6:73 Mar '33
- Push-pull high-fidelity amplifier. H. Short. *Radio N* 16:346 Dec '34
- Radio field-measuring system for frequencies up to 40 megacycles. H. T. Friis and E. Bruce. *Proc Inst Radio Eng* 14:507 Aug '26
- Recent developments in vacuum tube transmitters. B. R. Cummings. *Proc Inst Radio Eng* 13:49 Feb '25
- Reduction of filament-battery coupling in amplifiers. W. L. Watton. *Wireless Eng* 11:17 Jan '34
- Regeneration theory and experiment. E. Peterson, J. G. Kreer and L. A. Ware. *diags Proc Inst Radio Eng* 22:1191 Oct '34
- Resistance-coupled amplifier for television. C. B. Brown. *Il Electronics* 4:265 Aug '32
- Shielded neutrodyne receiver. John F. Dreyer, jr. and Ray H. Manson. *Proc Inst Radio Eng* 14:217 Apr '26
- Short-cut method for calculation of harmonic distortion in wave modulation. I. E. Mourontseff and H. N. Kozanowski. *Proc Inst Radio Eng* 22:1090 Sept '34
- Some remarks on the multivibrator. Y. Watanabe. *Proc Inst Radio Eng* 18:327 Feb '30
- Speech amplifier that may be used to drive class B modulators. *Radio N* 16:347 Dec '34
- Spontaneous background noise in amplifiers due to thermal agitation and shot effects. E. B. Moullin and H. D. M. Ellis. *Jour Inst Elec Eng* 74:323 Apr '34
- Stability of balanced high-frequency amplifiers. J. R. Nelson. *Proc Inst Radio Eng* 18:88 Jan '30
- Stability of resistance-coupled amplifiers. W. Bagally. *Wireless Eng* 11:179 Apr '34
- Stabilized feed-back amplifiers. H. S. Black. *Bell System Tech Jour* 13:1 '34
- Straight resistance-coupled audio amplifier; a precision amplifier for radio and television. J. Morgan. *Radio N* 11:610 Jan '30
- Study of the possibilities of radio-frequency voltage amplification with screen-grid and with triode valves. F. M. Colebrook. *Jour Inst Elec Eng* 74:187 Feb '34

**AMPLIFICATION, Amplifiers—Continued**

- Submarine cables located by amplifier. G. A. Drewett. *Elec W* 102:692 Nov 25 '33
- Test procedure for detectors with resistance-coupled output. G. D. Robinson. *Proc Inst Radio Eng* 19:806 May '31
- Theoretical comparison of coupled amplifiers with staggered circuits. J. R. Nelson. *diags Proc Inst Radio Eng* 20:1203 July '32
- Theory of filter amplifiers. S. Butterworth. *Exp Wireless* 7:536 Oct '30
- Thermionic valve amplifier for use with a Duddell oscillograph. W. Jackson. *Wireless Eng* 11:64 Feb '34
- Tone-compensating circuits for audio-amplifiers. J. B. Aceves. *diags Radio N* 12:520, 620 Dec '30, Jan '31
- Transformer coupling circuits for high-frequency amplifiers. A. J. Christopher. *Bell Sys Tech Jour* 11:608 July '32
- Transients and telephony. T. S. E. Thomas. *Wireless Eng* 8:485 Sept '31
- Tube amplifier equivalent parallel circuit. G. D. Robinson. *Electronics* 2:105 Sept '31
- Tuned condenser-coupled amplifiers. Louis Cohen. *Electronics* 1:340 Oct '30
- Tuning the double impedance audio amplifier. Engineering Dept., Aerovox Corporation. *I.2 Jan* '28
- Universal power amplifier—speaker unit. J. Milten. *Radio N* 12:704 Feb '31
- Use of a vacuum tube as a plate-feed impedance. J. W. Horton. *Jour Fr Inst* 216:749 Dec '33
- Vacuum tubes as high frequency oscillators. M. J. Kelly and A. L. Samuel. *Elec Eng* 53:1516 Nov '34
- Variation of magnification with pitch in resistance-capacity coupled amplifiers. W. A. Barclay. *Exp Wireless* 8:362 July '31
- Variations in the amplification factor of triodes. F. E. Terman and A. L. Cook. *Proc Inst Radio Eng* 18:1044 June '30
- Visual tuning of band-pass amplifiers. Rinaldo De Cola. *il Electronics* 4:58 Feb '32
- Voltage amplification with high selectivity by means of the dynatron circuit. F. M. Colebrook. *diags Wireless Eng* 10:69 Feb '33
- WLW 500-kilowatt broadcast transmitter. *Proc Inst Radio Eng* 22:1158 Oct '34
- AMPLIFIERS, Audio-Frequency**
- A-C operated high-gain amplifiers. D. E. Nobe. *il Electronics* 7:210 July '34
- Accurate testing of audio amplifiers in production. Arthur E. Thiessen. *Proc Inst Radio Eng* 18:231 Feb '30
- Application of class B audio amplifier to A-C operated receivers. L. E. Barton. *Proc Inst Radio Eng* 20:1085 July '31
- Applying neutralization to audio frequency amplifiers. P. W. Klipsch. *il Electronics* 7:252 Aug '34
- Audio-frequency compensation methods. J. G. Aceves. *il Electronics* 2:224 Dec '31
- Cascaded direct-coupled tube systems operated from alternating current. Edward H. Loftin and S. Young White. *Proc Inst Radio Eng* 18:669 Apr '30
- Design of non-distorting power amplifiers. E. W. Kellogg *Trans A. I. E. E.* 44:302 '25
- Design of transformers for audio-frequency amplifiers with preassigned characteristics. Glenn Koehler. *Proc Inst Radio Eng* 16:1742 Dec '28
- Distortion in valve characteristics. G. S. C. Lucas. *Exp Wireless and Wireless Eng* 8:595 Nov '31
- Graphical analysis of output tube performance. C. E. Kilgour. *Proc Inst Rad Eng* 19:42 Jan '31
- Graphical determination of performance of push-pull audio amplifiers. B. J. Thompson. *Proc Inst Radio Eng* 21:591 Apr '33
- High audio output from relatively small tubes. L. E. Barton. *Pro Inst Radio Eng* 19:1131 July '31
- High efficiency in audio-frequency amplifiers designed for use on rediffusion systems. E. K. Sandeman. *Wireless Eng* 11:351 July '34
- High-gain high-fidelity laboratory amplifier. J. M. Hollywood and M. P. Wilder. *Radio N* 16:206 Oct '34
- Maximum amplification in capacity-coupled circuits. W. van B. Roberts. *Electronics* 2:20 July '31
- Measuring frequency characteristics with the photo-audio generator. Walter Schaffer and Gunther Lubszynski. *Pro Inst Radio Eng* 19:1242 July '42
- Measurement of small alternating voltage at audio-frequencies. E. A. Johnson and C. Neitzert. *Rev Sci Instr* 5:196 May '34
- New method of testing for distortion in audio-frequency amplifiers. Herbert J. Reich. *Proc Inst Radio Eng* 19:401 Mar '31
- Notes on the testing of audio frequency amplifiers. Edward T. Dickey. *Proc Inst Radio Eng* 15:687 Aug '27
- Output characteristics of amplifier tubes. J. C. Warner and A. V. Longhren. *Proc Inst Radio Eng* 14:735 Dec '26
- Simplified general method for resistance-capacity coupled amplifier design. David C. G. Luck. *Proc Inst Radio Eng* 20:1401 Aug '32
- Stabilized feed-back amplifiers. H. S. Black. *Bell System Tech Jour* 13:1 '34
- Testing of audio-frequency transformer-coupled amplifiers. H. Diamond and J. S. Webb. *Proc Inst Radio Eng* 15:767 Sept '27
- Theory of power amplification. Manfred von Ardenne. *Proc Inst Radio Eng* 16:193 Feb '28
- AMPLIFIERS, Class A**
- Applying neutralization to audio frequency amplifiers. P. W. Klipsch. *Electronics* 7:252 Aug '34
- Equivalent circuits of an electron tube and the equivalent input and output admittances. E. L. Chaffee. *Proc Inst Radio Eng* 17:1633 Sept '29
- Mathematical theory of four electrode tube. J. G. Brainerd. *Proc Inst Radio Eng* 17:1006 June '29
- Modulation in vacuum tubes used as amplifiers. E. Peterson and H. P. Evans. *Bell System Tech Jour* 6:442 July '27
- Operation of thermionic vacuum tube circuits. F. B. Llewellyn. *Bell System Tech Jour* 5:433 July '26

Reduction of distortion and cross modulation in radio receivers by means of variable- $\mu$  tubes. Stuart Ballantine. Proc Inst Radio Eng 18:2102 Dec '30

Theoretical study of the three element vacuum tube. John R. Carson. Proc Inst Radio Eng 7:187 Apr '19

#### AMPLIFIERS, Class B

Application of the class B audio amplifier to A-C operated receivers. Loy E. Barton. Proc Inst Radio Eng. 20:1085 July '32

Experimental study of the tetrode as a modulated radio-frequency amplifier. H. A. Robinson. Proc Inst Radio Eng 20:113 Jan '32

High audio output from relatively small tubes. L. E. Barton. Proc Inst Radio Eng 19:1131 July '31

Operation of vacuum tube as Class B and Class C amplifiers. C. E. Fay. Proc Inst Radio Eng 20:548 Mar '32

Speech amplifier that may be used to drive class B modulators. Radio N 16:347 Dec '34

Study of Class B and C amplifier tank circuits. Perry H. Osborn. Proc Inst Radio Eng 20:813 May '32

#### AMPLIFIERS, Class C

Calculation of class C amplifier and harmonic generator performance of screen-grid and similar tubes. F. E. Terman and J. H. Ferns. Proc Inst Radio Eng 22:359 Mar '34

Optimum operating conditions for class C amplifiers. W. L. Everitt. Proc Inst Radio Eng 22:152 Feb '34. Discussion. L. B. Halman, Jr., and W. L. Everitt (Sept '34, p. 1139)

Vacuum tubes as power oscillators. D. C. Prince. Proc Inst Radio Eng 11:275, 405, 527 June-Aug-Oct '23

#### AMPLIFIERS, Radio-Frequency

A mathematical study of radio frequency amplification. Victor G. Smith. Proc Inst Radio Eng 15:525 June '27

An amplifier for the exciter unit. George Grammer. il diag QST 17:22 Dec '33

An untuned radio-frequency amplifier. F. W. Schor. Proc Inst Radio Eng 20:87 Jan '32

Amplitude, phase and frequency modulation. Hans Roder. Proc Inst Radio Eng 19:2145 Dec '31. Discussion. David G. C. Luck and Hans Roder. 20:884 May '32

Calculation of Class C amplifier and harmonic generator performance of screen-grid and similar tubes. F. E. Terman and J. H. Ferns. Proc Radio Eng 22:359 Mar '34

Combined electromagnetic and electrostatic coupling and some uses of the combination. Edward H. Loftin and S. Young White. Proc Inst Radio Eng 14:605 Oct '26

Determination of power in the antenna at high frequencies. H. Hoyt Taylor and H. F. Hastings. Proc Inst Radio Eng 19:1370 Aug '31

Diversity telephone receiving system of R. C. A. Communications, Inc. H. O. Peterson, H. H. Beverage and J. B. Moore. Proc Inst Radio Eng 19:562 Apr '31

Fourier analysis of radio-frequency power amplifier wave forms. L. B. Hallman, jr. Proc Inst Radio Eng 20:1640 Oct '32. Discussion. Frederick Emmons Terman and L. B. Hallman, jr. (May, '33, p. 726)

Harmonic generation by means of grid circuit distortion. F. E. Terman, D. E. Chambers and E. H. Fisher. Trans A. I. E. E. 50:811 June '31

High frequency amplifiers. H. T. Friis and A. G. Jensen. 3:181 Apr '24

Load carrying capacity of amplifiers. F. C. Willis and L. E. Melhiush. Bell Sys Tech Jour 5:573 Oct '26

Measurements of radio frequency amplification. Sylvan Harris. Proc Inst Radio Eng 15:641 July '27

Method of treating resistance stabilized radio frequency amplifying circuits. B. L. Snavely and J. S. Webb. Proc Inst Radio Eng 17:118 June '29

Modulation in vacuum tubes used as amplifiers. Eugene Peterson and H. P. Evans. Bell Sys Tech Jour 6:442 July '27

Note on radio-frequency transformer coupled circuit theory. J. R. Nelson. Proc Inst Radio Eng 19:1233 July '31

Oscillation in tuned radio-frequency amplifiers. B. J. Thompson. Proc Inst Radio Eng 19:421 Mar '31. Discussion. J. R. Nelson p. 1281 July '31

Output networks of radio frequency power amplifiers. W. L. Everitt. Proc Inst Radio Eng 19:725 May '31

Reduction of distortion and cross modulation in radio receivers by means of variable- $\mu$  tetrodes. Stuart Ballantine. Proc Inst Radio Eng 18:2102 Dec '30

Regeneration theory. H. Nyquist. Bell System Tech Jour 2:126 Jan '32

Shielded neutrodyne receiver. John F. Dreyer Jr. and Ray H. Manson. Proc Inst Radio Eng 14:217 Apr '26. Discussion. L. A. Hazeltine p. 395 June '26

Theory and operation of tuned-radio-frequency coupling systems. Harold A. Wheeler and W. A. MacDonald. Proc Inst Radio Eng 19:738 May '31

Tuned radio-frequency amplifiers. Louis Cohen. Electronics 1:21 Apr '30

Vacuum tubes as high-frequency oscillators. E. D. McArthur and E. E. Spitzer. Proc Inst Radio Eng 19:1971 Nov '31

#### ANTENNAS

Action of a reflecting antenna. L. S. Palmer and L. L. K. Honeyball. diags Jour Inst Elec Eng 67:1045 Aug '29

Action of short-wave frame aerials. L. S. Palmer and L. L. K. Honeyball. Proc Inst Radio Eng 20:1345 Aug '32

Aerial and ground design and connections. C. A. Randon. il diags Radio N 9:637 Dec '27

Aerial mast. W. S. Pinchin. diag Radio N 13:309 Oct '31

Aerials and grounds for short-wave reception. A. V. Sommers. diags Radio N 10:918 Apr '29

Beam arrays and transmission lines. T. Walmsley. bibliog diags Jour Inst Elec Eng Feb, '31

Beam wireless telegraphy. N. Wells. Elec Rev (Lond) 102:898, 940 May 25-June 1 '28



## ANTENNAS—Continued

- Cause and elimination of night effects in radio range-beacon reception. H. Diamond. U S Bur Stand Jour Research 10:7 Jan '33
- Certain factors affecting the gain of directive antennas. G. C. Southworth. Proc Inst Radio Eng 18:1502 (bibliog p1532) Sept '30
- Circuit relations in radiating systems and applications to antenna problems. P. S. Carter. Proc Inst Radio Eng 20:1004 June '32
- Collins impedance-matching network for tuning an antenna. Radio N 16:214 Oct '34
- Community antenna; two new systems for solving the apartment house radio problem. E. B. Lyford. Radio N 11:616 Jan '30
- Concentrating short radio waves. N. Wells. diags Elec Rev (Lond) 109:700 Nov 6 '31
- Determination of the direction of arrival of short radio waves. H. T. Friis, C. B. Feldman and W. M. Sharpless. Proc Inst Radio Eng 22:47 Jan '34
- Development of directive transmitting antennas by R.C.A. Communications, Inc. P. S. Carter, C. W. Hansell and N. E. Lindenblad. Proc Inst Radio Eng 19:1773 Oct '31
- Developments in short-wave directive antennas. E. Bruce. Proc Inst Radio Eng 19:1406 Aug '31; Same. Bell System Tech Jour 10:656 Oct '31
- Diversity receiving system of R.C.A. communications, Inc., for radiotelegraphy. H. H. Beverage and H. O. Peterson. Proc Inst Radio Eng 19:545 Apr '31
- Effective s.w. antenna for reducing interference. A. H. Lynch. Radio N 14:396 Jan '33
- Experimental reception on the world's tallest structure. S. G. Taylor. il Radio N 13:362 Nov '31
- Focusing short radio waves. N. Wells. diags Elec Rev (Lond) 109:392 Sept 11 '31
- French system of directional aerials for transmission on short waves. H. Chireix. Exp Wireless 6:235 May '29
- Fundamental transmission and reception. E. T. Hansen. il diags Radio N 6:1421 Feb '25
- Generalized theory of antennae. R. M. Wilmotte. Exp Wireless 5:119 Mar '28
- Getting acquainted with short waves; ABC of short-wave aerials. J. Millen. Radio N 16:96 Aug '34
- High quality radio broadcast transmission and reception. S. Ballatine. Proc Inst Radio Eng 22:617 May '34
- Hohe der runderfunkantennen. O. Betz. Elektrotech Zeit 46:148 Jan 29 '25
- Investigation of antennae by means of models. J. Tywocinski-Tykociner. il diags Ill U Eng Exp Sta Bul 147:1 (bibliog p57) '25
- Kurzwellenantennen. M. Baumler. bibliog il diags Zeit Ver Deutsch Ing 77:1369 Dec 30 '33
- L'antenne de la station radiotelegraphique de La Pauline, pres Toulon. M. Bourseire. Genie Civil 103:492 Nov 18 '33
- Marconi series-phase aerial. diags Engineering 138:235 Aug 31 '34
- Mutual impedance of two skew antenna wires. F. H. Murray. Proc Inst Radio Eng 21:154 Jan '33
- New type of directive aerial. T. Walmsley. diags Wireless Eng 9:662 Nov '32
- One antenna now serves 3,000 radio receivers. Elec W 100:64 July 9 '32
- Plate aerials for wireless reception. C. F. Mackness. Elec Rev (Lond) 96:446 Mar 20 '25; Discussion 96:558 Apr 3 '25
- Polarization of high-frequency waves and their direction finding. S. Namba, E. Iso and S. Ueno. il diags Proc Inst Radio Eng 19:2000 Nov '31
- Radio aerial system for apartments. diag Amer Bld 53:46 Aug '32
- Radio aerials create no lightning hazard. Manfred von Ardenne. il Radio N 10:30 July '28
- Radio broadcasting station KOA. J. J. Farrell. il Gen Elec Rev 37:448 Oct '34
- Radio tower 878 ft. high built at Nashville, Tenn. il Eng N 110:91 Jan 19 '33
- Receiving system for long-wave transatlantic radio telephony. A. Bailey, S. W. Dean and W. T. Wintringham. il diags maps Bell System Tech Jour 8:309 Apr '29
- Rectangular short-wave frame aerials for reception and transmission. L. S. Palmer and D. Taylor. il diags Proc Inst Radio Eng 22:93 Jan '34
- Regulations for outdoor aerials—some interesting problems for German amateurs. G. W. O. Howe. Electrician 95:34 July 10 '25
- Schwundmindernde antennenanordnungen. M. Baumler. bibliog il Zeit Ver Deutsch Ing 78:969 Aug 18 '34
- Short-wave broadcast towers; WABC's 665-ft. vertical antenna. R. L. Jenner. il Elec W. 99:360 Feb 20 '32
- Single-wire transmission lines for short-wave antennas. W. L. Everitt and J. F. Byrne. Ohio State U Eng Exp Sta Bul 52:1 '30
- Solution of the problem of night effects with the radio range beacon system. H. Diamond. il diags Proc Inst Radio Eng 21:808 June '33
- Solving the apartment house antenna problem. Arch & Bldg 61:257 Aug '29
- Some new types of broadcast transmitting aerials; editorial. il Wireless Eng 10:525 Oct '33
- Spreading of electromagnetic waves from a Hertzian dipole. J. A. Ratcliffe, L. G. Vedy and A. F. Wilkins. diags Jour Inst Elec Eng 70:522 May '32
- Theoretical and practical aspects of directional transmitting systems. E. J. Sterba. il diags Proc Inst Radio Eng 19:1184 July '31
- Transmission and direction of radio waves. E. F. Martin. diags Jour W. Soc Eng 35:121; 36:266 April 30; Oct '31
- Wireless beam. il diag Engineer 140:273 Sept 11 '25
- WLW 500-kilowatt broadcast transmitter. il Proc Inst Rad Eng 22 Oct '34

## Angle of Radiation

- Circuit relations in radiating systems and applications to antenna problems. P. S. Carter. Proc Inst Radio Eng 20:1004 June '30
- Control of radiating properties of antennas. C. A. Nickle, R. B. Dome, and W. W. Brown. Proc Inst Radio Eng 22:1362 Dec '34. Discussion. G. H. Brown, C. A. Nickle, R. B. Dome and W. W. Brown 23:1264 Oct '35
- Determination of the direction of arrival of short waves. H. T. Friis, C. B. Feldman and W. M. Sharpless. Proc Inst Radio Eng 22:47 Jan '34

- Developments in short-wave directive antennas. E. Bruce. Proc Inst Radio Eng 19:1406 Aug '31
- Directional radiation with horizontal antennas. A. Meissner. Proc Inst Radio Eng 15:928 Nov '27
- Grounded condenser antenna radiation formula. W. Howard Wise. Proc Inst Radio Eng 19:1684 Sept '31
- High angle radiation of short electric waves. S. Uda. Proc Inst Radio Eng 15:377 May '27
- Kennelly-Heaviside layer studies. P. A. de Mars, T. R. Gilliland, and G. W. Kenrick. Proc Inst Radio Eng 19:106 Jan '31
- On the determination of the optimum radiation angle for horizontal antennas. A. Meisser and H. Rothe. Proc Inst Radio Eng 17:35 Jan '29
- On the optimum transmitting wave length for a vertical antenna over perfect earth. Stuart Ballantine. Proc Inst Radio Eng 12:833 Dec '24. Discussion (Balth. van der Pol and Stuart Ballantine (Apr '25, p. 251)
- On the radiation resistance of a simple vertical antenna at waves lengths below the fundamental. Stuart Ballantine. Proc Inst Radio Eng 12:823 Dec '24. Discussion. Balth. van der Pol and Stuart Ballantine (Apr '25, p. 251)
- Phase and magnitude of earth currents near radio transmitting antennas. George H. Brown. Proc Inst Radio Eng 23:168 Feb '35
- Radiation characteristics of a vertical half-wave antenna. J. A. Stratton and H. A. Chinn. Proc Inst Radio Eng 20:1892 Dec '32
- Some details relating to the propagation of very short waves. J. Jouanst. Proc Inst Radio Eng 19:479 Feb '31
- Calculations, Design**
- Antenna-measuring equipment. J. K. Clapp. il diag Proc Inst Radio Eng 18:571 Apr '30
- Calculation of electric and magnetic field strengths of any oscillating straight conductors. R. Bechmann. Proc Inst Radio Eng 19:461 Mar '31
- Calculation of radiation resistance of antennas and antenna combinations. R. Bechmann. Proc Inst Radio Eng 19:471 Aug '31
- Design of transmitting aerials for broadcasting stations. P. P. Eckersley, T. L. Eckersley and H. L. Kirke. diags Jour Inst Elec Eng 67:507 Apr '29
- Determination of power in the antenna at high frequencies. A. H. Taylor and H. F. Hastings. Proc Inst Radio Eng 19:1370 Aug '31
- Distribution of current in a transmitting antenna. R. M. Wilmotte. Jour Inst Elec Eng 66:617 June '28
- Effect of oxidation on the high-frequency resistance of aerial wires: with a note on measuring the resistance of thick wires. L. B. Turner. diags Jour Inst Elec Eng 63:149 Jan '25
- Effective height of closed aerials. V. I. Bashenoff and N. A. Mjasoedoff. diags Proc Inst Radio Eng 19:984 June '31
- Efficiency-rating of transmitting aerials for broadcasting distribution. E. T. Glas. Exp Wireless 7:665 Dec '30
- Elimination of phase shifts between the currents in two antennas. H. Roder. diags Proc Inst Radio Eng 22:374 Mar '34
- Equivalent inductance and capacity of an aerial with inserted tuning coil or condenser. G. W. O. Howe. Exp Wireless 5:297 June '28
- Errors in direction-finding calibrations in steel ships due to the shape and orientation of the aerial of the transmitting station. J. F. Coales. Jour Inst Elec Eng 73:280 Sept '33
- Establishment of a general formula for the inductance of single-turn circuits of any shape. V. I. Bashenoff. Exp Wireless 6:245 May '29
- Experimental and analytical investigation of earthed receiving aerials. F. M. Colebrook. Jour Inst Elec Eng 71:235 July '32
- Field in the immediate neighborhood of a transmitting aerial. Wireless Eng 9:119 Mar '32
- General formulae for the radiation distribution of antenna systems. R. M. Wilmotte. Jour Inst Elec Eng 68:1174 Sept '30
- Graphical determination of polar patterns of directional antenna systems. G. L. Davies and W. H. Orton. diags U S Bur Stand Jour Research 8:555 May '32
- Graphical method for determining the magnitude and phase of the electric field in the neighborhood on an antenna carrying a known distribution of current. J. S. McPetrie. Jour Inst Elec Eng 69:290 Feb '31
- Grounded condenser antenna radiation formula. W. H. Wise. Proc Inst Radio Eng 19:1684 Sept '31
- High-frequency models in antenna investigations. G. H. Brown and R. King. Proc Inst Radio Eng 22:457 Apr '34
- Influence of stray capacitance upon the accuracy of antenna resistance measurements. E. A. Laport. Proc Inst Radio Eng 22:657 May '34
- Investigation into the factors controlling the economic design of beam arrays. T. Walmsley. Jour Inst Elec Eng 74:543 June '34
- Maintaining the directivity of antenna arrays. F. G. Kear. il diags Proc Inst Radio Eng 22:847 July '34; 22:1313 Nov '34
- Matching impedances in antenna and feeder design. V. V. Gunsolley. il diag Radio N 16:156; 215-16 Sept-Oct '34
- Measurement of the angle of incidence at the ground of downcoming short waves from the ionosphere. A. F. Wilkins. Jour Inst Elec Eng 74:582 June '34
- Method for determining the effect of the earth on the radiation from aerial systems. J. S. McPetrie. Jour Inst Elec Eng 70:382 Mar '32
- Methods, formulas, and tables for the calculation of antenna capacity. F. W. Grover. U S Bur Stand Sci Pa 568:569 '28
- Nature of the field in the neighborhood of an antenna. R. M. Wilmotte. Jour Inst Elec Eng 66:961 Sept '28
- Phase synchronization in directive antenna arrays with particular application to the radio range beacon. F. G. Kear. pl diags U S Bur Stand Jour Research 11:123 July '33
- Polar diagrams due to plane aerial reflector systems. T. Walmsley. diags Exp Wireless 5:575 Oct '28
- Radiation and induction. R. R. Ramsey. Proc Inst Radio Eng 21:1586 Nov '33

**ANTENNAS—Design—Continued**

- Radiation characteristics of a vertical half-wave antenna. J. A. Stratton and H. A. Chinn. diags Proc Inst Radio Eng 20:1892 Dec '32
- Radiation distribution of antennae in vertical planes. R. M. Wilmotte. bibliog Jour Inst Elec Eng 68:1191 Sept '30
- Radiation measurements of a short-wave directive antenna at the Nauen high power radio station. M. Baumler and others. il diags Proc Inst Radio Eng 19:812 May '31
- Radiation resistance and energy capacity of half-wave aeriels. E. Green. Exp Wireless 5:82 Feb '28
- Radiation resistance and line impedance; an instructive analogy; editorial. diags Exp Wireless 7:297 June '30
- Radiation resistance of concentric conductor transmission lines. R. Whitmer. Proc Inst Radio Eng 21:1343 Sept '33
- Reciprocal energy. J. R. Carson. Bell System Tech Jour 9:325 Apr '30

**Radiation**

- Action of a reflecting antenna. L. S. Palmer and L. L. K. Honeyball. diags Jour Inst Elec Eng 67:1045 Aug '29; Abstract. Elec Rev (Lond) 105:337 Aug 23 '29
- Calculation of radiation resistance of antennas and antenna combinations. Rudolf Bechman. Proc Inst Radio Eng 19:1471 Aug '31. Correction 21:1367 Sept '33
- Circuit relations in radiating systems and applications to antenna problems. P. S. Carter. Proc Radio Eng 20:1004 June '32
- Engineering acoustics; antennae for electromagnetic radiation. Electrician 110:708 June 2 '33
- Field distribution and radiation resistance of a straight vertical unloaded antenna radiating at one of its harmonics. S. A. Levin and C. J. Young. Proc Inst Radio Eng 14:675 Oct '26. Errata (Jan '27, p. 8). Discussion. Stuart Ballantine (Mar 27, p. 245). O. C. Roos (May '27, p. 439)
- General formulae for the radiation distribution of antenna systems. R. M. Wilmotte. bibliog Jour Inst Elec Eng Sept '30
- Grounded condenser antenna radiation formula. W. Howard Wise. Proc Inst Radio Eng 19:1684 Sept '31
- Investigations into the mechanism of the transmission of radio signals through space. R. Brown, D. K. Martin and R. K. Potter. il diags Electrician 96:168 Feb 12 '26
- Method for determining the effect of the earth on the radiation from aerial systems. J. S. McPetrie. Jour Inst Elec Eng Mar '32
- Radiation characteristics of a vertical half-wave antenna. J. A. Stratton and H. A. Chinn. diags Proc Inst Radio Eng 20:1892 Dec '32
- Radiation distribution of antennae in vertical planes. R. M. Wilmotte. bibliog Jour Inst Elec Eng 68:1191 Sept '30
- Radiation resistance and energy capacity of half-wave length aeriels. E. Green. Exp. Wireless 5:82 Feb '28
- Radiation resistance of a simple vertical antenna at wave length below the fundamental. Stuart Ballantine. Proc Inst Radio Eng 12:823 Dec '24.

- Discussion. B. van der Pol and Stuart Ballantine 13:251 Apr '25
- Radiation resistance of beam antennas. A. A. Piskorski. Proc Inst Radio Eng 17:562 Mar '29
- Radiation resistance of concentric conductor transmission lines. Robert Whitmer. Proc Inst Radio Eng 21:1342 Sept '33
- Re-radiation from tuned antenna systems. Henry C. Forbes. Proc Inst Radio Eng 13:363. June '25
- Scattered radiation from short-wave beams. Wireless Eng 8:579 Nov. '31
- Simple method of calculating radiation resistance. Fulton Cutting. Proc Inst Radio Eng 10:129 Apr '22
- Some developments in common frequency broadcasting. G. D. Gillett. Proc Inst Radio Eng 19:1347 Aug '31

*See also***Propagation of Waves****ANTENNAS, Adcock**

- An instantaneous direction reading, radio goniometer. R. A. Watson-Watt and J. F. Herd. Jour Inst Elec Eng 64:611 '26
- Polarization of high frequency waves and their direction finding Shogo Namba, Eiji Iso and S. Ueno. Proc Inst Radio Eng 19:2000 Nov '31
- Recent developments in direction-finding apparatus. R. H. Barfield. Jour Inst Elec Eng 68:1052 '30
- Shipboard observations with a cathode-ray direction finder between England and Australia. E. H. Munro and L. G. H. Huxley. Jour Inst Elec Eng 71:488 '32

**ANTENNAS, Aircraft**

- An aircraft radio receiver for use with rigid antenna. F. H. Drake. Proc Inst Radio Eng 17:306 Feb '29
- Advantages of trailing antennas for aircraft radio. C. F. Jenkins. Aviation 28:1170 June 14 '30
- Characteristics of airplane antennas for radio range-beacon reception. H. Diamond and G. L. Davies. U S Bur Stand Jour Research 6:901 May '31
- Constants of aircraft trailing antennas. L. A. Hyland. Proc Inst Radio Eng 17:2230 Dec '29
- Maintaining the directivity of antenna arrays. F. G. Kear. Proc Inst Radio Eng 22:847 Nov '34
- Radio antennas and high speed ships. Aviation 33:178 June '34

**ANTENNAS, Broadcasting**

- Broadcast installations in the new "House of Radio." Gunther Lubszynski and Kurt Hoffmann. Proc Inst Radio Eng 19:1955 Nov '31
- Characteristics of certain broadcasting antennas at the South Schenectady Development Station, H. M. O'Neill. Proc Inst Radio Eng 16:872 July '28
- Design of transmitting aeriels for broadcasting stations. P. P. Eckersley, T. L. Eckersley, and H. L. Kerke. diags Jour Inst Elec Eng 67:507 Apr '29
- Directional antennae for broadcasting. R. M. Wilmotte. il Electronics 4:362 Nov '32

Requirements to be fulfilled by satisfactory broadcasting equipment; Birmingham broadcasting station. E. M. Deloraine. *Electrician* 95:409, 438, Oct 9 '25

Some new types of broadcast transmitting aerials; editorial. *il Wireless Eng* 10:525 Oct '33

Transmitting antennas for broadcasting. A. Meissner. *Proc Inst Radio Eng* 17:1178 July '29

Vertical radiator for Budapest broadcasting station. F. E. Sharp. *il diags Engineer* 157:246 Mar 9 '34

#### ANTENNAS, Directional

Abbreviated method of calculating the inductance of irregular plane polygons of round wire. V. I. Bashenoff. *Proc Inst Radio Eng* 15:1013 Dec '27

Action of short-wave frame aerials. L. S. Palmer and L. L. K. Honeyball. *Proc Inst Radio Eng* 20:1345 Aug '32

Beam transmission of ultra-short waves. Hidetsugu Yagi. *Proc Inst Radio Eng* 16:715 June '28

Certain factors affecting the gain of directive antennas. G. C. Southworth. *Bell System Tech Jour* 10:63 Jan '31

Chireix-Mesny directive antenna for short waves (review of current literature. Stuart Ballantine). *Proc Inst Radio Eng* 16:1261 Sept '28

Developments in short-wave directive antennas. E. Bruce. *Bell System Tech Jour* 10:656 Oct '31

Directional radiation with horizontal antennas. A. Meissner. *Proc Inst Radio Eng* 15:928 Nov '27

Directive diagrams of antenna arrays. Ronald M. Foster. *Bell System Tech Jour* 5:292 Jan '26

Diversity receiving system of R. C. A. Communications, Inc., for radiotelegraph. H. H. Beverage and H. O. Peterson. *Proc Inst Radio Eng* 19:531 Apr '31

Effective heights of closed aerials. V. I. Bashenoff and N. A. Mjasoedoff. *Proc Inst Radio Eng* 19:984 June '31

French system of directional aerials for transmission of short waves. H. Chireix. *Exp Wireless* 6:235 May '29

Loop uni-directional receiving circuits for the determination of the direction of atmospheric disturbances. L. W. Ausin. *Proc Inst Radio Eng* 11:395 Aug '23

Main considerations in antenna design. N. Lindenblad and W. W. Brown. *Proc Inst Radio Eng* 14:291 June '26

Maintaining the directivity of antenna arrays. F. G. Kear. *Proc Inst Radio Eng* 22:847 July '34

Monitoring the operation of short waves. Hans Mogel. *Proc Ist Radio Eng* 19:214 Feb '31

New directional receiving system. H. T. Friis. *Proc Inst Radio Eng* 13:685 Dec '25

New type of directive aerial. T. Walmsley. *diags Wireless Eng* 9:622 Nov '32

Polarization of radio waves. Greenleaf W. Pickard. *Proc Inst Radio Eng* 14:205 Apr '26. Discussion. E. W. Alevanderson (June '26, p 391)

Radio tracking of meteorological balloons. W. R. Blair and H. M. Lewis. *Proc Inst Radio Eng* 19:1531 Sept '31

Radiation measurements of a short-wave directive antenna at the Nauen high power radio station. M. Baumler, K. Kruger, H. Plendl and W. Pfitzer. *Proc Inst Radio Eng* 19:812 May '21.

Radiation resistance of beam antennas. A. A. Pistolokors. *Proc Inst Radio Eng* 17:562 Mar '29

Receiving system for long-wave transatlantic radio telephony. Austin Bailey, S. W. Dean and W. T. Wintringham. *Proc Inst Radio Eng* 16:1645 Dec '28. Discussion. J. P. Guthrie, Austin Bailey, August Hund, A. H. Taylor, Alfred N. Goldsmith, K. S. Van Dyke, W. T. Wintringham, Haraden Pratt, and F. H. Murray. 17:174 Jan '29

Rectangular short-wave frame aerials for reception and transmission. L. S. Palmer and D. Taylor. *Proc Inst Radio Eng* 22:93 Jan '34

Reduction of interference in broadcast reception. Alfred N. Goldsmith. *Proc Inst Radio Eng* 14:575 Aug '26. Discussion. J. V. Van Horn (Jan '27, p. 40)

Transatlantic radio telephone transmission. Lloyd Espenschied, C. N. Anderson and Austin Bailey. *Proc Inst Radio Eng* 14:7 Feb '26

#### ANTENNAS, Tower

Aerial mast. W. S. Pinchin. *diag Radio N* 13:309 Oct '31

Construction of a lattice radio tower. C. W. Guyatt. *il Radio N* 9:504 Nov '27

Der Berliner Funkturm. R. Bernhard. *diags Zeit Ver Deutsch Ing* 71:398 Mar 19 '27

Eisenkonstruktionen. Giessbach. *Zeit Ver Deutsch Ing* 70:1141 Aug 21 '26

Experimental reception on the world's tallest structure. S. G. Taylor. *il Radio N* 13:362 Nov '31

Funkturme aus holz in Wiederau bei Leipzig. F. Herbst. *il diags Zeit Ver Deutsch Ing* 76:1209 Dec 10 '32

High-frequency models in antenna investigations. G. H. Brown and R. King. *il diags Inst Radio Eng Proc* 22:457 Apr '34

Les pylones de T. S. F. en bois de Heilsberg (Prusse). *diags Genie Civil* 100:118 Jan 30 '32

New radio tower uses 132 tons of structural steel. *il Steel* 95:34 July 2 '34

Radio tower 878 ft. high built at Nashville, Tenn. *il Eng N* 110:91 Jan 19 '33

Short-wave broadcast towers; WABC's 665-ft. vertical antenna. R. L. Jenner. *il Elec W* 99:360 Feb 20 '32

Tower antennas. E. A. Laport. *il Electronics*. 7:238 Aug '34

Vertical radiator for Budapest broadcasting station. F. E. Sharp. *il diags Engineer* 157:246 Mar 9 '34

#### ATMOSPHERICS

Atmospherics at Watheroo, Western Australia. J. E. I. Cairns. *Pros Inst Radio Eng* 15:985 Dec '27

Audio-frequency atmospherics. E. T. Burton and E. M. Boardman. *il Proc Inst Radio Eng* 21:1476 Oct '33

Beneficence of atmospherics. R. A. W. Watt. *il (sup) Jour Roy Aeronautical Soc* 29:61-72; Discussions. 72 Feb '25

**ATMOSPHERICS—Continued**

Directional studies of atmospherics at high frequencies. Karl G. Jansky. Proc Inst Radio Eng 20:1920 Dec '32

Electrical disturbances apparently of extra-terrestrial origin. K. G. Jansky. diags Proc Inst Radio Eng. 21:1387 Oct '33

Estimate of the frequency distribution of atmospheric noise. R. K. Potter. Proc Inst Radio Eng 20:1512 Sept '32

High-frequency atmospheric noise. R. K. Potter. Proc Inst Radio Eng 19:1731 Oct '31

Long distance radio receiving measurements and atmospheric disturbances at the Bureau of Standards in 1925. L. W. Austin. Proc Inst Radio Eng 14:663 Oct '26. Discussion. K. Sreenivasan and L. W. Austin 15:15 Feb '27; G. W. Pickard 15:539 June '27; K. Sreenivasan 15:1002 Dec '27; B. H. Kynaston 16:359 Oct '28

Long-distance transmission of static impulses. R. K. Potter. Proc Inst Radio Eng 20:1512 Sept '32

Long-distance transmission of static impulses. S. W. Dean. il Proc Inst Radio Eng 19:1660 Sept. '31

Note on automatic field strength and static recorder. W. W. Mutch. Proc Inst Radio Eng 20:1914 Dec '32

Present state of knowledge of atmospherics. R. A. W. Watt. Exp Wireless 5:629 Nov '28

Present status of radio atmospheric disturbances. L. W. Austin. Proc Inst Radio Eng 14:133 Feb '26

Reduction of atmospheric disturbance. John R. Carson. Proc Inst Radio Eng 16:966 July '28

Some measurements on the direction distribution of static. A. E. Harper. Proc Inst Radio Eng 17:1214 July '29

Static recorder. H. T. Friis. Bell system Tech Jour 5:282 Apr '26

*See also*

**Interference****Measurements**

An automatic recorder for measuring the strength of radio signals and atmospheric disturbances. E. B. Judson. Proc Inst Radio Eng 16:666 May '28

High-frequency atmospheric noise. R. K. Potter. Proc Inst Radio Eng 19:1731 Oct '31

Long-wave radio receiving measurements at the Bureau of Standards in 1925. L. W. Austin. Proc Inst Radio Eng 14:663 Oct '26. Same for 1926, 15:825 Oct '27; for 1927, 16:1252 Sept '28; for 1928, 18:101 Jan '30; for 1929, 18:1481 Sept '30

Methods for measuring interfering noises. Lloyd Espenschied. Proc Inst Radio Eng 19:1951 Nov '31

Simultaneous atmospheric and cable disturbances. M. Baumler. Proc Inst Radio Eng 19:138 Jan '31

Some measurements on the directional distribution of static. A. E. Harper. Proc Inst Radio Eng 17:1214 July '29

*See also*

**Propagation of Waves—Measurements****ATTENUATION, Attenuators**

Attenuation of overland radio transmission in the frequency range 1.5 to 3.5 megacycles per second. C. N. Anderson. Proc Inst Radio Eng 21:1447 Oct '33

Attenuation of short wireless waves at the surface of the earth. G. H. Munro. diags Jour Inst Elec Eng 71:135 June '32

Attenuation of transmission lines. M. J. O. Strutt. Wireless Eng 10:139 Mar '33

Attenuation of wireless waves over land. R. H. Barfield. diags 66:204-14 Feb '28; Abstracts. Exp Wireless 5:25 Jan '28; Elec Rev. (Lond) 101:1056-Dec 16 '27; Discussion. Jour Inst Elec Eng 66:214-18 Feb '28; Exp Wireless 5:29-30 Jan '28

Attenuation of wireless waves over towns. R. H. Barfield and G. H. Munro, diags maps Jour Inst Elec Eng 67:253-65 Feb '29; Abstracts. Exp Wireless 6:31 Jan '29; Electrician 101:706 Dec 21 '28; Elec Rev (Lond) 103:1131 Dec 28 '28; Discussion. Jour Inst Elec Eng 67:265, 931 Feb-July '29; Exp Wireless 6:36 Jan '29

Automatic field strength and static recorder. W. W. Mutch. diags Proc Inst Radio Eng 20:1914 Dec '32

Chart for simple attenuator design. W. W. Waltz. Electronics 7:247 Aug '34

Design of attenuation networks. W. F. Lanterman. (diags.) Electronics 2:508 Feb '31

Design of constant resistance attenuators. T. S. Rangachari. diags Wireless Eng 11:596 Nov '34

East-west and north-south attenuations of long radio waves on the Pacific. E. Yokoyama and T. Nakai. Proc Inst Radio Eng 17:1240 July '29

Graphs to Prof. Sommerfeld's attenuation formula for radio waves. B. Rolf. Proc Inst Radio Eng 18:391 Mar '30; Discussion. W. H. Wise. 18:1971 Nov '30

Investigation of the attenuation of electromagnetic waves and the distances reached by radio stations in the wave band from 200 to 2000 meters. H. Fassbender, F. Eisner and G. Kurlbaum. bibliog Proc Inst Radio Eng 19:1446 Aug '31

Preliminary note on the proposed changes in the constants of the Austic-Cohen transmission formula. L. W. Austin. Proc Inst Radio Eng 14:377 June '26

Propagation of electric waves over the earth. H. W. Nichols and J. C. Schelleng. Bell System Tech Jour 4:215 Apr. '25

Transmission of electric waves around the earth. G. N. Watson. 95:546 July '19

*See also*

**Networks****AUTOMATIC Volume Control**

Acoustically-compensated volume control for radio and phonograph sets. I. Wolff and J. F. Cornell. il Electronics 6:50 Feb '33

Amplified automatic volume control. diag Radio N 15:655 May '34

Automatic volume control. A. R. Hodges. diags Sibley Jour 46:96 Apr '32

Automatic volume control for radio receiving sets. Harold A. Wheeler. Proc Inst Radio Eng 16:30 Jan '28. Discussion p 27

Automatic volume control for aircraft radio receivers. W. S. Hinman, jr. diags U. S. Bur Stand Jour Research 7:37 July '31

AVC for radio receivers. C. B. Fisher. diag Wireless Eng 10:248 May '33

AVC applied to audio frequency amplifier tubes. J. R. Nelson. il Electronics 7:50 Feb '34

- Choosing between volume control methods. A. V. Sommers. *il diags Radio N* 10:1000 May '29
- Circuit constants and constructional information on automatic volume control. C. Williamson. *diags Radio N* 11:724 Feb '30
- Copper-oxide rectifier used for radio detection and automatic volume control. L. O. Grondahl and W. P. Place. *Proc Inst Radio Eng* 20:1599 Oct '32
- Design of AVC systems; review of the chief methods. W. T. Cocking. *Wireless Eng* 11:406, 476, 542 Aug-Oct '34
- Diversity telephone receiving system of RCA Communications, Inc. H. O. Peterson, H. H. Beverage and J. B. Moore. *Proc Inst Radio Eng* 19:562 Apr '31
- Radio beacon and receiving system for blind landing of aircraft. H. Diamond and F. W. Dunmore. *Proc Inst Radio Eng* 19:585 Apr '31
- Sensitivity controls—manual and automatic. Dorman D. Israel. *Proc Inst Radio Eng* 20:461 Mar '32
- Supervisory and control equipment for audio-frequency amplifiers. Harry Sohon. *Proc Inst Radio Eng* 21:228 Feb '33

*See also*

Volume Control

**AUTOMOBILE Receivers.** See Receivers

## B

**BARKHAUSEN-Kurz Oscillations.** See Oscillators

### BATTERIES

- Battery design problems of the air cell receiver. F. T. Bowditch. *Proc Inst Radio Eng* 20:215 Feb '32
- Development of B-battery devices for auto radio. *il Electronics* 4:80 Mar '32
- General information and service data on modern battery receivers. *il Radio N* 15:536 Mar '34
- Improved B eliminator for automobile receivers. W. W. Garstang. *il Electronics* 4:254 Aug '32
- Low drain tubes for battery receivers. *Electronics* 1:122 June '30
- Practical farm radio; use of air cell A battery. E. E. Horine. *il Radio N* 15:462 Feb '34
- Radio battery eliminators. P. D. Tyers. *Elec Rev (Lond)* 101:217 Aug 5 '27
- Recent developments in B-power unit design. J. Millen. *il diags Radio N* 9:346 Oct '27
- Reduction of filament battery coupling in amplifiers. W. L. Watton. *diags Wireless Eng* 11:17 Jan '34
- Sets, tubes, batteries, accessories and parts, 1922-1930. *Electronics* 2:535 Mar '31
- Some facts about B batteries. J. Martin. *Radio N* 12:302 Oct '30
- Vibrator power supply from dry cells. Walter van B. Roberts. *il Electronics* 7:214 July '34

*See also*

Power Supply Systems

### BEACONS

- Aeronautic radiobeacon improvements. *Radio Serv Bul* 157:24 Apr '30
- Aircraft radio beacon development. G. K. Burgess. *Aviation* 24:1764 June 18 '28

- Airplane receiving equipment for visual radio range-beacons. *Jour Fr Inst* 213:568 May '32
- Applying the radio range to the airways. F. G. Kear and W. E. Jackson. *U S Bur Stand Jour Research* 4:371 Mar '30
- Applying the visual double-modulation type radio range to the airways. H. Diamond. *diags U S Bur Stand Jour Research* 4:265 Feb '30
- Cause and elimination of night effects in radio range-beacon reception. H. Diamond. *U S Bur Stand Jour Research* 10:7 Jan '33
- Course indicator of pointer type for the visual radio range-beacon system. F. W. Dunmore. *U S Bur Stand Jour Research* 7:147 July '31
- Course-shift indicator for the double-modulation type radiobeacon. H. Diamond and F. W. Dunmore. *U S Bur Stand Jour Research* 3:1 July '29
- Design of tuned reed course indicators for aircraft radiobeacon. F. W. Dunmore. *il U S Bur Stand Jour Research* 1:751 Nov '28
- Development of a visual type of radio range transmitter having a universal application to the airways. W. E. Jackson and S. L. Bailey. *bibliog Proc Inst Radio Eng* 18:2059 Dec '30
- Development of the visual type airway radiobeacon system. J. H. Dellinger, H. Diamond and F. W. Dunmore. *U. S. Bur Stand Jour Research* 4:425 Mar '30
- Devilometer for air courses not on regular radio beacon beam path. *Aero Digest* 20:55 Jan '32
- Experimental radiobeacon and submarine oscillator established on Coninberg (Ireland) light vessel. *Radio Serv Bul* 137:11 Aug '28
- Fresnel et les progres de la signalisation maritime. A. de Rouville. *il Genie Civil* 91:668 Dec 31 '27
- Guidage electromagnetique, par cable ou sans cable. des navires et des avions. Bourgonnier. *Genie Civil* 97:164 Aug 16 '30
- How the radio beacon makes navigation safer. *il diags Marine Eng* 32:511 Sept '27
- Investigation of a rotating radio beacon. *Engineering* 126:130 Aug 3 '28
- Kolster ship radio beacon. *il Marine Eng* 32:274 May '27
- Les phares a tres longue portee; le phare d'aviation du mont Valerion, pres de Paris. C. Dantin. *Genie Civil* 90:329 Apr 2 '27
- Locating radio beacon stations. H. C. Stark. *Aero Digest* 21:39 Dec '32
- Phase synchronization in directive antenna arrays with particular application to the radio range beacon. F. G. Kear. *U S Bur Stand Jour Research* 11:123 July '33
- Maintaining the directivity of antenna arrays. F. G. Kear. *il diags Proc Inst Radio Eng* 22:847 July '34; *Discussion*. 22:1313 Nov '34
- Method of operation of the Oxfordness, Suffolk, apparatus. *Electrician* 106:594 Apr 17 '31
- Method of providing course and quadrant identification with the radio range-beacon system. F. W. Dunmore. *U S Bur Stand Jour Research* 11:309 Sept '33
- Multiple courses of radio range beacons investigated. *Air Commerce Bul* 6:55 Sept '34
- New field of application for ultra-short waves. E. Kramar. *bibliog Proc Inst Radio Eng* 21:1519 Nov '33

**BEACONS—Continued**

- New type of transmitting antenna developed for radio range beacons. Air Commerce Bul 4:33 July 15 '32
- Performance tests of radio system of landing aids. H. Diamond. U S Bur Stand Jour Research 11:463 Oct '33
- Portable beacon transmitter. Aero Digest 20:64 Feb '32
- Radiobeacon and receiving system for blind landing of aircraft. H. Diamond and F. W. Dunmore. U S Bur Stand Jour Research' 5:897 Oct '30
- Radio beacons for transpacific flights. Clayton C. Shangraw. Proc Inst Radio Eng 16:1203 Sept '28
- Radio developments applied to aircraft. J. H. Dellinger and H. Diamond. Mech Eng 51:509 July '29
- Radio range beacon free from night effects. H. A. Chinn. Proc Inst Radio Eng 21:802 June '33
- Reversibility of radio direction-finding and local error at rotating-loop beacons. R. L. Smith-Rose. Jour Inst Elec Eng 67:149 Jan '29
- Rotating-loop radio transmitters, and their application to direction-finding and navigation. T. H. Gill and N. F. S. Hecht. Jour Inst Elec Eng 66:241 Mar '28
- Runway marking by radio. Aero Digest 22:52 Mar '33
- Ship's wireless equipment; Empress of Britain. Elec Rev (Lond) 108:623 Apr 10 '31
- Simultaneous radiotelephone and visual range beacon for the airways. F. G. Kear and G. H. Wintermute. U S Bur Stand Jour Research 7:261 Aug '31; Same, Proc Inst Radio Eng 20:478 Mar '32
- Simultaneous transmission of voice and aural radio range signals. Air Commerce Bul 5:268 May '34
- Solution of the problem of night effects with the radio range beacon system. H. Diamond. Proc Inst Radio Eng 21:808 June '33
- Some experiments on the application of the rotating-beacon transmitter to marine navigation. R. L. Smith-Rose and S. R. Chapman. Jour Inst Elec Eng 66:256 Mar '28; Abstracts. Exp Wireless 5:88 Feb '28; Electrician 100:29 Jan 13 '28; Elec Rev (Lond) 102:123 Jan 20 '28; Discussion Jour Inst Elec Eng 66:274 Mar '28
- Some observations on the Oxfordness rotating beacon. R. L. Smith-Rose. Jour Inst Elec Eng 69:523-32 Apr '31
- Stationary and rotating equisignal beacon. W. H. Murphy and L. M. Wolfe. Il diags Soc Auto Eng Jour 19:209 Sept '26
- Theoretical discussion of various possible aerial arrangements for rotating-beacon transmitters. R. L. Smith-Rose. Jour Inst Elec Eng 66:20 Mar '28
- Theory of design and calibration and vibrating-reed indicators for radio range beacons. G. L. Davies. diags U S Bur Stand Jour Research 7:195 July '31
- Tuned-reed course indicator for the 4- and 12-course aircraft radio range. F. W. Dunmore. Il diags U S Bur Stand Jour Research 4:461 Apr '30
- Unidirectional radiobeacon for aircraft. E. Z. Stowell. U. S. Bur Stand Jour Research 1:1011 Dec '28
- Wireless beacons; automatically controlled light-house equipments. Il Electrician 99:251 Aug 26 '27
- 12-course radio range for guiding aircraft with tuned reed visual indication. H. Diamond and F. G. Kear. U S Bur Stand Jour Research 4:351 Mar '30
- See also*
- Aids to Aviation                      Marine Radio
- BEAM Antennas.** See Antennas, Directional
- BLIND Landing.** See Aids to Aviation
- BRIDGES**
- Bridge circuit for measuring the inductance of coils while passing direct current. V. D. Landon. Proc Inst Radio Eng 16:1771 Dec '28
- Bridge method for the measurement of inter-electrode admittance in vacuum tubes. E. T. Hoch. Proc Inst Radio Eng 16:487 Apr '28
- Campbell-Shackelton shielded ratio box. Leo Behr and A. J. Williams, jr. Proc Inst Radio Eng 20:969 June '32. Discussion. p 1535 Sept '32
- Condenser bridge for factory inspection of variable condensers. R. A. Braden and H. C. Forbes. Proc Inst Radio Eng 18:123 Jan '30
- Constant impedance method for measuring inductance of choke coils. H. M. Turner. Proc Inst Radio Eng 15:1559 Nov '28
- Development of a circuit for measuring the negative resistance of pliodynatrons. Edward N. Dingley, Jr. Proc Inst Radio Eng. 19:1948. Nov '31
- Direct capacity bridge for vacuum tube measurements. Lincoln Walsh. Proc Inst Radio Eng 16:482 Apr '28
- Direct capacity measurement. George A. Campbell. Bell System Tech Jour 1:18 July '22
- Direct reading frequency bridge for the audio range, based on Hay's bridge circuit. Chester I. Soucy and B. deF. Boyly. Proc Inst Radio Eng 17:834 May '29
- Double hump phenomenon of current through a bridge across parallel lines. Eijiro Takagishi. Prog Inst Radio Eng 18:513 Mar '30.
- Electron tube wattmeter and voltmeter and a phase-shifting bridge. H. M. Turner and F. T. McNamara. Proc Inst Radio Eng 18:1743 Oct '30
- Equivalent electrical networks. Nathan Howitt. Proc Inst Radio Eng 20:1042 June '32
- Measurement of capacitance in terms of resistance and frequency. J. A. Ferguson and B. W. Bartlett. Bell System Tech Jour 7:420 July '28
- Measurement of inductance by the shielded Owen bridge. J. G. Ferguson. Bell System Tech Jour 6:375 July '27
- Microammeter indicator of high frequency bridge balance. H. M. Turner. Trans A. I. E. E. 46: 559 '27
- Shielded bridge for inductive impedance measurements at speech and carrier frequencies. W. J. Shackelton. Bell Sys Tech Jour 6:142 Jan '27
- See also*
- Capacitance                      Measurements  
Inductance

## BROADCASTING

- A study of reception from synchronized broadcast stations. Charles B. Aiken. Proc Inst Radio Eng 21:1265 Sept '33
- Basis established by the Federal radio commission for the division of radio broadcast facilities within the United States. Proc Inst Radio Eng 18:2032 Dec '30
- Better radio broadcasting. O. H. Caldwell. Elec W 90:1041 Nov 19 '27
- Broadcast control operation. Carl Dreher. Proc Inst Radio Eng 16:498 Apr '28. Errata (June 1928, p. 705)
- Broadcast installations in the new "House of Radio." Gunther Lubszynski and Kurt Hoffmann. Proc Inst Radio Eng 19:1955 Nov '31
- Broadcasting. P. P. Eckersley. Electrician 97:181 Aug 13 '26
- Broadcasting and relay systems. D. H. N. Caley. Electrician 107:98 July 17 '31
- Broadcasting from mid-ocean. Sci Amer 132:421 June '25
- Broadcasting in the United States. 191p. National assn. of broadcasters, Washington, D. C. '33
- Broadcasting over wires. G. O. Squier. il Elec W 90:893 Oct 29 '27
- Communication on the quasi-optical frequencies. Eduard Karplus. il Electronics 2:666 June '31
- Comparison of the engineering problems in broadcasting and audible pictures. Porter H. Evans. Proc Inst Radio Eng 18:1316 Aug '30
- Controlling "quality" in a broadcasting system. E. K. Sandeman. Elec Comm 7:33 July '28
- Die wissenschaftlichen probleme des rundfunks. K. W. Wagner. Elektrotech Zeit 47:735 June 24 '26
- Directional antennae for broadcasting. R. M. Wilmotte. il Electronics 4:362 Nov '32
- Direct-ray broadcast transmission. T. L. Eckersley. Proc Inst Radio Eng 20:1555 Oct '32
- Early history of broadcasting in the United States. C. H. Leet. Sibley Jour 48:22 Feb '34
- Effect of background noise in shared channel broadcasting. C. B. Aiken. diag Bell System Tech Jour 13:333 July '34
- Effects of reception on overmodulation. C. E. Kilgour. il Electronics 4:9 Jan '32
- Empirical standards for broadcast allocation. A. D. Ring. Proc Inst Radio Eng 20:611 Apr '32
- Engineering acoustics; broadcast power-levels. Electrician 106:371 Mar 6 '31
- Equalization of broadcasting facilities within the United States. J. M. Herring. Harvard Business Rev 9:417 July '31
- Experts discuss broadcasting on 150 meters. Radio N 7:18 July '25
- Growth of radio broadcasting in the United States. W. T. Charles. Dun's Int Rev 51:31 July '28
- High broadcast power. Science 71:sup12 Mar 14 '30
- High quality radio broadcast transmission and reception. Stuart Ballantine. Proc Inst Radio Eng Part I-22:564 May '34; Discussion. Hans Roder 23:256 Mar '35. Part II-23:618 June '35
- Improved broadcast program circuits. A. B. Clark and C. W. Green. Elec W 96:34 July 5 '30
- Interference from shared-frequency broadcasting. C. B. Aiken. Electronics 3:100 Sept '31
- Interference of electrical plant with the reception of radio broadcasting. A. Morris. diags Jour Inst Elec Eng 74:245; Discussion. 252 Mar '34
- Kennelly-Heaviside layer height observations for 4045 Kc and 8650 Kc. T. R. Gilliland. Proc Inst Radio Eng 19:114 Jan 31; Discussion. Frederick K. Vreeland 19:1500 Aug '31
- London's Radio City. S. Kaufman. il Radio N 13:909 May '32
- Long distance cable circuit for program transmission. A. B. Clark and C. W. Green. il diags map Bell System Tech Jour 9:567 July '30; Excerpts. Jour Amer Inst Elec Eng 49:642 Aug '30
- Low-frequency high power broadcasting as applied to national coverage in the United States. W. H. Wenstrom. maps Proc Inst Radio Eng 19:971 June '31
- Measurement of wavelengths of broadcasting stations; work of the Brussels checking station of the U.I.R. R. Braillard and E. Divoire. il diags Exp Wireless 6:412 Aug '29
- Microphone switching systems for broadcast stations. L. W. Barnett. il Electronics 7:152 May '34
- Modern treatment of broadcasting acoustics. S. K. Wolf. il Electronics 4:14 Jan '32
- New high power radio broadcasting equipment. D. B. Mirk. Elec Comm 7:241 Apr '29
- Note on reception of radio broadcast stations at distances exceeding 12,000 kilometers. L. V. Berkner. Proc Inst Radio Eng 20:1324 Aug '32
- Note on the synchronization of broadcast stations WJZ and WBAL. K. A. Norton. Proc Inst Radio Eng 22:1087 Sept '34
- Operation of several broadcasting stations on the same wave-length. P. P. Eckersley and A. B. Howe. diag Jour Inst Elec Eng 67:772 June '29; Abstracts. Exp Wireless 6:196 Apr '29; Elec Rev (Lond) 104:493 Mar 15 '29; Discussion. Jour Inst Elec Eng 67:785 June '29; Exp Wireless 6:198 Apr '29
- Organization and problems of national broadcasting. A. N. Goldsmith. Gen Elec Rev 30:349 July '27
- Preliminary analysis of high-power radio broadcasting by the Bureau of standards. il Gen Elec Rev 28:720 Oct '25
- Proper sites for broadcast stations. C. W. Horn. il Electronics 6:66 Mar '33
- Radio broadcasters iron out their problems. Ptr Ink 165:69 Oct 19 '33
- Radio broadcasting forges ahead; interview with M. H. Aylesworth. Bradstreet's 61:214 Jan 28 '33
- Radio broadcasting transmitters and related transmission phenomena. Edward L. Nelson. Proc Inst Radio Eng 27:1949 Nov '29
- Radio transmission characteristics of Ohio at broadcast frequencies. J. F. Byrne. il diags Ohio State Univ Eng Exp Sta Bul 71:1 '32
- Recording of modulation level of a broadcast system. H. L. Kirke. il diags Wireless Eng 9:369 July '32



**BROADCASTING—Continued**

- Reduction of interference in broadcast reception. Alfred N. Goldsmith. Proc Inst Radio Eng 14:575 Oct '26; Discussion. J. C. Van Horn 15:40 Jan '27
- Relations of the carrier and side-bands in radio transmission. R. V. L. Hartley. Proc Inst Radio Eng 11:34 Feb '23
- Reports of the I.R.E. committee on broadcasting. Proc Inst Radio Eng 18:15 Jan '30
- Required minimum frequency separation between carrier waves of broadcast stations. P. P. Eckersley. Proc Inst Radio Eng 21:193 Feb '33
- Requirements to be fulfilled by satisfactory broadcasting equipment; Birmingham broadcasting station. E. M. Deloraine. Electrician 95:409, 438 Oct 9 '25
- Shooting radio concerts into the sky; corkscrew waves. O. E. Dunlap, jr. il Sci Amer 134:234 Apr '26
- Simplified method of modulator design. E. A. Laport. il Electronics 6:184 July '33
- Some characteristics of modern radio receivers and their relation to broadcast regulations. Lewis M. Hill. Proc Inst Radio Eng 17:1334 Aug '29
- Some developments in common frequency broadcasting. G. D. Gillett. Proc Inst Radio Eng 19:1347 Aug '31
- Some experimental radio field intensity measurements and observations. Radio Serv Bul 120:10 Jan '27, Mar '27
- Some possibilities of intelligence transmission when using a limited band of frequencies. F. E. Terman. Proc Inst Radio Eng 18:167 Jan '30; Discussion. 18:1263 July '30
- Some principles of broadcast frequency allocation. L. E. Whittemore. Proc Inst Radio Eng 17:1343 Aug '29
- Some problems of broadcast reception. G. W. O. Howe. Electrician 95:290 Sept 11 '25
- Some studies in radio broadcast transmission. Ralph Brown, DeLoss K. Martin and Ralph K. Potter. Errata (Apr 1926, p. 160). Proc Inst Radio Eng 14:57 Feb '26
- Speech input equipment. D. G. Little. Proc Inst Radio Eng 27:1986 Nov '29
- Synchronization of broadcast stations WJZ and WBAL. K. A. Norton. Proc Inst Radio Eng 22:1087 Sept '34
- Technical achievements in broadcasting and its relation to national and international solidarity. Alfred N. Goldsmith. Proc Inst Radio Eng 27:1940 Nov '29
- Technical broadcasting problems. J. S. Brown. Electrician 95:299 Sept 11 '25
- Ten years of broadcasting. C. W. Horn. Proc Inst Radio Eng 19:356 Mar '31
- Time delays effects in synchronous broadcasting. C. B. Aiken. il Electronics 6:124 May '33
- Tower antennas. E. A. Laport. il Electronics 7:238 Aug '34
- Transmission progress at CBS. A. B. Chamberlain. il Electronics 7:138 May '34
- United States radio broadcasting development. R. H. Marriott. Proc Inst Radio Eng 17:1395 Aug '29

**BROADCASTING, International**

- Broadcasting; British and foreign systems. Economist 110:985 May 3 '30
- Broadcasting in the Argentine. D. Jose. Wireless Age 12:10 June '25
- Broadcasting in the British Isles. A. R. Burrows. il Wireless Age 11:24 Feb '24
- Broadcasting in Denmark. E. Holm. Ann Amer Acad 142:sup17-20 Mar '29
- Broadcasting in Sweden. il plan Electrician 97:560 Nov 12 '26
- Continental re-broadcasts; broadcast conditions in the British Isles. A. C. Granbeck. Wireless Age 12:17 Mar '25
- Europe lends ear to ether waves as broadcasting grows. il Dun's Int Rev 45:57 Apr '25
- German short-wave transmissions. W. W. Defenbach. il Radio N 16:232 Oct '34
- International broadcasting: I.B.U. London meeting recommendations. Electrician 112:891 June 29 '34
- La nouvelle organisation des programmes de radio-diffusion en France. J. Cazals de Fabel. Genie Civil 104:470 May 26 '34
- L'application de la nouvelle repartition des longueurs d'onde selon le Plan de Lucerne. M. Adam. Genie Civil 104:199 Mar 3 '34
- La reorganisation de la Radiodiffusion d'Etat (decrets des 1 et 15 Octobre 1934). J. Cazals de Fabel. Genie Civil 105:392 Oct 27 '34
- Radio broadcasting in the Scandinavian countries. S. A. Blangsted. Radio N 9:205 Sept '27
- Radio in Europe. A. C. Granbeck. il Wireless Age 12:18 Apr '25
- Rapid growth of radio in Czechoslovakia. H. Slouka. Radio N 9:233 Sept '27
- Review of broadcasting. M. P. Rice. Wireless Age 12:33 July '25
- Review of foreign broadcasting systems. Elec Eng 51:808 Nov '32
- Role of radio in the growth of international communication. H. H. Buttner. Elec Comm. 9:249 Apr '31
- Rundfunk-gleichwellensender. P. R. Arendt. bibliog il diags map Zeit Ver Deutsch Ing 78:1177 Oct 13 '34
- Transatlantic radio telephone transmission. A. Bailey. Elec Comm 4:7 July '25
- Wireless developments in Canada. Engineer 150:561 Nov 21 '30
- See also  
Communication
- BROADCASTING, Wire-Line System**
- High efficiency in audio-frequency amplifiers designed for use on rediffusion systems. E. K. Sandeman. il diags Wireless Eng 11:351 July '34
- Installing a radio relay system. Elec Rev (Lond) 114:79 Jan 19 '34
- Line filter for program system. A. W. Clement. diags Elec Eng 53:562 Apr '34; Same. Bell System Tech Jour 13:382 July '34
- Long distance cable circuit for program transmission. A. B. Clark and C. W. Green. il diags map Bell System Tech Jour 9:567 July '30

- Principles of audio-frequency wire broadcasting. P. P. Eckersley. *diags Jour Inst Elec Eng* 75:333 Sept '34
- Radio relay control. T. H. Hall. *il Elec Rev (Lond)* 114:699 May 18 '34
- Wide-band open-wire program system. H. S. Hamilton. *il diags Elec Eng* 53:550 Apr '34; Same. *Bell System Tech Jour* 13:351 July '34
- Wire line systems for national broadcasting. A. B. Clark. *il plans maps Bell System Tech Jour* 9:141 Jan '30
- BROADCASTING Service Area**
- Automatic recording of field strength. C. M. Jansky, jr. *il Electronics* 7:148 May '34
- Calculation of the service area of broadcast stations. P. P. Eckersley. *Proc Inst Radio Eng* 18:1160 July '30
- Detection of two modulated waves which differ slightly in carrier frequency. Charles B. Aiken. *Proc Inst Radio Eng* 19:120 Jan '31
- Low-frequency high-power broadcasting as applied to national coverage in the U. S. William H. Wenstrom. *Proc Inst Radio Eng* 19:971 June '31
- On the simultaneous operation of different broadcast stations on the same channel. P. P. Eckersley. *Proc Inst Radio Eng* 19:175 Feb '31
- On the use of field intensity measurements for the determination of broadcast station coverage. C. M. Jansky, jr. and S. L. Bailey. *Proc Inst Radio Eng* 20:62 Jan '32
- Portable receiving sets for measuring field strengths at broadcasting frequencies. Axel G. Jensen. *Proc Inst Radio Eng* 14:333 June '26
- Radio broadcast coverage of city areas. L. Espenschied. *il maps Bell System Tech Jour* 6:1117 Jan '27; Same. *Jour Amer Inst Elec Eng* 46:25 Jan '27; Abstract. *Electrician* 98:250 May 13 '27; Discussion. *Jour Amer Inst Elec Eng* 46:377 Apr '27
- Service area of a broadcast station; tests on signal strength and the effects of steel buildings. S. R. Winters. *il diags Radio N* 9:12 July '27
- Some developments in common frequency broadcasting. G. D. Gillett. *Proc Inst Radio Eng* 19:1347 Aug '31
- Some studies of radio broadcast coverage in the middle west. C. M. Jansky, jr. *Proc Inst Radio Eng* 16:1356 Oct '28
- Some studies in radio broadcast transmission. Ralph Bown, De Loss K. Martin and Ralph K. Potter. *Proc Inst Radio Eng* 14:57 Feb '26
- See also*  
Measurements, Field Intensity
- BROADCASTING Stations, Foreign**
- Broadcasting in Norway, Sweden and Denmark. A. Taranger. *Elec Comm* 7:18 July '28
- B.E.C. long-wave station. *il Electrician* 110:63 Jan 20 '33; *Engineer* 155:75 Jan 20 '33; *Elec Rev (Lond)* 112:100 Jan 20 '33
- Broadcasting house, London. *il Engineering* 133:570 May 13 '32; *Engineer* 153:537 May 13 '32; *Electrician* 108:659, 696 May 13-20 '32; *Elec Rev (Lond)* 110:727, 778 May 20 '32
- Broadcasting station SQIG. *Elec Comm* 7:210 Jan '29
- Die grossfunkstelle Monte Grande bei Buenos Aires (Argentinien). C. W. Doetsch. *il diags map Zeit Ver Deutsch Ing* 70:3 Jan 2 '26
- Development in South African Broadcasting. A. C. McQuillan. *Elec Comm* 9:28 July '30
- Experimental radio station G2DX. W. K. Alford. *il Exp Wireless* 3:19 Jan '26
- Indian wireless beam stations. *Engineer* 144:262 Sept 2 '27
- Information regarding foreign stations. *Radio Serv Bul* 119:8 Feb '27
- La station radiotelegraphique de Rugby (Angleterre). R. Malo. *il diags Genie Civil* 88:197 Feb 27 '26
- League of nations wireless station. G. F. Van Dissel. *il diags Proc Inst Radio Eng* 22:430 Apr '34
- Madrid-Buenos-Aires radio links and its wire connections. N. K. Fairbanks and G. H. Gray. *Elec Comm* 8:208 Feb '30
- Milan broadcasting station. E. M. Deloraine. *Elec Comm* 5:87 Oct '26
- New Swiss broadcasting station. F. C. McLean. *Elec Comm* 11:3 July '32
- New York-Buenos Aires radio circuit. H. H. Buttner. *Elec Comm* 8:259 Apr '30
- Prague radio broadcasting station. E. M. Deloraine. *Elec Comm* 5:180 Jan '27
- Radio-telegraphy in Brazil; Marconi plant for the new Rio de Janeiro station. *il Elec Rev (Lond)* 99:93 July 16 '26
- Rugby radio station. A. S. Angwin, M. C. Walmsley and T. Walmsley. *Electrician* 95:705 Dec 18 '25; Same. *Engineering* 121:105 Jan 22 '26
- Short wave beam transmission; stations at Grimsby and Skegness. *il Electrician* 98:319, 378 Mar 25, Apr 8 '27; *Engineering* 123:354 Mar 25 '27; *Engineer* 143:323 Mar 25 '27; *Elec Rev (Lond)* 100:627 Apr 22 '27
- Simultaneous broadcasting in Czecho-Slovakia. E. K. Sandemann. *Elec Comm* 6:171 Jan '28
- Spanish high-power station. *il Exp Wireless* 4:142 Mar '27
- Standard broadcasting land line equipment. A. R. A. Rendall. *Elec Comm* 11:39 July '32
- St. Mary's of the Sea (France) coast station reopened. *Radio Serv Bul* 104:8 Dec 1 '25
- Swiss broadcast network. A. Muri. *Elec Comm* 11:9 July '32
- Transatlantic telephony; equipment at the Rugby station. A. A. Oswald and E. M. Deloraine. *il Electrician* 96:572, 666 June 4, 25 '26
- Transatlantic radio telephone station of the British post office at Rugby. E. M. Deloraine. *Elec Comm* 5:3 July '26
- Wireless beam communication between England and India. *il Elec Rev (Lond)* 101:445 Sept 9 '27
- Wireless beam communication between England and South Africa. *il Elec Rev (Lond)* 101:50 July 8 '27
- Wireless beam stations; test of Indian service. *Electrician* 99:287 Sept 2 '27
- Wireless station at Nauen; Hermann Muthesius, architect; views. *Amer Arch* 128:441 Nov 20 '25

**BROADCASTING Stations, United States**

- Broadcasting stations equipped so as to suppress harmonics. Radio Serv Bul 104:8; 105:17 Dec 31 '25
- Broadcast stations on 150 meters. W. B. Aruin. il Radio N 6:2206 June '25
- Broadcasting with oil engine power; station KSTP. P. J. Stieger. il Power 75:159 Feb 2 '32
- Commercial and government radio stations of the United States. p 66-92 U. S. Dept of commerce, Radio div., Washington D. C. '27
- Communication system of the Radiomarine corporation of America. I. F. Byrnes. il map Proc Inst Radio Eng 20:434 Mar '32
- Compact, alternating-current operated speech input equipment. W. L. Black. il diag Proc Inst Radio Eng 21:1409 Oct '33
- Constant frequency broadcast stations. Radio Serv Bul 129:18 Dec '27
- Design and distribution of wireless broadcasting stations for a national service. P. P. Eckersley. Jour Inst Elec Eng 66:501 May '28; Abstract. Exp Wireless 5:189 Apr '28; Discussion. Jour Inst Elec Eng 520-8 May '28
- Design of transmitting aerials for broadcasting stations. P. P. Eckersley, T. L. Eckersley and H. L. Kirke. diags Jour Inst Elec Eng 67:507 Apr '29
- Diesel power for station KSTP. Power Pl Eng 36:563 July 15 '32
- Direct-current substation supplies broadcast power; new quarters of the National broadcasting company. F. Graf. il Elec Jour 31:184 May '34
- Early history of broadcasting in the United States. C. H. Leet. Sibley Jour 48:22 Feb '34
- Five broadcast stations in one room; Naval radio station at Arlington, Va. S. R. Winters. il Radio N 7:1121 Feb '26
- Giant of broadcasting; powerful transmitter of the General Electric at South Schenectady. O. E. Dunlap, jr. il Sci Amer 137:500 Dec '27
- "KDKA." D. G. Little and R. L. Davis. Proc Inst Radio Eng 14:479 Aug '26
- KDKA rebroadcast in Germany on a single tube. S. McClatchie. il Radio N 7:272 Sept '25
- Municipal radio station of New York city. Munic N & Water Works 75:104 Aug '28
- Operation of several broadcasting stations on the same wavelength. P. P. Eckersley and A. B. Howe. diag Jour Inst Elec Eng 67:772 June '29; Abstracts. Exp Wireless 6:196 Apr '29; Elec Rev (Lond) 104:493 Mar 15 '29; Discussion. Jour Inst Elec Eng 67:785 June '29; Exp Wireless 6:198 Apr '29
- Planning the NBC studios for Radio City. O. B. Hanson. Proc Inst Radio Eng 20:1296 Aug '32
- Radio broadcasting station KOA. J. J. Farrell. il Gen Elec Rev 37:442 Oct '34
- Radio and ventilation; National broadcasting company's building, New York. il plans Dom Eng 124:18 July 14 '28
- Radio broadcasting stations; need for use and occupancy insurance. R. L. Jones. il Weekly Underw 130:443 Mar 3 '34
- Radio City broadcasting power supply and control. R. W. Bauer and F. D. McCann. il Elec Jour 31:187 May '34
- Reduction of interference in broadcast stations. Alfred N. Goldsmith. Proc Inst Elec Eng 14:575 Oct '26; Discussion. J. C. Van Horn 15:40 Jan '27
- Ten years of broadcasting. C. W. Horn. Proc Inst Elec Eng 19:356 Mar '31
- Utility company aids flooded areas by radio service. il Elec W 90:1208 Dec 10 '27
- Westinghouse radio station KDKA, at Saxonburg, Pa. R. L. Davis and V. E. Trouant. il diags plans Proc Inst Radio Eng 20:921 June '32
- WLW 500 kilowatt broadcast transmitter. J. A. Chambers, L. F. Jones, G. W. Fyler, R. H. Williamson, E. A. Leach and J. A. Hutcheson. Proc Inst Radio Eng 22:1151 Oct '34
- World short wave time-table. Radio N 15:528, 588, 670, 726; 16:16, 88, 140, 226, 290, 352, 356 Mar-Dec '34

**BROADCASTING Studios**

- Air conditioning a broadcasting studio; duct-work N.B.C. studios in tower of Radio City; illustrations, Heat & Ven 30:30 Mar '33
- Air conditioning the broadcast plant. V. J. Gilcher. il diags Heat & Ven 30:33 Oct '33
- Broadcast installations in the new "House of Radio." G. Lubszynski and Kurt Hoffmann. Proc Inst Radio Eng 19:1955 Nov '31
- Broadcasting house, London. il Engineering 133:570 May 13 '32; Engineer 153:537 May 13 '32; Electrician 108:660, 696 May<sup>13</sup> '32; Elec Rev (Lond) 110:727 May 20 '32
- Broadcasting studios present interesting lighting problems; new studios of the National broadcasting company in Radio City, N. Y. A. L. Powell. il Elec W 103:367 Mar 10 '34
- Design and construction of broadcast studios. O. B. Hanson and R. M. Morris. Proc Inst Radio Eng 19:17 Jan '31
- Engineering problems of radio broadcasting studio design. il plans Amer Arch 135:195 Feb 5 '29
- Entrance foyer and typical studio, National broadcasting company, Rockefeller Center, New York. il Illum Eng Soc Trans 29:16 Jan '34
- Interesting previews of the world's greatest broadcast metropolis; Radio City. S. Kaufman. il Radio N 15:332 Dec '33
- Lighting National broadcasting studios. H. L. Logan. il diags Arch Rec 75:89 Jan '34
- Plan and construction of the National broadcasting company studios. O. B. Hanson. il plans Arch Forum 57:153 Aug '32
- Planning the NBC studios for Radio City. O. B. Hanson. il plans Proc Inst Radio Eng 20:1296 Aug '32
- RCA building of 69 stories rivals Empire State. il diags plans Eng N 109:587 Nov 17 '32
- Rockefeller Center; design of the air conditioning system of the broadcasting studios. A. W. Canney. il diags Heat & Ven 29:39 Aug '32
- Satisfactory lighting with low headroom; National broadcasting company's studios in Radio City. A. L. Powell. il Elec W 103:396 Mar '34
- Station WCAU of Philadelphia; views. Adv & Sell 20:sup (Adv Arts) 31 Mar '33
- Ten years of broadcasting. C. W. Horn. Proc Inst Radio Eng 19:356 Mar '31
- Visual volume control for broadcast studio and concert hall use. S. Kaufman. il Radio N 16:102 Aug '34

WCAU broadcasting studios, Philadelphia. R. Heller. il diags plans Arch Rec 73:246 Apr '33  
WCAU in Philadelphia; modernistic broadcasting. S. Kaufman. il Radio N 14:654 May '33

### BROADCASTING Transmitters

BBC's latest station; description of the new Falkirk transmitter. il Elec Rev (Lond) 110:778 May 27 '32  
Broadcast transmitter characteristics. A. S. Clark and L. W. Schuttig. il Electronics 7:378 Dec '34  
Crystal control of transmitters; Telefunken high-power broadcasting arrangements. R. Bechmann. il diags Wireless Eng 11:249 May '34  
Design of transmitting aerials for broadcasting stations. P. P. Eckersley, T. L. Eckersley and H. L. Kirke. diags Jour Inst Elec Eng 67:507 Apr '29  
Droitwich transmitter. il Electrician 113:323 Sept 14 '34; Elec Rev (Lond) 115:333 Sept 14 '34; Engineer 158:257 Sept 14 '34  
High-fidelity broadcast transmitter performance. E. A. Laport, il Electronics 7:144 May '34  
Measurement of power and efficiency of radio transmitting apparatus. G. Pession and T. Gorio. diags Proc Inst Radio Eng 22:1181 Oct '34  
Mercury arc power rectifiers for wireless stations. K. Kotschubey. il diags Wireless Eng 11:130 Mar '34  
Mercury-arc rectifiers for radio broadcasting. il Elec W 103:78 Jan 13 '34  
Progress in radio transmitters. D. G. Little. il diags Elec Jour 28:689 Dec '31  
Radio broadcasting transmitters and related transmission phenomena. E. L. Nelson. il bibliog Bell Sys Tech Jour 9:121 Jan '30  
Some developments in broadcast transmitters. I. J. Kaar and C. J. Burnside. il diags Proc Inst Radio Eng 18:1623 Oct '30  
Western Electric broadcasting equipment has high service characteristics. il Elec W 90:1156 Dec 3 '27  
Wireless broadcasting transmitting station for dual programme service. P. P. Eckersley and N. Ashbridge. Jour Inst Elec Eng 68:1149  
WLW 500-kilowatt transmitter. il diag Proc Inst Radio Eng 22:1151 Oct '34  
50,000 watt super station; WLW. J. A. Chambers. il Radio N 15:546 Mar '34  
*See also*  
Transmitters

## C

### CABLE

Advances in transoceanic cable technique. Hobart Mason. Proc Inst Radio Eng 18:2176 Dec '30  
Bridge methods for locating resistance faults on cable wires. T. C. Henneberger and P. G. Edwards. Bell System Tech Jour 10:382 July '31  
Cable v. radio. R. Belfore. Elec Rev (Lond) 102:142 '28  
Carrier in cable. A. B. Clark and B. W. Kendall. Bell System Tech Jour 12:251 July '33  
Carrier systems for wideband transmission over coaxial lines. L. Espenschied and M. E. Strieby. Bell Sys Tech Jour 13:654 Oct '34

High speed ocean cable telegraphy. O. E. Buckley. Bell System Tech Jour 7:225 Apr '28  
Linearly tapered loaded transmission lines. John W. Arnold and Roland C. Taylor. Proc Inst Radio Eng 20:1811 Nov '32. Discussion. A. T. Starr (Nov 33, p. 1609)  
Loaded submarine telegraph cable. O. E. Buckley. Bell System Tech Jour 4355 July '25  
Long distance cable circuit for program transmission. A. B. Clark and C. W. Green. Bell system Tech Jour 9:567 July '30  
Long distance telephone circuits in cable. A. B. Clark and H. S. Osborne. Bell Sys Tech Jour 11:520 Oct '32  
New Key West-Havana carrier telephone cable. H. H. Apfel, W. S. Gorton, and R. W. Chesmit. Bell Sys Tech Jour 11:197 Apr '32  
Pulp insulation for telephone cables. H. G. Walker and L. S. Ford. Bell Sys Tech Jour 12:1 Jan '33  
Recent developments in the process of manufacturing lead-covered telephone cable. C. D. Hart. Bell System Tech Jour 7:321 Apr '28  
Simultaneous atmospheric and cable disturbances. M. Baumler. il diags Proc Inst Radio Eng 19:138 Jan '31  
Some recent developments in long distance cables in the U. S. A. B. Clark. Bell System Tech Jour 9:487 July '30  
Testing high-voltage cables with d-c after installation. A. A. Allen. Elec Comm 4:184 Jan '26

*See also*

Transmission Lines

### CAPACITANCE, Capacity

An extension of the method of measuring inductances and capacities. Sylvan Harris. Proc Inst Radio Eng 17:516 Mar '29. Discussion. R. R. Batcher p. 518  
Bridge for capacitance and low power-factor measurements. H. W. Bousman. il diags Gen Elec Rev 35:295 May '32  
Capacitance and power factor of a mica capacitor as measured at the Bureau of standards and the national physical laboratory. H. L. Curtis and others. diags U S Bur Stand Jour Research 8:507 Apr '32  
Capacity of dry electrolytic condensers. P. R. Coursey. Exp Wireless 6:128 Mar '29  
Distributed capacity of single-layer coils. A. J. Palermo., bibliog Proc Inst Radio Eng 22:897 July '34  
Frequency modulation and effects of a periodic capacity variation in a nondissipative oscillatory circuit. W. L. Barrow. Proc Inst Radio Eng 21:1182 Aug '33  
Influence of power factor and capacity on filtering efficiency. Aerovox Res W Oct-Nov '34  
Measurement of small variable capacities at radio-frequencies. W. H. F. Griffiths. diags Exp Wireless 5:452 Aug '28  
Measurement of capacitance in terms of resistance and frequency. J. G. Ferguson and B. W. Bartlett 7:420 July '28  
Measurement of the direct interelectrode capacitance of vacuum tubes. A. V. Loughren and H. W. Parker. Proc Inst Radio Eng 17:957 June '29  
Measurement of the grid-anode capacitance of screen-grid valves. T. I. Jones. bibliog diags Jour Inst Elec Eng 74:589 June '34

**CAPACITANCE**—Continued

Method of measuring the self-capacitance of coils. M. G. Scroggie. diags *Wireless Eng* 10:477 Sept '33

Oscillations of a circuit having a periodically varying capacitance. W. L. Barrow., il diag *Proc Inst Radio Eng* 22:201 Feb '34

Some electrostatic distributions in two dimensions. A. E. H. Love. *Proc London Math Soc* 22:337 Mar '23

Variable-capacitance cylindrical condenser for precision measurement, and a wavemeter for short wavelengths. E. B. Moullin. diags *Jour Inst Elec Eng* 69:507 Apr '31

Variation of the resistance of a radio condenser with capacity and frequency. R. R. Ramsey. *Proc Inst Radio Eng* 18:1226 July '30

*See also*

**Condensers****CARRIER**—Current Transmission

Amplitude, phase and frequency modulation. Hans Roder. *Proc Inst Radio Eng* 19:2145 Dec '31

Analysis of high modulation transmission. G. F. Lampkin. il *Electronics* 1:326 Oct '30

Asymmetric telegraphic spectra. C. R. Burch. *Proc Inst Radio Eng* 19:2191 Dec '31

Better transmissions by zero carrier waves. A. H. Dacy. il diag *Radio N* 6:116\$ Jan '25

Carrier systems on long distance telephone lines. H. A. Affel, C. S. Demarest and C. W. Green. *Bell Sys Tech Jour* 7:564 July '28

Detection of two modulated waves which differ slightly in carrier frequency. Charles B. Aiken. *Bell Sys Tech Jour* 10:1 Jan '31

New field for experimentation; tabulation of received carrier-wave intensity. J. F. Rider. diag 8:1220 Apr '27

Precision methods used in constructing electric wave filters for carrier systems. G. R. Harris. *Bell Sys Tech Jour* 11:264 Apr '32

Production of single sideband for transatlantic radio telephony. R. A. Heising. *Proc Inst Radio Eng* 13:291 June '25

Recent developments in high power broadcast transmitters. A. W. Kispagh. diag *Electronics* 1:136 June '30

Relations of carrier and sidebands in radio transmission. R. V. L. Hartley. *Proc Inst Radio Eng* 2:34 Feb '23

Some possibilities of intelligence transmission when using a limited band of frequencies. F. E. Terman. *Proc Inst Radio Eng* 8:167 Jan '30

**CATHODE-Ray Tubes**

Applications of the cathode ray oscillograph. Ralph R. Batcher. *Proc Inst Radio Eng* 20:1878 Dec '32

Cathode-ray tube—a time divider. (ed) *Electronics* 2:693 June '31

Description of an experimental television system and the kinescope. V. K. Zworykin. *Proc Inst Radio Eng* 21:1655 Dec '33

Investigation of various electrode structures of cathode ray tubes suitable for television reception. Allen B. Du Mont. *Proc Inst Radio Eng* 20:1863 Dec '32

Investigations on gas-filled cathode ray tubes. Manfred von Ardenne. *Proc Inst Radio Eng* 20:1310 Aug '32

Low voltage cathode ray oscillograph. J. B. Johnson. *Bell Sys Tech Jour* 1:142 Nov '22

New method of removing distortions due to the space charge in gas-filled cathode ray oscillograph tubes. Manfred von Ardenne. *Proc Inst Radio Eng* 22:423 Apr '34

The iconoscope—a modern version of the electric eye. V. K. Zworykin. *Proc Inst Radio Eng* 22:16 Jan '34

Theory of electron gun. I. G. Maloff and D. W. Epstein. *Proc Inst Radio Eng* 22:1386 Dec '34

*See also*

**Vacuum Tubes****CAVITY Resonance**

Effect of cavity resonance on the frequency response characteristic of the condenser microphone. Stuart Ballantine. *Proc Inst Radio Eng* 18:1206 July '30

Electronic oscillations. E. C. S. Megaw. *Jour Inst Elec Eng* 72:313 '33; also *Wireless* section I.E.E. 8:59 June '33

Notes on loudspeaker response measurements and some typical response curves. Benjamin Olney. *Proc Inst Radio Eng* 19:1113 July '31

Vacuum tubes as high-frequency oscillators. M. J. Kelly and A. L. Samuel. *Trans A.I.E.E.* 53:1504; also *Bell System Tech Jour* 14:97 Jan '35

**CHANNEL Width**

Amplitude, phase and frequency modulation. Hans Roder. *Proc Inst Radio Eng* 19:2145 Dec '31

Application of printing telegraph to long wave radio circuits. Austin Bailey and T. A. McCann. *Proc Inst Radio Eng* 19:2177 Dec '31

Asymmetric telegraphic spectra. C. R. Burch. *Proc Inst Radio Eng* 19:2191 Dec '31

Second meeting of the International Technical Consulting Committee on radio communication, Copenhagen 1931. *Proc Inst Radio Eng* 19:2219 Dec '31

**CHOKE Coils.** See Inductors**CHOPPER**

Chopper utilizing contacts vibrating in a vacuum. F. G. Kelly. *Proc Inst Radio Eng* 22:672 May '34

**CIRCUIT Analysis**

Analysis of efficient modulation. E. N. Dingley, Jr. il *Electronics* 7:78 Mar '34

Analysis of high modulation transmission. G. F. Lampkin. il *Electronics* 1:326 Oct '30

Balance of power in aerial tuning circuits. F. M. Colebrook. diags *Exp Wireless* 7:129 Mar '30

Circuit for determining heating time of tubes. W. P. Koechel. il *Electronics* 4:293 Sept '32

Circuit relations in radiating systems and applications to antenna problems. P. S. Carter. *Proc Inst Radio Eng* 20:1004 June '32

- Design of power rectifier circuits. D. McDonald. diags Wireless Eng 8:522 Oct '31
- Design of tuned circuits to fulfill predetermined conditions. A. L. M. Sowerby. diag Exp Wireless 8:23 Jan '31
- Development of a circuit for measuring the negative resistance of pliodynatrons. E. N. Dingley, Jr. diag Proc Inst Radio Eng 19:1948 Nov '31
- Detuning method of measuring the high frequency resistance of a circuit. E. B. Moullin. Exp Wireless 7:367 July '30
- Diode detection analysis. C. E. Kilgour and J. M. Glessner. Proc Inst Radio Eng 21:930 July '33
- Diurnal and seasonal performance of high-frequency radio transmission over various long distance circuits. M. L. Prescott. charts Proc Inst Radio Eng 18:1797 Nov '30
- Diversity receiving system of R.C.A. communications, inc., for radiotelegraphy. H. H. Beverage and H. O. Peterson. il diags Proc Inst Radio Eng 19:531 Apr '31
- Ellipse diagram of a lecher wire system. Ataka Hikosaburo. Proc Inst Radio Eng 21:303 Feb '33
- Experimental method of studying transient phenomena. H. H. Turner. il diags Proc Inst Radio Eng 19:268 Feb '31
- Experimental study of regenerative ultra-short-wave oscillators. William H. Wenstrom. Proc Inst Radio Eng 20:113 Jan '32
- Extension of the theory of three-electrode vacuum tube circuits. S. A. Levin and L. C. Peterson. diags Bell System Tech Jour 13:523 Oct '34
- Frequency doubling in a triode vacuum tube circuit. C. E. Smith. diags Proc Inst Radio Eng 21:37 Jan '33
- Frequency modulation and effects of a periodic capacity variation in a nondissipative oscillatory circuit. W. L. Barrow. Proc Inst Radio Eng 21:1182 Aug '33
- Grid-anode capacity of valves; its effect on the associated tuned circuits. M. O. Horgan. diags Wireless Eng 11:464 Sept '34
- Inductance at high frequencies and its relation to the circuit equations. J. G. Brainerd. Proc Inst Radio Eng 22:395 Mar '34
- Instrument for projecting and recording the response curves of electrical circuits. C. L. Fortesque and F. Ralph. diags Jour Inst Elec Eng 68:583 May '30
- Micro radio waves; recent experimental work. G. Marconi. il diags Electrician 110:3 Jan 6 '33
- Negative circuit constants. L. C. Verman. diags Proc Inst Radio Eng 19:676 Apr '31
- Nonlinearity in transducers used in communication. P. Caporale. diag Proc Inst Radio Eng 21:1029 July '33
- Operation of modulators from a physical viewpoint. E. Peterson and F. B. Llewellyn. Proc Inst Radio Eng 18:38 Jan '30
- Operation of tube oscillators on a common load. S. I. Model. Proc Inst Radio Eng 21:1722 Dec '33
- Phase shift in radio transmitters. W. A. Fitch. biblog il diags Proc Inst Radio Eng 20:863 May '32
- Polyphase rectification special connections. R. W. Armstrong. biblog diags Proc Inst Radio Eng 19:78 Jan '31
- Practical analysis of parallel resonance. R. Lee. diags Proc Inst Radio Eng 21:271 Feb '33
- Quartz crystal-controlled oscillator circuits. Harry R. Meahl. Proc Inst Radio Eng 22:732 June '34
- Quartz crystals and their practical application to wireless circuits. A. Hinderlich. diags Exp Wireless 429. Discussion. 36 Jan '27
- Radio frequency circuits. Electrician 112:852; 113:26 June 22-July 6 '34
- Radio receiver characteristics related to the side-band coefficient of the resonance circuit. S. Takamura. diags Proc Inst Radio Eng 20:1774 Nov '32
- Reactance and admittance curves applied to tuned circuits with and without resistance. L. T. Bird. diags Exp Wireless 5:327 July '28
- Regeneration theory and experiment. E. Peterson. J. G. Kreer and L. A. Ware. diags Proc Inst Radio Eng 22:1191 Oct '34
- Relations between the parameters of coupled-circuit theory and transducer theory with some applications. J. G. Brainerd. diags Proc Inst Radio Eng 21:282 Feb '33
- Resonant lines in radio circuits. F. E. Terman. diags Elec Eng 53:1046 July '34
- Selectivity, a simplified mathematical treatment. B. de F. Bayly. diags Proc Inst Radio Eng 19:873 May '31
- Self-bias circuits. E. Williams. diags Wireless Eng 11:600 Nov '34
- Simplified frequency dividing circuit. V. J. Andrew. diag Proc Inst Radio Eng 21:982 July '33
- Tuned-grid tuned-plate circuit using plate-grid capacity for feedback. A derivation of conditions for oscillation. J. B. Dow. Proc Inst Radio Eng 15:397 May '27
- Tuned-grid tuned-plate self-oscillating vacuum tube circuit. J. Warren Wright. Proc Inst Radio Eng 16:1113 Aug '28
- Two-way radio telephone circuits. S. B. Wright and D. Mitchell. diags plans bell System Tech Jour 11:368 '32

#### Coupled Circuits

- An experimental method of studying transient phenomena. H. M. Turner. Proc Inst Radio Eng 19:268 Feb '21
- Amplitude characteristics of coupled circuits having distributed constants. R. King. Proc Inst Radio Eng 21:1142 Aug '33
- Apparatus for exhibiting some properties of coupled circuits. R. C. Clinker and T. H. Kinman. il diags Wireless Eng 9:11 Jan '32
- Combined electromagnetic and electrostatic coupling and some uses of the combination. E. H. Loftin and S. Young White. Proc Inst Radio Eng 14:605 Oct '26
- Coupling and coupling coefficients; editorial. Wireless Eng 9:485 Sept '32
- Effect of coupling between loop and heating oscillator circuits in a superheterodyne receiver. E. H. Ullrich and A. H. Reeves. diags Exp Wireless 4:652 Nov '27

**CIRCUIT Analysis—Coupled Circuits—Continued**

- Method of maximization in circuit calculation. Walter Van B. Roberts. Proc Inst Radio Eng 14:689 Oct '26
- New treatment of electron tube oscillators with feed-back coupling. C. K. Jen. Proc Inst Radio Eng 19:2109 Dec '31
- Notes on the design of resistance-capacity coupled amplifiers. Sylvan Harris. Proc Inst Radio Eng 14:759 Dec '26
- Radio-frequency transformer coupled circuit theory. J. R. Nelson. Proc Inst Radio Eng 19:1233 July '31
- Regeneration in coupled circuits. E. Leon Chaffee. Proc Inst Radio Eng 12:299 June '24. Errata 12:515 Aug '24
- Relations between the parameters of coupled-circuit theory and transducer theory with some applications. J. G. Brainerd. diags Proc Inst Radio Eng 21:282 Feb '33
- Single- and coupled-circuit systems. E. S. Purington. diags Proc Inst Radio Eng 18:983 June '30
- Theoretical comparison of coupled amplifiers with staggered circuits. J. R. Nelson. diags Proc Inst Radio Eng 20:1203 July '32
- Theory and operation of tuned radio-frequency coupling systems. H. A. Wheeler and W. A. MacDonald. il diags Proc Inst Radio Eng 19:738. Discussion. L. A. Hazeltine. 804 May '31
- Transformer coupling circuits for high-frequency amplifiers. A. J. Christopher. Bell Sys Tech Jour 11:608 July '32
- Wavelength characteristics of coupled circuits having distributed constants. R. King. diags Proc Inst Radio Eng 20:1368 Aug '32

*See also***Resonance****Detection**

- An analysis of power detection. Rinaldo de Cola. Proc Inst Radio Eng 21:984 July '33
- Detection of two modulated waves which differ slightly in carrier frequency. C. B. Aiken. Inst Radio Eng Proc 19:120 Jan '31; Same. Bell System Tech Jour 10:1 Jan '31
- Diode detection analysis. C. E. Kilgour and J. M. Glessner. Proc Inst Radio Eng 21:930 July '33
- Linear detection of heterodyne signals. F. E. Terman. Electronics 1:386 Nov '30
- Some notes on grid circuit and diode rectification. J. R. Nelson. diag Proc Inst Radio Eng 30:989 June '32; Discussion. 26:1971 Dec '32
- Suppression of interlocking in first detector circuits. P. W. Klipsch. diags Proc Inst Radio Eng June '34
- Test procedure for detectors with resistance coupled output. G. D. Robinson. diags Proc Inst Radio Eng 19:806 May '31

*See also***Detection, Detectors****Networks**

- Equivalent circuits of an active network. J. G. Brainerd. diags Proc Inst Radio Eng 21:144 Jan '33

- Equivalent electrical networks. N. Howitt. diags Proc Inst Radio Eng 20:1042 June '32
- Generalized analysis of the triode valve equivalent network. F. M. Colebrook. Jour Inst Elec Eng 67:157 Jan '29. Apr '29
- Making normal coordinates coincide with the meshes of an electrical network. E. A. Guillemin. Proc Inst Radio Eng 15:935 Nov '27
- Method for calculating transmission properties of electrical networks consisting of a number of sections. A. Alford. Proc Inst Radio Eng 21:1210 Aug '33
- Network theory. J. G. Brainerd. Proc Inst Radio Eng 20:1660 Oct '32
- On the behaviour of networks with "normalized" meshes. E. A. Guillemin and W. Glendenning. Proc Inst Radio Eng 17:380 Feb '29
- Output networks for radio-frequency power amplifiers. W. L. Everitt. Proc Inst Radio Eng 19:725 May '31
- Piezoelectric resonator and its equivalent network. K. S. Van Dyke. Proc Inst Radio Eng 16:742 June '28. Errata 18:219 Feb '30
- Reactance theorem. Ronald M. Foster. Bell Sys Tech Jour 3:259 Apr '24
- Synthesis of electrical networks. Y. W. Lee. Jour Math and Phys 11:83 '32
- The nonuniform transmission line. A. T. Starr. Proc Inst Elec Eng 20:1052 June '32
- Transmission curves of high-frequency networks. S. J. Model. diags Proc Inst Radio Eng 21:114 Jan '33; Correction. 21:1238 Sept '33
- See also*  
Networks

**Oscillatory Circuits**

- Analysis of a piezo-electric oscillator circuit. L. P. Wheeler. diags Proc Inst Radio Eng 19:627 Apr '31
- Frequency modulation and the effects of a periodic capacity variation in a nondissipative oscillatory circuit. W. L. Barrow, bibliog. Proc Inst Radio Eng 21:1182 Aug '33
- Interdependence of frequency variation and harmonic content, and the problem of constant-frequency oscillators. J. Groszkowski. bibliog diags Proc Inst Radio Eng 21:958 July '33
- Les instruments de musique a oscillations electriques; le clavier a lampes. A. Givélet. il diags Genie Civil 93:272 Sept 22 '28
- Method of measuring the radio-frequency resistance of an oscillatory circuit. H. Linuma. diag Proc Inst Radio Eng 18:537 Mar '30
- New circuit for the production of ultra-short-wave oscillations. H. N. Kozanowski. il diags Proc Inst Radio Eng 30:957 June '32
- Nonlinear theory of electric oscillations. B. van der Pol. diags Proc Inst Radio Eng 22:1051 bibliog p1082-61 Sept '34
- Operating frequency of regenerative oscillatory systems. Hugo Benioff Proc Inst Radio Eng 19:1252 July '31
- Operation of tube oscillators on a common load. S. I. Model. diags Proc Inst Radio Eng 21:1722 Dec '33

- Oscillation in tuned radio-frequency amplifiers. B. J. Thompson. diags Proc Inst Radio Eng 19:421 Mar '31; Discussion. J. R. Nelson, 19:1281 July '31
- Oscillations in the circuit of a strongly damped triode. F. Vecchiacci. il diags Proc Inst Radio Eng 19:856 May '31
- Oscillations of a circuit having a periodically varying capacitance. W. L. Barrow. il diag Proc Inst Radio Eng 22:201 Feb '34
- Performance of piezo-oscillators and the influence of decrement of quartz on the frequency of oscillation. M. Boella. Proc Inst Radio Eng 19:1252 July '31
- Piezo-electric resonator in high-frequency oscillation circuits. Y. Watanabe. diags Proc Inst Radio Eng 18:695 862 Apr-May '30
- Push-pull piezo-electric oscillator circuits. J. R. Harrison. diags Proc Inst Radio Eng 18:95 Jan '30
- Radiometric condenser; the control of oscillating circuits by radiant heat. G. G. Blake. il diags Elec Rev (Lond) 112:43 Jan 13 '33
- Recent development in vacuum tube oscillator circuits. J. B. Dow. diags Proc Inst Radio Eng 19:2095 Dec '31
- Resistance of spark and its effect on the oscillations of electrical oscillators. J. S. Stone. Proc Inst Radio Eng 19:1492 Aug '31
- Short wave limit of vacuum tube oscillators. C. R. England. Proc Inst Radio Eng 15:914 Nov '27
- Some remarks on the multivibrator. Yasusi Watanabe. Proc Inst Radio Eng 18:327 Feb '30
- Suppression of parasitic oscillations in valve circuits. M. Reed. diags Exp Wireless 4:725 Dec '27
- Vacuum tubes as oscillation generators. D. C. Prince and F. B. Vogdes. diags Gen Elec Rev 30:320; 31:97 June, Oct '27
- See also*
- Oscillators
- Resonant Circuits**
- Analysis and design of a chain of resonant circuits. M. Reed. diag Wireless Eng 9:259, 320 May-June '32
- Chains of resonant circuits. E. Mallett. diags Jour Inst Elec Eng 66:968 Sept '28
- Notes on resonance; distinct similarity between electrical and mechanical characteristics. B. J. Shillito. Elec Rev (Lond) 109:768 Nov 20 '31
- Optimum decrement of tuned circuits for the reception of telephony. D. A. Bell. Wireless Eng 10:371 July '33
- Piezoelectric resonator. W. G. Cady. Proc Inst Radio Eng 10:83 Apr '22
- Piezoelectric resonator and its equivalent network. K. S. Van Dyke. Proc Inst Radio Eng 16:742 June '28. Errata 18:219 Feb '30
- Piezoelectric resonance and oscillatory phenomena with flexural vibrations in quartz plates. J. R. Harrison. Proc Inst Radio Eng 15:1040 Dec '27
- Piezo-electric resonator in high-frequency oscillation circuits. Y. Watanabe. diags Proc Inst Radio Eng 18:695 Apr-May '30
- Practical analysis of parallel resonance. R. Lee. diags Proc Inst Radio Eng 21:271 Feb '33; Discussion. 21:875 June '33
- Radio receiver characteristics related to the side-band coefficient of the resonance circuit. S. Takamura. diags Proc Inst Radio Eng 20:1774 Nov '32
- Resonant impedance and effective series resistance of high-frequency parallel resonant circuits. H. Linuma. diag Proc Inst Radio Eng 19:467 Mar '31
- Resonant lines in radio circuits. F. E. Terman. diags Elec Eng 53:1046 July '34
- Simple resonance curves and their modification by valve circuits. E. Mallett. diags Exp Wireless 4:93 Feb '27
- Some aspects of parallel resonant circuits. L. M. Craft. diag Proc Inst Radio Eng 22:1211 Oct '34
- Some general resonance relations and a discussion of Thevenin's theorem. J. G. Brainerd. diags Proc Inst Radio Eng 21:1050 July '33
- See also*
- Resonance
- CLASSIFICATION of Radio Subjects**
- Decimal classification of radio subjects; an extension of the Dewey system. Proc Inst Radio Eng 16:1423 Oct '28; 18:1433 Aug '30
- Master reference system for telephone transmission. W. A. Martin and C. H. G. Gray 8:536 July '29
- COAXIAL Lines. See Transmission Lines**
- COILS. See Inductors**
- COLOR Organ**
- Automatic color organ. Edward B. Patterson. Proc Inst Radio Eng 19:1334 Aug '31
- COMMUNICATION**
- Acres of radio; research laboratories of General electric company at Schenectady, New York. O. E. Dunlap, jr. il Sci Amer 135:178 Sept '26
- AIL; fundamental principles and further illustrations of Ilo. M. Talmey. Wireless Age 12:18 June '25
- AIL; the auxiliary international language problem as related to radio. M. Talmey. il Wireless Age 12:9 Apr '25
- AIL; U. S. Ilo organizations—their function and activities. O. C. Roos. il Wireless Age 12:38 July '25
- Annual report of committee on communication. Jour Amer Inst Eng 46:714 July '27
- Annual report of the A.I.E.E. committee on communication. Jour Amer Inst Elec Eng 48:747 Oct '29
- Cable v. radio. R. Belfort. Elec Rev (Lond) 102:142 Jan 27 '28
- Changes observed in the direction of radio signals at the time of the eclipse January 24, 1925. E. Merrit, C. C. Bidwell and H. J. Reich. Jour Fr Inst 199:485 Apr '25



## COMMUNICATION—Continued

- Communication—past and present. B. Gherardi. *il Elec Eng* 53:747, 750 (bibliog p750-2) May '34
- Communications. O. Lodge. *Jour Inst E E* 69:1379 Nov '31
- Congress of the International scientific radio union, London. *Science* 80:331 Oct 12 '34
- Correlation of some recent advances in wireless. B. van der Pol. *diags Exp Wireless* 3:338 June '26
- Die vom schiff hervorgerufene funkfehlweisung und ihre kompensation. H. Maurer and F. Fischer. *diags Elektrotech Zeit* 46:1901 Dec 17 '25
- Effects of the eclipse on radio. A. P. Lane and F. X. Walsh. *il map Sci Amer* 132:224 Apr '25
- Electrical communication, 1932-33. *Elec Eng* 52:767 Nov '33
- Electrical communications in the Pacific. W. S. Rogers. *Ann Amer Acad* 122:78 Nov. '25
- Engineering acoustics. *Electrician* 110:624 May 12 '33
- Fundamental transmission and reception. E. H. Hansen. *il diags Radio N* 6:1421 Feb '25
- General development of wireless. C. L. Fortescue. *Jour Inst Elec Eng* 65:39 Dec '26
- Influence of conditions in the upper atmosphere upon radio communication. E. Merritt and W. Bostwick. *Sibley Jour* 42:248 Oct '28
- L'Assemblee generale de l'Union radio-scientifique internationale, tenue a Copenhague, du 27 mai au 6 juin 1931. G. Ferrie. *Genie Civil* 99:119 Aug 1 '31
- Le Xe salon de la T.S.F. (Paris, 6-16 septembre 1934). M. Adam. *il diags Genie Civil* 105:285 Sept 29 '34
- Les conferences radioelectriques et telegraphiques de Madrid (3 septembre-9 decembre 1932) et de Lucerne (15 mai-19 juin 1933). J. Cazals de Fabel. *Genie Civil* 103:185 Aug 19 '33
- Observation of freak ranges. L. B. Turner. *diag Electrician* 97:42 July 9 '26; Discussion. 97:100, 176 July 23, Aug 13 '26
- Past and present: a few notes. H. C. L. Holden. *Exp Wireless* 4:160 Mar '27
- Proceedings of the fourth National radio conference and recommendations for regulation of radio. 38p U.S. Dept. of commerce, Washington, D.C. '26
- Radio communication. G. Marconi. *Elec R (Lond)* 99:769 Nov 5 '26
- Radio-communication; past, present and future aspects. C. F. Elwell. *Elec Rev (Lond)* 98:888 June 11 '26
- Radio experts discuss future problems. G. C. B. Rowe. *Radio N* 7:1254 Mar '26
- Radio goes to the North pole. J. L. Reinartz. *il diags Radio N* 7:16 July '25
- Radio with the Rice Amazon expedition. T. S. McCaleb. *il Radio N* 7:588 Nov '25
- Rapid development of world-wide wireless communication. A. C. Lescarboursa. *il Dun's Int Rev* 47:35 Mar '26
- Recent advances in the communication art; annual report of A.I.E.E. committee on communication. *Jour Amer Inst Elec Eng* 44:1304 Dec '25
- Relative value of long and short waves in wireless communication; a discussion before the Radio Society of Great Britain. *Exp Wireless* 3:692 Nov '26
- Report of committee on communication. *Jour Amer Inst Elec Eng* 45:739 Aug '26
- Short-wave radio communications; long-distance achievements by amateurs. *il Elec Rev (Lond)* 97:195 July 31 '25
- Solar eclipse and wireless signals. W. H. Eccles. *Electrician* 94:208 Feb 20 '25
- Some developments in the electrical industry during 1925. J. Liston. *il Gen Elec Rev* 29:39 43 Jan '26
- Sound in its relation to radio. J. P. Minton. *il diags Wireless Age* 11:33 July; 38 Aug; 38 Sept; 12:40 Nov '24; 39 Jan '25
- Subjects of vital interest to power companies discussed at fourth National radio conference. R. N. Conwell. *N E L A Bul* 13:57 Jan '26
- Symposium on correlations of various radio phenomena with solar and terrestrial magnetic and electric activities. *Nat Research Council Bul* 61:127 July '27
- Technical progress in 1925. L. B. Turner. *Electrician* 96:30, 166 Jan 8, Feb 12 '26
- Wireless in the Empire; abstracts. W. H. Eccles. *Engineering* 121:599 May 21 '26
- Wireless measurements during the solar eclipse. *diags Elec Rev (Lond)* 96:214 Feb 6 '25; also in *Electrician* 94:152 Feb 6 '25
- Wireless theories. J. E. Taylor. *Electrician* 95:652 June 5 '25; Discussion. R. A. West. 94:728 June 19 '25

See also

Broadcasting  
Transmission

Radiotelephony

## Interference

- Audio-frequency atmospheric. E. T. Burton and E. M. Boardman. *il Proc Inst Radio Eng* 21:1476 Oct '33, 12:498 Oct '33
- Beneficence of atmospheric. R. A. W. Watt. *il (supp) Jour Roy Aeronautical Soc* 29:62; Discussion 72 Feb '25
- Boston analyzes radio interference; Edison electric illuminating company. J. V. MacDonald. *il Elec W* 97:724 Apr 18 '31
- Directional studies of atmospheric at high frequencies. K. G. Jansky. *il diags Proc Inst Radio Eng* 20:1920 Dec '32
- Effect of background noise in shared channel broadcasting. C. B. Aiken. *diag Bell System Tech Jour* 13:333 July '34
- Electrical disturbances apparently of extra-terrestrial origin. K. G. Jansky. *diags Proc Inst Radio Eng* 21:1387 Oct '33
- Electrical interference in motor car receivers. L. F. Curtis. *il diags Proc Inst Radio Eng* 20:674 Apr '32
- Electrical interference with broadcast reception. G. W. O. Howe. *diags Wireless Eng* 10:645 Dec '33
- Engineering acoustics; interference with radio reception. *Electrician* 110:563 Apr 28 '33
- Estimate of the frequency distribution of atmospheric noise. R. K. Potter. *Proc Inst Radio Eng* 20:1512 Sept '32

- Examination of the causes and nature of the interference to which the wireless communications of the mercantile marine are subjected. J. A. Slee, diag map Jour Inst Elec Eng 74:355 Sept '34; Abstract. Wireless Eng 11:368 July '34; Discussion. Jour Inst Elec Eng 75:375 Sept '34; Wireless Eng 11:369 July '34
- Fluctuation noise in radio receivers. S. Ballantine. diags Proc Inst Radio Eng 18:1377 Aug '30
- Frequency analysis of the heterodyne envelope. A. C. Bartlett. Wireless Eng 11:482 Sept '34
- Frequency analysis of the heterodyne envelope; its relation to problems of interference. F. M. Colebrook. bibliog Wireless Eng 9:195 Apr '32
- Further notes on the detection of two modulated waves which differ slightly in carrier frequency. C. B. Aiken. Proc Inst Radio Eng 20:569 Mar '32
- High-frequency atmospheric noise. R. K. Poiter. Proc Inst Radio Eng 19:1731 Oct '31
- Insulator surface and radio effects. W. A. Hillebrand and C. J. Miller, jr. il diags Elec Eng 53:1213 Aug '34
- Interference from line insulators. W. Jackson. Electrician 103:635 Nov '22 '29
- Interference problems treated individually. il diag Elec West 69:72 Aug '32
- Local reflection of wireless waves from the upper atmosphere. E. V. Appleton and A. F. Barnett. Engineer 139:441 Apr 17 '25
- Locating radio interference with the oscillograph. J. K. McNeely and P. J. Knokle. il Proc Inst Radio Eng 18:1216 July '30
- Long-distance transmission of static impulses. S. W. Dean. il Proc Inst Radio Eng 19:1660 Sept '31
- Measuring radio interference from high-voltage apparatus. C. V. Aggers and W. E. Pakala. il diags Elec Jour 30:504 Dec '33
- Methods for measuring interfering noises. L. Espenschied. Proc Inst Radio Eng 19:1951 Nov '31
- Mutual interference of wireless signals in simultaneous detection. E. V. Appleton and D. Boothariwalla. diag Wireless Eng 9:136 Mar '32; Discussion 9:394 July '32
- Outline of the action of a tone corrected highly selective receiver. Moullin. Proc Inst Radio Eng 21:1252 Sept '33
- Present state of knowledge of atmospheric. R. A. W. Watt. Exp Wireless 5:629 Nov '28
- Radio interference from insulator corona. F. O. McMillan. bibliog il diags Elec Eng 51:3 Jan '32
- Radio interference from line insulators. E. Van Atta and E. L. White. Jour Amer Inst Elec Eng 48:682 Sept '29
- Radio interference; its causes and elimination. J. McCandless. Electrician 109:198 Aug 12 '32
- Radio interference problem and the power company. L. J. Corbett. Jour Amer Inst Elec Eng 1057 Oct '25; Discussion. 44:1348 Dec '25
- Radio-noise meter and its application to the measurement of radio interference. C. R. Barhydt. il diags Gen Elec Rev 36:210 Apr '33
- Radio station interference. C. R. Stoner. Elec Rev (Lond) 109:50 July 10 '31
- Radio-telephony interference. Elec Rev (Lond) 105:924 Nov 22 '29
- Shared frequency broadcasting. C. B. Aiken. il Electronics 2:100 Sept '31
- Simultaneous atmospheric and cable disturbances. M. Baumler. il diags Proc Inst Radio Eng 19:138 Jan '31
- Solar activity and radiotelegraphy. L. W. Austin. bibliog Proc Inst Radio Eng 20:280 Feb '32
- Some earth potential measurements being made in connection with the International polar year. G. C. Southworth. map Proc Inst Radio Eng 21:1740 Dec '33
- Some observations of the behavior of earth currents and their correlation with magnetic disturbances and radio transmission. I. S. Bemis. map Proc Inst Radio Eng 19:1931 Nov '31
- Special device simplifies radio interference tests. C. M. Lindsley. il diag Elec West 64:20 Jan '30
- Statistical energy-frequency spectrum of random disturbances. J. R. Carson. Bell System Tech Jour 10:374 July '31
- Synchronization of broadcast stations WJZ and WBAL. K. A. Norton. Proc Inst Radio Eng 22:1087 Sept '34
- Tracing radio interference. J. H. Hanly. diags Elec W 91:101 Jan 14 '28
- Transmission lines and interference with radio. S. Kruse. Elec W 85:1080 May 23 '25
- Use of field intensity measurements for the determination of broadcast station coverage. C. M. Jansky, jr. and S. L. Bailey. maps Proc Inst Radio Eng 20:62 Jan '32
- Wireless signals; their mutual influence in simultaneous detection. E. V. Appleton and D. W. Fry. diag Electrician 109:83 July 15 '32

#### Interference Elimination

- Adjacent channel interference. I. J. Kaar. il diags Proc Inst Radio Eng 22:295 Mar '34
- Annual report of the A.I.E.E. committee on communication; intercontinental telephony. Elec Eng 50:552 sec 2 July '31
- Asphalt emulsion reduces insulator radio troubles. F. O. McMillan. il Elec W 102:185 Aug 5 '33
- Carrier interference eliminator. W. Baggally. diags Wireless Eng 9:388 July '32
- Compandor—an aid against radio static. R. C. Mathes and S. B. Wright. bibliog il diags Elec Eng 53:860 June '34; Same. Bell System Tech Jour 13:315 July '34
- Correction of radio interference. Elec W 85:622 Mar 21 '25
- Detection by a straight line rectifier of modulated and heterodyne signals. E. B. Moullin. Wireless Eng 9:378 July '32
- Directional reception reduces interference. P. C. Hoernel. il diags Radio N 7:290 Sept '25
- Effective s.w. antenna for reducing interference. A. H. Lynch. il diags Radio N 14:396 Jan '33
- Eliminating between-station noise in tuning A.V.C. receivers. W. A. Smith. il diags Radio N 14:216 Oct '32
- Eliminating radio interference from pin type insulators. G. W. Barrow. diag Elec W 100:787 Dec 10 '32
- Eliminating radio interference from power lines. F. S. Mabry. il diag Elec Jour 27:211 Apr '30

**COMMUNICATION Interference Elim.—Cont'd.**

- Empirical standards for broadcast allocation. A. D. Ring. Proc Inst Radio Eng 20:611 Apr '32
- Engineering acoustics; protection from interference. Electrician 110:590 May 5 '33
- Frequency measurement and control. A. S. Angwin. diags Jour Inst Elec Eng 70:17 Dec '31; Abstracts. Electrician 107:662 Nov 13 '31; Wireless Eng 8:659 Dec '31
- Impedance coil removes radio interference from trolley bus operation; Chicago surface lines. P. E. Murray. il diag Elec Traction 27:187 Apr '31
- Interference of electrical plant with the reception of radio broadcasting. A. Morris. diags Jour Inst Elec Eng 74:245 Mar '34
- Interference meter. G. H. Browning. il diags Radio N 14:29 July '32
- Interference; notes on methods for elimination of interference caused by non-radio devices. E. T. Glas. diags Wireless Eng 9:680 Dec '32
- Interference with broadcast reception; a German attempt to combat the evil. Elec Rev (Lond) 115:80 July 20 '34
- Interference with broadcasting; report on proposed suppression devices. Electrician 111:538 Oct 27 '33
- L'elimination des perturbations electriques genantes pour les usagers de la T.S.F.; arretes ministeriels des 30 et 31 mars 1934. M. Adam. Genie Civil 104:382 Apr 28 '34
- La reglementation pour la protection des emissions de radiodiffusion. J. Cazals de Fabel. Genie Civil 103:644 Dec 30 '33
- New pin insulators free from radio interference. H. H. Brown. diags Elec Eng 52:608 Sept '33
- Overseas radio extensions to wire telephone networks. L. Espenschied and W. Wilson. il fold maps diag Proc Inst Radio Eng 19:282-303 (bibliog p302-3) Feb '31; Bell Sys Tech Jour 10:243 Apr '31
- Radio coordination; Pacific coast electrical association committee report. Elec West 68:366 May 15 '32
- Radio interference insulator characterists. G. I. Gilchrest. il diag Elec Eng 53:899 June '34; Discussion. 53:1539 Nov '34
- Radio interference; recommendations of the International conference held in Paris. Electrician 113:24 July 6 '34
- Radiotelegraph keying transients. R. Lee. il diags Proc Inst Radio Eng 22:213 Feb '34
- Reducing radio interference from commutating machines. C. V. Aggers and W. E. Pakala. diags Elec Jour 30:423 Oct '33
- Reducing transmission line radio interference. B. E. Ellsworth. Elec W 99:199 Jan 23 '32; Discussion. F. B. Doolittle. 99:788 Apr 30 '32
- Required minimum frequency separation between carrier waves of broadcast stations. P. P. Eckersley. diag Proc Inst Radio Eng 21:193 Feb '33
- Rundfunkstorungen und ihre beseitigung. H. Repisch. diags Zeit Ver Deutsch Ing 79:395 Mar 30 '35
- Selective circuits and static interference. J. R. Carson. Jour Amer Inst Elec Eng 43:1145 Dec '24; Discussion. 44:297 Mar '25

- Shielding the radio on private airplanes. P. O'Connor. Aero Digest 24:47 Apr '34
- Suppression of radio interference with capacitor-type filters. C. V. Aggers and W. E. Pakala. Elec Jour 30:337 Aug '33
- Trolley bus radio interference filter. W. E. Palakn and C. V. Aggers. il Transit Jour 79:271 Sept '35
- Trolley omnibuses and wireless interference; special choke coils. il Engineer 154:649 Dec 23 '32
- Using a balanced aerial system to eliminate interference. T. C. McClary. diags Radio N 14:212 Oct '32
- Using filter units in eliminating street-railway interference. T. Deutschmann. il diags Radio N 13:921 May '32
- Voltage complaints on radio sets. J. E. Deines. Elec W 94:1032 Nov 23 '29

*See also*

**Interference****COMMUNICATION, Bands for Transmission In**

- Amplitude, phase and frequency modulation. Hans Roder. Proc Inst Radio Eng 19:2145 Dec '31. Discussion: David G. C. Luck and Hans Roder 20:884 May '32
- Application of printing telegraph to long-wave radio circuits. Austin Bailey and T. A. McCann. Proc Inst Radio Eng 19:2177 Dec '31
- On asymmetric telegraphic spectra. C. R. Burch. Proc Inst Radio Eng 19:2191 Dec '31
- Second meeting of the International Technical Consulting Committee on radio communication. Copenhagen, 1931. Proc Inst Radio Eng 19:2219 Dec '31
- Some possibilities of intelligence transmission when using a limited band of frequencies. F. E. Terman. Proc Inst Radio Eng 18:167 Jan '30

**COMMUNICATION, Beam System**

- Application of radio in air navigation. J. H. Dellingner. il diags Mech Eng 49:29 Jan '27
- Approximate theory of the flat projector (Franklin) aerial used in the Marconi Beam system of wireless telegraphy. J. A. Fleming. Exp Wireless 4:387 July '27
- Beam arrays and transmission lines. T. Walmsley. bibliog diags Jour Inst Elec Eng 69:299 Feb '31;
- Beam wireless telegraphy. N. Wells. il diags Elec Rev (Lond) 102:898, 940 May 25-June 1 '28
- Bodmin and Bridgwater wireless beam stations. il Engineer 142:476 Oct 29 '26; Engineering 122:528 Oct 29 '26; Elec Rev (Lond) 99:709, 749 Oct 29-Nov 5 '26; Electrician 97:498 Oct 29 '26
- Certain factors affecting the gain of directive antennas. G. C. Southworth. diags fold pls Proc Inst Radio Eng 18:1502 (bibliog p1532-5) Sept '30; Same. Bell System Tech Jour 10:63 (bibliog p92-5) Jan '31
- Concentrating short radio waves. N. Wells. diags Elec Rev (Lond) 109:700 Nov 6 '31
- Fractional wave tests. E. M. Walker. il Radio N 13:366 Nov '31
- French system of directional aeralis for transmission on short waves. H. Chireix. il diags Exp Wireless 6:235 May '29
- General considerations of the directivity of beam systems. R. M. Wilmotte. Jour Inst Elec Eng 66:955 Sept '28

- Girdling the earth with a radio beam. O. E. Dunlap, jr. *il Sci Amer* 134:90 Feb '26
- Graphical method for determining the magnitude and phase of the electric field in the neighborhood of an antenna carrying a known distribution of current. J. S. McPetrie. *bibliog diags Jour Inst Elec Eng* 69:290 Feb '31; *Discussion. Eng* 69:636 May '31
- How Marconi beam dodges sunlight. *Sci Amer* 137:271 Sept '27
- Imperial wireless beam communication. *il Elec Rev (Lond)* 98:99 Jan 15 '26; *Electrician* 96:62 Jan 15 '26; *Engineer* 141:78 Jan 15 '26
- Imperial wireless communication with Canada. *Engineer* 142:452 Oct 22 '26
- Indian wireless beam stations. *Engineer* 144:262 Sept 2 '27
- Investigation into the factors controlling the economic design of beam arrays. T. Walmsley. *bibliog diags Jour Inst Elec Eng* 74:543 June '34; *Abstract. Wireless Eng* 11:82 Feb '34; *Discussion. Jour Inst Elec Eng* 74:574 June '34; *Wireless Eng* 11:84 Feb '34
- Marconi series-phase aerial. *diags Engineering* 138:235 Aug 31 '34
- Micro-ray wireless; new short wave system demonstrated by I.T. & T. laboratories. *il diags Electrician* 106:509 Apr 3 '31; *Engineer* 151:413 Apr 10 '31; *Engineering* 131:482 Apr 10 '31; *Elec Rev (Lond)* 108:622 Apr 10 '31
- Possibilities of directional radio transmission. J. H. Dellinger. *Jour Fr Inst* 204:239 Aug '27
- Radio communication on short waves. N. Wells. *il diags Engineering* 122:510 Oct 22 '26
- Scattered radiation from short-wave beams. *Wireless Eng* 8:579 Nov '31
- Short wave beam transmission; stations at Grimsby and Skegness. *il Electrician* 98:319, 378 Mar 25, Apr 8 '27; *Engineering* 123:354 Mar 25 '27; *Engineer* 143:323 Mar 25 '27; *Elec Rev (Lond)* 100:627 Apr 22
- Theoretical investigation of the phase relations in beam systems. R. M. Wilmotte and J. S. McPetrie. *Jour Inst Elec Eng* 66:949 Sept '28
- Transmission and direction of radio waves. E. F. Martin. *diags Jour W Soc Eng* 35:121; 36:266 Apr '30, Oct '31
- Wireless beam. *il diag Engineer* 140:273 Sept 11 '25
- Wireless beam communication between England and India. *il Elec Rev (Lond)* 101:445 Sept 9 '27
- Wireless beam communication between England and South Africa. *il Elec Rev (Lond)* 101:50 July 8 '27
- See also*
- Directional Reception and Transmission
- COMMUNICATION, International**
- Control of international radio communication. G. S. Shoup. *Ann Amer Acad* 142:sup95-104 Mar '29
- Dozen nations regulate his rates; Sosthenes Behn of International telephone and telegraph. E. C. May. *il Nation's Business* 18:93 Mar '30
- Fortschritte im elektrischen nachrichtenwesen im Jahre 1927 in Deutschland. K. W. Wagner. *il maps Zeit Ver Deutsch Ing* 72:743 June 2 '28
- Intercontinental radiotelephone service from the United States. J. J. Pilliod. *il diags map Elec Eng* 50:748 Sept '31
- International significance of unification plans for communication systems. *Pub Util* 5:303 Mar 6 '30
- International telephony: H. S. Osborne. *il maps diag Jour W Soc Eng* 36:148 June '31
- Radio at the North pole. O. E. Dunlap, jr. *il map Sci Amer* 133:93 Aug '25
- Radio in Germany. E. Nesper. *il Radio N* 7:412 Oct '25
- Role of radio in growth of international communication. H. T. Buttner. *fold map Proc Inst Radio Eng* 19:51 Jan '31
- Russia's radio laboratory. W. K. Lebedinsky. *il diags Radio N* 6:1638, 1867 Mar-Apr '25
- U. S. Naval radio development. A. H. Taylor. *Radio N* 6:1479 Feb '25
- Wireless communication in the British Empire. G. S. Shoup. *U S Bur For & Dom Com Trade Information Bul* 551:1 '28
- World battle starts in air and under sea. *Business Week* p 37 Nov 27 '29
- World-wide communication. *Elec W* 97:195 Jan 24 '31
- See also*
- Broadcasting, International
- Radiotelephony, Transoceanic
- COMMUNICATION, Long-Wave**
- Correlation of long-wave radio field intensity with the passage of storms. I. J. W. Shiel. *Proc Inst Radio Eng* 19:1675 Sept '31
- Long-wave radio receiving measurements at the Bureau of standards in 1930. L. W. Austin. *Proc Inst Radio Eng* 19:1766 Oct '31
- Low-frequency radio receiving measurements at the Bureau of standards in 1931 and 1932. E. B. Judson. *Proc Inst Radio Eng* 21:135 Sept '33
- Phase interference phenomena in low-frequency radio transmission. G. W. Kenrick and G. W. Pickard. *diags Proc Inst Radio Eng* 22:344 Mar '34
- Plan for making national broadcast coverage direct. W. H. Wenstrom. *il map Radio N* 12:878, 1049; Aug-Sept '31
- See also*
- Broadcasting
- COMMUNICATION, Marine**
- Annual report of the A.I.E.E. committee on communication; ship-to-shore radio-telephone systems. *Elec Eng* 50:553 sec 2 July '31
- Broadcasting from mid-ocean. *il Sci Amer* 132:421 June '25
- Charting the ice-fields; how life and property is protected by radio-equipped coast guard cutters. S. R. Summers. *il Wireless Age* 12:42 Apr '25
- Coast guard cutters on North Atlantic ice patrol equipped with powerful new radio transmitters. *il Marine Eng* 30:269 May '25
- Coastal wireless; radio telephone apparatus to be installed at eight more stations. *il Electrician* 108:698 May 20 '32
- Communication system of the Radiomarine corporation of America. I. F. Byrnes. *il map Proc Inst Radio Eng* 20:434 Mar '32

**COMMUNICATION, Marine—Continued**

- Effect of shore station location upon signals. R. A. Heising. diags map Proc Inst Radio Eng 20:77 Jan '32
- Improving marine radio service. Marine Rev 55:63 Feb '25
- Les communications radioelectriques avec les navires en mer. Picault. Genie Civil 102:188 Feb 25 '33
- Long distance telephone calls from ships at sea prove use of service. Pub Serv Management 50:157 May '31
- Marine radio telephony. A. R. Boone. il Radio N 13:475 Dec '31
- Mobile radio services. C. H. Butman. Radio N 12:895 Apr '31
- Modern marine wireless equipment. R. Twelvetrees. il Electrician 95:35 July 10 '25
- North Atlantic ship-shore radiotelephone transmission during 1932-1933. C. N. Anderson. Proc Inst Radio Eng 22:1215 Oct '34
- Operation of a ship-shore radiotelephone system. C. N. Anderson and I. E. Lattimer. il diags Proc Inst Radio Eng 20:407 Mar '32
- Radio communication for directing marine equipment. Ry Rev 76:126 Jan 10 '25
- Radio telephone service to ships at sea. W. Wilson and L. Espenschied. il diags Bell System Tech Jour 9:407 July '30
- Ship-and-shore radio telephony. Electrician 104:304 Mar 7 '30
- Ship-to-shore telephone service inaugurated between the Leviathan and the telephones of the Bell System. il Elec W 95:352 Feb 15 '30
- Telephone goes to sea. E. M. Walker. il map Radio N 12:210 Sept '30
- Travelers in mid-ocean can now telephone land. il Dun's Int Rev 55:48 June '30
- Tug boat dispatching. P. P. Hand. il Wireless Age 12:38 Mar '25
- Two-kilowatt U.S. Coast guard radio equipment. I. F. Byrnes. il diags Gen Elec Rev 28:549 Aug '25
- Wireless phone is tested on launch. il Pulp & Pa of Can 35:437 July '34

*See also*

Marine Radio Radiotelephony, Ship-to-Shore

**COMMUNICATION, Short-Wave**

- Application of frequencies above 30,000 kilocycles to communication problems. H. H. Beverage, H. O. Peterson and C. W. Hansell. il diag map Proc Inst Radio Eng 19:1313 Aug '31
- Attenuation of short wireless waves at the surface of the earth. G. H. Munro. diags Jour Inst Elec Eng June '32
- Broadcasting on 7.85 metres; experimental work in Amsterdam. P. J. H. A. Nordlohne. bibliog il Wireless Eng 10:186 Apr '33
- Commercial short wave communication; abstracts. H. M. Dowsett. Electrician 103:429 Oct 11 '29; Elec Rev (Lond) 105:831 Nov 8 '29
- Communication with quasi optical waves. E. Karplus. bibliog il diags Proc Inst Radio Eng 19:1715 Oct '31
- Concerning the influence of the eleven-year solar activity period upon the propagation of waves in wireless telegraphy. H. Plendl. Proc Inst Radio Eng 20:520 (bibliog p538-9) Mar '32
- Cruiser number 1 reports; short wave radio communication between police cars and headquarters. J. H. Crider. il Sci Amer 149:276 Dec '33
- Detection of microwaves. N. Carrara. diag Proc Inst Radio Eng 20:1615 Oct '32
- Determination of the direction of arrival of short radio waves. H. T. Friis, C. B. Feldman and W. M. Sharpless. il diags Proc Inst Radio Eng 22:47 Jan '34
- Der heutige stand der ultrakurzwellen-technik. K. Schnemann. Zeit Ver Deutsch Ing 75:1083 Aug 22 '31
- Development of directive transmitting antennas by R.C.A. communications, inc. P. S. Carter, C. W. Hansell and N. E. Lindenblad. il diags Proc Inst Radio Eng 19:1773 Oct '31
- Directional studies of atmospherics at high frequencies. K. G. Jansky. il diags Proc Inst Radio Eng 20:1920 Dec '32
- Electronic oscillations. E. C. S. Megaw. diags Jour Inst Elec Eng 72:313 (bibliog p324-51; Discussion. 348-52 Apr '33)
- Empire broadcasting; new short wave transmitters at Daventry. il diag Electrician 109:781 Dec 16 '32; Elec Rev (Lond) 111:885 Dec 16 '32; Engineering 134:749 Dec 23 '32
- Essais de liaison radiophonique par ondes ultra-courtes entre Douvres et Calais. il diags Genie Civil 98:449 May 2 '31
- Experimental study of regenerative ultra-short-wave oscillators. W. H. Wenstrom. il diags Proc Inst Radio Eng 20:113 Jan '32
- Experimental transmitting and receiving apparatus for ultra short waves. R. L. Smith-Rose and J. S. McPetrie. diags Exp Wireless 6:532 Oct-Nov '29; Discussion. 6:676; 7:22 Dec '29-Jan '30
- Fading measurements in India on the short-wave station PCJJ (Holland). T. S. Rangachari. diag Exp Wireless 5:501 Sept '28
- Focusing short radio waves. N. Wells. diags Elec Rev (Lond) 109:392 Sept 11 '31
- Fractional wave tests. E. M. Walker. il Radio N 13:366 Nov '31
- Generation of centimetre waves. F. W. Chapman. bibliog diags Wireless Eng 9:500 Sept '32
- High-frequency transmission during the summer of 1930. G. W. Kenrick, A. H. Taylor and L. C. Young. il Proc Inst Radio Eng 19:252 Feb '31
- Historical review of ultra-short-wave progress. W. H. Wenstrom. diags Proc Inst Radio Eng 20:95 Jan '32
- How American communications engineers are conquering fading on short waves by diversity reception. M. G. Crosby. il diag Radio N 15:72 Aug '33
- Ionized gas modulator for short radio waves. E. G. Linder and I. Wolff. diag Proc Inst Radio Eng 22:791 June '34
- Kurzwellenantennen. M. Baumler. bibliog il diags Zeit Ver Deutsch Ing 77:1369 Dec 30 '33; Abstract. Genie Civil 104:339 Apr 14 '34

- La radiotelephonie a ondes courtes a bande laterale unique. P. Letheule. il diags Genie Civil 99:205 Aug 29 '31
- Le Centre d'emission radioelectrique de l'Administration des P.T.T., a Pontoise (S.-et-O.). Veaux. il diag plans Genie Civil 99:541 Nov 28 '31
- Les communications par ondes ultra-courtes entre les aeroportos de Lympne (Angleterre) et de Saint-Inglevert (Pas-de-Calais). il plan Genie Civil 104:128, 157 Feb 10 '34
- Measurement of the angle of incidence at the ground of downcoming short waves from the ionosphere. A. F. Wilkins. bibliog diags Jour Inst Elec Eng 74:582 June '34; Discussion 75:353 Sept '34
- Method of calculation of field strengths in high-frequency radio transmission. S. Namba and T. Tsukada. charts Proc Inst Radio Eng 21:1003 (bibliog p1028) July '33
- Micro radio waves; recent experimental work. G. Marconi. il diags Electrician 110:3 Jan 6 '33
- Micro-ray wireless; new short system demonstrated by I.T. & T. laboratories. il diags Electrician 106:509 Apr 3 '31; Engineer 151:413 Apr 10 '31; Engineering 131:482 Apr 10 '31; Elec Rev (Lond) 108:622 Apr 10 '31; Sci Amer 154:54 July '31
- Multiple signals in short-wave transmission. T. L. Eckersley. Proc Inst Radio Eng 18:106 Jtn '30
- Multiple refraction and reflection of short waves. N. H. Edes. Proc Inst Radio Eng 19:1024 June '31
- Optical behavior of the ground for short radio waves. C. B. Feldman. il Proc Inst Radio Eng 21:764 (bibliog p800-1) June '33
- Production and utilization of micro-rays; permanent link between Lympne, England and St. Inglevert, France. A. G. Clavier. diags Elec Eng 52:739 Nov '33
- Propagation of short radio waves over the North Atlantic. C. R. Burrows. bibliog il Proc Inst Radio Eng 19:1634 Sept '31
- Propagation of waves below ten meters in length. B. Trevor and P. S. Carter. Proc Inst Radio Eng 21:387 Mar '33
- Radiation measurements of a short-wave directive antenna at the Nauen high power radio station. M. Baumler and others. il diags Proc Inst Radio Eng 19:812 May '31
- Radiotelephony with ultra-short waves; abstracts. G. Marconi. Engineering 134:771 Dec 30 '32; Electrician 109:758 Dec 9 '32; Elec Rev (Lond) 111:854 Dec 9 '32
- Radiotelegraphy and radiotelephony on half-meter waves. S. Uda. il diags Proc Inst Radio Eng 18:1047 June '30
- Recent developments in direction-finding apparatus. R. H. Barfield. diags Exp Wireless 7:262. Discussion. 264 May '30
- Resonant lines in radio circuits. F. E. Terman. diags Elec Eng 53:1046 July '34
- Scattered radiation from short-wave beams. Wireless Eng 8:579 Nov '31
- Seventy-five-centimeter radio communication tests. W. D. Hershberger. il Proc Inst Radio Eng 22:870 July '34
- Short-wave radio propagation. N. Wells. diags Elec Rev (Lond) 109:86 July 17 '31
- Short-wave transmission to South America. C. R. Burrows and E. J. Howard. il Proc Inst Radio Eng 21:102 Jan '33; Aug '33
- Single side-band system applied to short-wave telephone links. A. H. Reeves. diags Jour Inst Elec Eng 73:245 Sept '33; Abstracts. Electrician 110:623 May 12 '33; Elec Rev (Lond) 112:631 May 5 '33; Discussion. Jour Inst Elec Eng 73:276 Sept '33
- Some characteristics of short-wave propagation. J. Hollingsworth. il Jour Inst Elec Eng 72:229 Mar '33; Abstracts. Electrician 109:810 Dec 23 '32; Elec Rev (Lond) 111:854 Dec 9 '32; Wireless Eng 10:89 Feb '33; Discussion. Jour Inst Elec Eng 72:249 Mar '33; Wireless Eng 10:90 Feb '33
- Some characteristics of ultra-high-frequency transmission. H. Muyskens and J. D. Kraus. il map Proc Radio Eng 21:1302 Sept '33
- Some details relating to the propagation of very short waves. R. Jouaust. diags Proc Inst Radio Eng 19:479 Mar '31
- Some experiences with short-wave wireless telegraphy. N. H. Edes. diags Proc Inst Radio Eng 18:2011 Dec '30
- Some methods of measuring the frequency of short waves. H. Mogel. il diags Proc Inst Radio Eng 19:195 (bibliog p212-13) Feb '31
- Some problems in short-wave telephone transmission. J. C. Schelleng. il diags Proc Inst Radio Eng 18:913 June '30
- Some effects of topography and ground on short-wave reception. R. K. Potter and H. T. Friis. il map diags Proc Inst Radio Eng 20:699 Apr '32
- Some polarization phenomena of very short radio waves. E. A. Paulin. diags Phys Rev 33:432 Mar '29
- Some results of a study of ultra-short-wave transmission phenomena. C. R. Englund, A. B. Crawford and W. W. Mumford. il maps Proc Inst Radio Eng 21:464 Mar '33
- Studies in radio transmission. T. L. Eckersley. il diags Jour Inst Elec Eng 71:405 Sept '32; Abstracts. Wireless Eng 9:331 June '32; Elec Rev (Lond) 110:455 Mar 25 '32; Discussion. Jour Inst Elec Eng 71:454 Sept '32; Wireless Eng 9:333 June '32
- Study of the propagation of wavelengths between three and eight meters. L. F. Jones. il diags Proc Inst Radio Eng 21:349 Mar '33
- Transmission characteristics of a short-wave telephone circuit. R. K. Potter. il diags Proc Inst Radio Eng 18:581 Apr '30
- Transmission and reception below ten meters. J. Millen. il diags Radio N 13:1009 June '32
- Transmission and reception of ultra-short waves that are modulated by several modulated high frequencies. M. von Ardenne. il diags Proc Inst Radio Eng 20:933 June '32
- Transmission curves of high-frequency networks. S. J. Model. diags Proc Inst Radio Eng 21:114 Jan '33
- Transmission lines for short-wave radio systems. E. J. Sterba and C. B. Feldman. il diags Bell System Tech Jour 11:411 July '32; Same. Proc Inst Radio Eng 20:1163 July '32

**COMMUNICATION, Short-Wave—Continued**

- Transoceanic reception of high-frequency telephone signals. R. M. Morris and W. A. R. Brown. map Proc Inst Radio Eng 21:63 Jan '33
- Transoceanic telephone service—short wave equipment. A. A. Oswald. il diags Bell System Tech Jour 9:270 Apr '30
- Transoceanic telephone service—short-wave transmission. R. Bown. il diag map Bell System Tech Jour 9:258 Apr '30
- Ultra-short wave propagation. J. C. Schelleng, C. R. Burrows and E. B. Ferrell. bibliog il map Proc Inst Radio Eng Jour 21:427 Mar '33; Same. Bell System Tech Jour 12:125 Apr '33
- Ultra-short radio waves; refraction in the lower atmosphere. R. L. Smith-Rose and J. S. McPetrie. bibliog Wireless Eng 11:3 Jan '34
- Ultra short radio waves. W. H. Moore. bibliog diags Jour Fr Inst 209:473 Apr '30
- Ultra-short waves for limited range communication. W. J. Brown. il diags Proc Inst Radio Eng 18:1129 July '30

*See also*

Propagation of Waves  
Ultra-High-Frequencies

**COMMUNICATION, Underground**

- Experiments in underground communication through earth strata. L. C. Ilsley, H. B. Freeman and D. H. Zellers. il diags plans U S Bur Mines Tech Pa 433:11 '28; Abstract. Engineering 127:445 Apr 12 '29
- Radio in the cave disaster. C. W. Williams. il Radio N 6:2073 May '25
- Underground radio. W. H. M. Watson. il diags plan Radio N 7:301 Sept '25
- Underground radio. S. R. Winters. il Radio N 6:1868 Apr '25

**COMMUNICATION Standards**

- Empirical standards for broadcast allocation. A. D. Ring. Proc Inst Radio Eng 20:611 Apr '32
- Frequency standards; programme of transmissions from the National physical laboratory. Electrician 109:482 Oct 14 '32
- Precision tuning fork frequency standard. E. Norrman. bibliog il diags Proc Inst Radio Eng 20:1715 Nov '32
- Radio transmissions of standard frequency. Proc Inst Radio Eng 20:1684 Nov '32
- Radio transmissions of standard frequencies. Proc Inst Radio Eng 21:516 Apr '33

*See also*

Standards

**COMPASS, Radio.** See Direction Finders**CONDENSERS**

- Absorption in electric condensers. R. E. W. Madison. Jour Fr Inst 214:327 Sept '32
- Accuracy and calibration permanence of variable air condensers for precision wave-meters. W. H. F. Griffiths. Exp Wireless 5:17 Jan '28
- Accuracy of variable air condensers for wave-meters. W. H. F. Griffiths. Exp Wireless 4:754 Dec '27
- Analysis of air condenser loss resistance. W. Jackson. diag Proc Inst Radio Eng 22:957 Aug '34
- Analysis of condenser resistance. S. Harris. il Radio N 6:1668 Mar '25
- Automatically operated capacitor equipment for power-factor correction; A. P. Green fire brick company. F. Bernick and H. S. Woods. il diag Gen Elec Rev 35:381 July '32
- By-pass condenser production test equipment. F. W. Stellwagon. il Electronics 2:504 Feb '31
- Calibration permanence and overall accuracy of the series-gap precision variable air condenser. W. H. F. Griffiths. diags Exp Wireless 6:23, 77 Jan-Feb '29
- Comparison of the power factors of condensers. R. M. Wilmotte. diags Exp Wireless 6:656 Dec '29
- Condenser bridge for factory inspection of variable condensers. R. A. Braden and H. C. Forbes. il diags Proc Inst Radio Eng 18:123 Jan '30
- Coupling condenser in audio amplifiers. Aerovox Res W Jan '28
- Coupling condensers provide relay currents. A. V. Joslin. il diag Elec West 67:290 Dec '31; Same cond. Elec W 99:145 Jan 16 '32
- Decoupling efficiency. W. A. Barclay. Wireless Eng 10:307 June '33; Discussion. 10:612; 11:129 Nov '33, Mar '34
- Developments in design of small-size electrolytic condensers. Aerovox Res W Nov '33
- Dry electrochemical condensers. P. E. Edelman. diags Proc Inst Radio Eng 18:1366 Aug '30
- Electrolytic condensers. T. A. Smith and J. Millen. diags Radio N 7:808 Dec '25
- Electrolytic condensers for condenser-start type motors. Aerovox Res W July '34
- Electrolytic condensers for radio use. F. W. Godsey, jr. il Electronics 2:596 Apr '31
- Electrolytic condensers produced in aluminum by impact extrusion. il Iron-Age 130:220 Aug 11 '32
- Equivalent circuits of imperfect condensers. C. L. Dawes and W. M. Goodhue. Electric Eng 50:676 Aug '31
- Factors which must be considered in using filter condensers. Aerovox Res W Jan '31
- Flash-arc in high-power valves; the Rocky Point effect. B. S. Gossling. diags Jour Inst Elec Eng 71:460-83 Sept '32
- Gang capacitor testing device. Virgil M. Graham. Proc Inst Radio Eng 16:1401 Oct '28
- How to test condenser capacities. Aerovox Res W Feb-Mar '29
- Important features in design of high voltage transmitting filter condensers. Aerovox Res W Aug '34
- Life test for condensers. W. H. Houck. Electronics 2:114 Sept '31
- Losses in variable air condensers. W. H. F. Griffiths. Exp Wireless 8:124 Mar '31
- Mica condensers in high-frequency circuits. I. G. Maloff. Proc Inst Radio Eng 20:647 Apr '32
- Midget condensers. D. Lewis. il diags Radio N 12:899 Apr '31

- Modern condenser design introduced at La Fresa. R. B. Pollock. *il Elec West* 68:191 Apr '32
- Oscillator condenser design for single control superheterodynes. Z. Bouck. *il diag Radio N* 13:132 Aug '31
- Proper condenser ratings important for trouble-free operation. Bert E. Smith. *Aerovox Res W* Apr '28
- Simplified S.L.F. and S.L.W. design. O. C. Roos. *Proc Inst Radio Eng* 14:773 Dec '26; Discussion. R. R. Batcher, O. C. Roos, and Paul M. Mueller. 15:319 Apr '27
- Straight line condensers. S. R. Winters. *il Wireless Age* 12:24 Apr '25
- Straight-line frequency variable condenser. Henry C. Forbes. *Proc Inst Radio Eng* 13:507 Aug '25
- Straight-line frequency condensers. S. Harris. *il diags Radio N* 7:188, 308 Aug-Sept '25
- Systemizing manufacture; Western electric company condenser department. C. A. Purdy. *il front Jour W Soc Eng* 37:181 '32
- Use of electrolytic condensers in B power supply devices. R. U. Clark. *diags Radio N* 11:176 Aug '29
- Uses of concentrically-wound electrolytic condensers. *Aerovox Res W* Mar '34
- Variation of the resistance of a radio condenser with capacity and frequency. R. R. Ramsey. *Proc Inst Radio Eng* 18:1226 July '30
- What is the correct characteristic for a variable condenser? K. E. Edgeworth. *Exp Wireless* 5:148 Mar '28

*See also*

Capacitance

CROSS Modulation. *See* Modulation, Cross

COUPLING. *See* Circuit Analysis

CRYSTAL Oscillators. *See* Oscillators, Crystal

CRYSTALS, Piezoelectric

- Application of quartz plates to radio transmitters. O. M. Hovgaard. *Proc Inst Radio Eng* 20:767 May '32
- Bibliography on piezo-electricity. W. G. Cady. *Proc Inst Radio Eng* 16:521 Apr '28
- Electrical wave filters employing quartz crystals as elements. W. P. Mason. *Bell Sys Tech Jour* 13:405 July '34
- High precision standard of frequency. W. A. Marrison. *Proc Inst Radio Eng* 17:1103 July '29
- Modes of vibration of piezo-electric crystals. N. H. Williams. *Proc Inst Radio Eng* 21:990 July '33
- Mounting quartz crystal oscillators. R. C. Hitchcock. *Proc Inst Radio Eng* 15:902 Nov '27
- New piezo oscillations with quartz cylinders cut along the optical axis. August Hund and R. B. Wright. *Jour Research* 4:383 Mar '30
- Note on the piezoelectric quartz oscillating crystal regarded from the principle of similitude. Isaac Koga. *Proc Inst Radio Eng* 19:1022 June '31
- Notes on quartz plates, air gap effect, and audio-frequency generation. August Hund. *Proc Inst Radio Eng* 16:1072 Aug '28

- Observation on modes of vibration and temperature coefficient of quartz crystal plates. F. R. Lack. *Proc Inst Radio Eng* 17:1123 July '29; Same. *Bell Sys Tech Jour* 8:515 July '29
- Piezo electric crystal resonators and crystal oscillators applied to the precision calibration of wavemeters. *Proc Amer Acad* 59:81 May '23
- Piezo-electric effect and its application to wireless. C. W. Goyder. *il diags Exp Wireless* 3:165 Mar '26
- Piezoelectric resonance and oscillatory phenomena with flexural vibrations in quartz plates. J. R. Harrison. *Proc Inst Radio Eng* 15:1040 Dec '27
- Piezo-electric resonator. W. G. Cady. *Proc Inst Radio Eng* 10:83 Apr '22
- Piezoelectric stabilization of high frequencies. Harold Osterberg and John W. Cookson. *Rev Sci Inst* 5:281 Aug '34
- Quartz crystals and their practical application to wireless circuits. A. Hinderlich. *diags Exp Wireless* 4:29; Discussion. 36-41 Jan '27
- Quartz plate mountings and temperature control for piezo oscillators. Vincent E. Heaton and E. G. Lapham. *Proc Inst Radio Eng* 20:261 Feb '32
- Some improvements in quartz crystals circuit elements. F. R. Lack, G. W. Willard and I. E. Fair. *Bell Sys Tech Jour* 13:453 July '34
- Temperature control for frequency standards. James K. Clapp. *Proc Inst Radio Eng* 18:2003 Dec '30
- Thermostat design for frequency standard. W. A. Marrison. *Proc Inst Radio Eng* 16:976 July '28

*See also*

Oscillators, Crystal

## D

### DETECTION

- Amplification and detection of ultra-short electric waves. Kinjiro Okabe. *Proc Inst Radio Eng* 18:1028 June '30
- Analysis of power detection. Rinaldo De Cola. *Proc Inst Radio Eng* 21:984 July '33
- Apparent demodulation. E. Mallett. *diags Wireless Eng* 9:248 May '32
- Copper-oxide rectifier used for radio detection and automatic volume control. L. O. Grondahl and W. P. Place. *il diags Proc Inst Radio Eng* 20:1599 Oct '32
- Demodulation. W. B. Lewis. *Wireless Eng* 9:629 Nov '32
- Detection at high signal voltages; plate rectification with the high vacuum triode. Stuart Ballantine. *Proc Inst Radio Eng* 17:1153 July '29
- Detection by a straight line rectifier of modulated and heterodyne signals. E. B. Moullin. *Wireless Eng* 9:378 July '32
- Detection by grid-rectification with the high vacuum triode. Stuart Ballantine. *Proc Inst Radio Eng* 16:593 May '28
- Detection characteristics of three-element vacuum tubes. Frederick Emmons Terman and Thomas M. Googin. *Proc Inst Radio Eng* 17:149 Jan '29
- Detection of microwaves. N. Carrara. *diag Proc Inst Radio Eng* 20:1615 Oct '32



**DETECTION—Continued**

- Detection of two modulated waves which differ slightly in carrier frequency. C. B. Aiken. *Bell System Tech Jour* 10:1 Jan '31
- Diode detection analysis. C. E. Kilgour and J. M. Glessner. *diag Proc Inst Radio Eng* 21:930 July '33
- Distortionless reception of a modulated wave and its relation to selectivity. Frederick K. Vreeland. *Proc Inst Radio Eng* 16:255 Mar '28
- Further notes on the detection of two modulated waves which differ slightly in carrier frequency. C. B. Aiken. *Proc Inst Radio Eng* 20:569 Mar '32
- Grid circuit power rectification. James R. Nelson. *Proc Inst Radio Eng* 19:489 Mar '31
- High level automatic or self-bias detection. J. R. Nelson. *Electronics* 2:14 July '31
- High level plate circuit rectification. J. R. Nelson. *il Electronics* 2:550 Mar '31
- Numerical estimation of grid rectification for small signal amplitudes. W. A. Barclay. *Exp Wireless* 6:596 Nov '29
- Power detection characteristics of pentode tubes. H. A. Brown and C. T. Knipp. *il Electronics* 4:126 Apr '32
- Rectification of radio signals by a thermionic tube containing alkali metal vapor. K. H. Kingdon and E. E. Charlton. *Phys Rev* 33:998 June '29
- Rectification of small radiofrequency potential differences by means of triode valves. *Exp Wireless* and *Wireless Eng* 2:946 Dec '25
- Small signal detection. E. L. Chaffee. *il Electronics* 2:641 May '31
- Some methods of detection—and their respective merits. C. W. Palmer. *diags Radio N* 10:916 Apr '29
- Some notes on demodulation. H. Roder. *diag Proc Inst Radio Eng* 20:1946 Dec '32
- Some notes on grid circuit and diode rectification. J. R. Nelson. *Proc Inst Radio Eng* 20:989 June '32; Discussion. Frederick Emmons Terman and J. R. Nelson 16:1971 Dec '32
- Some principles of grid-leak, grid-condenser detection. Frederick Emmons Terman. *Proc Inst Radio Eng* 16:1384 Oct '28; Discussion. W. F. Polydoroff 17:752 Mar '29
- Some properties of grid leak power detection. F. E. Terman and N. R. Morgan. *biblog Proc Inst Radio Eng* 18:2160 Dec '30
- Straight-line detection with diodes. F. F. Roberts and F. C. Williams. *diags Jour Inst Elec Eng* 75:379 Sept '34
- Superposition of two modulated radio frequencies. H. Roder. *Proc Inst Radio Eng* 20:1962 Dec '32
- Theoretical and experimental investigation of detection for small signals. E. L. Chaffee and G. H. Browning. *Proc Inst Radio Eng* 15:113 Feb '27
- Theory of detection in a high vacuum thermionic tube. L. P. Smith. *Proc Inst Radio Eng* 14:649 Oct '26
- Theory of the detection of two modulated waves by a linear rectifier. C. B. Aiken. *biblog Proc Inst Radio Eng* 21:601 Apr '33
- Weak signal demodulation by a strong carrier. E. V. Appleton. *il Electronics* 4:171 May '32

**DETECTORS**

- Copper-oxide rectifier used for radio detection and automatic volume control. L. O. Grondahl and W. P. Place. *Proc Inst Radio Eng* 20:1599 Oct '32
- Conversion detectors. M. J. O. Strutt. *Proc Inst Radio Eng* 22:981 Aug '34
- Description of the Wunderlich tube. F. E. Terman. *Proc Inst Radio Eng* 12:25 May '32
- Detection characteristics of three-element tubes. F. E. Terman and T. M. Googin. *Proc Inst Radio Eng* 17:149 Jan '29
- Detector characteristics. P. P. Eckersley. *diag Wireless Eng* 11:72 Feb '34
- Detector distortion. K. W. Jarvis. *il Electronics* 7:386 Dec '34
- Detector-output tube systems. J. R. Nelson. *il Electronics* 6:94 Apr '33
- Direct-coupled detector and amplifiers with automatic grid-bias. Edward H. Loftin and S. Young White. *Proc Inst Radio Eng* 16:281 Mar '28. Discussion. Henry Shore. 16:286 Mar '28
- Effect of anode-grid capacity in detectors and i-f amplifiers. W. B. Medlam. *diags Exp Wireless* 5:545 Oct '28
- Graphical solution of detector problems. G. S. C. Lucas. *diags Wireless Eng* 9:202, 253 Apr-May '32
- New idea for a detector valve. *Exp Wireless* 5:515 Sept '28
- Novel valve detector. H. J. Neill. *diag Exp Wireless* 5:74 Feb '28
- Positive-grid valve as a detector. H. E. Hollmann. *diags Wireless Eng* 11:245, 309 May-June '34
- Power detectors produce superior results in radio receivers. G. L. Beers. *Elec Jour* 26:413 Sept '29
- Quality detectors; a survey of rectification. W. Greenwood and S. J. Preston. *diags Wireless Eng* 8:648 Dec '31
- Regenerative detectors. H. A. Robinson. *QST* 17:26 Feb '33
- Retarding-field tube as a detector for any carrier frequency. H. E. Hollmann. *biblog il diags Proc Inst Radio Eng* 32:630 May '34
- Screened grid pentode detectors. F. R. W. Stratford. *diags Wireless Eng* 11:484 Sept '34
- Suppression of interlocking in first detector circuits. P. W. Klipsch. *diags Proc Inst Radio Eng* 22:699 June '34
- Test procedure for detectors with resistance coupled output. G. D. Robinson. *diags Proc Inst Radio Eng* 19:806 May '31
- The rectifying detector. F. M. Colebrook. *Exp Wireless* 2:330 Mar '25

**DIELECTRIC Constants**

- Dielectric constant measurement. *Electronics* 4:264 Aug '32
- Dielectric constant of air at high pressures. J. W. Broxon. *Phys Rev* 37:1338 May 15 '31
- Dielectric constant of liquids under high pressure. W. E. Danforth, jr. *diag Phys Rev* 38:1224 Sept 15 '31
- Dielectric constant of water as determined by a resonance method. E. P. Linton and O. Maass. *diag Amer Chem Soc Jour* 53:957 Mar '31
- Electrical constants of dielectrics for radio frequency currents. R. V. Guthrie, jr. *Proc Inst Radio Eng* 12:841 Dec '24

- Intramolecular field and the dielectric constant. F. G. Keyes and J. G. Kirkwood. *Phys Rev* 37:202 Jan 15 '31
- Measurements of the dielectric constants of conducting media. J. Wyman, jr. *diags Phys Rev* 38:623 Mar 15 '30
- Molecular association. J. A. Wehrle. *diags Phys Rev* 37:1135 May 1 '31
- Reflection of electromagnetic waves at ionized media with variable conductivity and dielectric constant. G. J. Elias. *Proc Inst Radio Eng* 19:891 May '31
- Recent dielectric constant theory and its relation to problems of electrical insulation. J. W. Williams. *diags Jour Fr Inst* 211:581 May '31
- Some electrical properties of foreign and domestic micas and the effect of elevated temperatures on micas. A. B. Lewis, E. L. Hall and F. R. Caldwell. *diags U S Bur Stand Jour Research* 7:403 Aug '31
- Structure of molecules as revealed by dielectric constant data. J. W. Williams. *Chem Rev* 6:589 Dec '29
- Variation of dielectric constant with frequency. J. H. L. Johnstone and J. W. Williams. *diag Phys Rev* 34:1483 Dec 1 '29
- DIELECTRIC Losses**
- Behavior of dielectrics; a study of the anomalous charging current and the variation of dielectric energy loss and capacitance with frequency in solid dielectrics. R. R. Benedict. *il diag Jour Amer Inst Elec Eng* 49:221 Mar '30
- Complex nature of dielectric absorption and dielectric loss. E. J. Murphy and H. H. Lowry. *Jour Phys Chem* 34:598 Mar '30
- Dispositif pour la mesure des pertes dielectriques dans les matieres isolantes et les isolateurs. *Genie Civil* 96:559 June 7 '30
- High frequency characteristics of glass. C. F. Hill. *Elec Jour* 26:586 Dec '29
- Losses in liquid dielectrics at radio frequencies. W. Jackson. *diag Wireless Eng* 9:14 Jan '32
- Mechanism of dielectric loss and breakdown. J. B. Whitehead. *Elec W* 94:1083 Nov 30 '29
- Polar molecules, their contribution to energy loss in dielectrics. F. Hamburger, jr. *Phys Rev* 35:1119 May 1 '30
- Surface leakage of pyrex glass. W. A. Yager and S. O. Morgan. *diag Jour Phys Chem* 35:2026 July '31
- Variations with temperature and frequency of dielectric loss in a viscous, mineral, insulating oil. H. H. Race. *il diags Phys Rev* 37:430 Feb 15 '31
- DIELECTRICS**
- Behavior of dielectrics; a study of the anomalous charging current and the variation of dielectric energy loss and capacitance with frequency in solid dielectrics. R. R. Benedict. *il diag Jour Inst Elec Eng* 49:221 Mar '30
- Breakdown voltage as a function of electrode area and dielectric homogeneity. M. C. Holmes. *Jour Fr Inst* 211:777 June '31
- Chemical research in the field of dielectrics. F. M. Clark. *Elec Eng* 50:28 Jan '31
- Complex nature of dielectric absorption and dielectric loss. E. J. Murphy and H. H. Lowry. *Jour Phys Chem* 34:598 Mar '30
- Determination of dielectric properties at very high frequencies. J. G. Chaffee. *Proc Inst Radio Eng* 22:1009 Aug '34
- Electron oscillations without tuned circuits. W. H. Moore. *Proc Inst Radio Eng* 22:1021 Aug '34
- Ionization currents and the breakdown of insulation. J. J. Torok and F. D. Fielder. *bibliog il Jour Amer Inst Elec Eng* 49:46 Jan '30
- Liquid dielectrics; a method of measuring the specific a.c. resistances. D. H. Black. *diag Elec Rev (Lond)* 107:135 July 25 '30
- Measuring dielectric fields. M. R. Mulhotra. *il Elec W* 95:201 Jan 25 '30
- Modern theories of dielectrics. W. N. Stoops. *Elec Jour* 28:183 Mar '31
- Permittivity and power factor of micas. C. Dannatt and S. E. Goodall. *diags Inst Elec Eng Jour* 69:490 Apr '31
- Photography of dielectric fields. L. L. Carter. *il Elec W* 95:397 Feb 22 '30
- Rochelle salt as a dielectric. C. B. Sawyer and C. H. Tower. *il Phys Rev* 35:269 Feb 1 '30
- Scattering of light by dielectrics of small particle size. G. F. A. Stutz. *il diags Jour Fr Inst* 210:67 July '30
- Theory of thermal breakdown of solid dielectrics. P. H. Moon. *Elec Eng* 50:676 Aug '31
- Thermal resistivity of solid dielectrics. *bibliog diags Jour Inst Elec Eng* 68:1313 Oct '30
- Three mechanisms of breakdown obtained on glass by elimination of edge effect. P. H. Moon and A. S. Norcross. *bibliog diags Jour Fr Inst* 208:705 Dec '29
- Three regions of dielectric breakdown. P. H. Moon and A. S. Norcross. *diag Jour Amer Inst Elec Eng* 49:125 Feb '30
- X-ray studies of motions of molecules in dielectrics under electric stress. R. D. Bennett. *il diags Jour Fr Inst* 211:481 Apr '31
- See also*
- Insulation, Insulators
- DIRECTION Finders**
- Development and application of marine radio direction finding equipment by the U. S. Coast Guard. C. T. Solt. *Proc Inst Radio Eng* 20:228 Feb '32
- Electrical aids to navigation. R. H. Marriott. *il Jour Amer Inst Elec Eng* 48:196 Mar '29
- Errors in direction finding calibrations in steel ships due to shape and orientation of the transmitting antenna. J. F. Coales. *Jour Inst Elec Eng* 73:280 '33; also wireless section I.E.E. 8:127 Sept '33
- Instantaneous direction reading radio goniometer. R. A. Watson-Watt and J. F. Herd. *Jour Inst Elec Eng* 64:611 '26; also *Exp Wireless and Wireless Eng* 3:239 Apr '26
- Kaess visual indicating radio compass. *il Marine Eng* 35:615 Nov '30
- Les procedes modernes de navigation aerienne; le compas Morel. F. Collin. *diags Genie Civil* 86:312 Mar 28 '25
- Radio compass developed in H. M. signal school. C. E. Horton and C. Crampton. *Jour Inst Elec Eng* 73:284 Sept '33

**DIRECTION Finders—Continued**

- Method for finding distance of vessel from source of radio. *Electronics* 5:260 Aug '32
- Marconi marine radio direction finder. H. de A. Donisthorpe. *Proc Inst Radio Eng* 13:29 Feb '25
- Naval radio compass stations instructions. In commercial and government radio stations of the United States. p102-6 U. S. Dept. of commerce, Bur of navigation, Washington '25
- New pioneer earth inductor compass. *il Aviation* 18:643 June 8 '25
- Practical correction of a wireless direction-finder for deviations due to the metal work of a ship. C. E. Horton. *diags Jour Inst Elec Eng* 69:623 May '31
- Radio compass bearings. F. H. Walker. *il diag Wireless Age* 12:57 Mar '25
- Radio direction finder for use on aircraft. W. S. Hinman, jr. *Bur Stand Jour Research* 11:733 Dec '33
- Radio direction finding by transmission and reception. R. L. Smith-Rose. *Proc Inst Radio Eng* 17:425 Mar '29
- Shielded loops. R. H. Barfield. *Jour Inst Elec Eng* 62:249 '24
- Shipboard observations with a cathode-ray direction finder between England and Australia. G. H. Munro and L. G. H. Huxley. *Jour Inst Elec Eng* 71:488 '32
- Vessels equipped with a radio compass. *Radio Serv Bul* 127:10 Oct '27
- Wireless direction finding. R. Keen. *Iliffe & Sons, Ltd. London*. 1938
- See also*  
Aircraft Beacons  
Antennas, Directional

**DIRECTIONAL Antennas. See Antennas, Directional****DIRECTIONAL Reception and Transmission**

- Diversity telephone receiving system of R. C. A. Communications, Inc. for radiotelegraphy. H. O. Peterson, H. H. Beverage and J. B. Moore. *Proc Inst Radio Eng* 19:562 Apr '31
- East-West and north-south attenuations of long radio waves on the Pacific. Eitaro Yokoyama and Tomozo Nakai. *Proc Inst Radio Eng* 17:1240 July '29
- New directional receiving system. H. T. Frils. *Proc Inst Radio Eng* 13:685 Dec '25
- New phenomenon in sunset radio direction variations. L. W. Austin. *Proc Inst Radio Eng* 13:409 Aug '25. Discussion. R. L. Smith-Rose, R. H. Barfield, and L. W. Austin p 781
- Polarization of radio waves. Greenleaf W. Pickard. *Proc Inst Radio Eng* 14:205 Apr '26. Discussion. E. W. Alexanderson. p391, June '26
- Study of radio direction finding. R. L. Smith-Rose. *Engineering* 124:587 Nov 4 '27
- Suggestion for experiments on apparent radio direction variations. L. W. Austin. *Proc Inst Radio Eng* 13:3 Feb '25
- Theoretical and practical aspects of directional transmitting systems. E. J. Sterbo. *Proc Inst Radio Eng* 19:1184 July '31
- See also*  
Direction Finders

**DISTORTION**

- Amplitude, phase, and frequency modulation. Hans Roder. *Proc Inst Radio Eng* 19:2145 Dec '31. Discussion: David G. C. Luck and Hans Roder (May '32, p. 884)
- Analysis of distortion in resistance amplification. E. B. Moulin. *diag Exp Wireless* 8:118 Mar '31
- Calculation of output and distortion in symmetrical output systems. J. R. Nelson. *Proc Inst Radio Eng* 20:1763 Nov '32
- Can perfect loud-speaker reproduction ever be attained by the use of electrical filters? C. M. R. Balbi. *Elec R (Lond)* 99:50 July 9 '26; *Abstract. Genie Civil* 89:222 Sept. 11 '26
- Class B amplifier distortion. C. L. Farrar. *il Electronics* 4:196 June '32
- Cross modulation in R-F amplifiers. S. Harris. *diags Proc Inst Radio Eng* 18:350 Feb '30
- Detector distortion. K. W. Jarvis. *il Electronics* 7:386 Dec '34
- Distortion cancellation in audio amplifiers. W. Baggally. *diags Wireless Eng* 10:413 Aug '33
- Distortion correction in electrical circuits with constant resistance recurrent networks. Otto J. Zobel. *Bell Sys Tech Jour* 7:438 July '28
- Distortion induced by the use of a transformer; coupling class B amplifiers into power amplifiers for high modulation. C. L. Farrar. *Arkansas U Eng Exp Sta Bul* 10:1 '32
- Distortion in screen-grid valves, with special reference to the variable conductance type. R. O. Carter. *Wireless Eng* 9:123 Mar '32
- Distortion in valve characteristics. G. S. C. Lucas. *Exp Wireless* 8:595 Nov '31
- Distortion in wireless telephony, and related applications of the cathode ray oscillograph. E. K. Sanderman and N. Kipping. *il diags Exp Wireless* 2:811 (bibliog p. 819, Oct. '25)
- Distortionless amplification of electrical transients. C. W. Oatley. *Exp Wireless* 8:244, 307 May-June '31
- Effect of output load upon frequency distortion in resistance amplifiers. H. A. Thomas. *Exp Wireless* 8:11 Jan '31
- Fluctuation noise in radio receivers. Stuart Balantine. *Proc Inst Radio Eng* 18:1377 Aug '30
- Frequency modulation and distortion. T. L. Eckersley. *diags Exp Wireless* 7:482 Sept '30
- Graphical analysis of output tube performance. C. E. Kilgour. *Proc Inst Radio Eng* 19:42 Jan '31
- Graphical determination of performance of push-pull amplifiers. B. J. Thompson. *Proc Inst Radio Eng* 21:591 Apr '33
- Grid circuit power rectification. James R. Nelson. *Proc Inst Radio Eng* 19:489 Mar '31
- High audio power from relatively small tubes. Roy E. Barton. *Proc Inst Radio Eng* 19:1131. Discussion. R. A. Heising (Oct '31, p. 1884)
- High efficiency in audio-frequency amplifiers designed for use on rediffusion systems. E. K. Sanderman. *il diags Wireless Eng* 11:351 July '34
- Harmonic production and cross modulation in thermionic valves with resistive loads. D. C. Espley. *Proc Inst Radio Eng* 22:781 June '34
- Measurement of phase distortion. H. Nyquist and S. Brand. *Bell Sys Tech Jour* 9:522 July '30
- Interaction in amplifiers. L. Bainbridge-Bell. *Exp Wireless* 8:18 Jan '31

- Linear distortions in broadcast receivers and their compensation by low-frequency equalization devices. A. Clausing and W. Kautter. diags Proc Inst Radio Eng 20:1456 Sept '32
- Low-frequency high power broadcasting as applied to national coverage in the United States. William H. Wenstrom. Proc Inst Radio Eng 19:971 June '31
- Measurement of class B amplifier distortion. C. L. Farrar. *il* Electronics 4:196 June '32
- New method of testing for distortion in audio-frequency amplifiers. H. J. Reich. *il* diags Proc Inst Radio Eng 19:401 Mar '31
- Output characteristics of amplifier tubes. J. C. Warner and A. V. Loughren. Proc Inst Radio Eng 14:735 Dec '26
- Permissible amplitude distortion of speech in an audio reproducing system. Frank Massa. Proc Inst Radio Eng 21:682 May '33
- Phase distortion and phase distortion correction. S. P. Mead. Bell Sys Tech Jour 7:195 Apr '28
- Reduction of distortion and cross-talk in radio receivers by means of variable-mu tetrodes. S. Ballantine and H. A. Snow. diags Proc Inst Radio Eng 18:2102 Dec '30
- Reduction of distortion in anode rectification. A. G. Warren. diags Exp Wireless 6:425 Aug '29; Discussion. 6:498. 550 Sept-Oct '29
- Short-cut method for calculation of harmonic distortion in wave modulation. I. E. Mouromisheff and H. N. Kozanowski. Proc Inst Radio Eng 22:1090 Sept '34
- Simple method of harmonic analysis for use in radio engineering practice. Hans Roder. Proc Inst Radio Eng 19:1481 Aug '31. Discussion. J. R. Ford and H. Roder (Feb '32, p. 359)
- Spontaneous background noise in amplifiers due to thermal agitation and shot effects. E. B. Moullin and H. D. M. Ellis. Jour Inst Elec Eng 74:323 Apr '34
- Test procedure of detectors with resistance coupled output. G. D. Robinson. Proc Inst Radio Eng 19:806 May '31
- Theory of detection in a high vacuum thermionic tube. L. P. Smith. Proc Inst Radio Eng 14:649 Aug '26
- Theory of power amplification. Manfred von Andenne. Proc Inst Radio Eng 16:193 Feb '28
- Tone-compensating circuits for audio-amplifiers. J. G. Aceves. diags Radio N 12:520 620 Dec '30-Jan '31
- Variation of magnification with pitch in resistance-capacity coupled amplifiers. W. A. Barclay. Exp Wireless 8:362 July '31
- See also*
- Interference; Noise
- DIVIDER, Frequency.** See Frequency, Dividers
- DYNATRON Oscillator**
- Constant frequency oscillators. F. B. Llewellyn. Proc Inst Radio Eng 19:2063 Dec '31
- Crystal control applied to the dynatron oscillator. K. A. MacKinnon. Proc Inst Radio Eng 20:1689 Nov '32
- Dynatron oscillator. F. M. Colebrook. diags Wireless Eng 8:581 Nov '31
- Inner-grid dynatron and duodynatron. T. Hayasi. Proc Inst Radio Eng 22:751 June '34
- Inter-electrode capacitance of the dynatron, with special reference to the frequency stability of the dynatron generator. G. B. Baker. Jour Inst Elec Eng 73:196; Discussion. 201 Aug '33
- Recent developments in vacuum tube oscillator circuits. J. B. Dow. Proc Inst Radio Eng 19:2095 Dec '31. Correction p 182 Jan '32
- Resistance tuning. Sewall Cabot. Proc Inst Radio Eng 22:709 June '34
- Simple dynatron oscillator. Engineering Dept., Aerovox Res W. 4:5 June '31
- The dynatron—a vacuum tube possessing negative electric resistance. Albert W. Hull. Proc Inst Radio Eng 6:5 Feb '18
- Voltage amplification with high selectivity by means of the dynatron circuit. F. M. Colebrook. diags Wireless Eng 10:69 Feb '33
- See also*
- Vacuum Tubes, Dynatron

## E

- EARTH.** See Propagation of Waves
- ECLIPSE.** See Propagation of Waves
- ELECTRODYNAMIC Speaker.** See Loudspeakers
- ELECTROACOUSTICS.** See Acoustics
- ELECTROMAGNETIC Shielding.** See Shielding
- ELECTROMAGNETISM**
- An electromagnetic monochord for the measurement of audio frequencies. J. H. Owen Harries. Proc Inst Radio Eng 17:1316 Aug '29
- Calculation of electromagnetic forces on a conductor. J. F. Calvert. bibliog diags Elec Jour 28:108; 116 Feb '31
- Certain aspects of Henry's experiments on electromagnetic induction. J. S. Ames. Science 75:87 Jan 22 '32
- Chart of some electromagnetic relations. W. E. Deming and F. G. Cottrell. Rev Sci Instr 3:296 June '32
- Electromagnetic absorption by rocks, with some experimental observations taken at the Mammoth Cave of Kentucky. J. W. Joyce. bibliog *il* diags U S Bur Mines Tech Pa 497:1 '31
- Electromagnetic forces on conductors with bends, short lengths, and cross-overs. C. W. Frick. diags Gen Elec Rev 36:232 May '33
- Electromagnetic forces set up between current-carrying conductors during short-circuit. G. L. E. Metz. bibliog diags Jour Inst Elec Eng 75:527 Oct '34
- Electromagnetic induction; reconciliation of flux cutting and flux linkage methods of calculation. W. H. Miller. bibliog diags Electrician 112:662 May 18 '34
- Electromagnetic phenomena in high-voltage testing equipment. B. L. Goodlet. diags Jour Inst Elec Eng 74:377 May '34
- Electromagnetic theory of coaxial transmission lines and cylindrical shields. S. A. Schelkunoff. Bell System Jour 13:532 Oct '34

**ELECTROMAGNETISM—Continued**

- Interior of electrons and protons. A. Einstein and W. Mayer. *Science* 75:sup8 June 3 '32
- Magnetism, electricity and electromagnetism up to the time of the crowning work of Michael Faraday in 1831; a retrospect. J. J. Fahie. *Jour Inst Elec Eng* 69:1331 Nov '31
- Mathematical considerations underlying the formulation of the electromagnetic equations and the selection of units. L. Page. *Nat Research Council Bul* 93:39.. '33
- Penetration of rock by electromagnetic waves and audio frequencies. A. S. Eve, D. A. Keyes, and F. W. Lee. *Proc Inst Radio Eng* 17:2072 Nov '29
- Problem of rotating magnets. W. B. Pientenpol and E. C. Westerfield. *Phys Rev* 38:2280 Dec 15 '31
- Proposed reformation of the electromagnetic equations and revision of units. L. Page and N. I. Adams, jr. *Jour Fr Inst* 218:517 Nov '34
- Torque on Faraday's magnet. E. H. Kennard. *Phys Rev* 43:587 Apr 1 '33
- Transients in magnetic systems. C. F. Wagner. *diags Elec Eng* 53:418 Mar '34
- Variational principles in electromagnetism. H. Bateman. *Phys Rev* 43:481 Mar 15 '33

**ELECTRONS**

- Application of electron diffraction to the study of gas absorption. L. H. Germer. *Bell Sys Tech Jour* 8:591 July '29
- Certain effects accompanying electron diffraction. H. E. Farnsworth. *Phys Rev* 33:1131 May 1 '30
- Conception and demonstration of electron waves. C. J. Davisson. *Bell Sys Tech Jour* 11:546 Oct '32
- Determination of a limit in the number of free electrons in a metal. F. S. Colpitts. *Jour Fr Inst* 206:489 Oct '28
- Diffusion of electrons back to an emitting electrode in a gas. I. Langmuir. *Phys Rev* 38:1656 Nov 1 '31
- Electromagnetic radiation and the properties of the electron. R. D. Kleeman. *Science* 72:225 Aug 29 '30
- Electronic energy bands in metals. J. C. Slater. *diags Phys Rev* 45:794 June 1 '34
- Electrons and quanta. C. J. Davisson. *Bell Sys Tech Jour* 8:217 Apr '29
- Ferromagnetism and related problems of the theory of electrons. P. S. Epstein. *Phys Rev* 41:91 July 1 '32
- Forced oscillations of electron clouds in dense gases. K. K. Darrow. *Rev Sci Inst* 4:563 Nov '33
- Harmonic analysis of electron orbits. F. C. Hoyt. *Phys Rev* 25:174 Feb '25
- Interesting experiment in weighing the electron. I. J. Saxl. *Radio N* 14:145 Sept '32
- Les verifications recentes de la mecanique ondulatoire dans le case des electrons. M. de Broglie. *Genie Civil* 94:549 June 8 '29
- Listening to an electron rainstorm. *Sci Amer* 132:116 Feb '25
- New method for recording electrons; use of metal films. P. H. Carr. *bibliag il diag Rev Sci Inst* 1:711 Dec '30
- Phenomena in oxide-coated filaments; origin of enhanced emission. J. A. Becker and R. W. Sears. *diags Phys Rev* 38:2193 Dec 15 '31

- Positive electron. K. K. Darrow. *Rev Sci Inst* 4:263 May '33
- Range of fast electrons and neutrons. J. F. Carlson and J. R. Oppenheimer. *Phys Rev* 38:1787 Nov 1 '31
- Refractive index of spaces with free electrons; a mechanical model. P. O. Pederson. *il diags Exp Wireless* 7:16 Jan '30
- Scattering of electrons by ions and the mobility of electrons in a caesium discharge. C. Boeckner and F. L. Moehler. *U S Bur Stand Jour Res* 10:357 Mar '33
- Waves of an electron. G. P. Thompson. *il Engineering* 126:79 July 20 '28

**ELECTROTHERAPEUTICS**

- Developments in the electrical industry during 1930; artificial fever. J. Liston. *il Gen Elec Rev* 34:46 Jan '31
- Diathermy protective devices. G. G. Blake. *il diags Elec Rev (Lond)* 110:701 May 13 '32
- Electrically induced fever. W. R. Whitney. *Science* 76:sup7 July 15 '32
- Electricity in healing. E. P. Cumberbatch. *il Elec R (Lond)* 109:799 Nov 27 '31
- Electricity in the home; electric health appliances. *il Elec Rev (Lond)* 111:552 Oct 14 '32
- How high-frequency electric fields are used in modern medicine to produce radio fever. I. J. Saxl. *il diag Radio N* 13:332 Apr '32
- Latest in high intensity X-rays and "fever machines." *il Electronics* 4:56 Feb '32
- Les services de radiologie et d'electrotherapie des hopitaux Saint-Louis et Laennec a Paris. Vellard. *Genie Civil* 101:414 Oct 22 '32
- Producing artificial fevers. Carpenter & Page. *Electronics* 1:68 May '30
- Some electro-medical considerations; abstract. G. G. Blake. *Elec R (Lond)* 109:811 Nov 27 '31
- Some uses of electricity in medicine. W. Bierman. *N E L A Bul* 19:603 Oct '32
- Television scanning technique applied to X-ray diagnosis. *Electronics* 7:253 Aug '34

**ENGINEERING**

- Comparison of the engineering problems in broadcasting and audible pictures. P. H. Evans. *il diags Proc Inst Radio Eng* 18:1316 Aug '30
- Engineering behind the R.C.A. radiola superheterodyne. W. L. Carlson, R. S. Holmes and N. E. Wunderlich. *il diags Radio N* 12: 398 Nov '30
- Engineering planning for manufacture. G. A. Penneck. *Bell Sys Tech Jour* 4:542 Oct '25
- General engineering problems of the Bell system. H. P. Charlesworth. *Bell Sys Tech Jour* 4:515 Oct '25
- Introduction to the various physical phenomena underlying radio. E. B. Kirk. *il diag Radio N* 13:846, 1002 Apr, June '32
- Needed radio inventions. I. J. Saxl. *il diag Radio N* 15:404, 480 Jan-Feb '34
- Pittsburgh's contributions to radio. S. M. Kintner. *Proc Inst Radio Eng* 20:1849 Dec '32
- Radio future; forecast of future trends in radio development and activity. *Radio N* 13:987 June '32

Spokesman for the radio engineer. S. C. Hooper. Proc Inst Radio Eng 19:1843 Oct '31

Survey of current progress in radio engineering. J. H. Dellinger. W Soc E Jour 30:39 Feb '25; Excerpts. Radio N 6:1633 Mar '25

Writing of scientific papers. F. M. Colebrook. diags Exp Wireless 6:301 June '29

See also

Research

**EQUALIZERS.** See Networks

## F

### FACSIMILE

Electrical transmission of pictures and images. J. W. Horton. Proc Inst Radio Eng 17:1540 Sept '29

Facsimile apparatus. il Electronics 7:71 Mar '34

Facsimile newspapers. Electronics 7:1 Jan '34

Facsimile now in the commercial stage. il Electronics 7:269 Sept '34

Facsimile picture transmission. V. Zworykin. Proc Inst Radio Eng 17:536 Mar '29. Discussion, p. 895 May '29

Facsimile transmission from plane to ground. G. S. Gibbs. il Electronics 1:117 July '30

Facsimile transmission to ships at sea. Sci Amer 148:57 Jan '33

Home radio printing press. il Electronics 7:336 Nov '34

Image transmission by radio waves. Alfred N. Goldsmith. Proc Inst Radio Eng 17:1536 Sept '29

Mechanical developments of facsimile equipment. R. H. Ranger. Proc Inst Radio Eng 17:1564 Sept '29

Radio facsimile transmission to ships. Marine Eng 36:416 Sept '31

Radio vision. C. Francis Jenkins. Proc Inst Radio Eng 15:958 Nov '27

Synchronizing system for electrical transmission of pictures. Dr. Yasujiro Niwa. Elec Comm 11:91 Oct '32

System of electrical transmission of pictures. Yasujiro Niwa. Elec Comm 8:283 Apr '30

Transmission and reception of photoradiograms. Richard R. Ranger. Proc Inst Radio Eng 14:161 Apr '26

Transoceanic photo-radio. R. H. Ranger. Electronics 1:224 Aug '30

See also

Television

### FADING

Attenuation of wireless waves over land. R. H. Barfield. diags Jour Inst Elec Eng 66:204 Feb '29

Automatic fading recorder. Theodore A. Smith and George Rodwin. Proc Inst Radio Eng 15:41 Jan '27

Cause and elimination of fading. D. H. Menzel. diags Radio N 9:635 Dec '27

Diversity receiving system of R.C.A. Communications, Inc. for radiotelegraphy. H. H. Beverage and H. O. Peterson. Proc Inst Radio Eng 19:531 Apr '31

Diversity telephone receiving system of R.C.A. Communications, Inc. H. O. Peterson, H. H.

Beverage and J. B. Moore. Proc Inst Radio Eng 19:562 Apr '31

Emission of special radio signals for the study of the ionosphere. H. A. Thomas. il diags Jour Inst Elec Eng 75:240 Aug '34

Fading. E. W. Marchant. Exp Wireless 3:288-90; Discussion. 294 May '26

Fading and the Kennelly-Heaviside layer. E. F. Martin. diags W Soc E Jour 33:30 Jan '28

Fading curves along a meridian. Robert C. Colwell. Proc Inst Radio Eng 16:1570 Nov '28

Fading curves and weather conditions. R. C. Colwell. Proc Inst Radio Eng 17:143 Jan '29

Fading measurements in India on the short-wave station PCJJ (Holland). T. S. Rangachari. diags Exp Wireless 5:501 Sept '28

Further notes on fading. S. R. Winters. il Radio N 9:762 Jan '28

High quality radio broadcast transmission and reception. S. Ballantine. il diags Proc Inst Radio Eng 22:602 May '34

How American communications engineers are conquering fading on short-waves by diversity reception. M. G. Crosby. il diags Radio N 15:72 Aug '33

Low-frequency high power broadcasting as applied to national coverage in the United States. W. H. Wenstrom. maps Proc Inst Radio Eng 19:971 June '31

Mystery of fading. O. Hall. Exp Wireless 3:211 Apr '26; Discussion. P. D. Tyers. 3:393 June '26

Oscillographic observations on the direction of propagation and fading of short waves. H. T. Friis. Proc Inst Radio Eng 16:658 May '28

Phase interference phenomena in low-frequency radio transmission. G. W. Kenrick and G. W. Pickard. diags Proc Inst Radio Eng 22:344 Mar '34

Radio fading in the broadcast range. Radio Serv Bul 135:25 June '28

Short period variations in radio reception. W. Pickard. Proc Inst Radio Eng 12:119 Apr '24

Signal fading. J. C. Jensen. Exp Wireless 4:59 Jan '27

Some measurements of short wave transmission. R. A. Heising, J. C. Schelleng and G. C. Southworth. Proc Inst Radio Eng 14:613 Oct '26

Some observations of short period radio fading. T. Parkinson. Proc Inst Radio Eng 17:1042 June '29

Some studies in radio broadcast transmission. Ralph Bown, De Loss K. Martin and Ralph K. Potter. Proc Inst Radio Eng 14:57 Feb '26

Study of signal fading; work of the Peterborough radio research station. E. V. Appleton. Jour Inst Elec Eng 66:872-81 Aug '28; Abstracts. Elec Rev (Lond) 102:793 May 4 '28; Exp Wireless 5:267-72 May '28; Discussion. Jour Inst Elec Eng 66:881 Aug '28; Exp Wireless 5:272 May '28

Suggestion of a connection between radio fading and small fluctuations in the earth's magnetic field. G. Breit. Nat Research Council Bul 61:150 July '27

Synchronization of broadcast stations WJZ and WBAL. K. A. Norton. Proc Inst Radio Eng 22:1087 Sept '34

Transatlantic radiotelephone transmission. Lloyd Espenschled, C. N. Anderson, and Austin Bailey. Proc Inst Radio Eng 14:7 Feb '26

**FADING**—Continued

- Visual studies of radio fading. E. Merritt, T. McLean and W. E. Bostwick. diags Jour Fr Inst 211:539 May '31
- Wide range scales for fading records by electrical means. G. D. Robinson. diag Proc Inst Radio Eng 19:247 Feb '31

*See also*

**Propagation of Waves**—Fading**FIELD Intensity**

- Automatic fading recorder. Theodore A. Smith and George Rodwin. Proc Inst Radio Eng 14:41 Jan '27
- Automatic recording of field strength. C. M. Jansky, jr. il Electronics 7:148 May '34
- Bibliography on radio wave phenomena and measurement of radio field intensity. Bureau of Standards. Proc Inst Radio Eng 19:1034 June '31
- Calculation of service area of broadcast stations. P. P. Eckersley. Proc Inst Radio Eng 18:1160 July '30
- Compact radio field strength meter. Paul B. Taylor. Proc Inst Radio Eng 22:191 Feb. '34
- Field intensity measurements at frequencies from 285 to 5400 kilocycles per second. S. S. Kirby and K. A. Norton. Proc Inst Radio Eng 20:841 May '32
- Low-frequency high-power broadcasting as applied to national coverage in the U. S. William H. Wenstrom. Proc Inst Radio Eng 19:971 June '31
- Note on an automatic field strength and static recorder. W. W. Mutch. Proc Inst Radio Eng 20:1914 Dec '32
- Portable receiving sets for measuring field strengths at broadcasting frequencies. Axel G. Jensen. Proc Inst Radio Eng 14:333 June '26
- Problems centering about the measurement of field intensity. S. W. Edwards and J. E. Brown. Proc Inst Radio Eng 17:1377 Aug '29
- Quantitative measurements on reception in radio telegraphy. G. Anders. Proc Inst Radio Eng 15:297 Apr '27
- Radio broadcast coverage of city areas. L. Espenschied. il maps Bell Sys Tech Jour 6:1117 Jan '27
- Radio field-strength measuring system for frequencies up to forty megacycles. H. T. Friis and E. Bruce. Proc Inst Radio Eng 14:507 Aug '26
- Radio transmission measurements on long wavelengths. H. H. Beverage and H. O. Peterson. Proc Inst Radio Eng 2:661 Dec '23
- Service area of a broadcast station; tests on signal strength and the effects of steel buildings. S. R. Winters. il diags Radio N 9:12 July '27
- Some measurements of short wave transmission. R. A. Heising, J. C. Schelleng, and G. C. Southworth. Proc Inst Radio Eng 14:613 Oct '26
- Some studies in radio broadcast transmission. Ralph Bown, De Loss K. Martin and Ralph K. Potter. Proc Inst Radio Eng 14:57 Feb '26
- Some studies of radio broadcast coverage in the middle west. C. M. Jansky, jr. Proc Inst Radio Eng 16:1356 Oct '28
- Use of automatic recording equipment in radio transmission research. P. A. deMars, G. W. Kenrick, and G. W. Pickard. Proc Inst Radio Eng 19:1618 Sept '31

Use of radio field intensities as a means of rating the outputs of radio transmitters. S. W. Edwards and J. E. Brown. Proc Inst Radio Eng 16:1173 Sept '28

Use of field intensity measurements for the determination of broadcast station coverage. C. M. Jansky, jr. and S. L. Bailey. Proc Inst Radio Eng 20:62 Jan '32

*See also*

**Measurements, Field Intensity****FILTERS**

- Analysis of rectifier-filter circuits. Dr. R. L. Freeman. Thesis. Stanford Univ Library '34
- Cause of residual hum in rectifier-filter systems. F. E. Terman and S. B. Pickles. diags Proc Inst Radio Eng 22:1040 Aug '34
- Decoupling efficiency. W. A. Barclay. Wireless Eng 10:307 June '33
- Design of the band pass filter. N. R. Bligh. diags Wireless Eng 9:61 Feb '32
- Electrical wave filters employing quartz crystals as elements. W. P. Mason. diags Bell System Tech Jour 13:405 July '34
- Electric filter design. C. A. Johnson. diags Radio N 15:216 Oct '33
- Engineering acoustics; filtering. Electrician 107:284 Aug 28 '31
- Equivalent circuits of an active network. J. G. Brainerd. diags Proc Inst Radio Eng 21:144-53 Jan '33
- Equivalent electrical networks. N. Howitt. diags Proc Inst Radio Eng 20:1042 June '32
- Factors affecting the fidelity of radio receiving circuits. Aerovox Res W Feb '34
- Factors which must be considered in using filter condensers. Aerovox Res W Jan '31
- Filtering antennas and filter-valve circuits. Jozef Plebanski. Proc Inst Radio Eng 17:161 Jan '29
- Filters. P. K. Turner. diags Exp Wireless 2:821 Oct '25
- First filter choke; its effect on regulation and smoothing. QST 16:26 Mar '32
- How to increase efficiency of circuits by proper bypassing and filtering. Aerovox Res W July-Aug-Sept-Oct '29
- Importance of proper cathode bias filtering. Aerovox Res W Jan '34
- Influence of power factor and capacity on filtering efficiency. Aerovox Research W Oct-Nov '34
- Note on a cause of residual hum of rectifier filter systems. F. E. Terman and S. B. Pickles. Proc Inst Radio Eng 22:1040 Aug '34
- General theory of electric wave filters. H. W. Bode. Jour Math & Phys 13:275 Nov '34
- Magnetostriction filter. H. H. Hall, il diags Proc Inst Radio Eng 21:1328 Sept '33
- Method of calculating transmission properties of electrical networks consisting of a number of sections. Andrew Alford. Proc Inst Radio Eng 21:1210 Aug '33
- New series of filter condenser blocks cover all operating requirements. Aerovox Res W June '29
- Note on the simple two-element low-pass filter of two and three sections. L. B. Hallman, jr. Proc Inst Radio Eng 21:1603 Nov '33

Notes on the design of filters. Sidney Fishberg. Aerovox Research W 1:6 June '28; 1:7 July '28  
Peak voltages in filter circuits. Aerovox Res W July-Aug-Sept '31

Proper use of condensers in high voltage filter circuits. Aerovox Res W Apr '34

Rectifier filter circuits. R. Lee. *Il diags Elec Jour* 29:186 Apr '32

Rejectors and absorbers. G. W. O. Howe. *diags Exp Wireless* 3:131 Mar '26

Resistance-capacity filters for plate and grid circuits. Aerovox Res W Feb-Mar '32

Resistance in band pass filters. G. H. Buffery. *diags Wireless Eng* 9:504 Sept '32

Simple two-element low-pass filter of two and three sections. L. B. Hallman, jr. *diags Proc Inst Radio Eng* 21:1603 Nov '33

Some considerations in the design of hot-cathode mercury-vapor rectifier circuits. C. R. Dunham. *Jour Inst Elec Eng* 75:278 '34

Something new in wave traps. D. H. Menzel and W. W. Salisbury. *diags Radio N* 7:1297 Mar '26

Square top filters. *Il Electronics* 6:136 May '33

Suppression of radio interference with capacitor-type filters. C. V. Aggers and W. E. Pakala. *Elec Jour* 30:337 Aug '33

System for suppressing hum by a new filter arrangement. Palmer H. Craig. *Proc Inst Radio Eng* 19:664 Apr '31

Theory of band-pass filters for radio receivers. C. W. Oatley. *Wireless Eng* 9:608 Nov '32

Theory of filter amplifiers. S. Butterworth. *Exp Wireless* 7:536 Oct '30

Transformers as band pass filters. E. K. Sandeman. *Elec Comm* 7:282 Apr '29

Two-element band-pass filters; design simplified by use of charts. R. T. Beatty. *diags Wireless Eng* 9:546 Oct '32

*See also*

Networks  
Rectification

### FREQUENCY Allocation

Analysis of broadcasting station allocation. J. H. Dellinger. *Proc Inst Radio Eng* 16:1477 Nov '28

Considerations affecting the licensing of high-frequency stations. S. C. Hooper. *Proc Inst Radio Eng* 16:1240 Sept '28

Empirical standards for broadcast allocation. A. D. Ring. *Proc Inst Radio Eng* 20:611 Apr '32

Radio stations of the world on frequencies above 1500 kilocycles. Federal Radio Commission. *Proc Inst Radio Eng* 16:1575 Nov '28

Some principles of broadcast frequency allocation. L. E. Whittmore. *Proc Inst Radio Eng* 17:1343 Aug '29

Technical considerations involved in the allocation of short waves; frequencies between 1.5 and 30 megacycles. Lloyd Espenschied. *Proc Inst Radio Eng* 16: 773 June '28

### FREQUENCY Analysis

An electrical frequency analyzer. R. L. Wegel and C. R. Moore. *Bell Sys Tech Jour* 3:299 Apr '24

Audible frequency ranges of music, speech and noise. W. B. Snow. *Bell Sys Tech Jour* 10:616 Oct '31

Frequency distribution of the unknown mean of a sampled universe. E. C. Molina. *Bell Sys Tech Jour* 8:632 Oct '29

New electrical method of frequency analysis and its application to frequency modulation. W. L. Barrow. *Proc Inst Radio Eng* 20:1626 Oct '32

Note on a modified reactance-frequency chart. J. R. Tolmie. *Proc Inst Radio Eng* 21:1364 Sept '33

Overseas radio extensions to wire telephone networks. Lloyd Espenschied, William Wilson. *Proc Inst Radio Eng* 19:282 Feb '31

Radio frequency phenomena associated with the aurora borealis. F. Dearlove. *Exp Wireless* 6:193 Apr '29

Required minimum frequency separation between carrier waves of broadcast stations. P. P. Eckersly. *Proc Inst Radio Eng* 21:193 Feb '33

Some possibilities of intelligence transmission when using a limited band of frequencies. F. E. Terman. *Proc Inst Radio Eng* 18:167 Jan '30

The statistical energy-frequency spectrum of random disturbances. John R. Carson. *Bell Sys Tech Jour* 10:374 July '31

*See also*

Measurements, Waveform

### FREQUENCY Changers

Contribution to the theory of magnetic frequency changes. J. Zenneck. *Proc Inst Radio Eng* 8:493 Dec '20

Frequency analysis of the heterodyne envelope. F. M. Colebrook. *Exp Wireless and Wireless Eng* 9:195 Apr '32

Frequency doubling in a triode vacuum tube circuit. Carl E. Smith. *Proc Inst Radio Eng* 21:37 Jan '33

Linear detection of heterodyne signals. F. E. Terman. *Electronics* 1:386 Nov '30

Mutual interference of wireless signals in simultaneous detection. E. V. Appleton. *Exp Wireless and Wireless Eng* 9:136 Mar '32

New frequency transformer or frequency changer. Issac Koga. *Proc Inst Radio Eng* 15:669 Aug '27

New system of short wave amplification. Edwin H. Armstrong. *Proc Inst Radio Eng* 9:3 Feb '21

Note on the apparent demodulation of a weak station by a stronger one. S. Butterworth. *Exp Wireless and Wireless Eng* 6:619 Nov '29

Some characteristics of the frequency doubler as applied to radio transmission. T. Minohare. *Proc Inst Radio Eng* 8:492 Dec '20

Some practical aspects of short-wave operation at high power. H. E. Hallborg. *Proc Inst Radio Eng* 15:501 June '27

Status of the static frequency changer in radio engineering practice. Frederick C. Ryan. *Proc Inst Radio Eng* 8:509 Dec '20

Suppression of interlocking in first detector circuits. Paul W. Klipsch. *Proc Inst Radio Eng* 22:699 June '34

*See also*

Heterodyne  
Receivers, Superheterodyne

### FREQUENCY Control

A high precision standard of frequency. W. A. Morrison. *Proc Inst Radio Eng* 17:1103 July '29

Bibliography on piezoelectricity. W. G. Cady. *Proc Inst Radio Eng* 16:521 Apr '28



**FADING**—Continued

- Visual studies of radio fading. E. Merritt, T. McLean and W. E. Bostwick. diags Jour Fr Inst 211:539 May '31
- Wide range scales for fading records by electrical means. G. D. Robinson. diag Proc Inst Radio Eng 19:247 Feb '31

*See also***Propagation of Waves—Fading****FIELD Intensity**

- Automatic fading recorder. Theodore A. Smith and George Rodwin. Proc Inst Radio Eng 14:41 Jan '27
- Automatic recording of field strength. C. M. Jansky, jr. il Electronics 7:148 May '34
- Bibliography on radio wave phenomena and measurement of radio field intensity. Bureau of Standards. Proc Inst Radio Eng 19:1034 June '31
- Calculation of service area of broadcast stations. P. P. Eckersley. Proc Inst Radio Eng 18:1160 July '30
- Compact radio field strength meter. Paul B. Taylor. Proc Inst Radio Eng 22:191 Feb. '34
- Field intensity measurements at frequencies from 285 to 5400 kilocycles per second. S. S. Kirby and K. A. Norton. Proc Inst Radio Eng 20:841 May '32
- Low-frequency high-power broadcasting as applied to national coverage in the U. S. William H. Wenstrom. Proc Inst Radio Eng 19:971 June '31
- Note on an automatic field strength and static recorder. W. W. Mutch. Proc Inst Radio Eng 20:1914 Dec '32
- Portable receiving sets for measuring field strengths at broadcasting frequencies. Axel G. Jensen. Proc Inst Radio Eng 14:333 June '26
- Problems centering about the measurement of field intensity. S. W. Edwards and J. E. Brown. Proc Inst Radio Eng 17:1377 Aug '29
- Quantitative measurements on reception in radio telegraphy. G. Anders. Proc Inst Radio Eng 15:297 Apr '27
- Radio broadcast coverage of city areas. L. Espenschied. il maps Bell Sys Tech Jour 6:1117 Jan '27
- Radio field-strength measuring system for frequencies up to forty megacycles. H. T. Friis and E. Bruce. Proc Inst Radio Eng 14:507 Aug '26
- Radio transmission measurements on long wavelengths. H. H. Beverage and H. O. Peterson. Proc Inst Radio Eng 2:661 Dec '23
- Service area of a broadcast station; tests on signal strength and the effects of steel buildings. S. R. Winters. il diags Radio N 9:12 July '27
- Some measurements of short wave transmission. R. A. Heising, J. C. Schelleng, and G. C. Southworth. Proc Inst Radio Eng 14:613 Oct '26
- Some studies in radio broadcast transmission. Ralph Bown, De Loss K. Martin and Ralph K. Potter. Proc Inst Radio Eng 14:57 Feb '26
- Some studies of radio broadcast coverage in the middle west. C. M. Jansky, jr. Proc Inst Radio Eng 16:1356 Oct '28
- Use of automatic recording equipment in radio transmission research. P. A. deMars, G. W. Kenrick, and G. W. Pickard. Proc Inst Radio Eng 19:1618 Sept '31

Use of radio field intensities as a means of rating the outputs of radio transmitters. S. W. Edwards and J. E. Brown. Proc Inst Radio Eng 16:1173 Sept '28

Use of field intensity measurements for the determination of broadcast station coverage. C. M. Jansky, jr. and S. L. Bailey. Proc Inst Radio Eng 20:62 Jan '32

*See also***Measurements, Field Intensity****FILTERS**

- Analysis of rectifier-filter circuits. Dr. R. L. Freeman. Thesis. Stanford Univ Library '34
- Cause of residual hum in rectifier-filter systems. F. E. Terman and S. B. Pickles. diags Proc Inst Radio Eng 22:1040 Aug '34
- Decoupling efficiency. W. A. Barclay. Wireless Eng 10:307 June '33
- Design of the band pass filter. N. R. Bligh. diags Wireless Eng 9:61 Feb '32
- Electrical wave filters employing quartz crystals as elements. W. P. Mason. diags Bell System Tech Jour 13:405 July '34
- Electric filter design. C. A. Johnson. diags Radio N 15:216 Oct '33
- Engineering acoustics; filtering. Electrician 107:284 Aug 28 '31
- Equivalent circuits of an active network. J. G. Brainerd. diags Proc Inst Radio Eng 21:144-53 Jan '33
- Equivalent electrical networks. N. Howitt. diags Proc Inst Radio Eng 20:1042 June '32
- Factors affecting the fidelity of radio receiving circuits. Aerovox Res W Feb '34
- Factors which must be considered in using filter condensers. Aerovox Res W Jan '31
- Filtering antennas and filter-valve circuits. Jozef Plebanski. Proc Inst Radio Eng 17:161 Jan '29
- Filters. P. K. Turner. diags Exp Wireless 2:821 Oct '25
- First filter choke; its effect on regulation and smoothing. QST 16:26 Mar '32
- How to increase efficiency of circuits by proper bypassing and filtering. Aerovox Res W July-Aug-Sept-Oct '29
- Importance of proper cathode bias filtering. Aerovox Res W Jan '34
- Influence of power factor and capacity on filtering efficiency. Aerovox Research W Oct-Nov '34
- Note on a cause of residual hum of rectifier filter systems. F. E. Terman and S. B. Pickles. Proc Inst Radio Eng 22:1040 Aug '34
- General theory of electric wave filters. H. W. Bode. Jour Math & Phys 13:275 Nov '34
- Magnetostriction filter. H. H. Hall, il diags Proc Inst Radio Eng 21:1328 Sept '33
- Method of calculating transmission properties of electrical networks consisting of a number of sections. Andrew Alford. Proc Inst Radio Eng 21:1210 Aug '33
- New series of filter condenser blocks cover all operating requirements. Aerovox Res W June '29
- Note on the simple two-element low-pass filter of two and three sections. L. B. Hallman, jr. Proc Inst Radio Eng 21:1603 Nov '33

Notes on the design of filters. Sidney Fishberg. Aerovox Research W 1:6 June '28; 1:7 July '28

Peak voltages in filter circuits. Aerovox Res W July-Aug-Sept '31

Proper use of condensers in high voltage filter circuits. Aerovox Res W Apr '34

Rectifier filter circuits. R. Lee. *il* diags Elec Jour 29:186 Apr '32

Rejectors and absorbers. G. W. O. Howe. diags Exp Wireless 3:131 Mar '26

Resistance-capacity filters for plate and grid circuits. Aerovox Res W Feb-Mar '32

Resistance in band pass filters. G. H. Buffery. diags Wireless Eng 9:504 Sept '32

Simple two-element low-pass filter of two and three sections. L. B. Hallman, jr. diags Proc Inst Radio Eng 21:1603 Nov '33

Some considerations in the design of hot-cathode mercury-vapor rectifier circuits. C. R. Dunham. Jour Inst Elec Eng 75:278 '34

Something new in wave traps. D. H. Menzel and W. W. Salisbury. diags Radio N 7:1297 Mar '26

Square top filters. *il* Electronics 6:136 May '33

Suppression of radio interference with capacitor-type filters. C. V. Aggers and W. E. Pakala. Elec Jour 30:337 Aug '33

System for suppressing hum by a new filter arrangement. Palmer H. Craig. Proc Inst Radio Eng 19:664 Apr '31

Theory of band-pass filters for radio receivers. C. W. Oatley. Wireless Eng 9:608 Nov '32

Theory of filter amplifiers. S. Butterworth. Exp Wireless 7:536 Oct '30

Transformers as band pass filters. E. K. Sandeman. Elec Comm 7:282 Apr '29

Two-element band-pass filters; design simplified by use of charts. R. T. Beatty. diags Wireless Eng 9:546 Oct '32

*See also*

Networks  
Rectification

### FREQUENCY Allocation

Analysis of broadcasting station allocation. J. H. Dellinger. Proc Inst Radio Eng 16:1477 Nov '28

Considerations affecting the licensing of high-frequency stations. S. C. Hooper. Proc Inst Radio Eng 16:1240 Sept '28

Empirical standards for broadcast allocation. A. D. Ring. Proc Inst Radio Eng 20:611 Apr '32

Radio stations of the world on frequencies above 1500 kilocycles. Federal Radio Commission. Proc Inst Radio Eng 16:1575 Nov '28

Some principles of broadcast frequency allocation. L. E. Whittmore. Proc Inst Radio Eng 17:1343 Aug '29

Technical considerations involved in the allocation of short waves; frequencies between 1.5 and 30 megacycles. Lloyd Espenschied. Proc Inst Radio Eng 16: 773 June '28

### FREQUENCY Analysis

An electrical frequency analyzer. R. L. Wegel and C. R. Moore. Bell Sys Tech Jour 3:299 Apr '24

Audible frequency ranges of music, speech and noise. W. B. Snow. Bell Sys Tech Jour 10:616 Oct '31

Frequency distribution of the unknown mean of a sampled universe. E. C. Molina. Bell Sys Tech Jour 8:632 Oct '29

New electrical method of frequency analysis and its application to frequency modulation. W. L. Barrow. Proc Inst Radio Eng 20:1626 Oct '32

Note on a modified reactance-frequency chart. J. R. Tolmie. Proc Inst Radio Eng 21:1364 Sept '33

Overseas radio extensions to wire telephone networks. Lloyd Espenschied, William Wilson. Proc Inst Radio Eng 19:282 Feb '31

Radio frequency phenomena associated with the aurora borealis. F. Dearlove. Exp Wireless 6:193 Apr '29

Required minimum frequency separation between carrier waves of broadcast stations. P. P. Eckersly. Proc Inst Radio Eng 21:193 Feb '33

Some possibilities of intelligence transmission when using a limited band of frequencies. F. E. Terman. Proc Inst Radio Eng 18:167 Jan '30

The statistical energy-frequency spectrum of random disturbances. John R. Carson. Bell Sys Tech Jour 10:374 July '31

*See also*

Measurements, Waveform

### FREQUENCY Changers

Contribution to the theory of magnetic frequency changes. J. Zenneck. Proc Inst Radio Eng 8:493 Dec '20

Frequency analysis of the heterodyne envelope. F. M. Colebrook. Exp Wireless and Wireless Eng 9:195 Apr '32

Frequency doubling in a triode vacuum tube circuit. Carl E. Smith. Proc Inst Radio Eng 21:377 Jan '33

Linear detection of heterodyne signals. F. E. Terman. Electronics 1:386 Nov '30

Mutual interference of wireless signals in simultaneous detection. E. V. Appleton. Exp Wireless and Wireless Eng 9:136 Mar '32

New frequency transformer or frequency changer. Issac Koga. Proc Inst Radio Eng 15:669 Aug '27

New system of short wave amplification. Edwin H. Armstrong. Proc Inst Radio Eng 9:3 Feb '21

Note on the apparent demodulation of a weak station by a stronger one. S. Butterworth. Exp Wireless and Wireless Eng 6:619 Nov '29

Some characteristics of the frequency doubler as applied to radio transmission. T. Minohare. Proc Inst Radio Eng 8:492 Dec '20

Some practical aspects of short-wave operation at high power. H. E. Hallborg. Proc Inst Radio Eng 15:501 June '27

Status of the static frequency changer in radio engineering practice. Frederick C. Ryan. Proc Inst Radio Eng 8:509 Dec '20

Suppression of interlocking in first detector circuits. Paul W. Klipsch. Proc Inst Radio Eng 22:699 June '34

*See also*

Heterodyne  
Receivers, Superheterodyne

### FREQUENCY Control

A high precision standard of frequency. W. A. Morrison. Proc Inst Radio Eng 17:1103 July '29

Bibliography on piezoelectricity. W. G. Cady. Proc Inst Radio Eng 16:521 Apr '28

**FREQUENCY Control—Continued**

- Constant frequency oscillators. F. B. Llewellyn. Proc Inst Radio Eng 19:2063 Dec '31
- Correction factor for the parallel wire system used in absolute radio-frequency standardization. August Hund. Proc Inst Radio Eng 12:817 Dec '24
- Frequency control with thermionic tubes. il Electronics 7:284 Sept '34
- Frequency stabilization of radio transmitters. Y. Kusunose and S. Ishikawa. Proc Inst Radio Eng 20:310 Feb '32
- Method of measuring very short radio wave lengths and their use in frequency standardization. F. W. Dunmore and F. H. Engel. Proc Inst Radio Eng 11:467 Oct '23
- New methods of frequency control employing long lines. J. W. Conklin, J. L. Finch, and C. W. Hansell. Proc Inst Radio Eng 19:1918 Nov '31
- Piezoelectric crystal resonators and crystal oscillators applied to the precision calibration of wavemeters. G. W. Pierce. Proc Amer Acad 59:81 '23
- Performance of piezo oscillators and the influence of decrement of quartz on the frequency of oscillation. M. Boella. Proc Inst Radio Eng 19:1252 July '31
- Piezoelectric stabilization of high frequencies. Harold Osterberg and John W. Cookson. Rev Sci Instr 5:281 Aug '34
- Precision tuning fork frequency standard. E. Norrman. Proc Inst Radio Eng 20:1715 Nov '32
- The piezoelectric resonator. W. G. Cady. Proc Inst Radio Eng 10:83 Apr '22
- Time service of the U. S. Naval Observatory. J. E. Hellweg. Trans A.I.E.E. 51:538 June '32

*See also***Piezoelectric Crystals****FREQUENCY Division**

- Adjustment of the multivibrator for frequency division. Victor J. Andrew. Proc Inst Radio Eng 19:1911 Nov '31
- Convenient method for referring secondary frequency standards to a standard time interval. L. M. Hull and J. K. Clapp. Proc Inst Radio Eng 17:252 Feb '29
- Frequency division. Januz Groszkowski. Proc Inst Radio Eng 18:1960 Nov '30
- Mesure in valeur absolue des periods oscillations electriques de haute frequence. H. Abraham and E. Block. Annal d Phys 12:237 Sept-Oct '19
- Oscillations in the circuit of a strongly damped triode. F. Vecchiacchi. Proc Inst Radio Eng 19:856 May '31
- Simplified frequency dividing circuit. Victor J. Andrew. Proc Inst Radio Eng 21:982 July '33

*See also***Multivibrator****FREQUENCY Doublers. See Frequency Multipliers****FREQUENCY Measurement**

- Capacitive potential divider for high frequency measurements. K. Schlesinger. il diags Wireless Eng 8:532 Oct '31
- Frequency checking station at Mare Island. G. T. Royden. Proc Inst Radio Eng 15:313 Apr '27

Frequency comparison with the cathode-ray oscillograph. C. B. Fisher. il Electronics 6:310 Nov '33

Frequency measurement and control. A. S. Angwin. diags Jour Inst Elec Eng 70:17 Dec '31; Abstracts. Electrician 107:662 Nov '31; Wireless Eng 8:659 Dec '31

Frequency measurements of broadcasting stations. Dec. 1930-Dec. 1931. Radio Serv Bul 178:27 Jan '32

High-frequency measurements on an electron oscillator. S. J. Borgars. diags Wireless Eng 11:134 Mar '34

High-gain amplifiers for electronic measurements. Electronics 4:319 Oct '32

International frequency comparisons by means of modulation emissions. L. Essen. Jour Inst Elec Eng 75:289 Sept '34

Measurement of frequency. Seikichi Jimbo. Proc Inst Radio Eng 17:2011 Nov '29

Measurement of the frequency of ultra-radio waves. J. Barton Hoag. Proc Inst Radio Eng 21:29 Jan '33

Methods and associated apparatus for the accurate determination of radio frequencies; abstract. F. J. Tompsett. Electrician 11:694 Dec '33

Micrometer frequency meter. G. F. Lamphin. il QST 17:10 July '33

Notes on audio-frequency measurements. J. K. Hilliard. il Electronics 2:506 Feb '31

Precise and rapid method of measuring frequencies from five to two hundred cycles per second. N. P. Case. diags Proc Inst Radio Eng 18:1586 Sept '30

Precision determination of frequency. J. W. Horton and W. A. Marrison. Proc Inst Radio Eng 16:137 Feb '28

Precision frequency measuring system of R.C.A. communications, inc. H. O. Peterson and A. M. Braaten. il diags Proc Inst Radio Eng 20:941 June '32

Precision method for the measurement of high frequencies. Charles Bayne Aiken. Proc Inst Radio Eng 16:128 Feb '28

Routine measurement of the operating frequencies of broadcast stations. Henry L. Bogardus and Charles T. Manning. Proc Inst Radio Eng 17:1225 July '29

Second meeting of the International technical consulting committee on radio communication, Copenhagen, 1931. Proc Inst Radio Eng 19:2219 Dec '31

Thermionic type of frequency meter for measurements up to 15 kc. F. T. McNamara. Proc Inst Radio Eng 16:579 May '28

Status of frequency standardization. J. H. Dellinger. Proc Inst Radio Eng 16:579 May '28

*See also***Measurements, Frequency****FREQUENCY Meters**

- All about frequency measurements and meters. J. Martin. il Radio N 12:780 Mar '31
- Device for the precise measurement of high frequencies. F. A. Polkinghorn and A. A. Roetken. Proc Inst Radio Eng 19:937 June '31
- Direct-reading frequency meter. F. Guarnaschelli and F. Vecchiacchi. Proc Inst Radio Eng 19:659 Apr '31. Correction Aug '31 p1506

Electrical instruments; 1933 developments. A. C. Jolley. Electrician 112:101 Jan 26 '34

Micrometer frequency meter. A. F. Lampkin. *il* QST 17:10 July '33

New frequency meters. *il* Engineer 157:579 June 8 '34

Sensitizing the wavemeter for intermediate frequencies. A. G. Richardson. *il* Electronics 4:130 Apr '32

Thermionic type frequency meter for use up to 15 kc. F. T. McNamara. Proc Inst Radio Eng 19:1384 Aug '31

Thermo-junctions at high radio frequencies. F. M. Colebrook. *diags* Exp Wireless 8:356 July '31

*See also*

Measurements, Frequency

#### FREQUENCY Modulation

Amplitude, phase and frequency modulation. Hans Roder. Proc Inst Radio Eng 19:2145 Dec '31. Discussion. David G. C. Luck and Hans Roder. 20:884 May '32

Frequency modulation. Balth van der Pol. Proc Inst Radio Eng 18:1194 July '30

Frequency modulation and the effects of a periodic capacity variation in a nondissipative oscillatory circuit. W. L. Barrow. Proc Inst Radio Eng 21:1182 Aug '33

New electrical method of analysis and its application to frequency modulation. W. L. Barrow. Proc Inst Radio Eng 20:1626 Oct '32

Notes on the theory of modulation. John R. Carson. Proc Inst Radio Eng 10:57 Feb '22

Phase shift in radio transmitters. W. A. Fitch. Proc Inst Radio Eng 20:683 May '32

Reception of frequency-modulated radio signals. Victor J. Andrew. Proc Inst Radio Eng 20:835 May '32

Side bands in frequency modulation. E. D. Scott and J. R. Woodyard. *il* *diags* Washington U Eng Exp Sta Bul 68:5 '33

Transmission lines as frequency modulators. Austin V. Eastman and Earl D. Scott. Proc Inst Radio Eng 22:878 July '34

*See also*

Modulation

#### FREQUENCY Monitors

Improving the freqmeter-monitor. (Construction of a selective electron-coupled unit) D. A. Griffin. *il* *diags* QST 18:31 Apr '34

Modulation monitor for phone transmitters. James J. Lamb. *diag* QST 17:7 Apr '33

Monitoring the operation of short-wave transmitters. Hans Mogel. Proc Inst Radio Eng 19:214 Feb '31

Monitoring of broadcast stations. L. B. Argulmbau. General Radio Exp Vol 9 Jan '35

Testing frequency monitors for the Federal Radio Commission. W. D. George. Proc Inst Radio Eng 22:449 Apr '34

#### FREQUENCY Multipliers

Applying the tri-tet principle to frequency multipliers. Frank M. Dans. *il* *diags* QST 18:29 Oct '34

Frequency doubling on a triode vacuum tube circuit. Carl E. Smith. Proc Inst Radio Eng 21:37 Jan '33

Frequency multiplication by shock excitation. E. A. Guillemin and P. T. Rumsey. Proc Inst Radio Eng 17:629 Apr '29

Improvements in frequency multipliers for aircraft radio. E. G. Watts. Electronics 4:124 Apr '32

Investigation of the phenomena of frequency multiplication as used in tube transmitters. R. M. Page. Proc Inst Radio Eng 17:1649 Sept '29

On the simultaneous operation of different broadcast stations on the same channel. P. P. Eskersley. Proc Inst Radio Eng 19:175 Feb '31

Oscillations in the circuit of a strongly damped triode. F. Vecchiacchi. Proc Inst Radio Eng 19:856 May '31

Some characteristics of the frequency doubler as applied to radio transmission. T. Minohare. Proc Inst Radio Eng 8:492 Dec '20

*See also*

Amplifiers  
Oscillation

#### FREQUENCY Standards

Correction factor for the parallel wire system used in absolute radio frequency standardization. August Hund. Proc Inst Radio Eng 12:817 Dec '24

Development of standard-frequency transmitting sets. L. Mickey and A. D. Martin. *diags* pls U S Bur Stand Jour Research 12:1-12 Jan '34

Establishment of the Japanese radio-frequency standard. Y. Namba. *il* *diags* Proc Inst Radio Eng 18:1017 June '30

Frequency standards; programme of transmissions from the national physical laboratory. Electrician 109:482 Oct 14 '32

High precision standard of frequency. W. A. Marrison. *il* *diags* Bell System Tech Jour 8:493-514 July '29

Interpolation methods used with harmonic frequency. J. K. Clapp. Proc Inst Radio Eng 18:1575 Sept '30

Method of measuring very short radio wave lengths and their use in frequency standardization. Francis W. Dunmore and Francis H. Engel. Proc Inst Radio Eng 11:467 Oct '23; Discussion. Eijiro Takagishi, Shigeyoshi Kawanzoe, F. W. Dunmore, and F. H. Engel (Feb '25, pp125-127)

Precision determination of frequency. J. W. Horton and W. A. Marrison. Proc Inst Radio Eng 16:137 Jan '28

Radio frequencies; international comparison of standards—co-operation of B.B.C. and N.P.L. Electrician 112:336 Mar 9 '34

Radio transmissions of standard frequency. Proc Inst Radio Eng 20:1684 Nov '32

Radio transmissions of standard frequencies. Proc Inst Radio Eng 21:516 Apr '33

Standard frequency dissemination. M. S. Strock. Proc Inst Radio Eng 15:727 Aug '27

Temperature control for frequency standards. J. K. Clapp. *il* *diags* Proc Inst Radio Eng 18:2003 Dec '30

Thermostat design for frequency standards. W. A. Marrison. Proc Inst Radio Eng 16:796 July '28

Transmissions of wireless waves of standard frequencies from the national physical laboratory. Wireless Eng 8:531 Oct '31

## G

**GETTERS.** See Vacuum Tube, Manufacture

**GROUND.** See Propagation of Waves

## H

**HARMONICS**

Adjustment of the multivibrator for frequency division. Victor J. Andrew. Proc Inst Radio Eng 19:1911 Nov '31

Alternating current measuring instruments as discriminators against harmonics. Irving Wolff. Proc Inst Radio Eng 19:647 Apr '31

Analyzer for complex electric waves. A. G. Landeen. Bell Sys Tech Jour 6:230 Apr '27

Elimination of harmonics in vacuum tube transmitters. Yuziro Kusunose. Proc Inst Radio Eng 20:340 Feb '32

Field distribution and radiation resistance of a straight vertical unloaded antenna radiating at one of its harmonics. S. A. Levin and C. J. Young. Proc Inst Radio Eng 14:675 Oct '26. Errata 15:8 Jan '27; Discussion. Stuart Ballantine 15:245 Mar '27

Frequency division. Janusz Groszkowski. Proc Inst Radio Eng 18:1960 Nov '30

Graphical harmonic analysis for determining modulated distortion in amplifier tubes. W. R. Ferris. Proc Inst Radio Eng 23:510 May '35

Harmonic analysis applied to the power pentode. H. E. Rhodes. diag Electronics 1:118 June '30

Harmonic production and cross modulation in thermionic valves with resistance loads. D. C. Espley. Proc Inst Radio Eng 22:781 June '34

Interpolation methods used with harmonic frequency standards. J. K. Clapp. Proc Inst Radio Eng 18:1575 Sept '30

Measurement of harmonic power output of a radio transmitter. P. M. Honnell and E. B. Ferrell. Proc Inst Radio Eng 22:1181 Oct '34

Measuring harmonic distortion in tube circuits. D. F. Schmidt and J. M. Stinchfield. Electronics 1:79 May '30

Method of measuring radio frequency by means of a harmonic generator. August Hund. Proc Inst Radio Eng 13:207 Apr '25

New electrical method of frequency analysis and its application to frequency modulation. W. L. Barrow. Proc Inst Radio Eng 20:1626 Oct '32

New method of testing for distortion in audio-frequency amplifiers. Herbert J. Reich. Proc Inst Radio Eng 19:401 Mar '31

Oscillations in the circuit of a strongly damped triode. F. Vecchiacchi. Proc Inst Radio Eng 19:856 May '31

"Short-cut" method for calculation of harmonic distortion in wave modulation. I. E. Mourontseff and H. N. Kazanowski. Proc Inst Radio Eng 22:1090 Sept '34

Simple harmonic analyzer. M. G. Nicholson and William M. Perkins. Proc Inst Radio Eng 20:734 Apr '32

Simple method of harmonic analysis for use in radio engineering practice. Hans Roder. Proc Inst Radio Eng 19:1481 Aug '31

Simplified harmonic analyzer. A. W. Barber. il Electronics 1:374 Nov '30

Simplified method of measuring broadcast harmonics. E. C. Miller. Electronics 1:432 Dec '30

Simultaneous production of a fundamental and a harmonic in a tube generator. Hoy J. Walls. Proc Inst Radio Eng 15:37 Jan '27

"Sound prism." O. H. Schuck. Proc Inst Radio Eng 22:1295 Nov '34

Suppression of radio-frequency harmonics in transmitters. J. W. Labus and H. Roder. diags Proc Inst Radio Eng 19:949 June '31

Suppression of transmitter harmonics. C. G. Dietsch. il Electronics 6:167 June '33

Thermionic voltmeter method for harmonic analysis of electrical waves. Chauncey Guy Suits. Proc Inst Radio Eng 18:178 Jan '30

Test procedure for detectors with resistance coupled output. G. D. Robinson. Proc Inst Radio Eng 19:806 May '31

Wave analysis. L. B. Arguimbau. General Radio Exp 7:12 June '33

Wavelength characteristics of coupled circuits having distributed constants. Ronald King. Proc Inst Radio Eng 20:1368 Aug '32

See also

Measurements  
Multivibrator

**HETERODYNE**

A study of heterodyne interference. John V. L. Hogan. Proc Inst Radio Eng 17:1354 Aug '29

Detection of two modulated waves which differ slightly in carrier frequency. Charles B. Aiken. Proc Inst Radio Eng 19:120 Jan '31

Frequency analysis of the heterodyne envelope. F. M. Colebrook. Exp Wireless and Wireless Eng 9:195 Apr '32

Heterodyne capacity measuring set. W. C. Lister. il diag Wireless Eng 11:425 Aug '34

Linear detection of heterodyne signals. F. E. Terman. il Electronics 1:386 Nov '30

Modulation and the heterodyne. W. Jackson. Exp Wireless 8:425 Aug '31

Optimum heterodyne reception. E. V. Appleton and Mary Taylor. Proc Inst Radio Eng 12:277 June '24

Some developments in common frequency broadcasting. G. D. Gillett. Proc Inst Radio Eng 19:1347 Aug '31

See also

Receivers, Superheterodyne

**HISTORY of Radio**

Communication—past and present. B. Gherardi. il Elec Eng 53:747 750 (bibliog p. 750-2) May '34

Development of radio. L. E. Whittemore. Ann Amer Acad 142:sup1-7 Mar '29

Early history of broadcasting in the United States. C. H. Leet. Sebley Jour 48:22 Feb '34

Electric word; the rise of radio. P. Schubert 31lp Macmillan. New York '28

Fourteen years of radio's evolution. E. L. Bragdon. il Radio N 14:82 Aug '32

Historical review of ultra-short-wave progress. William H. Wenstrom. Proc Inst Radio Eng

- 20:95 Jan '32. Discussion: H. M. Dowsett and William H. Wenstrom 21:315 Feb '33
- History of radio inventions. A. H. Morse. diags Radio N 6:2048; 7:52; 184; 296 May-July-Sept '25
- History of radio telegraphy and telephony. G. G. Blake. 425pp. (biblog p. 353-403) Chapman & Hall Ltd., London '28
- Historic rescue: Titanic disaster gave added impetus to universal adoption of radio on all ocean-going ships. O. E. Dunlap jr. il Radio N 11:997 May '30
- Important events in radio—peaks in the waves of wireless progress, 1827 to 1928. Radio Serv Bul 141:16 Dec '28
- Marconi smiles on America. O. E. Dunlap, jr. il Sci Amer 138:24 Jan '28
- New problems radio brings. M. Codel. Nation's Business 17:32 July '29
- Opinions expressed by the International technical consulting committee on radio communication; meetings at The Hague, 1929, and Copenhagen, 1931. 84p U. S. Dept. of state. Washington '32
- Physical research in wireless; abstracts. W. H. Eccles. Engineering 129:805 June 20 '30; Chem Age (Lond) 22:514 May 31 '30; Electrician 104:691 May 30 '30; Engineer 149:611 May 30 '30
- Pioneers of wireless. E. Hawks. 304pp. Methuen & Co., Ltd., London '27
- Pittsburgh's contributions to radio. S. M. Kintner. Proc Inst Radio Eng 20:1849 Dec '32
- Practical application of the Fourier integral. G. A. Campbell. Bell Sys Tech Jour 7:639 Oct '28
- Progress in American radio communication during 1930. W. A. Winterbottom. Dun's Int R 57:49 Mar '31
- Radio communication. G. Marconi. Elec R (Lond) 99:769 Nov 5 '26
- Radio communication; progress during the past two years. C. E. Kennedy-Purvis. Jour Inst Elec Eng 68:16 Dec '29; Abstract. Elec Rev (Lond) 105:1019 Dec 6 '29
- Radio communications; how world-wide speech by wireless has been realized on the foundation of Faraday's experiments. E. H. Shaughnessy. Electrician 107:418 Sept. 25 '31
- Radio dream come true. G. Marconi. il Radio N 11:784 Mar '30
- Radio links the Americas; communicating with Little America, Antarctica. O. E. Dunlap, jr. il Radio N 11:712 Feb '30
- Radio research board; report for the period ended March 31st, 1929. Engineer 149:331 Mar 21 '30
- RCA world-wide radio network. A. A. Isbell. Proc Inst Radio Eng 18:1732 Oct '30
- Role of radio in growth of international communication. H. H. Buttner. fold map Proc Inst Radio Eng 19:51 Jan '31
- Spokesman for the radio engineer. S. C. Hooper. Proc Inst Radio Eng 10:1843 Oct '31
- Technical achievements in broadcasting and its relation to national and international solidarity. Alfred D. Goldsmith. Proc Inst Radio Eng 27:1940 Nov '29
- Television nears technical solution. il Electronics 7:172 June '34
- Television progress. il Electronics 7:272 Sept '34
- Ten years of broadcasting. C. W. Horn. Proc Inst Radio Eng 19:356 Mar '31
- Ten years of transradio—a retrospect. E. Quack. Proc Inst Radio Eng 20:40 Jan '32
- Thirty-seven years of radio progress. G. Marconi. il Radio N 13:553 Jan '32
- Transatlantic wireless; thirtieth anniversary of first communication. Electrician 107:847 Dec 18 '31
- Twelve years of radio progress, 1919-1931. R. S. Wood. il Radio N 13:24 July '31
- Wireless section of the I.E.E.; chairman's address. C. E. Rickard. Jour Inst Elec Eng 69:11-24 Dec '30

## HUM

- Analysis and reduction of output disturbances resulting from the alternating-current operation of the heaters of indirectly heated cathode triodes. J. O. McNulty. Proc Inst Radio Eng 20:1263 Aug '32
- Calculating hum in amplifiers. diags Radio N 12:915 Apr '31
- Cause and prevention of hum in receiving tubes employing alternating current direct on the filament. W. J. Kimmel. Proc Inst Radio Eng 16:1089 Aug '28
- Cause of residual hum in rectifier-filter systems. F. E. Terman and S. B. Pickles. diags Proc Inst Radio Eng 22:1040 Aug '34
- Fluctuation noise in radio receivers. Stuart Ballantine. Proc Inst Radio Eng 19:416 Mar '31
- Heater cathode leakage as a source of hum. Electronics 13:48 Feb '40
- Hum in a. c. operated receivers. B. F. Meissner. Radio N 11:1110 June '30
- Hum in all-electric receivers. B. F. Meissner. Proc Inst Radio Eng 17:137 Jan '30
- Low noise vacuum tubes. il Electronics 4:169 May '32
- Note on a cause of residual hum in rectifier-filter systems. F. E. Terman and S. B. Pickles. Proc Inst Radio Eng 22:1040 Aug '34
- Notes on audio frequency measurements. J. K. Hilliard. il Electronics 2:506 Feb '31
- Rapid method for estimating the signal-to-noise ratio of a high-gain receiver. F. B. Llewellyn. Proc Inst Radio Eng 18:1377 Aug '30
- Some types of hum and how to locate, measure and eliminate them. B. F. Meissner. il Radio N 12:117 July '30
- System for suppressing hum by a new filter arrangement. P. H. Craig. Proc Inst Radio Eng 19:644 Apr '31

See also

Noise  
Vacuum Tube Noise

## I

ICONOSCOPE. See Television

## IMPEDANCE

- A method of impedance correction. H. W. Bode. Bell Sys Tech Jour 9:794 Oct '30
- A periodic impedance measuring set. A. T. Starr. diags Wireless Eng 9:325 June '32

**IMPEDANCE—Continued**

- Circuit relations in radiating systems and applications to antenna problems. P. S. Carter. Proc Inst Radio Eng 20:1004 June '32
- Classification of bridge methods of measuring impedances. John G. Ferguson. 12:452 Oct '33
- Conduction of high-frequency oscillatory energy. H. O. Roosenstein. Proc Inst Radio Eng 19:1849 Oct '31
- Ground return impedance: underground wire with earth return. John R. Carson. Bell Sys Tech Jour 8:94 Jan '29
- Impedance matching networks. A. E. Thiessen. Electronics 2:552 Mar '31
- Impedance measurement. A. T. Starr. diags Wireless Eng 9:615 Nov '32
- Impedance of loaded lines and design of simulated and compensating networks. Ray S. Hoyt. Bell Sys Tech Jour 3:414 July '24
- Impedances of smooth lines and design of simulating networks. Ray S. Hoyt. Bell Sys Tech Jour 2:1 Jan '23
- Measurement of acoustic impedance and the absorption coefficient of porous materials. E. C. Wentz and E. H. Bedell. Bell Sys Tech Jour 7:1 Jan '28
- Measurement of resistances and impedances at high frequencies. J. W. Labus. Proc Inst Radio Eng 19:452 Mar '31
- Mutual impedance between adjacent antennas. Carl R. Englund and Arthur B. Crawford. Proc Inst Radio Eng 17:1277 Aug '29
- Mutual impedance of grounded wires lying on the surface of the earth. Ronald M. Foster. Bell Sys Tech Jour 10:408 July '31
- Mutual impedance of two skew antenna wires. F. H. Murray. Proc Inst Radio Eng 21:154 Jan '33
- Natural period of linear conductors. C. R. England. Bell Sys Tech Jour 7:404 July '28
- New impedance measuring device. A. W. Barber. Electronics 6:194 July '33
- Output networks for radio-frequency power amplifiers. W. L. Everett. Proc Inst Radio Eng 19:725 May '31
- Radio-frequency bridge for impedance and power-factor measurements. D. W. Dye and T. I. Jones, bibliog diags Jour Inst Elec Eng 72:169 Feb '33
- Reactance theorem. Ronald M. Foster. Bell Sys Tech Jour 3:259 Apr '24
- Rule for the impedance of parallel circuits. Exp Wireless 7:677 Dec '30
- Static and motional impedance of a magnetostriction resonator. E. H. Lange and J. A. Myers. Proc Inst Radio Eng 17:1687 Oct '29
- Theorems regarding the driving point impedance of two-mesh circuits. Ronald M. Foster. Bell Sys Tech Jour 3:651 Oct '24

*See also*

Measurements

**INDUCTANCE, Inductors**

- Coil design for short wave receivers. D. Grimes and W. Barden. Electronics 7:174 June '34
- Design of standards of inductance, and the proposed use of model reactors in the design of air-core and iron-core reactors. H. B. Brooks. U. S. Bur Stand Jour Research 7:289 Aug '31
- Effective resistance of inductance coils at radio frequency. B. B. Austin Wireless Eng 2:12 Jan '34
- Effective resistance of inductance coils at radio frequencies. S. Butterworth. Exp Wireless and Wireless Eng 3:203 Apr '26
- Establishment of a general formula for the inductance of single-turn circuits of any shape. V. I. Bashenoff. Exp Wireless 6:245 May '29
- High-frequency resistance of coils. A. L. Green. diags Exp Wireless 8:183 Apr '31
- Inductance at high frequencies and its relation to the circuit equation. J. G. Brainerd, Proc Inst Radio Eng 22:395 Mar '34
- Inductance of solenoids in cylindrical screen boxes. W. G. Hayman. bibliog Wireless Eng 11:189 Apr '34
- Magnetic field of a solenoid oscillating at radio frequencies. O. Stuhlman, jr. and S. Githens, jr. diags Rev Sci Instr 3:561 Oct '32
- Mutual inductance of concentric solenoids. Chester Snow. U. S. Bur Stand Jour Research 1:531, '28
- Radio frequency resistance and inductance of coils used in radio reception. August Hund and H. B. De Groot. U. S. Bur Stand Tech Paper 298 Oct '25
- Study of the high-frequency resistance of single layer coils. A. J. Palermo and F. W. Grover. Proc Inst Radio Eng 18:2041 Dec '30
- Tables for calculation of mutual inductance of any two coaxial single layer coils. F. W. Grover. Proc Inst Radio Eng 21:1039 July '33
- Study of litz-wire coils. D. Grimes and W. S. Barden. Electronics 6:303 Nov '33

**INSTRUMENT Landing.** See Aids to Aviation

**INSULATION, Insulators**

- Cellulose acetate treatment for textile insulation; development of the manufacturing process. C. R. Avery and H. Kress. Bell Sys Tech Jour 11:231 Apr '32
- Cellulose acetate treatment for textile insulation; engineering development. E. B. Wood and D. R. Brobst. Bell Sys Tech Jour 11:213 Apr '32
- Designs and efficiencies of large air core inductances. W. W. Brown and J. E. Love. Proc Inst Radio Eng 13:755 Dec '25
- Electrical constants of dielectrics for radio frequency currents. R. V. Guthrie Jr. Proc Inst Radio Eng 12:841 Dec '24
- Electrode effects in the measurement of power factor and dielectric constant of sheet insulating Materials. E. T. Hoch. Bell System Tech Jour 5:555 Oct '26
- Main considerations in antenna design. N. Lindblad and W. W. Brown. Proc Inst Radio Eng 14:291 June '26
- Notes on the design of radio insulators. T. Walmsley. Proc Inst Radio Eng 16:361 Mar '28
- Power losses in insulating materials. E. T. Hoch. Bell Sys Tech Jour 1:110

Predominating influence of moisture and electrolytic material upon textiles as insulators. R. R. Williams and E. J. Murphy. *Bell Sys Tech Jour* 8:225 Jan '29

Properties and applications of mycalex in radio apparatus. W. W. Brown. *Proc Inst Radio Eng* 18:1307 Aug '30

Radio frequency tests on antenna insulators. W. W. Brown. *Proc Inst Radio Eng* 11:495 Oct '23. Discussion, D. C. Prince, A. O. Austin and W. W. Brown, p. 523

Sleet removal from antennas. J. H. Shannon. *Proc Inst Radio Eng* 14:181 Apr '26

Study of the telephone line insulators. L. T. Wilson. *Bell Sys Tech Jour* 9:697

*See also*

Dielectrics

## IONOSPHERE

A test of the existence of the conducting layer. G. Breit and M. Tuve. *Phys Rev* 28:554 Sept '26

Emission of special radio signals for the study of the ionosphere. H. A. Thomas. *Jour Inst Elec Eng* 75:240 Aug '34

General theory on the propagation of radio waves in the ionized layer of the upper atmosphere. Shogo Namba. *Proc Inst Radio Eng* 21:238 Feb '33

High angle radiation of short electric waves. S. Oda. *Proc Inst Radio Eng* 15:377 May '27

Ionospheric investigation. T. R. Gilliland. *Nature* 134:379 Sept. '34

Multifrequency automatic recorder of ionosphere heights. T. R. Gilliland. *Proc Inst Radio Eng* 22:236 Feb '34

Note on the determination of the ionization of the upper atmosphere. J. C. Schelleng. *Proc Inst Radio Eng* 16:1471 Nov '28

Observations in transmission during the solar eclipse of August 31, 1932. J. R. Martin and S. W. McCuskey. *il diags map Proc Inst Radio Eng* 21:567 Apr '33

Radio observations at the Bureau of Standards during the solar eclipse of August 31, 1932. L. V. Berkner and T. R. Gilliland. *Proc Inst Radio Eng* 22:247 Feb '34

Relation of meteor showers and radio reception. G. W. Pickard. *Proc Inst Radio Eng* 19:1166 July '31

Report of ionosphere investigations at the Huan-cayo magnetic observatory. (Peru) during 1933. L. V. Berkner and H. W. Wells. *bibliog il Proc Inst Radio Eng* 22:1102 Sept. '34

Short-wave commercial long-distance communication. H. E. Hallborg, L. A. Briggs and C. W. Hansell. *Proc Inst Radio Eng* 15:467 June '27

Skip distance effects on superfrequencies. A. H. Taylor. *Proc Inst Radio Eng* 19:103 Jan '31

Some observations on skip distance and ultra-high frequencies. T. A. Marshall. *Radio N* 12:406 Nov '30

Studies of the ionosphere and their application to radio transmission. S. S. Kirby, L. V. Berkner and D. M. Stuart. *bibliog U. S. Bur Stand Jour Research* 12:15 Jan '34; Same. *Proc Inst Radio Eng* 22:481 Apr '34

Summary of progress in the study of radio wave propagation phenomena. G. W. Pickard. *Proc Inst Radio Eng* 18:649 Apr '30

Wireless apparatus for the study of the ionosphere. G. Builder. *bibliog diags Jour Inst Elec Eng* 73:419 pl 1-2 Oct '33

Wireless studies of the ionosphere. E. V. Appleton. *Jour Inst Elec Eng* 71:642 (*bibliog p649*) Oct '32; *Abstract. Wireless Eng* 9:513 Sept '32

Wireless telegraphy and magnetic storms. H. B. Maris and E. O. Hulburt. *Proc Inst Radio Eng* 17:494 Mar '29

Wireless telegraphy and the ionization in the upper atmosphere. E. O. Hulburt. *Proc Inst Radio Eng* 18:1231 July '30

*See also*

Propagation of Waves

## INTERFERENCE

An echo interference method for the study of radio wave paths. L. R. Hafstad and M. A. Tuve. *Proc Inst Radio Eng* 17:1786 Oct '29

Adjacent channel interference. I. J. Kaar. *il diags Proc Inst Radio Eng* 22:295 Mar '34

Boston analyses radio interference; Edison electric illuminating company. J. V. MacDonald. *il Elec W* 97:724 Apr 18 '31

Directional reception reduces interference. P. C. Hoernel *il diags Radio N* 7:290 Sept '25

Double and multiple signals with short waves. E. Quack and H. Mogel. *Proc Inst Radio Eng* 17:791 May '29

Echoes of radio waves. N. Janco. *Proc Inst Radio Eng* 22:923 July '34

Effective s.w. antenna for reducing interference. A. H. Lynch. *Radio N* 14:396 Jan '33

Effect of background noise in shared channel broadcasting. C. B. Aiken. *diag Bell System Tech Jour* 13:333 July '34

Electrical interference in motor car receivers. Leslie F. Curtis. *Proc Inst Radio Eng* 20:674 Apr '32

Electrical interference with broadcast reception. G. W. O. Howe. *diags Wireless Eng* 10:645 Dec '33

Eliminating between-station noise in tuning A.V.C. receivers. W. A. Smith. *il diags Radio N* 14:216 Oct '32

Engineering acoustics; interference with radio reception. *Electrician* 110:563 Apr 28 '33

Engineering acoustics; protection from interference. *Electrician* 110:590 May 5 '33

Examination of the causes and nature of the interference to which the wireless communications of the mercantile marine are subjected. J. A. Slee. *diag map Jour Inst Elec Eng* 74:355 Sept '34; *Abstract. Wireless Eng* 11:368 July '34; *Discussion. Jour Inst Elec Eng* 75:375 Sept '34; *Wireless Eng* 11:369 July '34

Fluctuation noise in radio receivers. Stuart Ballantine. *Proc Inst Radio Eng* 18: 1377 Aug '30

Fluctuation noise in vacuum tubes. G. L. Pearson. *il diag Bell System Tech Jour* 13:642 Oct '34

Frequency analysis of the heterodyne envelope; its relation to problems of interference. F. M. Colebrook. *bibliog Wireless Eng* 9:195 Apr '32

Group-velocity and long retardations of radio echoes. G. Breit. *Proc Inst Radio Eng* 17:1508 Sept '29



**INTERFERENCE—Continued**

- High-frequency atmosphere noise. R. K. Potter. Proc Inst Radio Eng 19:1731 Oct '31
- Interference from line insulators. W. Jackson. Electrician 103:635 Nov 22 '29
- Interference from shared-frequency broadcasting. C. B. Aiken. Electronics 3:100 Sept '31
- Interference of electrical plant with the reception of radio broadcasting. A. Morris. diags Jour Inst Elec Eng 74:245 Discussion. 252 Mar '34
- Interference problems treated individually. il diag Elec West 69:72 Aug '32
- Limits to amplification. J. B. Johnson and F. B. Llewellyn. diag Elec Eng 53:1449 Nov '34
- Locating radio interference with the oscillograph. J. K. McNeely and P. J. Konkle. il Proc Inst Radio Eng 18:1216 July '30
- Measuring radio interference from high-voltage apparatus. C. V. Aggers and W. E. Pakala. il diags Elec J 30:504 Dec '33
- Methods for measuring interfering noises. Lloyd Espenschied. Proc Inst Radio Eng 19:1951 Nov '31
- Microphonic feed-back phenomena in radio receivers. H. A. Brooke. Jour Inst Elec Eng 70:268 Feb '32
- Microphonic improvements in vacuum tubes. Alan C. Rockwood and Warren R. Ferris. Proc Inst Radio Eng 17:1621 Sept '29. Discussion, M. J. Kelly, Alan C. Rockwood, A. E. Rodd, J. E. Pristas, K. H. Wood, A. Hoyt, Taylor and Lee Sutherland. (Oct '29 p. 1899)
- Multiple signals in short-wave transmission. T. L. Eckersley. Proc Inst Radio Eng 18:106 Jan '30
- Mutual interference of wireless signals in simultaneous detection. E. V. Appleton and D. Boohariwalla. diag Wireless Eng 9:136 Mar '32; Discussion 9:394 July '32
- Note on high-frequency transmission during the summer of 1930. G. W. Kenrick, A. H. Taylor and L. C. Young. Proc Inst Radio Eng 19:252 Feb '31
- Radio interference from insulator corona. F. O. McMillan bibliog il diags Elec Eng 51:3 Jan '32
- Radio interference from line insulators. E. Van Atta and E. L. White. Jour Amer Inst Elec Eng 48:682 Sept '29
- Radio interference; its causes and elimination. J. McCandless. Electrician 109:198 Aug 12 '32
- Radio interference problem and the power company. L. J. Corbett. Jour Amer Inst Elec Eng 44:1057 Oct '25; Discussion 44:1348 Dec '25
- Rapid method of estimating the signal-to-noise ratio of a high gain receiver. F. B. Llewellyn. Proc Inst Radio Eng 19:416 Mar '31
- Receiver design for minimum fluctuation noise. Nelson P. Case. Proc Inst Radio Eng 19:963 June '31
- Reduction of interference in broadcast reception. Alfred N. Goldsmith. Proc Inst Radio Eng 14:575 Oct '26; Discussion, J. C. Van Horn 15:40 Jan '27
- Selective circuits and static interference. John R. Carson. Bell Sys Tech Jour 4:265 Apr '25
- Shielded neutrodyne receiver. John F. Dreyer Jr. and Ray H. Manson. Proc Inst Radio Eng 14:217 Apr '26
- Some interfering oscillations experienced in a supersonic-heterodyne receiver. R. L. Smith-Rose. diags Exp Wireless 5:673 Dec '28
- Some measurements on the directional distribution of static. A. E. Harper. Proc Inst Elec Eng 17:1214 July '29
- Spontaneous background noise in amplifiers due to thermal agitation and shot effects. E. B. Moullin and H. D. M. Ellis. Jour Inst Elec Eng 74:323 Apr '34
- Statistical energy-frequency spectrum of random disturbances. J. R. Carson. Bell System Tech Jour 10:374 July '31
- Studies of echo signals. A. Hoyt Taylor and L. C. Young. Proc Inst Radio Eng 17:1491 Sept '29
- Studies of high-frequency radio wave propagation. A. Hoyt Taylor and L. C. Young. Proc Inst Radio Eng 16:561 May '28
- Study of noise in vacuum tubes and attached circuits. F. B. Llewellyn. Proc Inst Radio Eng 18:243 Feb '30
- Study of short-time multiple signals. J. B. Hoag and Victor J. Andrew. Proc Inst Radio Eng 16:1638 Oct '28
- Suppressing ignition-interference on radio-equipped aircraft. E. A. Robertson and L. M. Hull. il S A E Jour 27:78. Discussion 84 July '30
- Testing of mercury power vapor tubes. J. L. Zehner. il Electronics 4:224 July '32
- The significance of observations of the phase of radio echoes. G. Breit. Proc Inst Radio Eng 17:1815 Oct '29
- Transmission lines and interference with radio. S. Kruse. Elec W 85:1080 May 23 '25
- Transmitter modulating device for the study of the Kennelly-Heaviside layer by the echo method. M. A. Tuve and O. Dahl. Proc Inst Radio Eng 16:794 June '28
- Wireless echoes of long delay. P. O. Pedersen. Proc Inst Radio Eng 17:1750 Oct '29

*See also*

Communication Interference  
Hum; Noise

## K

### KEYING, Radiotelegraph

Diversity receiving system of R. C. A. communications, Inc. for radiotelegraphy. H. H. Beverage and H. O. Peterson. Proc Inst Radio Eng 19:531 Apr '31

Monitoring the operation of short-wave transmitters. Hans Mogel. Proc Inst Radio Eng 19:214 Feb '31

Radiotelegraph keying transients. Reuben Lee. Proc Inst Radio Eng 22:213 Feb '34

*See also*

Radiotelegraphy

### KENNELLY-Heaviside Layer

Cooperation committee program for 1930-1931. Proc Inst Radio Eng 19:1171 July '31

Further observations of radio transmission and the height of the Kennelly-Heaviside layer. G. W. Kenrick and C. K. Jen. Proc Inst Radio Eng 17:2034 Nov '29

- Further studies of the Kennelly-Heaviside layer by the echo-method. L. R. Hafstad and M. A. Tuve. Proc Inst Radio Eng 17:1508 Sept '29
- Investigations of Kennelly-Heaviside layer heights for frequencies between 1600 and 8650 kilocycles per second. T. R. Gilliland, G. W. Kenrick and K. A. Norton. Proc Inst Radio Eng 20:286 Feb '32
- Kennelly-Heaviside layer studies. P. A. de Mars, T. R. Gilliland and G. W. Kenrick. il Proc Inst Radio Eng 19:106 Jan '31
- Kennelly-Heaviside layer studies employing a rapid method of virtual-height determination. J. P. Schafer and W. M. Goodall. Proc Inst Radio Eng 20:1131 July '32
- Kennelly-Heaviside layer and radio-wave propagation. E. O. Hulburt. diags Jour Fr Inst 201:597 May '26
- Kennelly-Heaviside layer height observations for 4,045 and 8,650 kc. T. R. Gilliland. pl U S Bur Stand Jour Research 5:1057 Nov '30; Same. Proc Inst Radio Eng 19:114 Jan '31; Discussion, F. K. Vreeland. 19:1500 Aug '31
- Measurements of the height of the Kennelly-Heaviside layer. G. W. Kendrick and C. K. Jen. Proc Inst Radio Eng 17:74 Apr '29
- Observations of Kennelly-Heaviside layer heights during the Leonid meteor shower of November, 1931. J. P. Schafer and W. M. Goodall. Proc Inst Radio Eng 20:1941 Dec '32
- Observations of the effective height of the Kennelly-Heaviside layer and field intensity during the solar eclipse of August 31, 1932. G. W. Kenrick and G. W. Pickard. il Proc Inst Radio Eng 21:546 Apr '33
- Preliminary note on an automatic recorder giving a continuous height record of the Kennelly-Heaviside layer. T. R. Gilliland and G. W. Kenrick. Proc Inst Radio Eng 20:540 Mar '30
- Radio transmission studies of the upper atmosphere. J. P. Schafer and W. M. Goodall. Proc Inst Radio Eng 19:1434 Aug '31
- Round-the-world signals. E.O. Hulburt. Proc Inst Radio Eng 16:287 Mar '28
- Some observations of short period radio fading. T. Parkinson. Proc Inst Radio Eng 17:1042 June '29
- Some observations of the behavior of earth currents and their correlation with magnetic disturbances and radio transmission. Isabel S. Bemis. Proc Inst Radio Eng 19:1931 Nov '31
- See also*
- Ionosphere  
Propagation of Waves
- KINESCOPE.** See Television
- L**
- LAWS and Regulations, United States**
- Administration of federal radio legislation. O. H. Caldwell. Ann Amer Acad 142: sup 45-56 Mar '29
- Amended regulations governing the issuance of radio operators' licenses. Radio Serv Bul 130:9 Jan '28
- Basis established by the Federal radio commission for the division of radio broadcast facilities within the United States. Proc Inst Radio Eng 18:2032 Dec '30
- Congress considers problems of the fifth estate. M. Codel. Radio N 12:712 Feb '31
- Equalization of broadcasting facilities within the United States. J. M. Herring. Harvard Business R 9:417 July '31
- Federal radio commission orders creation of single agency open to all individual newspapers and press associations. Comm & Fin Chr 128:4257 June 29 '29
- Federal radio legislation. F. P. Lee. Ann Amer Acad 142: sup 36-44 Mar '29
- Frequency allocations to aeronautical services chains established. Radio Serv Bul 159:26 June '30
- General orders of the Federal radio commission. Radio Serv. Bul 132:10 Mar; 136:20 July; 137:8 Aug '28
- General order specifying and limiting the maximum rated power of broadcast transmitters. Radio Serv Bul 158:23 May '30
- General orders of the Federal radio commission applicable to broadcasting stations. Radio Serv Bul 165:11 Dec '30
- Is a broadcasting station a public utility? R. D. Heintz. Pub Util 6:344 Sept 18 '30
- Liability of broadcasting company. Bradstreet's 60:1493 Nov 12 '32
- Naval radiotelegraph in peace and war. S. C. Hooper. Ann Amer Acad 142: sup 90-4 Mar '29
- Order on the air! J. Rorty. 32 p. pa 25c Day '34
- Pending conflict between state and federal regulation; the radio, air, motor, and pipeline services. A. H. Ulm. Pub Util 12:524 Oct 26 '33
- Prosperity in the air as affected by the airplane and the radio. H. L. Jome. bibliog J. Land & Pub Util Econ 4:257 Aug '28
- Provisional regulations for the conduct of long, continuous wave ship and shore commercial communication. Radio Serv Bul 131:9 Feb '28
- Public interest, convenience and necessity? work of the Federal radio commission. il Radio N 11:428 Nov '29
- Radio broadcast and libel; some important decisions. I. W. Digges. Ptr Ink 169:73 Nov 8 '34
- Radio control and operation. E. R. Rankin. Comp. Univ of North Carolina Extension Bul v 13, no 3:1-80 (bibliog p 76-80) '33
- Radio engineer and the law. P. M. Segal. Proc Inst Radio Eng 18:1038 June '30
- Radio laws of the United States. E. A. Lewis. Comp. 35 p. U. S. Govt. printing office, Washington, D. C. '29
- Radio regulations drafted for air service. Radio N 10:1112 June '29
- Regulations governing the issuance of radio operators' licenses. Radio Serv Bul 150:11 Sept '29
- Regulations governing the licensing and operation of amateur stations. Radio Serv Bul 130:11 Jan '28
- Rules and regulations governing relay broadcasting. Radio Serv Bul 144:16 Mar '29
- Shall there be a radio censorship? a debate by radio. E. Celler; H. Gernsback. il Radio N 9:746 Jan '28
- Some aspects of radio law. J. W. Wright. Proc Inst Radio Eng 21:1574 Nov '33

**LAWS and Regulation, U.S.—Continued**

State and municipal regulation of radio communication. P. M. Segal and P. D. P. Spearman. 16p U. S. Federal radio commission, Washington '29

Will federal regulation of communications mean censorship? Pub Util 13:475-80 Apr 12 '34

World's first telecommunication convention. G. C. Gross. Radio N 16:136 Sept '34

*See also*

Allocation, Frequency

**LAWS and Regulations, International**

Allocation of European broadcast wavelengths. S. Lemoine. Exp Wireless 5:386 July '28

Chairman's address before Wireless section, Institution of electrical engineers. G. Shearing. Jour Inst Elec Eng 74:29 Jan '34

Control of radio. J. G. Kerwin. 27p pa 25c Univ. of Chicago press '34

Das gesetz uber fernmeldeanlagen. Munch. Elektrotech Zeit 49:925 June 14 '28

Extent of the development of radio over the world. L. D. Batson. Ann Amer Acad 142:sup 21-31 Mar '29

L'application de la nouvelle repartition des longueurs d'onde selon le Plan de Lucerne. M. Adam. Genie Civil 104:199 Mar '34

Le regime juridique de la T.S.F. en France. A. Mestre. Genie Civil 102:93 Jan '33

Le reglementation pour la protection des emissions de radiodiffusion. J. Cazals de Fable. Genie Civil 103:644 Dec 30 '33

La reorganisation de la radiodiffusion l'Etat (decrets des 12 et 15 octobre 1934). J. Cazals de Fable. Genie Civil 105:392 Oct 27 '34

Neue gesetzliche verordnungen fur den rundfunk in Italien. Elektrotech Zeit 49:549 Apr 5 '28

Prague broadcasting frequency plan. Radio Serv Bul 146:25-6 May '29

Problem of radio reallocation. Congressional Digest 7:255 Oct '28

Recommendations of the International technical consulting committee on radio communication. Proc Inst Radio Eng 18:775 May '30

**LECHER Wires**

Communication with quasi-optical waves. E. Karplus. Proc Inst Radio Eng 19:1715 Oct '31

Conduction of high frequency oscillatory energy. H. O. Roosenstein. Proc Inst Radio Eng 19:1849 Oct '31

Correction factor for the parallel wire system used in absolute radio-frequency standardization. August Hund. Proc Inst Radio Eng 12:817 Dec '24

Double hump phenomenon of current through a bridge across parallel lines. E. Takagishi. Proc Inst Radio Eng 18:573 Mar '30

Ellipse diagram of a lecher wire system. A. Hikosaburo. Proc Inst Radio Eng 21:303 Feb '33

Formation of standing waves on lecher wires. A. Mohammed and S. R. Kantebet. Proc Inst Radio Eng 19:1983 Nov '31

Graphical methods for problems involving radio-frequency transmission lines. Hans Roder. Proc Inst Radio Eng 21:290 Feb '33

Method for measuring very short radio wave lengths and their use in frequency standardization. F. W. Dunmore and F. H. Engel. Proc Inst Radio Eng 11:467 Oct '23

*See also*

Transmission Lines

**LOOP Antennas.** See Antennas, Directional

**LOUDSPEAKERS**

Acoustical performance of a cone-type loudspeaker. D. A. Oliver. bibliog diag Wireless Eng 10:420 Aug '33

Amplitude of loud speaker diaphragms at low frequencies. N. W. McLachlan. diags Wireless Eng 10:375 July '33

Amplification of transients. C. H. Smith. diags Wireless Eng 10:296 June '33

Apparatus for the projection of frequency output characteristics. C. G. Garton and G. S. Lucas. diags Exp Wireless 6:62 Feb '29

Calculation of loudspeaker efficiency. il Electronics 4:52 Feb '32

Directional characteristics of loudspeakers for theaters. Louis Malter. Electronics 1:186 July '30

Damped diaphragm reproducer. R. Miehling. Electronics 1:385 Nov '30

Electronic carillon loudspeaker. il Electronics 2:603 Apr '31

Electro-mechanical rectification; a moving-coil L. S. phenomenon. N. W. McLachlan. Wireless Eng 9:329, 573 June, Oct '32

Electrodynamic speaker design considerations. J. D. Seabert. Proc Inst Radio Eng 22:738 June '34

Equivalent mass of driven loud speaker cones. M. J. O. Strutt. il diag Wireless Eng 9:143 Mar '32

Flat piston moving coil loud speakers. R. W. Paul and B. S. Cohen. il diags Exp Wireless 7:421 Aug '30

Improved fidelity of two speaker radio receivers. H. S. Knowles. il Electronics 4:154 May '32

Improvements in dynamic speakers. I. B. Serge. il Electronics 1:385 Nov '30

Loud speaker coupling systems. Aerovox Res W Nov-Dec '29

Loudspeaker-deflection measurements. Gliver & Hunter. il Electronics 2:474 Jan '31

Loud speakers and reception. J. P. Minton. il diags Wireless Age 12:39 Jan; 42 Feb; 40 Mar; 15 June; 16 July '25

Loud speaker response measurements and some typical response curves. B. Olney. il Proc Inst Radio Eng 19:1113 July '31

Loud speaker tests and performance factors. D. A. Oliver. diags Exp Wireless 7:653 Dec '30; Discussion. L. E. C. Hughes. 8:142 Mar '31

Loudspeaker cost vs. quality. H. S. Knowles. il Electronics 6:240 Sept '33

Loudspeaker research. Electronics 2:604 Apr '31

Loudspeakers and microphones. E. C. Wente and A. L. Thuras. Bell Sys Tech Jour 13:259 Apr '34

Low-frequency distortion in horn speakers due to the medium. S. Goldstein and N. W. McLachlan. Wireless Eng 11:423 Aug '34

Measurement of the performance of loud speakers. E. J. Barnes. diags Exp Wireless 7:248, 301 May-June '30

- Methods of investigating the vibrational frequencies of conical shells and loud speaker diaphragms. N. W. McLachlan. *il Wireless Eng* 9:626 Nov '32
- Moving coil loud speakers. H. M. Clarke. *Exp Wireless* 7:447; 8:304 Sept '30, June '31
- Moving coil loud speakers of midget design. F. R. W. Strafford. *Wireless Eng* 9:75 Feb '32; Discussion. N. W. McLachlan. 9:151 Mar '32
- Moving coil loud speakers, with particular reference to the free-edge cone type. C. R. Cosens. *diags Exp Wireless* 6:353 July '29; Discussion. 6:438, 6:21 Aug. Nov '29
- Moving-coil magnets; precision measurements of the gap flux density. C. E. Webb. *il Wireless Eng* 9:67 Feb '32
- New cone loud speaker for high fidelity sound reproduction. Harry F. Olsen. *Proc Inst Radio Eng* 22:33 Jan '34
- New hornless loudspeaker described by inventors. C. W. Rice and E. W. Kellogg. *il Sci Amer* 133:136 Aug '25
- Nodal lines on vibrating diaphragms. N. W. McLachlan. *Wireless Eng* 8:540 Oct '31
- Nonlinearity in transducers used in communication. P. Caporale. *Proc Inst Radio Eng* 21:1029 July '33
- Notes on loud speaker design. M. A. Codd. *il diags Elec Rev (Lond)* 96:205 Feb 6 '25
- Notes on loudspeaker response measurements and some typical response curves. Benjamin Olney. *Proc Inst Radio Eng* 19:1113 July '31
- Piezo-electric loudspeakers and microphones. A. L. Williams. *il Electronics* 4:166 May '32
- Piezo-electric loud speaker for the higher audio frequencies. S. Ballantine. *il diags Proc Inst Radio Eng* 21:1399 Oct '33
- Possibilities of loudspeakers. *Electronics* 2:75 Aug '31
- Relations between the parameters of coupled-circuit theory and transducer theory with some applications. J. G. Brainerd. *diags Proc Inst Radio Eng* 21:282 Feb '33
- Resonator speaker. *il Electronics* 4:102 Mar '32
- Study of the regular combination of acoustic elements, with applications to recurrent acoustic filters, tapered acoustic filters, and horns. W. P. Mason. *Bell Sys Tech Jour* 6:258 Jan '27
- Use of rochelle salt crystals for electrical reproducers and microphones. C. B. Sawyer. *diags Proc Inst Radio Eng* 19:2020 Nov '31
- Vibrations of a coil-driven paper cone. F. R. W. Strafford. *Wireless Eng* 10:141 Mar '33; Discussion. 10:204, 313 Apr, June '33
- Vibrations of loud-speaker diaphragms. *Exp Wireless* 4:713 Dec '27
- Harmonic production in ferromagnetic materials at low frequencies and low flux densities. E. Peterson. *Bell System Tech Jour* 7:762 Oct '28
- Hysteresis effect with varying superimposed magnetizing forces. W. Fondiller and W. H. Martin. *Trans A. I. E. E.* 40:553 '21
- Magnetic alloys of iron, nickel, and cobalt. G. W. Elmen. *Bell System Tech Jour* 8:435 July '29
- Magnetic properties of compressed powdered iron. B. Speed and G. W. Elmen. *Trans A. I. E. E.* 40:596 '21
- Magnetic properties of permivar. G. W. Elmen. *Bell System Tech Jour* 8:21 Jan '29
- Magnet steels and permanent magnets; relationships among their magnetic properties. K. L. Scott. *Bell System Tech Jour* 11:383 July '32
- Silicon steel with A-C and D-C excitation. R. F. Edgar. *Trans A. I. E. E.* 53:318 Feb '34

### MAGNETROSTRICTION

- Magnetostriction filter. Harry H. Hall. *Proc Inst Radio Eng* 21:1328 Sept. '33
- Magnetostriction oscillator. *Electronics* 6:104 Apr '33
- Magnetostrictive alloys with low temperature coefficients of frequency. John McDonald Ide. *Proc Inst Radio Eng* 22:17 Feb. '34
- Measurements on magnetostriction vibrator. R. L. Smith-Rose. *Elec Rev (Lond)* 10:994 June 8 '28
- Static and motional impedance of a magnetostriction resonator. E. H. Lange and J. A. Myers. *Proc Inst Radio Eng* 17:1687 Oct '29

*See also*

### Oscillators

#### MAGNETRON Oscillator

- An investigation of the magnetron short-wave oscillator. E. C. S. Megaw. *Jour Inst Elec Eng* 72:326 '33. Also, *Wireless section I.E.E.* 8:72 June '33
- Diode for ultra-high-frequency oscillations. J. S. McPetrie. *Exp Wireless and Wireless Eng* 11:118 Mar '34
- Electronic oscillations. E. C. S. Megaw. *Jour Inst Elec Eng* 72:313 '33. Also *Wireless section I.E.E.* bibliog 8:59 June '33
- Note on magnetron theory. F. T. McNamara. *Proc Inst Radio Eng* 22:1037 Aug '34
- Note on the theory of the magnetron oscillator. E. C. S. Megaw. *Proc Inst Radio Eng* 21:1749 Dec '33. Same. J. Barton Hoag. 21:1132 Aug '33
- On the mechanism of electron oscillations in a triode. H. E. Hollman. *Proc Inst Radio Eng* 17:229 Feb '29
- The magnetron. Albert W. Hull. *Jour A.I.E.E.* 40:715 '21
- Vacuum tubes of extremely small dimensions for use at extremely high frequencies. B. J. Thompson and G. M. Rose, jr. *Proc Inst Radio Eng* 21:1707 Dec '33

*See also*

### Oscillators

#### Vacuum Tubes, Magnetron

#### MARINE Radio

- Communication system of the Radiomarine corporation of America. I. F. Byrnes. *Proc Inst Radio Eng* 20:434 Mar '29
- Directional wireless marine navigation. R. L. Smith-Rose. *Elec Rev (Lond)* 10:994 June 8 '28

## M

### MAGNETIC Materials

- Design methods for soft magnetic materials in radio. John Minton and Iury G. Malff. *Proc Inst Radio Eng* 17:102 June '29
- Design of transformers for audio-frequency amplifiers with preassigned characteristics. Glenn Koehler. *Proc Inst Radio Eng* 16:1742 Dec '28

**MARINE Radio—Continued**

- Errors in direction-finding calibrations in steel ships due to the shape and orientation of the aerial of the transmitting station. J. E. Coales. Jour Inst Elec Eng 73:280 Sept. '33
- Fresnel et les progres de la signalisation maritime. A. de Rouville. il Genie Civil 91:668 Dec 31 '27
- Guiding the battle fleet by multiplex radio signaling. H. F. Breckel. il diag Radio N 8; 1420 June '27
- How the radio beacon makes navigation safer. il diag Marine Eng 32:511 Sept '27
- Kolster ship radio beacon. il Marine Eng 32:274 May '27
- Latest developments in equipment for marine radio. A. K. Ransom. Radio N 14:534 Mar '33
- Les communications radioelectriques avec les navires en mer. Picault. Genie Civil 102:188 Feb 25 '33
- Marconi international marine company's latest installations for wireless telegraphy and telephony, etc. Engineer 152:264 Sept 11 '31
- Marine radio equipment. Elec Rev. (Lond) 113:456 Oct 6 '33
- Marine wireless. B. Binyon. Jour Inst Elec Eng 64:83 Dec '25
- Modern marine wireless equipment. R. Twelve-trees. il Electrician 95:35 July 10 '25
- Navigation and communication aids on modern liners. Elec Rev. (Lond) 109:842 Dec 4 '31
- Operation of a ship-to-shore radiotelephone system. C. N. Anderson and I. E. Lattimer. il diags Proc Inst Radio Eng 20:407 Mar '32
- Plate-voltage supply for naval vacuum-tube transmitters. E. C. Raguet. Proc Inst Radio Eng 18:49. Discussion. p. 84 Jan '30
- Practical correction of a wireless direction-finder for deviations due to the metal work of a ship. C. E. Horton Jour Inst Elec Eng 69:623 May '31
- Problem of duplex telegraphy in the mercantile marine wireless service. M. Reed. diags Wireless Eng 11:122 Mar '34
- Radio equipment on the Georgic. Elec Rev (Lond) 111:120 July 22 '32
- Radio pictures for ships. Electrician 105:527 Oct 31 '30
- Reception of wireless signals in naval ships. W. F. Rawlinson. Jour Inst Elec Eng 75:293 Sept '34
- Rotating-loop radio transmitters, and their application to direction-finding and navigation. T. H. Gill and N. F. S. Hecht. Jour Inst Elec Eng 66:241 Mar '28
- Sea-going radiophone. W. Jones. il diag Radio N 11:988 May '30
- Ship's motor lifeboat with wireless equipment. il diags plan Engineer 139:160 Feb 6 '25
- Ships' wireless equipment; Empress of Britain. Elec Rev (Lond) 108:623 Apr 10 '31
- Some experiments on the application of the rotating-beacon transmitter to marine navigation. R. L. Smith-Rose and S. R. Chapman. Jour Inst Elec Eng 66:256 Mar '28; Abstract. Exp Wireless 5:88 Rev Feb '28; Electrician 100:29 Jan 13 '28; Elec Rev. (Lond) 102:123 Jan 20 '28; Discussion. Jour Inst Elec Eng 66:274 Mar '28

*See also*

Beacons  
Communication, Marine Radiotelegraphy

**MEASUREMENTS**

- Alternating-current measuring instruments as discriminators against harmonics. I. Wolff, diags Proc Inst Radio Eng 19:647 Apr. '31
- Amplifier systems for the measurement of ionization by single particles. J. R. Dunning. diags Rev Sci Instr 5:387 Nov '34
- Design of resistors for precise high-frequency measurements. L. Behr and A. E. Tarpley. il diags Proc Inst Radio Eng 20:1101. Discussion. 1114 July '32
- Determination of dielectric properties at very high frequencies. J. G. Chaffee. diags Proc Inst Radio Eng 22:1009 Aug '34
- Dielectric constant measurement. Electronic 5:264 Aug '32
- Electrical measurements on soil with alternating currents. R. L. Smith-Rose. Jour Inst Elec Eng 75:221 bibliog p236-71 Aug '34
- Electron tubes in scientific measurements. J. W. Horton. il Electronics 1:18 Apr '30.
- High gain amplifier for electronic measurement. Electronics 4:319 Oct '32
- Long wave radio receiving measurements at the Bureau of standards in 1929. L. W. Austin. Proc Inst Radio Eng 18:1481 Sept '30
- Long-wave radio receiving measurements at the Bureau of standards in 1930. L. W. Austin. Proc Inst Radio Eng 19:1766 Oct '31
- Measurement of the angle of incidence at the ground of downcoming short waves from the ionosphere. A. F. Wilkins. bibliog diags Jour Inst Elec Eng 74:582 June '34; Discussion 75:353 Sept. '34
- Measurements of electrical state of upper stratosphere in polar regions (Kennelly-Heaviside layer). M. A. Bontch-Bruewitch. il diags Proc Inst Radio Eng 22:1124 Sept. '34
- Method of maximization in circuit calculation. Walter van B. Roberts. Proc Inst Radio Eng 14:689 Oct '26
- Note on the measurement of radio signals. C. R. Englund. Proc Inst Radio Eng 2:25 Feb '28
- Optimum operating conditions for class C amplifiers. W. L. Everitt. diag Proc Inst Radio Eng 22:152 Feb '34
- Piezoelectric measuring devices. il Electronic 2:115 Sept. '31
- Piezoelectric methods of measuring mechanical forces. I. J. Sazl. il Electronics 4:292 Sept '32
- Potentiometer arrangement for measuring microvoltages at radio frequencies. Axel G. Jensen. Phys Rev Vol 26 July '25
- Precise and rapid method of measuring frequencies from five to two hundred cycles per second. N. P. Case. Proc Inst Radio Eng 18:1586 Sept '30. Errata Oct '30 p. 1620).
- Radiation resistance of concentric conductor transmission lines. R. Whitmer. Proc Inst Radio Eng 21:1343 Sept. '33

- Radio measurements; the application of the decibel system. N. Wells. Elec Rev (Lond) 11:736 Nov 18 '32
- Radiotoneotype; an apparatus to determine the acoustic period of vibrating members. L. Spencer. diags Radio N 6:1875 '25
- Radio transmission measurements on long wavelengths. H. H. Beverage and H. O. Peterson. Proc Inst Radio Eng 2:661 Dec '23
- Some measurements on optimum heterodyne. J. F. Herd. Exp Wireless 7:493 Sept '30
- Some measurements on the directional distribution of static. A. E. Harper. Proc Inst Radio Eng 17:1214 July '29
- Tables for the calculation of the mutual inductance of any two coaxial single-layer coils. F. W. Grover. Proc Inst Radio Eng 21:1039 July '33
- Wide range scales for fading records by electrical means. G. R. Robinson. Proc Inst Radio Eng 19:247 Feb '31
- See also*  
Modulation Measurements  
Receiver Measurements
- MEASUREMENTS, Circuit Constants at Low Frequency**
- Amplification of very low direct currents. Electronics 11:634 May '31
- Audio-frequency measurement by the electrically-excited monochord. E. Williams. Proc Inst Radio Eng 22:794 June '34; Correction. 22:1050 Sept '34
- Bridge circuit for measuring the inductance of coils while passing direct current. V. D. Landon. Proc Inst Radio Eng 16:1771 Dec '28
- Bridge method for the measurement of interelectrode admittance in vacuum tubes. E. T. Hock. Proc Inst Radio Eng 16:487 Apr '28
- Calibration of low audio frequencies. E. R. Meissner. Electronics 4:137 May '33
- Direct-capacity bridge for vacuum-tube measurements. Lincoln Walsh. Proc Inst Radio Eng 16:482 Apr '28
- Direct capacity measurement. George A. Campbell. Bell Sys Tech Jour 1:18 July '22
- Dual-frequency audio source for general laboratory use. G. F. Lampkin. Il Electronics 1:417 Dec '30
- Experiments on electromagnetic shielding frequencies between one and thirty kilocycles. W. Lyons. Il diags Proc Inst Radio Eng 21:574 Apr '33
- Low-frequency radio receiving measurements at the Bureau of Standards in 1931 and 1932. E. B. Judson. Proc Inst Radio Eng 21:1354 Sept '33
- Measurement of capacitance in terms of resistance and frequency. J. G. Ferguson and B. W. Bartlett. Bell Sys Tech Jour 7:420 July '28
- Measurement of inductance by the shielded Owen bridge. J. G. Ferguson. Bell Sys Tech Jour 6:375 July '27
- Measurement of small values of inductance and effective resistance. C. Brookes-Smith. Elec Comm 13:9 July '34
- Measuring weak magnetic a.c. fields of known frequency. Electronics 2:635 May '31
- Microammeter indicator of high-frequency bridge balance. H. M. Turner. Trans A.I.E.E. 46:559 '27
- Notes on audio-frequency measurements. J. K. Hilliard. Il Electronics 2:506 Feb '31
- MEASUREMENTS, Circuit Constants at Radio Frequency**
- Absorption method of capacity and inductance measurement. A. P. Castellain. diags Exp Wireless 7:81 Feb. '30; Discussion. W. H. F. Griffiths. 7:203 May '30
- Analysis of air condenser loss resistance. W. Jackson. Proc Inst Radio Eng 22:957 Aug '34
- Bridge-type frequency meter. R. F. Field. General Radio Exp Vol 6 Nov '31
- Campbell-Shackelton shielded ratio box. Leo Behr and A. J. Williams, jr. Proc Inst Radio Eng 20:969 June '32. Discussion. R. F. Field and Leo Behr Sept '32 p. 1535
- Capacitive and inductive coupling, including a method of measuring mutual inductance at radio frequencies. R. M. Wilmotte. Exp Wireless 7:485 Sept '30
- Capacitive potential divider for high frequency measurements. K. Schlesinger. Il diags Wireless Eng 8:532 Oct '31
- Current-transformer methods of producing small, known voltages and currents at radio frequencies for calibrating purposes. D. W. Dye. diags Jour Inst Elec Eng 63:597; Discussion. 603 June '25
- Determination of dielectric properties at very high frequencies. J. G. Chaffee. Proc Inst Radio Eng 22:1009 Aug '34
- Detuning method of measuring the high-frequency resistance of a circuit. E. B. Moullin. Exp Wireless 7:367 July '30
- Development of a circuit for measuring the negative resistance of pliodynatrons. Edward N. Dingley, jr. Proc Inst Radio Eng 19:1948 Nov '31
- Double beat method of frequency adjustment; applications to the measurement of capacity and inductance. F. M. Colebrook. diags Wireless Eng 8:639 Dec '31
- Electrode effects in the measurement of power factor and dielectric constant of sheet insulating materials. E. T. Hoch. Bell Sys Tech Jour 5:555 Oct '26
- Frequency measurements at radio frequencies. 80p General radio co, Cambridge, Mass. '33
- High-frequency resistance measurement by the use of a variable mutual inductance. W. Jackson. diags Jour Inst Elec Eng 68:296 Feb '30
- High resistance measurement. F. A. Lidbury. Il Electronics 4:94 Mar '32
- Improved circuits for measuring negative resistance. F. E. Terman. Electronics 6:340 Dec '33
- Measurement of direct interelectrode capacitance of vacuum tubes. A. V. Loughren and H. W. Parker. Proc Inst Radio Eng 17:957 June '29
- Measurement of radio frequencies. W. H. F. Griffiths. Il diag Wireless Eng 11:524 Oct '34
- Measurement of resistance and impedances at high frequencies. J. W. Labus. diags Proc Inst Radio Eng 19:452 Mar '31

**MEASUREMENTS, Circuit Constants at Radio Frequency—Continued**

- Measuring ionization currents and high resistances. I. J. Saxl. *il Electronics* 3:62 Aug '31
- Measuring the damping coefficient of oscillating circuits. *Electronics* 6:18 Jan '33
- Method for measurement of high resistance at high frequency. P. B. Taylor. *diag Proc Inst Radio Eng* 20:1802 Nov '32
- Method of measuring the radio-frequency resistance of an oscillatory circuit. H. Inuma. *diag Proc Inst Radio Eng* 18:537 Mar '30
- Methods, formulas, and tables for the calculation of antenna capacity. F. W. Grover. *U S Bur Stand Sci Pa* 568:569 '28
- New method for the calibration of ammeters at radio frequencies. Herbert C. Hazel. *Proc Inst Radio Eng* 16:70 Jan '28
- New method of measurement of resistance and reactance at radio frequencies. F. M. Colebrook and R. M. Wilmotte. *diags Jour Inst Elec Eng* 69:497 Apr '31
- Precision condenser calibration at radio frequencies. E. L. Hall and W. D. George. *il Electronics* 7:318 Oct '34
- Radio frequency bridge for impedance and power-factor measurements. D. W. Dye and T. I. Jones. *Jour Inst Elec Eng* 72:169 '33 (Wireless Section. *I.E.E.* 8:22 Mar '33
- Resonant impedances and effective series resistance of short-wave parallel resonant circuits. Hajime Inuma. *Proc Inst Radio Eng* 19:467 Mar '31
- Simplification of accurate measurement of radio-frequency. W. H. F. Griffiths. *il diag Wireless Eng* 10:239, 299 May-June '33

*See also*

**Receiver Measurements****MEASUREMENTS, Field Intensity**

- Compact radio field strength meter. P. B. Taylor. *il diags Proc Inst Radio Eng* 22:191 Feb '34
- Comparison of methods of measuring radio field intensities. *Radio Serv Bul* 98:17 June '25
- Continuous recorder of radio field intensities. K. A. Norton and S. E. Reymer. *diags pl U S Bur Stand Jour Research* 11:373 Sept '33
- Determining field distribution by electronic methods. E. D. McArthur. *il Electronics*. 4:192 June '32
- Field-intensity measurements at frequencies from 285 to 5,400 kilocycles per second. S. S. Kirby and K. A. Norton. *diags map U S Bur Stand Jour Research* 8:463 Apr '32; Same. *Proc Inst Radio Eng* 20:841 May '32
- Field-strength measurement. A. L. Green. *diags Exp Wireless* 8:61 Feb '31
- Field intensity meter. G. H. Brown and G. Koehler. *il diags Rev Sci Instr* 3:403 Aug '32
- Instantaneous-reading radio goniometer. R. A. Watson-Watt and J. F. Herd. *Jour Inst Elec Eng* 64:611 May '26
- Measurement of field intensity of broadcasting stations. *Radio Serv Bul* 101:18 Sept '25
- Measurement of the intensity of high frequency magnetic fields. R. H. Mortimore. *il diags Phys Rev* 35:753 Apr 1 '30

- Note on an automatic field strength and static recorder. W. W. Mutch. *Proc Inst Radio Eng* 20:1914 Dec '32
- Note on the measurement of radio signals. C. R. England. *Proc Inst Radio Eng* 11:26 Feb '23. Discussion. L. W. Austin p. 153 Apr '23
- Portable receiving sets for measuring field strengths at broadcasting frequencies. A. G. Jensen. *Proc Inst Radio Eng* 14:333 June '26
- Quantitative measurements on reception in radio telegraphy. G. Anders. *Proc Inst Radio Eng* 15:297 Apr '27
- Radio field-strength measuring system for frequencies up to forty megacycles. H. T. Friis and E. Bruce. *Proc Inst Radio Eng* 14:507 Aug '27
- Radio transmission measurements. Ralph Bown, Carl R. England, and H. T. Friis. *Proc Inst Radio Eng* 11:115 Apr '23
- Radio transmission measurements on long wave lengths. H. H. Beverage and H. O. Peterson. *Proc Inst Radio Eng* 11:661 Dec '23
- Signal-strength measurements. E. H. Ullrich. *Elec Comm* 5:22 July '26
- Static recorder. H. T. Friis. *Bell Sys Tech Jour* 5:282 Apr '26
- Ultra-short-wave propagation. J. C. Schelleng, C. R. Burrows and E. B. Ferrell. *Proc Inst Radio Eng* 21:427 Mar '33
- Use of automatic recording equipment in radio transmission research. P. A. de Mars, G. W. Kenrick, and G. W. Pickard. *Proc Inst Radio Eng* 19:1618 Sept '31
- Use of field intensity measurements for the determination of broadcast station coverage. C. M. Jansky, jr. and S. L. Bailey. *maps Proc Inst Radio Eng* 20:62 Jan '32
- Wide range scales for fading records by electrical means. G. D. Robinson. *Proc Inst Radio Eng* 19:247 Feb '31

*See also*

**Broadcasting Service Area****MEASUREMENTS, Frequency**

- Accurate method of measuring transmitted wave frequencies at 5,000 and 20,000 kilocycles per second. E. L. Hall. *bibliog diag U S Bur Stand Jour Research* 5:647 Sept '30
- Adjustment of the multivibrator for frequency division. V. J. Andrew. *diags Proc Inst Radio Eng* 19:1911 Nov '31
- Correction factor for the parallel wire system used in absolute radio-frequency standardization. August Hund. *Proc Inst Radio Eng* 12:817 Dec '24
- Development of a precision ammeter for very high frequencies. E. B. Moullin. *diags Jour Inst Elec Eng* 68:544 May '30; Discussion. 68:1173 Sept '30
- Device for the precise measurement of high frequencies. F. A. Polkinghorn and A. A. Roetken. *il diags Proc Inst Radio Eng* 19:937 June '31
- Direct reading frequency bridge for the audio range, based on Hay's bridge circuit. Chester I. Soucy and B. deF. Bayly. *Proc Inst Radio Eng* 17:834 May '29
- Direct-reading frequency meter. F. Guarnaschelli and F. Vecchiacchi. *Proc Inst Radio Eng* 19:659 Apr '31. Correction Aug '31 p. 1506

- Double hump phenomenon of current through a bridge across parallel lines. Eijiro Takagishi. Proc Inst Radio Eng 18:513 Mar '30
- Ellipse diagram of a lecher wire system. A. Hikosaburo. Proc Inst Radio Eng 21:303 Feb '33
- Formation of standing waves on lecher wires: A. Mohammed and S. R. Kantebet. Proc Inst Radio Eng Proc 19:1983 Nov '31
- Frequency comparison with the cathode ray oscillograph. C. B. Fisher. il Electronics 6:310 Nov '33
- Frequency measurement and control. A. S. Angwin. diags Jour Inst Elec Eng 70:17-35 Dec '31; Abstracts. Electrician 107:662 Nov 13 '31; Wireless Eng 8:659 Dec '31
- Frequency measurement in electrical communication. J. W. Horton, N. H. Ricker and W. A. Morrison. Trans A.I.E.E. 42:730 '23
- Frequency measurements of high accuracy. J. J. Vormer and C. van Geel. diags Exp Wireless 8:298 June '31
- Frequency measurements with the cathode ray oscillograph. F. J. Rasmussen. Trans A.I.E.E. 45:1256 '36
- High frequency feeders; some investigations into design and measurement. H. O. Roosenstein. il diags Exp Wireless 8:294 June '31
- High-frequency measurements on an electron oscillator. S. J. Borgars. diags Wireless Eng 11:134 Mar '34
- International comparison of frequency by means of a luminous quartz resonator. S. Jimbo. il Proc Inst Radio Eng 18:1930 Nov '30
- International frequency comparisons by means of modulation emissions. L. Essen. Jour Inst Elec Eng 75:289 Sept '34
- Interpolation methods for use with harmonic frequency standards. J. K. Clapp. Proc Inst Radio Eng 18:1575 Sept '30
- Measurement of frequency and allied quantities in wireless telegraphy. K. E. Edgeworth and G. W. N. Cobbold. Jour Inst Elec Eng 63:919; Discussion. p. 920 Sept '25
- Measurement of the frequency of ultra-radio waves. J. B. Hoag. diags Proc Inst Radio Eng 21:29 Jan '33
- Method of measuring very short radio wave lengths and their use in frequency standardization. F. W. Dunmore and F. H. Engel. Proc Inst Radio Eng 11:467 Oct '23
- Precise and rapid method of measuring frequencies from five to two hundred cycles per second. N. P. Case. diags Proc Inst Radio Eng 18:1586 Sept. Errata, Oct p 1620 '30
- Precision tuning fork frequency standard. E. Norrman. Proc Inst Radio Eng 20:1715 Nov '32
- Radio frequency electrical measurements. H. A. Brown. 286 p \$4 McGraw-Hill '31
- Sensitizing the wavemeter for intermediate frequencies. A. G. Richardson. il Electronics 4:130 Apr '32
- Shielding in high-frequency measurements. J. G. Ferguson. Bell Sys Tech Jour 8:560 July '29
- Superregenerative wave meter for ultra-short waves. A. Ataka. diag Proc Inst Radio Eng 21:1590 Nov '33
- Testing of frequency monitors for the Federal radio commission. W. D. George. Proc Inst Radio Eng 22:449 Apr '34
- Time service of the U. S. Naval observatory. J. F. Hellweg. Trans A.I.E.E. 51:538 June '32
- See also*  
Frequency Measurements  
Frequency Meters
- MEASUREMENTS, Vacuum Tube Characteristics**
- Bridge method for the measurement of interelectrode admittance in vacuum tubes. E. T. Hock. Proc Inst Radio Eng 16:487 Apr '28
- Calculation of characteristics and the design of triodes. Yuziro Kusunose. Proc Inst Radio Eng 17:1706 Oct '29. Errata 18:219 Feb '30
- Development of a circuit for measuring the negative resistance of pliodynatrons. E. N. Dingley, jr. Proc Inst Radio Eng 19:1948 Nov '31
- Direct-capacity bridge for vacuum tube measurements. L. Walsh. Proc Inst Radio Eng 16:482 Apr '28
- Dynamic measurement of electron tube coefficients. W. N. Tuttle. il diags Proc Inst Radio Eng Aug '27
- Dynamic tube measurements. W. N. Tuttle. Electronics. 4:344 Nov '32
- Dynamic tube measurements. W. P. Koehel. il Electronics 7:381 Dec '34
- Estimation of the sensitivity of the grid rectifier for large inputs. C. D. Hall. Exp Wireless 7:668 Dec '30
- Graphical analysis of output tube performance. C. E. Kilgour. Proc Inst Radio Eng 19:42 Jan '31
- Grid-current measurements. L. Sutherlin. Electronics. 3:148 Oct '31
- Grid losses in power amplifier. E. E. Spitzer. Proc Inst Radio Eng 17:985 June '29
- Measurement and reduction of microphonic noise in vacuum tubes. D. B. Penick, bibliog diag Bell System Tech Jour 13:614 Oct '34
- Measurement of direct interelectrode capacitance of vacuum tubes. A. V. Loughren and H. W. Parker. Proc Inst Radio Eng 17:957 June '29
- Measurement of the grid-anode capacitance of screen-grid valves. T. I. Jones, bibliog diags Jour Inst Elec Eng 74:589 June '34
- Measurement of vacuum in radio tubes. M. D. Sarbey. Electronics 2:594 Apr. '31
- Note on variations in the amplification factor of triodes. Frederick Emmons Terman and Albert L. Cook. Proc Inst Radio Eng 18:1044 June '30
- See also*  
Receiver Measurements
- MEASUREMENTS, Voltage, Current, and Power**
- Alternating current measuring instruments as discriminators against harmonics. Irving Wolff. Proc Inst Radio Eng 19:647 Apr '31
- Aspects of standard signal generator design. J. D. Crawford. il Electronics 4:46 Feb '32
- Beat frequency oscillator control determining proper plate shape. G. F. Lampkin. il Electronics 4:369 Dec '32
- Broadcast transmitter measurement. E. A. Laport. Electronics 4:88 Mar '32
- Condenser shunt for measurement of high frequency currents of large magnitude. Alexander Nyman. Proc Inst Radio Eng 16:208 Feb '28



**MEASUREMENTS, Voltage, Current, and Power—**  
Continued

- Development of a circuit for measuring the negative resistance of pliodynatrons. E. N. Dingley, jr. *diag Proc Inst Radio Eng* 19:1948 Nov '31
- Electron tube wattmeter and voltmeter and phase-shifting bridge. H. M. Turner and F. T. McNamara. *Proc Inst Radio Eng* 18:1743 Oct '30
- Engineering acoustics; broadcast power-levels. Electrician 106:371 Mar 6 '31
- Low range electrostatic voltmeter. W. P. Koechel. *il. Electronics* 4:252 Sept '33
- Measurement of harmonic power output of a radio transmitter. P. M. Honnell and E. B. Ferrrell. *il diags Proc Inst Radio Eng* 22:1181 Oct '34
- Measurement of the a-c component of composite voltages. Sidney Fishberg. *Aerovox Research W* 1.5 May '28
- Measurement of power and efficiency of radio transmitting apparatus. G. Pession and T. Gorio. *Proc Inst Radio Eng* 19:377 Mar '31
- Potential difference and capacity in a.c. problems. *Exp Wireless* 5:117 Mar '28
- Shielded bridge for inductive impedance measurements of speech and carrier frequencies. W. J. Shackelton. *Trans A.I.E.E.* 45:1266 '26
- Use of the copper-oxide rectifier for instrument purposes. Joseph Sahagen. *Proc Inst Radio Eng* 19:233 Feb '31
- Vacuum tube microvoltmeter. E. Woehlich. *Electronics* 3:193 Nov '31
- Vacuum tube voltmeters for a.c. operation. *Electronics* 2:634 May '31
- Vacuum-tube voltmeter with logarithmic response. F. V. Hunt. *Rev Sci Inst* 4:672 Dec '33  
*See also*
- Vacuum-Tube Voltmeters

**MEASUREMENTS, Wave Form and Phase**

- Analysis of alternating-current waves by the method of Fourier, with special reference to methods of facilitating computations. Reprint 203 *Bur Standards Bul Vol* 9 '13
- Analysis of waveforms; half period contact in waveforms containing even harmonics. L. G. A. Sims. *Wireless Eng* 11:419 Aug '34
- Analyzer for complex electric waves. A. G. Landeen. *Bell Sys Tech Jour* 6:230 Apr '27
- Delineation of alternating current wave forms. H. A. Thomas. *il diags Exp Wireless* 4:15 Jan '27
- Determination of wave-length by audible heterodyne. L. G. A. Sims. *Engineering* 138:348 Oct 5 '34
- Device for showing the direction of motion of oscilloscope spot. E. R. Mann. *Rev Sci Inst* 5:214 June '34
- Electrical wave analyzers for power and telephone systems. R. G. McCurdy and P. W. Blye. *Trans A.I.E.E.* 48:1167 Oct '29
- Elimination of phase shifts between the currents in two antennas. H. Roder. *diags Proc Inst Radio Eng* 22:374 Mar '34
- Fourier analysis of radio-frequency power amplifier wave forms. L. B. Hallman, jr. *Proc Inst Radio Eng* 20:1640 Oct '32. Discussion. Frederick Emmons Terman and L. B. Hallman, jr. 21:726 May '33

- Graphical method for determining the magnitude and phase of the electric field in the neighborhood of an antenna carrying a known distribution of current. J. S. McPetrie. *Jour Inst Elec Eng* 69:290 Feb '31
- Harmonic production and cross modulation in thermionic valves with resistive loads. D. C. Espley. *Proc Inst Radio Eng* 22:781 June '34
- Interpolation methods for use with harmonic frequency standards. J. K. Clapp. *Proc Inst Radio Eng* 18:1575 Sept '30
- Measurement of phase distortion. H. Nyquist and S. Brand. *Bell Sys Tech Jour* 9:522 July '30
- Measuring harmonic distortion in tube circuits. Schimdt and Stinchfield. (*diag*) *Electronics* 1:79 May '30
- New radiofrequency phase meter. R. R. Law. *diag Rev Sci Instr* 4:537 Oct '33
- Oscillographic observations on the direction of propagation and fading of short waves. H. T. Friis. *Proc Inst Radio Eng* 16:658 May '28
- Phase angle of vacuum tube transconductance at very high frequencies. F. B. Llewellyn. *diags Proc Inst Radio Eng* 22:947 Aug '34
- Phase interference phenomena in low-frequency radio transmission. G. W. Kenrick and G. W. Pickard. *diags Proc Inst Radio Eng* 22:344 Mar '34
- Simple harmonic analyzer. M. G. Nicholson and William M. Perkins. *Proc Inst Radio Eng* 20:734 Apr '32
- Simple method of harmonic analysis for use in radio engineering practice. H. Roder. *Proc Inst Radio Eng* 19:1481-7 Aug '31; Discussion. 20:359 Feb '32
- Simplified harmonic analyzer. A. W. Barber. *il Electronics* 1:374 Nov '30
- Simplified method of measuring broadcast harmonics. E. C. Miller. *Electronics* 1:432 Dec '30
- Standard microvolter using second harmonic principle. W. F. Diehl. *il Electronics* 4:230 July '32
- Theoretical investigation of the phase relations in beam systems. R. M. Wilmotte and J. S. McPetrie. *Jour Inst Elec Eng* 66:949 Sept '28
- Thermionic voltmeter method for the harmonic analysis of electrical waves. C. G. Suits. *il diags Proc Inst Radio Eng* 18:172 Jan '30
- Wave analysis. L. B. Arguimbau. *Gen Radio Exp* 7:12 June '33
- Wave form examination with cathode ray oscillograph. N. V. Kipping. *Elec Comm* 3:69 July '24  
*See also*
- Oscillograph                      Wavemeters  
Phase

**MICROPHONES**

- A solution of the problem of the broadcasting microphone. A. H. Reeves. *Elec Comm* 7:258 Apr '29
- Broadcast transmitting stations of the radio corporation of America. Julius Weinberger. *Proc Inst Radio Eng* 12:745 Dec '24
- Calibration of microphones. Olsen and Goldman. *il Electronics* 3:106 Sept '31
- Carbon microphone; some researches bearing on its action. F. S. Goucher. *Bell Sys Tech Jour* 13:163 Apr '34

- Condenser and carbon microphones; their construction and use. W. C. Jones. Bell Sys Tech Jour 10:46 Jan '31
- Description of the General Electric Company's broadcasting station at Schnectady, New York. W. R. G. Baker. Proc Inst Radio Eng 11:339 Aug '23
- Dynamic microphone amplifier. A. J. Sanail. il Electronics 7:52 Feb '34
- Effect of cavity resonance on the frequency response characteristic of the condenser microphone. Stuart Ballantine. Proc Inst Radio Eng 18:1206 July '30
- Efficient miniature condenser microphone system. H. C. Harrison and R. B. Flanders. Bell Sys Tech Jour 11:451 July '32
- Lapel microphone of the velocity type. Harry F. Olson and Richard W. Carlisle. Proc Inst Radio Eng 22:1354 Dec '34
- Loudspeakers and microphones. E. C. Wentz and A. L. Thuras. Bell Sys Tech Jour 13:259 Apr '34
- Microphone amplifiers and transformers. H. L. Kirke. il diags Exp Wireless 5:361-443 July-Aug '28
- Microphone switching systems for broadcast stations. L. W. Barnett. il Electronics 7:152 May '34
- Moving coil telephone receivers and microphones. E. C. Wentz and A. L. Thuras. Bell Sys Tech Jour 10:565 Oct '31
- Note on the effect of reflection by the microphone in sound measurements. Stuart Ballantine. Proc Inst Radio Eng 16:1639 Dec '28
- On the collection of sound in reverberant rooms, with special reference to the application of the ribbon microphone. Harry F. Olson. Proc Inst Radio Eng 21:655 May '33
- Piezoelectric loudspeakers and microphones. A. L. Williams. il Electronics 4:166 May '32
- Some microphone measurements and some suggestions with regard to microphone arrangements. S. Lemoine. Elec Comm 9:139 Oct '30
- Use of rochelle salt crystals for electrical reproducers and microphones. C. Baldwin Sawyer. Proc Inst Radio Eng 19:2020 Nov '31
- Velocity microphones. C. W. Melotte and George A. Elliott. diags QST 17:23 Feb '33
- See also
- |         |                        |
|---------|------------------------|
| Musical | Speech                 |
| Sound   | Speech Input Equipment |
- MODULATION, Modulators**
- Adjacent channel interference. I. J. Kaar. il diag Proc Inst Radio Eng 22:301 Mar '34
- Amplitude, phase, and frequency modulation. H. Roder. Proc Inst Radio Eng 19:2145 (bibliog p.2175-6) Dec '31; Discussion. 20:884 May '32
- Analysis of efficient modulation. E. N. Dingley, jr. il Electronics 7:78 Mar '34
- Analysis of high modulation transmission. G. F. Lampkin. il Electronics 1:326 Oct '30
- Apparent demodulation of a weak station by a stronger one. F. M. Colebrook. Wireless Eng 8:409-12 Aug '31
- Broadcast transmitting stations of the RCA. Julius Weinberger. Proc Inst Radio Eng 12:745 Dec '24
- Cross modulation in r-f amplifiers. Sylvan Harris. Proc Inst Radio Eng 18:350 Feb '30
- Degree of amplitude modulation; some notes on practical measurement. L. F. Gaudernack. bibliog diags Wireless Eng 11:293, 362; Same. Proc Inst Radio Eng 22:819 July '34
- Detection of two modulated waves which differ slightly in carrier frequency. C. B. Aiken. Proc Inst Radio Eng 19:120 Jan '31
- Determination of grid driving power in radio-frequency power amplifiers. W. P. Thomas. Proc Inst Radio Eng 21:1134 Aug '33; Discussion. W. H. Doherty 22:267 Feb '34
- Direct reading thermal modulation meter. F. R. W. Strafford. diags Wireless Eng 11:302 June '34
- Effects of reception on overmodulation. C. E. Kilgour. il Electronics 4:9 Jan '32
- Emission valve modulator for superheterodynes. H. A. Wheeler. il Electronics 6:76 Mar '33
- Equivalent circuit of the vacuum tube modulator. John R. Carson. Proc Inst Radio Eng 9:243 June '21
- Experimental study of the tetrode as a modulated radio-frequency amplifier. H. A. Robinson. Proc Inst Radio Eng 20:131 Jan '32
- Extension of the theory of three-electrode vacuum tube circuits. S. A. Levin and L. C. Peterson. diags Bell Sys Tech Jour 13:523 Oct '34
- Frequency modulation. B. van der Pol. Proc Inst Radio Eng 18:1194 July '30
- Frequency modulation and distortion. T. L. Eckersley. diags Exp Wireless 7:482 Sept '30
- Frequency modulation and the effects of a periodic capacity variation in a nondissipative oscillatory circuit. W. L. Barrow. bibliog Proc Inst Radio Eng 21:1182 Aug '33
- Grid current modulation. E. Peterson and C. R. Keith. Bell Sys Tech Jour 7:225 Apr '28
- Harmonic production and cross modulation in thermionic valves with resistive loads. D. C. Espley. Proc Inst Radio Eng 22:781 June '34
- Ionized gas modulator for short radio waves. E. G. Linder and I. Wolff. diag Proc Inst Radio Eng 22:791 June '34
- "KDKA," D. G. Little and R. L. Davis. Proc Inst Radio Eng 14:479 Aug '26
- Modulation and the heterodyne. W. Jackson. Exp Wireless 8:425 Aug '31
- Modulation frequencies in visual transmission. Edwin Lee White. Proc Inst Radio Eng 21:51 Jan '33
- Modulation in vacuum tubes used as amplifiers. Eugene Peterson and Herbert P. Evans. Bell Sys Tech Jour. 6:442 July '27
- Modulation products in a power law modulator. A. G. Tynan. Proc Inst Radio Eng 21:1203 Aug '33
- Mutual demodulation and allied problems. Exp Wireless 8:405 Aug '31
- New method of modulation; Radio-Paris broadcasting station. Wireless Eng 9:367 July '32
- Note on an ionized gas modulator for short radio waves. Ernest G. Linder and Irving Wolff. Proc Inst Radio Eng 22:791 June '34
- Note on new methods to modulate light. G. Wataghin and R. Deaglio. Proc Inst Radio Eng 21:1495 Oct '33
- Operation of modulators from a physical viewpoint. E. Peterson and F. B. Llewellyn. Proc Inst Radio Eng 18:38 Jan '30

**MODULATION, Modulators—Continued**

- Radio frequency circuits; the principle of modulation. Electrician 112:474 Apr 6 '34
- Radio frequency circuits; modulating circuits. diag Electrician 112:822 June 15 '34
- Reception of frequency modulated radio signals. V. J. Andrew. diags Proc Inst Radio Eng 20:835 May '32
- Recording of modulation level of a broadcast system. H. L. Kirke. il diags Wireless Eng 9:369 July '32
- Reduction of distortion and cross-talk in radio receivers by means of variable- $\mu$  tetrodes. Stuart Ballantine and H. A. Snow. Proc Inst Radio Eng 18:2102 Dec '30
- Short-cut methods for calculation of harmonic distortion in wave modulation. I. E. Mouromtseff and H. N. Kozanowski. Proc Inst Radio Eng 22:1090 Sept '34
- Side bands in frequency modulation. E. D. Scott and J. R. Woodyard. il diags Washington U Eng Exp Sta Bul 68:5 '33
- Simplified method of modulator design. E. A. Laport. il Electronics 6:184 July '33
- Some notes on the practical measurement of the degree of modulation. L. F. Gaudernack. Proc Inst Radio Eng 22:819 July '34
- Some possibilities of intelligence transmission when using a limited band of frequencies. F. E. Terman. Proc Inst Radio Eng 8:167 Jan '30
- Speech amplified that may be used to drive class B modulators. il diag Radio N 16:347 Dec '34
- Superposition of two modulated radio frequencies. H. Roder. Proc Inst Radio Eng 20:1962 Dec '32
- Transmission and reception of ultra-short waves that are modulated by several modulated high frequencies. M. von Ardenne. il diags Proc Inst Radio Eng 20:933 June '32
- Transmission lines as frequency modulators. A. V. Eastman and E. D. Scott. bibliog diags Proc Inst Radio Eng 22:878 July '34
- See also*  
Frequency Modulation

**MODULATION, Cross**

- Cross modulation in radio frequency amplifiers. Sylvan Harris. Proc Inst Radio Eng 18:350 Feb '30
- Harmonic production and cross modulation in thermionic valves with resistive loads. D. C. Espley. Proc Inst Radio Eng 22:781 June '34
- Harmonic production in ferromagnetic materials at low frequencies and low flux densities. Eugene Peterson. Bell Sys Tech Jour 7:762 Oct '28
- Reduction of distortion and cross-modulation in radio receivers by means of variable- $\mu$  tetrodes. Stuart Ballantine and H. A. Snow. Proc Inst Radio Eng 18:2102 Dec '30
- See also*  
Interference

**MODULATION Measurements**

- Degree of amplitude modulation; some notes on practical measurement. L. F. Gaudernack. Wireless Eng 11:293, 362 June-July '34
- Direct reading modulation meter. A. H. Cooper and G. P. Smith. diag Wireless Eng 8:647 Dec '31

- Direct reading thermal modulation meter. F. R. W. Strafford. diags Wireless Eng 11:302 June '34
- International frequency comparisons by means of modulation emissions. L. Essen. Jour Inst Elec Eng 75:289 Sept '34
- New electrical method of frequency analysis and its application to frequency modulation. W. L. Barrow. il diag Proc Inst Radio Eng 20:1626 Oct '32
- New results in the calculation of modulation products. W. R. Bennett. Bell System Tech Jour 12:229 Apr '33
- Short-cut method for calculation of harmonic distortion in wave modulation. I. E. Mouromtseff and H. N. Kozanowski. Proc Inst Radio Eng 22:1090 Sept '34
- Some notes on the practical measurement of the degree of amplitude modulation. L. F. Gaudernack. Proc Inst Radio Eng 22:819 July '34
- Thermionic type frequency meter for use up to 15 kc. F. T. McNamara. Proc Inst Radio Eng 19:1384 Aug '31
- Use of the electron peak voltmeter for the measurement of modulation. C. B. Jolliffe. Proc Inst Radio Eng 17:660 Aug '29
- See also*  
Measurements, Radio-Frequency

**MONITORS, Frequency**

- Combining the frequency meter and monitor. Clyde J. Houldson. il diag QST 17:27 Jan '33
- Complete self-contained frequency meter-monitor. Fred H. Schnell. il diags QST 17:30 Jan '33
- Policing the ether lanes. M. Codel. il plan Radio N 12:1062-3 June '31
- Testing of frequency monitors for the Federal Radio Commission. W. D. George. Proc Inst Radio Eng 22:448 Apr '34

**MULTIVIBRATOR**

- Adjustment of the multivibrator for frequency division. Victor J. Andrew. Proc Inst Radio Eng 19:911 Nov '31
- Convenient method for referring secondary frequency standards to a standard time interval. L. M. Hull and J. K. Clapp. Proc Inst Radio Eng 17:252 Feb '29
- Device for the precise measurement of high frequencies. F. A. Polkinghorn and A. A. Roetken. Proc Inst Radio Eng 19:937 June '31
- Frequency division. Janusz Groszkowski. Proc Inst Radio Eng 18:1960 Nov '30
- Mesure en valeur absolue des periods oscillations electriques de haute frequence. H. Abraham and E. Black. Annal d Phys 12:237 Sept/Oct '19
- Oscillations in the circuit of a strongly damped triode. F. Vicchiacchi. Proc Inst Radio Eng 19:856 May '31
- Simplified frequency dividing circuit. Victor J. Andrew. Proc Inst Radio Eng 21:982 July '33
- Some remarks on the multivibrator. Yasusi Watanabe. Proc Inst Radio Eng 18:327 Feb '30
- The van der Pol four electrode tube relaxation oscillation circuit. R. M. Page and W. F. Curtis. Proc Inst Radio Eng 18:1921 Nov '30
- See also*  
Oscillators

## MUSIC

Audible frequency ranges of music, speech and noise. W. B. Snow. Bell Sys Tech Jour 10:616 Oct '31

Methods of high quality recording and reproducing of music and speech based on telephone research. J. P. Maxfield and H. C. Harrison. Bell Sys Tech Jour July '26

Some physical characteristics of speech and music. Harvey Fletcher. Bell Sys Tech Jour 10:349 July '31

Sound projection system for use in motion picture theatres. E. O. Scriven. Bell Sys Tech Jour 8:197 Jan '29

Symposium on wire transmission of symphonic music and its reproduction in auditory perspective. Bell Sys Tech Jour 13:239 Apr '34

*See also*

Sound  
Speech

## N

## NAVAL Communication

Naval aircraft radio. T. Johnson, jr. Proc Inst Radio Eng Part I 8:3 Feb '20. Part II Apr p. 87. Discussion. Apr p. 135

Naval radio tube transmitters. T. Johnson, jr. Proc Inst Radio Eng 9:381 Oct '21

Naval wireless telegraph communications. A. Shearing and J. W. S. Dorling. diag map Jour Inst Elec Eng 68:237 Feb '30

Plate-voltage supply for naval vacuum-tube transmitters. E. C. Raguét. Proc Inst Radio Eng 18:49 Jan '30

Reception of wireless signals in naval ships. W. F. Rawlinson. diag Jour Inst Elec Eng 75:293 Sept '34; Abstract. Wireless Eng 11:255 May '34; Discussion. Jour Inst Elec Eng 75:311 Sept '34; Wireless Eng 11:257 May '34

## NEGATIVE Resistance

A method of measuring the radio-frequency resistance of an oscillatory circuit. Hajime Iinuma. Proc Inst Radio Eng 18:537 Mar '30

Development of a circuit for measuring the negative resistance of pliodynatrons. Edward N. Dingley, jr. Proc Inst Radio Eng 19:1948 Nov '31

Dynatron detector—A new heterodyne receiver for continuous and modulated waves. Albert W. Hull, E. F. Hennelly, and F. R. Elder. Proc Inst Radio Eng 10:320 Oct '22

Improved circuits for measuring negative resistance. F. E. Terman. Electronics 6:340 Dec '33

Negative circuit constants. Lal C. Verma. Proc Inst Radio Eng 19:676 Apr '31

Resonant impedances and effective series resistance of short-wave parallel resonant circuits. Hajime Iinuma. Proc Inst Radio Eng 19:467 Mar '31

Uses and possibilities of piezoelectric oscillators. August Hund. Proc Inst Radio Eng 14:447 Aug '26

*See also*

Dynatron

## NETWORKS

Approximate networks of acoustic filters. W. P. Mason. Bell Sys Tech Jour 9:332 Apr '30

Behaviour of networks with normalized meshes. E. A. Gullemin and W. Glendinning. Proc Inst Radio Eng 17:380 Feb '29

Communication networks. E. Gullemin. John Wiley & Sons, N. Y. C. 1931

Distortion correction in electrical circuits with constant resistance recurrent networks. O. J. Zobel. Bell Sys Tech Jour 7:438 Apr '28

Equivalent circuits of an active network. J. G. Brainerd. Proc Inst Radio Eng 21:144 Jan '33

Equivalent electrical networks. Nathan Howitt. Proc Inst Radio Eng 20:1042 June '32

Impedance of loaded lines and design of simulating and compensating networks. Ray S. Hoyt. Bell Sys Tech Jour 3:414 July '24

Making normal coordinates coincide with the meshes of an electrical network. E. A. Gullemin. Proc Inst Radio Eng 15:635 Nov '27

Method for calculating transmission properties of electrical networks consisting of a number of sections. Andrew Alford. Proc Inst Radio Eng 17:380 Feb '29

New method for obtaining transient solutions of electrical networks. W. P. Mason. Bell Sys Tech Jour 8:109 Jan '29

Output networks for radio frequency power amplifiers. W. L. Everitt. Proc Inst Radio Eng 19:725 May '31

Overseas radio extensions to wire telephone networks. Lloyd Espenschied and William Wilson. Bell Sys Tech Jour 10:243 Apr '31

Reactance theorem. Ronald M. Foster. Bell Sys Tech Jour 3:259 Apr '24

Synthesis of electrical networks. Y. W. Lee. Jour Math and Phys 11:83 '32

The nonuniform transmission line. A. T. Starr. Proc Inst Radio Eng 20:1052 June '32

Transmission curves of high frequency networks. S. J. Model. Proc Inst Radio Eng 21:114 Jan '33. Errata p1238 Sept '33

Transmission networks and wave filters. T. E. Shea. D. Van Nostrand Co. N. Y. C. 1929

*See also*

Attenuators  
Wave Filters

## NOISE

Audible frequency ranges of music, speech and noise. W. B. Snow. Bell Sys Tech Jour 10:616 Oct '31

Diversity receiving system of RCA Communications, Inc. H. H. Beverage and H. O. Peterson. Proc Inst Radio Eng 19:531 Apr '31

Effect of background noise in shared channel broadcasting. C. B. Aiken. diag Bell Sys Tech Jour 13:333 July '34

Electronics chart of sound levels. Electronics 4:43 Feb '32

Fluctuation noise in radio receivers. Stuart Ballantine. Proc Inst Radio Eng 18:1377 Aug '30

Fluctuation noise in vacuum tubes. G. L. Pearson. Bell Sys Tech Jour 13:634 Oct '34

**NOISE—Continued**

- Fluctuation noise in vacuum tubes. G. L. Pearson. *il diag Bell System Tech Jour* 13:642 Oct '34
- High-frequency atmospheric noise. R. K. Potter. *Proc Inst Radio Eng* 19:1731 Oct '31
- Measurement and reduction of microphonic noise in vacuum tubes. D. B. Penick. *Bell Sys Tech Jour* 13:614 Oct '34
- Methods for measuring interfering noises. Lloyd Espenschied. *Proc Inst Radio Eng* 19:1951 Nov '31
- Microphonic improvements in vacuum tubes. Alan C. Rockwood and Warren R. Ferris. *Proc Inst Radio Eng* 17:1621 Sept '29
- Note on an automatic field strength and static recorder. W. W. Mutch. *Proc Inst Radio Eng* 20:1914 Dec '32
- Radio atmospherics. A. A. Lee. *diags Jour Inst Elec Eng* 66:12 Dec '27
- Radio-noise meter and its application to the measurement of radio interference. C. R. Barhydt. *il diags Gen Elec Rev* 36:201 Apr '33
- Radio transmission measurements. Ralph Bown, Carl R. Englund and H. T. Friis. *Proc Inst Radio Eng* 11:115 Apr '23
- Rapid method of estimating the signal-to-noise ratio of a high-gain receiver. F. B. Llewellyn. *Proc Inst Radio Eng* 19:416 Mar '31
- Receiver design for minimum fluctuation noise. Nelson R. Case. *Proc Inst Radio Eng* 19:963 June '31
- Shielded neutrodyne receiver. John F. Dreyer, Jr., and Ray H. Manson. *Proc Inst Radio Eng* 14:217 Apr '26
- Some theoretical and practical aspects of noise induction. R. F. Davis and H. R. Huntley. *Bell Sys Tech Jour* 12:469 Oct '33
- Special noise testing equipment. D. H. Macnee. *Elec Comm* 11:128 Jan '33
- Spontaneous background noise in amplifiers due to thermal agitation and shot effects. E. B. Moullin and H. D. M. Ellis. *Jour Inst Elec Eng* 74:323 Apr '34
- Static recorder. H. T. Friis. *Bell Sys Tech Jour* 5:282 Apr '26
- Study of noise in vacuum tubes and attached circuits. F. B. Llewellyn. *Proc Inst Radio Eng* 18:243 Feb '30
- Survey of Buffalo and New York City noises. *Electronics* 7:14 Jan '34
- See also*
- Hum; Interference; Vacuum Tube Noise

**O****OPTICS of Radio Transmission**

- Optical behavior of the ground for short radio waves. C. B. Feldman. *Proc Inst Radio Eng* 21:764 June '33
- Optics of radio transmission. Ernest Merritt. *Proc Inst Radio Eng* 20:29 Jan '32
- Some optical features in two-way television. Herbert E. Ives. *Bell Sys Tech Jour* 10:265 Apr '31
- See also*
- Propagation of Waves  
Television

**OSCILLATION, Oscillators**

- An auxiliary frequency control for r. f. oscillators. G. E. Lampkin. *Proc Inst Radio Eng* 17:115 Jan '29
- An improved audiofrequency generator. E. G. Lapham. *Proc Inst Radio Eng* 20:272 Feb '32
- Adjustment of the multivibrator for frequency division. Victor J. Andrew. *Proc Inst Radio Eng* 19:1911 Nov '31
- Application of quartz plates to radio transmitter. O. M. Hovgaard. *Proc Inst Radio Eng* 20:767 May '32
- Constant frequency oscillators. F. B. Llewellyn. *Proc Inst Radio Eng* 19:2063 Dec '31
- Crystal control applied to the dynatron oscillator. K. A. MacKinnon. *Proc Inst Radio Eng* 20:1689 Nov '32
- Design of a portable temperature-controlled piezo-oscillator. V. E. Heaton and W. H. Brattain. *Proc Inst Radio Eng* 18:1239 July '30
- Design of radio frequency signal generators. J. R. Bird. *Proc Inst Radio Eng* 19:438 Mar '31
- Electrical oscillations in antennas and inductance coils. John M. Miller. *Proc Inst Radio Eng* 7:299 June '19
- Elimination of harmonics in vacuum tube transmitters. Yusiro Kusunose. *Proc Inst Radio Eng* 20:340 Feb '32
- Four-electrode tube as a beat-frequency oscillator. S. Reid Warren, jr. *Proc Inst Radio Eng* 18:544 Mar '30
- Frequency modulation and effects of a periodic capacity variation in a nondissipative oscillatory circuit. W. L. Barrow. *Proc Inst Radio Eng* 21:1182 Aug '33
- Generation of polyphase oscillations by means of electron tubes. Rene Mesny. *Proc Inst Radio Eng* 13:471 Aug '26
- Inner-grid dynatron and the duodynatron. Tatuo Hayasi. *Proc Inst Radio Eng* 22:751 June '34
- Interdependence of frequency variation and harmonic content, and the problem of constant-frequency oscillators. Janusz Groszkowski. *Proc Inst Radio Eng* 21:958 July '33
- Interelectrode capacitance of the dynatron, with special reference to the frequency stability of the dynatron generator. G. B. Baker. *Jour Inst Elec Eng* 73:196
- Laboratory oscillator for receiver testing. C. J. Franks. *il Electronics* 2:668 June '31
- Logarithmic scale for beat-frequency oscillator. E. R. Meissner. *Proc Inst Radio Eng* 17:879 May '29
- Method of measuring the radio-frequency resistance of an oscillatory circuit. H. Linuma. *Proc Inst Radio Eng* 18:537 Mar '30
- Natural period of linear conductors. C. R. Englund. *Bell Sys Tech Jour* 7:404 July '28
- New method of testing for distortion in audio-frequency amplifiers. Herbert J. Reich. *Proc Inst Radio Eng* 19:401 Mar '31
- New treatment of electron tube oscillators with feed-back coupling. C. K. Jen. *Proc Inst Radio Eng* 19:2109 Dec '31

- Nonlinear theory of electric oscillations. Balh van der Pol. Proc Inst Radio Eng 22:1051 Sept '34
- On the mechanism of electron oscillations in a triode. H. E. Hollmann. Proc Inst Radio Eng 17:229 Feb '29
- On the oscillations of a circuit having a periodically varying capacitance. W. L. Barrow. Proc Inst Radio Eng 22:201 Feb '34
- On the simultaneous operation of different broadcast stations on the same channel. P. P. Eckersley. Proc Inst Radio Eng 19:175 Feb '31
- On the variation of generated frequency of a triode oscillator due to changes in filament current, grid voltage, plate voltage, or external resistance. Keith B. Eller. Proc Inst Radio Eng 16:1706 Dec '28
- Operating frequency of regenerative oscillatory systems. Hugo Benioff. Proc Inst Radio Eng 19:1252 July '31
- Operation of tube oscillators on a common load. S. I. Model. Proc Inst Radio Eng 21:1722 Dec '33
- Oscillator circuit measures humidity. Electronics 6:75 Mar '33
- Oscillator having a linear operating characteristic. L. B. Argulmbau. Proc Inst Radio Eng 21:14 Jan '33
- Oscillators with automatic control of the threshold of regeneration. Janusz Groszkowski. Proc Inst Radio Eng 22:145 Feb '34
- Output networks for radio frequency power amplifiers. W. L. Everitt. Proc Inst Radio Eng 19:725 May '31
- Precision heterodyne oscillators. W. H. F. Griffiths. II diags Wireless Eng 11:234 May '34
- Precision tuning fork frequency standard. E. Norrman. Proc Inst Radio Eng 20:1715 Nov '32
- Push-pull piezoelectric oscillator circuits. J. R. Harrison. Proc Inst Radio Eng 18:75 Jan '30
- Quartz crystal controlled oscillator circuits. Harry R. Meahl. Proc Inst Radio Eng 22:732 June '34
- Recent development in vacuum tube oscillator circuits. J. B. Dow. Proc Inst Radio Eng 19:2095 Dec '31. Correction (Jan '32 p. 182)
- Resistance stabilized oscillators. F. E. Terman. II Electronics 6:190 July '33
- Resonant impedance and effective series resistance of high-frequency parallel resonant circuits. Hajime Linuma. Proc Inst Radio Eng 19:467 Mar '31
- Short wave limit of vacuum tube oscillators. C. R. England. Proc Inst Radio Eng 15:914 Nov '27
- Simultaneous production of a fundamental and a harmonic in a tube generator. Hoy J. Walls. Proc Inst Radio Eng 15:37 Jan '27
- Single-tube beat-frequency oscillator. Leon Podolsky and Eugene McBride. II Electronics 7:356 Nov '34
- Some remarks on the multivibrator. Yasusi Watanabe. Proc Inst Radio Eng 18:327 Feb '30
- Stable general purpose test oscillator. Richard F. Shea. diags QST 18:40 Feb '34
- The nonlinear theory of electric oscillations. Balh van der Pol. Proc Inst Radio Eng 22:1051 Sept '34
- Transient oscillations in electric wave-filters. J. R. Carson and O. J. Zobel. Bell Sys Tech Jour 2:1 Jan '23
- Tuned-grid tuned-plate circuit using plate-grid capacity for feed-back. A derivation of conditions for oscillation. J. B. Dow. Proc Inst Radio Eng 15:397 May '27
- Tuned-grid, tuned-plate self-oscillating vacuum tube circuit. J. Warren Wright. Proc Inst Radio Eng 16:1113 Aug '28
- Vacuum tubes as power oscillators. D. C. Prince. Proc Inst Radio Eng 11:275 June '23. Part II 405 Aug '23; Part III 527 Oct '23
- Vacuum tube oscillators—a graphical method of analysis. J. W. Horton. Bell Sys Tech Jour 3:508 July '24

### OSCILLATORS, Crystal

- Application of quartz plates to radio transmitters. O. M. Hovgaard. Proc Inst Radio Eng 20:767 May '32
- Characteristics of piezo-electric quartz oscillators. I. Koga. diags Proc Inst Radio Eng 18:1935 Nov '30
- Constant frequency oscillators. F. B. Llewellyn. Proc Inst Radio Eng 19:2063 Dec '31
- Crystal control applied to the dynatron oscillator. K. A. MacKinnon. Proc Inst Radio Eng 20:1689 Nov '32
- Design of a portable temperature-controlled piezo oscillator. V. E. Heaton and W. H. Brattain. Proc Inst Radio Eng 17:1239 July '30
- Interdependence of frequency variation and harmonic content, and the problem of constant frequency oscillators. Janusz Groszkowski. Proc Inst Radio Eng 21:958 July '33
- Modes of vibration of piezoelectric crystals. N. H. Williams. Proc Inst Radio Eng 21:990 July '33
- Mounting quartz crystal oscillators. R. C. Hitchcock. Proc Inst Radio Eng 15:902 Nov '27
- New piezo oscillations with quartz cylinders cut along the optical axis. August Hund and R. B. Wright. Jour Research 4:383 Mar '30
- Observation on modes of vibration and temperature coefficient of quartz crystal plates. F. R. Lack. Proc Inst Radio Eng 17:1123 July '29
- On the variation of generated frequency of a triode oscillator due to changes in filament current, grid voltage, plate voltage, or external resistance. Keith B. Eller. Proc Inst Radio Eng 16:1706 Dec '28
- Performance of piezo oscillators and the influence of decrement of quartz on the frequency of oscillation. M. Boella. Proc Inst Radio Eng 19:1252 July '31
- Piezoelectric crystal resonators and crystal oscillators applied to the precision calibration of wavemeters. Proc Amer Acad 59:81 May '23
- Piezoelectric resonance and oscillatory phenomena with flexural vibrations in quartz plates. J. R. Harrison. Proc Inst Radio Eng 15:1040 Dec '27
- Piezoelectric resonator. W. G. Cady. Proc Inst Radio Eng 10:83 Apr '22
- Piezoelectric resonator in high-frequency oscillation circuits. Y. Watanabe. diags Proc Inst Radio Eng 18:695 Apr-May '30

**OSCILLATORS, Crystal—Continued**

- Piezoelectric stabilization of high frequencies. Harold Osterberg and John W. Cookson. *Rev Sci Inst* 5:281 Aug '34
- Quartz crystal-controlled oscillator circuits. Harry R. Meahl. *Proc Inst Radio Eng* 22:732 June '34
- Some improvements in quartz crystal circuit elements. F. R. Lack, G. W. Willard and I. E. Fair. *Bell Sys Tech Jour* 13:453 July '34

**OSCILLATORS, Dynatron**

- Constant frequency oscillators. F. B. Llewellyn. *Proc Inst Radio Eng* 19:2063 Dec '31
- Crystal control applied to the dynatron oscillator. K. A. MacKinnon. *Proc Inst Radio Eng* 20:1689 Nov '32
- Dynatron oscillator. F. M. Colebrook. *diags Wireless Eng* 8:581 Nov '31
- Inner-grid dynatron and the duodynatron. Tatu Hayasi. *Proc Inst Radio Eng* 22:751 June '34
- Interelectrode capacitance of the dynatron, with special reference to the stability of the dynatron generator. G. B. Baker. *Jour Inst Elec Eng* 73:196 June '34
- Recent development in vacuum tube oscillator circuits. J. B. Dow. *Proc Inst Radio Eng* 19:2095 Dec '31. Correction p. 182 Jan '32
- Resistance tuning. S. Cabot. *Proc Inst Radio Eng* 22:709 June '34
- Simple dynatron oscillator. Engineering Dept Aerovox Res W 4:5 June '31
- The dynatron; a vacuum tube possessing negative electric resistance. Albert W. Hull. *Proc Inst Elec Eng* 6:5 Feb '18
- Voltage amplification with high selectivity by means of the dynatron circuit. F. M. Colebrook. *diags Wireless Eng* 10:69F eb '33

*See also*

**Negative Resistance****OSCILLATORS, Electron**

- An electron oscillator with plane electrodes. B. J. Thompson and P. D. Zottu. *Proc Inst Radio Eng* 22:1374 Dec '34
- Communication with quasi optical waves. E. Karplus. *Proc Inst Radio Eng* 19:1715 Oct '31
- Electron oscillations without tuned circuits. W. H. Moore. *Proc Inst Radio Eng* 22:102 Aug '34
- Vacuum tubes as high-frequency oscillators. E. D. McArthur and E. E. Spitzer. *Proc Inst Radio Eng* 19:1971 Nov '31

**OSCILLATORS, Local Standard**

- An oscillation source for radio receiver investigations. Julius Weinberger and Carl Dreher. *Proc Inst Radio Eng* 7:584 Dec '19
- Method of measuring field intensities and atmospheric disturbances. L. W. Austin and E. B. Judson. *Proc Inst Radio Eng* 12:521 Oct '24
- Piezoelectric resonator. W. G. Cady. *Proc Inst Radio Eng* 10:83 Apr '22. Correction (contents page) Aug '22
- Portable receiving sets for measuring field strengths at broadcasting frequencies. Axel G. Jensen. *Proc Inst Radio Eng* 14:333 June '26. Discussion. G. D. Gillet (Oct '26 p. 699)

- Radio field-strength measuring system for frequencies up to forty megacycles. H. T. Friis and E. Bruce. *Proc Inst Radio Eng* 14:507 Aug '27

**OSCILLATORS, Magnetostriction**

- Magnetostatic oscillator for generation of ultrashort waves. G. R. Kilgore. *Proc Inst Radio Eng* 20:1741 Nov '32
- Magnetostriction oscillators. George W. Pierce. *Proc Inst Radio Eng* 17:12 Jan '29
- Magnetostrictive alloys with low temperature coefficients of frequency. John McDonald Ide. *Proc Inst Radio Eng* 22:177 Feb '34
- Measurements on magnetostriction vibrators. John M. Ide. *Proc Inst Radio Eng* 19:1216 July '31

**OSCILLATORS, Magnetron**

- An investigation of the magnetron short-wave oscillator. E. C. S. Megaw. *Jour Inst Elec Eng* 72:326 '33. Also, *Wireless Section I.E.E.* 8:72 June '33
- Magnetostatic oscillators for generation of ultrashort waves. G. R. Kilgore. *Proc Inst Radio Eng* 20:1741 Nov '32
- Magnetron oscillation of new type. Kinjiro Okabe. *Proc Inst Radio Eng* 18:1748 Oct '30
- New treatment of electron tube oscillators with feed-back Coupling. C. K. Jen. *Proc Inst Radio Eng* 19:2109 Dec '31
- Note on magnetron theory. F. T. McNama. *Proc Inst Radio Eng* 22:1037 Aug '34
- Note on the theory of the magnetron oscillator. E. C. S. Megaw. *Proc Inst Radio Eng* 21:1749 Dec '33
- Note on the theory of the magnetron oscillator. J. Barton Hoag. *Proc Inst Radio Eng* 21:1132 Aug '33
- On the magnetron oscillation of new type. Kinjiro Okabe. *Proc Inst Radio Eng* 18:1748 Oct '30
- On the short-wave limit of magnetron oscillators. Kinjiro Okabe. *Proc Inst Radio Eng* 17:652 Apr '23
- The magnetron. Albert W. Hull. *A Jour A. I. E. E.* 40:715 '21
- Vacuum tubes as high-frequency oscillators. E. D. McArthur and E. E. Spitzer. *Proc Inst Radio Eng* 19:1971 Nov '31
- Vacuum tubes as high frequency oscillators. M. J. Kelly and A. L. Samuel. *Elec Eng* 53:1516 Nov '34

**OSCILLATORS, Relaxation**

- Adjustment of the multivibrator for frequency division. Victor J. Andrew. *Proc Inst Radio Eng* 19:1911 Nov '31
- Device for the precise measurement of high frequencies. F. A. Polkinghorn and A. A. Roetken. *Proc Inst Radio Eng* 19:937 June '31
- The van der Pol four-electrode tube relaxation oscillation circuit. R. M. Page and W. F. Curtis. *Proc Inst Radio Eng* 18:1921 Nov '30

*See also*

**Multivibrator**

**OSCILLATORS, Tuned-Circuit Controlled**

- A recent development in vacuum tube oscillator circuits. J. B. Dow. Proc Inst Radio Eng 19:2095 Dec '31; Correction. p. 182 Jan '32
- Constant frequency oscillators. F. B. Llewellyn. Proc Inst Radio Eng 19:2063 Dec '31
- New methods of frequency control employing long lines. J. W. Conklin, J. L. Finch and C. W. Hansell. Proc Inst Radio Eng 19:1918 Nov '31
- New treatment of electron tube oscillators with feed-back coupling. C. K. Jen. Proc Inst Radio Eng 19:2109 Dec '31
- Operating frequency of regenerative oscillatory systems. Hugo Benioff. Proc Inst Radio Eng 19:1274 July '31
- Oscillations in the circuit of a strongly damped triode. F. Vecchiacchi. Proc Inst Radio Eng 19:856 May '31
- Performance of plezo oscillators and the influence of decrement of quartz on the frequency of oscillation. M. Boella. Proc Inst Radio Eng 19:1252 July '31
- Tuned-grid tuned-plate circuit using plate-grid capacity for feed-back. A derivation of the conditions for oscillation. J. B. Dow. Proc Inst Radio Eng 15:397 May '27

**OSCILLATORS, Ultra-High-Frequency**

- Communication with quasi-optical waves. E. Karplus. Proc Inst Radio Eng 19:1715 Oct '31
- Experimental study of regenerative ultra-short-wave oscillators. William H. Wenstrom. Proc Inst Radio Eng 20:113 Jan '32
- Generation and utilization of ultra-short waves in radio communication. Frederick A. Kolster. Proc Inst Radio Eng 22:1335 Dec '34
- Historical review of ultra-short-wave progress. William H. Wenstrom. Proc Inst Radio Eng 20:95. Discussion. H. M. Dowsett and William H. Wenstrom. 21:315 Feb '33
- Magnetostatic oscillators for generation of ultra-short-waves. G. R. Kilgore. Proc Inst Radio Eng 20:1741 Nov '32
- New circuit for the production of ultra-short-wave oscillations. H. N. Kozanowski. Proc Inst Radio Eng 20:957 June '32
- New methods of frequency control employing long lines. W. J. Conklin, J. L. Finch and C. W. Hansell. Proc Inst Radio Eng 19:1918 Nov '31
- New type of ultra-short-wave oscillator. I. E. Mouromsteff and H. V. Noble. Proc Inst Radio Eng 20:1328 Aug '32
- Note on the piezoelectric quartz oscillating crystal regarded from the principle of similitude. Isaac Koga. Proc Inst Radio Eng 19:1022 June '31
- Production of short-wave oscillations with cold-cathode discharge tube. Kinjor Okabe. Proc Inst Radio Eng 21:1593 Nov '33
- Vacuum tube electronics at ultra-high frequencies. F. B. Llewellyn. Proc Inst Radio Eng 21:1532 Nov '33
- Vacuum tubes as high-frequency oscillators. E. D. McArthur and E. E. Spitzer. Proc Inst Radio Eng 19:1971 Nov '31
- Vacuum tubes for generating frequencies above one hundred megacycles. C. E. Fay and A. L. Samuel. Proc Inst Radio Eng 23:199 Mar '35

*See also*

Vacuum Tubes, Ultra-High-Frequency

**OSCILLOGRAPH**

- A low voltage cathode ray oscillograph. J. B. Johnson. Bell Sys Tech Jour 1:142 Nov '22
- Applications of the cathode ray oscillograph. Ralph R. Batcher. Proc Inst Radio Eng 20:1878 Dec '32
- Cathode ray oscillograph and its application in radio work. Lewis M. Hull. Proc Inst Radio Eng 9:130 Apr '21
- Cathode ray oscillograph in radio work. C. B. Bazzoni. il diags Radio N 7:988 Jan '26
- Cathode-ray oscillograph timing axis. F. T. Brewer. il Electronics 3:222 Dec '31
- Cathode ray tubes for oscillograph purposes. R. T. Orth. il Electronics 4:332 Dec '33
- Device for showing the direction of motion of the oscillograph spot. E. R. Mann. Rev Sci Inst 5:214 June '34
- Electronic oscillograph lightning studies. Electronics 4:233 July '32
- Locating radio interference with the oscillograph. J. K. McNeely and P. J. Konkle. Proc Inst Radio Eng 18:1216 July '30
- New method of removing distortions due to the space charge in gas filled cathode ray oscillograph tubes. Manfred von Ardenne. Proc Inst Radio Eng 22:423 Apr '34
- New method of testing for distortion in audio frequency amplifiers. Herbert J. Reich. Proc Inst Radio Eng 19:401 Mar '31
- New treatment of electron tube oscillators with feedback coupling. C. K. Jen. Proc Inst Radio Eng 19:2109 Dec '31
- Oscillograph for ten thousand cycles. A. M. Curtis. Bell Sys Tech Jour 12:76 Jan '33
- Oscillographic observations on the direction of propagation and fading of short waves. H. T. Friis. Proc Inst Radio Eng 16:658 May '28
- Oscillographs for recording transient phenomena. W. A. Morrison. Bell Sys Tech Jour 8:368 Apr '29
- Photography of transients with cathode-ray oscillograph. il Electronics 7:125 Apr '34
- Polarization phenomena of low frequency waves. Shogo Namba. Proc Inst Radio Eng 19:1988 Nov '31
- Power supply and linear time axis for cathode ray oscillographs. Meir and Richards. il Electronics 7:110 Apr '34
- Simultaneous traces with cathode ray oscillograph. C. E. Brown. il Electronics 6:170 June '33
- The cathode ray oscillograph. J. B. Johnson. Bell Sys Tech Jour 11:1 Jan '32
- Thermionic valve amplifier for use with a Duddell oscillograph. W. Jackson. Wireless Eng 11:656 Feb '34
- Variation of the resistance of a radio condenser with capacity and frequency. R. R. Ramsey. Proc Inst Radio Eng 18:1226 July '30

*See also*

Cathode-Ray Tubes



## P

## PATENTS

- De Forest wins feed-back patent suit. *Sci Amer* 151:111 Aug '34
- Decision on sound film patents. (N) *Electronics* 1:217 Aug '30
- Electron devices in industry. *il Electronics* 2:92 Sept '31
- Extensively used patents relating to amplifying circuits. *Electronics* 4:221 July '32
- "For \$1 and other considerations" (editorial) *Electronics* 2-3:645 May '31
- Government loses suit against Dubilier. *Electronics* 2-3:646 May '31
- Information on U. S. radio patents and suits. 175p Radio manufacturers association, inc., New York '26
- Is a radio patent pool the way out? *Electronics* 2-3:2 July '31
- Langmuir high-vacuum patent case. *Electronics* 2-3:476 Jan '31
- Licenses under amplifier patents. *Electronics* 4:152 May '32
- Lowenstein grid-bias patent ruled invalid. *Electronics* 2-3:74 Aug '31
- Patents relating to electronics devices. *il Electronics* 3:92 Sept '31
- Pool of electronic patents (editorial). *Electronics* 2-3:131 Oct '31
- Problems in the field of electronics. H. A. Toulmin, jr. *il Electronics* 4:306 Oct '32
- Proposed patent office reforms. *Electronics* 4:116 Apr '32
- Radio patent action dismissed; Marconi's wireless telegraph co. vs. Philips lamps, ltd. *Elec Rev (Lond)* 113:156 Aug 4 '33; *Electrician* 111:155 Aug 4 '33
- Radio patent revolution. E. F. McDonald, jr. *Radio N* 6:1337 Jan '25
- Regeneration and the patent situation. J. B. Brady. *diags Radio N* 6:1424 Feb '25
- Safeguards for the radio inventor. Everett N. Curtis. *Proc Inst Radio Eng* 14:471 Aug '26
- Supreme court holds patent invalid. *Electronics* 2:673 June '31
- U. S. Supreme Court refuses to review RCA Deforest case. *Electronics* 2-3:646 May '31
- Phase compensation (III) Nyquist method of measuring time delay (compensation). E. K. Sandeman and I. L. Turnbull. *Elec Comm* 7:327 Apr '29
- Phase distortion and phase distortion correction. Sallie Pero Mead. *Bell Sys Tech Jour* 7:195 Apr '28
- Phase distortion in telephone apparatus. C. E. Lane. *Bell Sys Tech Jour* 9:493 July '30
- Phase shift in radio transmitters. W. A. Fitch. *bibliog il diags Proc Inst Radio Eng* 20:863 May '32
- Phase synchronization in directive antenna arrays with particular application to the radio range beacon. F. G. Kear, pl *diags U. S. Bur Stand Jour Research* 11:123 July '33
- Polyphase rectification special connections. R. W. Armstrong. *Proc Inst Radio Eng* 19:78 Jan '31
- See also*  
Measurements, Wave Form and Phase

## PHOTOELECTRIC CELLS

- Alkali-metal photoelectric cell. Herbert E. Ives. *Bell Sys Tech Jour* 5:320 Apr '26
- Amplification of weak currents and their application to photoelectric cells. G. Ferrie, R. Jouaust and R. Mesny. *Proc Inst Radio Eng* 13:461 Aug '25
- Analogy between dry-disc phototube and chemical cell. *Electronics* 7:20 Jan '34
- Artificial eye for blind finds doors or windows in room. F. E. Free. *il Electronics* 2:64 Aug '31
- Caesium-oxygen-silver photoelectric cell. C. H. Prescott, jr. and M. J. Kelly. *Bell Sys Tech Jour* 11:334 July '32
- Characteristics of the photronic cell. *Electronics* 4:168 May '32
- Circuits for light sensitive cells. *il Electronics* 2:114 Sept '31
- Galvanometer, distant reading, employs photocells. *Electronics* 4:21 Jan '32
- Improvement of thin film caesium photoelectric tubes. S. Asao and M. Suzuki. *Proc Inst Radio Eng* 19:655 Apr '31
- Manufacture of caesium silver-oxide photocell. W. H. Nickless. *il Electronics* 4:255 July '32
- Measuring frequency characteristics with the photoaudio generator. Walter Schaffer and Gunther Lubyszynski. *Proc Inst Radio Eng* 19:1242 July '31
- Operating characteristics in photoelectric tubes. G. F. Metcalf. *Proc Inst Radio Eng* 27:2064 Nov '29
- Photocell static discharger at WLW. *il Electronics* 7:316 Oct '34
- Photocells from rectifier disks. E. D. Wilson. *il Electronics* 4:312 Oct '32
- Photoelectric density comparator for analyzing spectrograms. *il Electronics* 7:358 Nov '34
- Radio tubes as photocells. W. P. Koechel. *il Electronics* 4:372 Dec '32
- Selenium cell versus photocell. *Electronics*. 2:644 May '31
- Sensitizing the photocell. *Charts Electronics* 2:518 Feb '31
- Sextant uses photocell with amplifier. *Electronics* 2:562 Mar '31

## PHASE

- Effects of phase distortion on telephone quality. John C. Steinberg. *Bell Sys Tech Jour* 9:550 July '30
- Electronic phase failure relay. C. Stansbury and G. C. Brown. *il Electronics* 6:46 Feb '33
- Measurement of phase distortion. H. Nyquist and S. Brand *Bell Sys Tech Jour* 9:522 July '30
- Phase angle of vacuum tube transconductance at very high frequencies. F. B. Llewellyn. *diags Proc Inst Radio Eng* 22:947 Aug '34
- Phase compensation (I) A simple account of phase compensation. E. K. Sandeman. *Elec Comm* 7:309 Apr '29
- Phase compensation (II) Design of phase compensating networks. A. R. A. Rendall. *Elec Comm* 7:316 Apr '29

- Transmission and reception of photoradiograms. Richard H. Ranger. Proc Inst Radio Eng 14:161 Apr '26
- Vacuum tube phototube with sensitivity of the better gas cells. il Electronics 7:86 Mar '34
- Weather Bureau uses photocells. E. B. Lyford. Electronics 7:316 Oct '34
- PHOTOELECTRIC CELLS, Industrial Uses**
- Adjusting illumination in tunnels and movie houses. Electronics 4:200 June '32
- Application of photoelectric register control. D. R. Shoultz. il diags Gen Elec Rev 37:170 Apr '34
- Automatic control of airport lighting on runways. R. A. Holmes. Electronics 4:135 Apr '32
- Automatic current regulator for gas X-ray tubes. H. Kersten. il diag Rev Sci Instr 5:5 Jan '34
- Automatic elevators protected by photocell. Electronics 7:15 Jan '34
- Automatic weighing of batches. il Electronics 4:98 Mar '32
- Bar and rod heating controlled by electric eye. Electronics 6:103 Apr '33
- Batching of cement by photocell. il Electronics 6:268 Oct '33
- Cable stretch compensated by photocells. Electronics 7:49 Feb '34
- Camera guards laboratory. Electronics 4:134 Apr '32
- Carton wrapping. Electronics 2:196 Nov '31
- Cesium-oxygen silver photocell. Electronics 6:49 Feb '33
- Color matching in automobile plant. Electronics 6:162 June '33
- Color measuring instruments. Herbert Neustadt, jr. il Electronics 6:128 May '33
- Commercial applications. Electronics 2:134 Oct '31
- Control of water supply. Electronics 6:103 Apr '33
- Controlling chemical processes by electron devices. J. A. Lee. Electronics 2:684 May '31
- Comparison of photocells. Electronics 6:171 June '33
- Counterfeits detected by electric eye. Electronics 4:135 Apr '32
- Daylight intensity controlled by phototubes. il Electronics 7:186 June '34
- Daylight yields to photo-cell control; four motor-operated skylight louvers in a Carolina post office are manipulated by electric eyes. E. H. Vedder. il diags Elec W 103:611 Apr 28 '34
- Deep sea fishing levels studied by photocells. Electronics 7:15 Jan '34
- Determination of opacities, particle size and consistency by light absorption. O. Maass. Pulp & Pa of Can 35:460 Aug '34
- Developments in the electrical industry during 1933; electronic tube control. J. Liston. il Gen Elec Rev 37:38 Jan '34; Same. Electrician 112:162 Feb 2 '34
- Differential circuit for blocking-layer photocells. L. A. Wood. diags Rev Sci Instr 5:295 Aug '34
- Electric eye for color. Am Dyestuff Rep 23:367 July 2 '34; Same cond. Paper Tr Jour 99:42 July 19 '34
- Electron tube in the paper industry. A. J. Germain. Paper Tr Jour 97:33 Dec 7 '33
- Electronic inspection. R. D. McDill. il diags Amer Mach 78:763 Nov 7 '34
- Elgin automatic water-hardness tester. il Engineering 137:331 Mar 16 '34
- Elevator doors controlled by photocells. C. E. Ellis. il Electronics 4:54 Feb '32
- Freight car movements controlled by photocells. Electronics 4:314 Oct '32
- Glow-tubes check operating voltage. Electronics 2:24 July '31
- Headlights open garage door. il Electronics 2:135 Oct '31
- High Speed electronic resistor sorter. Electronics 7:249 Aug '34
- Infra-red rays work new sextant. Electronics 4:201 June '32
- Inspection device with "memory." Electronics 4:201 June '32
- Installing photocell control. R. D. McDill. Electronics 6:276 Oct '33
- Integrator for irregular areas. Electronics 4:98 Mar '32
- Iron mine plants use photocell control. Electronics 2:196 Nov '31
- L'emploi des cellules photo-electriques dans la mesure de l'eclat et de la couleur des metaux. Genie Civil 105:94 July 28 '34
- Lichtelektrische messung des durchmessers feiner drahte. Gro. Zeit Ver Deutsch Ing 78:1172 Oct 66 '34
- Light beams control traffic. il Electronics 2:515 Feb '31
- Light-beam fence protects high-voltage test workers; Westinghouse research laboratories. T. R. Watts. il Elec W 104:22 July 7 '34
- Light beam of uniform intensity of cross section. J. T. Lay and I. C. Cornog. diags Rev Sci Instr 4:600 Nov '33
- Lighting switches in machine shop controlled by photo-electric cell. Electronics 2:557 Mar '31
- Machine designer looks at electronic industrial control. R. W. Carson. Electronics 7:156 May '34
- Machine throws out bad beans. B. S. Havens. il Electronics 2:197 Nov '31
- Matching colors of samples at three points. E. D. Wilson and others. il Electronics 4:342 Nov '32
- Measuring light with the electric eye. E. C. Schnurmacher. il Nat Safety N 29:24 Jan '34
- New photo-electric invention in London guarantees safety of jewelry display. East Undw 35:38 July 20 '34
- Objective luxmeters. H. G. Fruhling. Illum Engr 27:198 June '34
- Optical factors in caesium-silver-oxide photo-electric cells. H. E. Ives and A. R. Olpin. Jour Opt Soc Amer 24:198 Aug '34
- Optical train control; an adaptation of the photo-electric principle. O. P. van Steewen. il diags Elec Rev (Lond) 114:187 Feb 9 '34

- PHOTOELECTRIC Cells—Industrial Uses—Cont'd.**
- Packaging machines controlled by photoelectric cell. E. L. Smith. *il Electronics* 6:302 Nov '33
- Photocell detects smoke or fire. *Electronics* 6:306 Nov '33
- Photocells insure perfect jigsaws. *il Electronics* 6:163 June '33
- Photo-cell indicators on motor trucks. R. Raven-Hart. *diag Automotive Ind* 70:536 Apr 28 '34
- Photocell operates huge sign. G. S. Mitchell. *Electronics* 4:99 Mar '32
- Photo-cell synchronizes output and conveyors; Ohio rubber company. J. D. Crobaugh. *il Elec W* 103:477 Mar 31 '34
- Photoelectric apparatus for turbidity and light penetration measurement. M. M. Ellis. *bibliog Science* 80:37 July 13 '34
- Photo-electric colorimeter. A. Well. *diag Science* 79:593 June 29 '34
- Photoelectric effect for high energy quanta. H. Hall. *Phys Rev* 45:620 May 1 '34
- Photoelectric halftone engraver. *Electronics* 6:222 Aug '33
- Photoelectric U-V photometers. *Electronics* 6:105 Apr '33
- Photoelectric relays; application to rubber operations. *il diags India Rubber W* 89:33 Dec '33
- Photo-electric tubes as limit switches in sheet mill. A. F. Bowers. *il Electronics* 2:64 Aug '31
- Photo-electric technique for the counting of microscopical cells. A. Moldavan. *Science* 80:188 Aug 24 '34
- Photoelectric cell watches earthquakes, gives alarm. *Electronics* 4:135 Apr '32
- Photoelectric control in the printing arts. *Electronics* 4:334 Nov '32
- Photometry of stars by means of a photocell and low grid current tube. *Electronics* 6:49 Feb '33
- Photoelectric cells in precision inspection work. W. J. Tietz and C. Paulson. *il Electronics* 4:6 Jan '32
- Power control by means of phototubes. W. R. G. Baker, A. S. Fitzgerald and C. F. Whitney. *il Electronics* 2:632 May '31
- Projector type light flux generator for testing light sensitive devices. E. B. Kurz and J. L. Potter. *Proc Inst Radio Eng* 21:1599 Nov '33
- Recording eclipse phenomena. *Electronics* 2:157 Oct '31
- Response of the photronic cell to modulated light flux at audiofrequencies. J. H. Roe. *bibliog il diags Rev Sci Instr* 5:441 Dec '34
- Routing mail by photocells. *il Electronics* 2:139 Oct '31
- Siemens and Halske protective apparatus operated from the mains; makes use of rays from the non-visible portion of the spectrum. *il diag Electrician* 112:471 Apr 6 '34
- Sintering beds controlled by photocells. *Electronics* 2:156 Oct '31
- Smoke-density recorder for power plants. *Electronics* 2:684 June '31
- Smoke detection and recording by means of an Osram photo-cell. *diag Engineer* 157:536 May 25 '34; *Mech Handling* 21:204 July '34
- Sorting by photocell. *il Factory Management* 91:508 Dec '33
- Stroboscope inspects highspeed printing. *Electronics* 6:14 Jan '33
- Stroboscopic testing of meters. *Electronics* 6:15 Jan '33
- Tabulator sorts cards. *il Electronics* 2:157 Oct '31
- Tagliabue photoelectrically balanced recording potentiometer. *il Power Pl Eng* 38:297 June '34
- "Telepoise" with light sensitive budge for weighing. E. J. White. *il Electronics* 4:60 Feb '32
- Thermometer control by photronic cell. *il Electronics* 6:74 Mar '33
- Tube controls aviation obstruction lights. *il Electronics* 2:518 Feb '31
- Uses for photoelectric counters. *Electronics* 4:315 Oct '32
- Voting by means of cells. *Electronics* 6:222 Aug '33
- Web control of printing press. *Electronics* 6:102 Apr '33
- WCAV's photocell organ. *il Electronics* 7:157 May '34
- Westinghouse right light meter. *il Elec Traction* 30:130 Apr '34
- PIEZOELECTRIC Crystals, Piezoelectricity**
- Analysis of a piezo-electric oscillator circuit. Lyn-de P. Wheeler. *Proc Inst Radio Eng* 19:627 Apr '31. Correction (p908 May '31)
- Analysis of a piezo-electric oscillator circuit. L. P. Wheler. *diags Proc Inst Radio Eng* 19:627 Apr '31
- Application of quartz plates to radio transmitters. O. M. Hovgaard. *Proc Inst Radio Eng* 20:767 May '32
- Bibliography on piezo-electricity. W. G. Cady. *Proc Inst Radio Eng* 16:521 Apr '28
- Characteristics of piezo-electric quartz oscillators. I. Koga. *diags Proc Inst Radio Eng* 18:1935 Nov '30
- Crystal control applied to the dynatron oscillator. K. A. MacKinnon. *diag Proc Inst Radio Eng* 20:1689 Nov '32
- Dependence of the frequency of quartz piezo-electric oscillators upon circuit constants. Earle M. Terry. *Proc Inst Radio Eng* 16:1486 Nov '28
- Electrical wave filters employing quartz crystals as elements. W. P. Mason. *Bell Sys Tech Jour* 13:405 July '34
- Fundamental circuit details and constructional data for a practical crystal control 56 megacycle transmitter. J. Millen. *il diags Radio N* 14:206 Oct '32
- International comparison of frequency by means of a luminous quartz resonator. S. Jimbo. *il Proc Inst Radio Eng* 18:1930 Nov '30
- Modes of vibration in piezo-electric crystals. A. Crossley. *Proc Inst Radio Eng* 16:416 Apr '28
- Mounting quartz crystal oscillators. R. C. Hitchcock. *Proc Inst Radio Eng* 15:902 Nov '27
- New piezo oscillations with quartz cylinders cut along the optical axis. August Hund and R. B. Wright. *Jour Research* 4:383 Mea '30

- Note on the piezoelectric quartz oscillating crystal regarded from the principle of similitude. Isaac Koga. Proc Inst Radio Eng 19:1022 June '31
- Note on piezoelectric generators with small back action. A. Hund. Proc Inst Radio Eng 15:725 Aug '27
- Notes on quartz plates, air gap effect, and audio-frequency generation. August Hund. Proc Inst Radio Eng 16:1072 Aug '28
- Observation on modes of vibration and temperature coefficient of quartz crystal plates. F. R. Lack. Proc Inst Radio Eng 17:1123 July '29  
Same. Bell Sys Tech Jour 8:515 July '29
- Performance of piezo oscillators and the influence of decrement of quartz on the frequency of oscillation. M. Boella. Proc Inst Radio Eng 19:1252 July '31
- Piezo-electric crystals at radio frequencies. A. Meissner. Proc Inst Radio Eng 15:281 Apr '27
- Piezo-electric crystal oscillator. J. Warren Wright. Proc Inst Radio Eng 17:127 Jan '29
- Piezo electric crystal resonators and crystal oscillators applied to the precision calibration of wavemeters. Ann Amer Acad 59:81 May '23
- Piezo-electric effect and its application to wireless. C. W. Goyder. il diags Exp Wireless 3:165 Mar '26
- Piezo-electric frequency control. R. C. Hitchcock. Elec Jour 25:503 Oct '28
- Piezo-electric loud speaker for the higher audio frequencies. Stuart Ballantine. Proc Inst Radio Eng 21:1399 Oct '33
- Piezoelectric measuring devices. il Electronics 2:115 Sept '31
- Piezo electric methods of measuring mechanical forces. I. J. Saxi. il Electronics 4:292 Sept '32
- Piezoelectric resonance and oscillatory phenomena with flexural vibrations in quartz plates. J. Harrison. Proc Inst Radio Eng 15:1040 Dec '27
- Piezoelectric resonator. W. G. Cady. Proc Inst Radio Eng 10:83 Apr '22
- Piezoelectric resonator and its equivalent network. K. S. Van Dyke. Proc Inst Radio Eng 16:742 June '28. Errata 18:219 Feb '30
- Piezo-electric resonator in high frequency oscillation circuits. Y. Watanabe. diags Proc Inst Radio Eng 18:695 Apr-May '30
- Precision determination of frequency. J. W. Horton and W. A. Marrison. Proc Inst Radio Eng 16:137 Feb '28
- Piezoelectric stabilization of high frequencies. Harold Osterberg and John W. Cookson. Rev Sci Instr 5:281 Aug '34
- Push-pull piezo-electric oscillator circuits. J. R. Harrison. diags Proc Inst Radio Eng 18:95 Jan '30
- Quartz crystal controlled oscillator circuits. H. R. Meahl. diag Proc Inst Radio Eng 22:732 June '34
- Some developments of the piezo-electric crystal as a frequency standard. H. J. Lucas, diags Jour Inst Elec Eng 68:855 July '30
- Some improvements in quartz crystals circuit elements. F. R. Lack, G. W. Willard and I. E. Fair. Bell Sys Tech Jour 13:453 July '34
- Some measurements on a loud-speaker in vacuo. P. K. Turner. diags Jour Inst Elec Eng 69:591 May '31; Abstracts. Exp Wireless 8:129 Mar '31; Elec Rev (Lond) 108:279 Feb 13 '31; Discussion. Jour Inst Elec Eng 69:610 May '31; Exp Wireless 8:131 Mar '31
- Some output power measurements on a moving coil drive loud speaker. H. A. Clark and N. R. Bligh. diags Exp Wireless 5:491 Sept '28
- Some practical applications of quartz resonators. G. W. N. Gobbold and A. E. Underdown. diags Jour Inst Elec Eng 66:855 Aug '28
- Summary of piezo-electric crystal conference held by U.S. Navy department, December 3-4, 1929. diags Proc Inst Radio Eng 18:2128 Dec '30
- Some radio developments; radio loud-speakers, electrical gramophone pick-ups, and new sound-recording apparatus. S. G. Brown. Elec Rev (Lond) 107:1022 Dec 12 '30; Discussion. Electrician 105:749 Dec 12 '30; Elec Rev (Lond) 107:1022 Dec 12 '30
- Speakers in factory work rooms. (Picture feature) Electronics 1:169 July '30
- Symposium on loudspeakers. Electronics 1:142 June '30
- Temperature control for frequency standards. James K. Clapp. Proc Inst Radio Eng 18:2003 Dec '30
- Thermostat design for frequency standard. W. A. Marrison. Proc Inst Radio Eng 16:976 July '28
- Use of rochelle salt crystals for electrical reproducers and microphones. C. Baldwin Sawyer. Proc Inst Radio Eng 19:2020 Nov '31
- See also*
- Frequency Control
- ### POWER Supply Systems
- Analysis and reduction of output disturbances resulting from the alternating current operation of the heaters of indirectly heated cathodes. J. O. McNally. Proc Inst Radio Eng 20:1263 Aug '32
- Cause and prevention of hum in receiving tubes employing alternating current direct on the filament. W. J. Kimmel. Proc Inst Radio Eng 16:1089 Aug '28
- Duplex plate supply using type 83 tubes. G. E. M. Bertram and R. S. Quimby. QST 17:31 Mar '33
- Experiments with high velocity positive ions: further developments in the method of obtaining high velocity positive ions. Proc Roy Soc (Lond) 136:168 '32
- Filament supply for radio receiver from rectified 25-kilocycle current. Hugh A. Brown and Lloyd P. Morris. Proc Inst Radio Eng 18:298 Feb '30
- Measurement of power and efficiency of radio transmitting apparatus. G. Pession and T. Gorio. Proc Inst Radio Eng 19:377 Mar '31
- Mercury-arc power rectifiers. O. K. Marti and H. Winograd. McGraw-Hill Co. N. Y. '30
- Mercury-arc rectifiers and circuits. D. C. Prince and F. B. Vodges. McGraw-Hill Co. N. Y. '27
- New voltage doubler. William W. Garstang. Electronics 4:50 Feb '32
- Note on a cause of residual hum in rectifier filter systems. F. E. Terman and Sidney B. Pickles. Proc Inst Radio Eng 22:1040 Aug '34

**POWER Supply Systems—Continued**

- Note on a simple two-element low-pass filter of two and three sections. L. B. Hallman, jr. Proc Inst Radio Eng 21:1603 Nov '33
- Novel current supply for audions. Charles V. Logwood. Proc Inst Radio Eng 13:189 Apr '25
- Plate voltage supply for naval vacuum tube transmitters. E. C. Raguet. Proc Inst Radio Eng 1849 Jan '30
- Polyphase rectification special connections. R. W. Armstrong. Proc Inst Radio Eng 19:78 Jan '31
- Recent developments in vacuum tube transmitters. B. R. Cummings. Proc Inst Radio Eng 13:49 Feb '25
- System for suppressing hum by a new filter arrangement. Palmer H. Craig. Proc Inst Radio Eng. Erratum (May '31 p. 908)
- The first filter choke—its effect on regulation and smoothing. F. S. Dellenbaugh, jr. and R. S. Quimby. QST 16:26 Mar '32
- See also*
- Receivers—Power Supply  
Transmitters—Power Supply
- PROPAGATION of Waves**
- A study of short-time multiple signals. J. B. Hoag and Victor J. Andrew. Proc Inst Radio Eng 16:1368 Oct '28
- Bibliography on radio wave phenomena and measurement of radio field intensity; prepared by Bureau of Standards. Proc Inst Radio Eng 19:1034 June '31
- Communication with quasi optical waves. E. Karplus. bibliog il diags Proc Inst Radio Eng 19:1715 Oct '31
- Comparison of the variation of intensity and direction of radio signals. H. J. Reich. Jour Fr Inst 203:537 Apr '27
- Concentrating short radio waves. N. Wells. diags Elec Rev (Lond) 109:700 Nov 6 '31
- Diurnal and seasonal performance of high-frequency radio transmission over various long distance circuits. M. L. Prescott. Proc Inst Radio Eng 18:1797 Nov '30
- Effect of shore-station location upon signals. R. A. Heising. Proc Inst Radio Eng 20:77 Jan '32
- Effect of the moon on radio reception; a new theory. D. Shannon. diag Exp Wireless 3:429 July '26
- Generation of centimetre waves. F. W. Chapman. bibliog diags. Wireless Eng 9:500 Sept '32
- Ionizing effect of meteors in relation to radio propagation. A. M. Skellett. Proc Inst Radio Eng 20:1933 Dec '32
- L'emploi des ondes courtes en T.S.F. G. Malgron. il diags Genie Civil 88:477, 500 May 29-June 5 '26
- Long-wave radio receiving measurements at the Bureau of standards in 1928. L. W. Austin. Proc Inst Radio Eng 18:101 Jan '30
- Low-frequency radio receiving measurements at the Bureau of Standards in 1931 and 1932. E. B. Judson. Proc Inst Radio Eng 21:1354 Sept '33
- Low-frequency radio transmission. P. A. de Mars, G. W. Pickard. Proc Inst Radio Eng 18:1488 Sept '30
- Method of representing radio wave propagation conditions. L. W. Austin. Proc Inst Radio Eng 19:1615 Sept '31
- Micro-ray wireless; new short wave system demonstrated by I.T. & T. laboratories. il diags Electrician 106:509 Apr 3 '31; Engineer 151:413 Apr 10 '31; Engineering 131:482 Apr 10 '31; Elec Rev (Lond) 108:622 Apr 10 '31
- New field of application for ultra-short waves. E. Karmar. bibliog il diags Proc Inst Radio Eng 21:1519 Nov '33
- Propagation of high-frequency currents in ground return circuits. W. H. Wise. Proc Inst Radio Eng 22:522 Apr '34; Correction, 22:563 May '34
- Propagation of radio waves. J. Hollingworth. diags Jour Inst Elec Eng 64:579 May '26; Abstracts. Engineer 141:192 Feb 12 '26; Electrician 96:291 Mar 12 '26; Exp Wireless 3:178 Mar '26; Elec Rev (Lond) 98:596 Apr 9 '26; Discussion. Jour Inst Elec Eng 64:589 May '26
- Radio broadcasting transmitters and related transmission phenomena. Edward L. Nelson. Proc Inst Radio Eng 27:1949 Nov '29
- Radio communications. G. Marconi Engineering 122:543, 587 Oct 29-Nov 5 '26; Same. Engineer 142:466 Oct 29 '26; Abstract. Electrician 97:502 Oct 29 '26
- Radio frequency circuits; wave propagation. Electrician 113:131 July 27 '34
- Radio wave-lengths. W. Moon. Elec Rev (Lond) 97:814 Nov 20 '25
- Recent advances in wireless propagation both in theory and in practice. A. S. Eve. Jour Fr Inst 200:327 Sept '25
- Relation of meteor showers and radio reception. G. W. Pickard. Proc Inst Radio Eng 19:1166 July '31
- Relationships existing between radio waves modulated in frequency and in amplitude. C. H. Smith. Exp Wireless 7:609 Nov '30
- Short-distance observations on long-wave phenomena. R. Naismith. Jour Inst Elec Eng 69:875 July '31; Abstract. Exp Wireless 8:254 May '31; Discussion. Jour Inst Elec Eng 69:885 July '31; Exp Wireless 8:255 May '31
- Study of wireless wave fronts by directional methods; abstracts. R. L. Smith-Rose. Engineer 140:287 Sept 18 '25; Elec Rev (Lond) 97:431 Sept 11 '25; Electrician 95:265-6 Sept 4 '25; Engineering 120:377 Sept 25 '25
- Summary of progress in the study of radio wave propagation phenomena. G. W. Kenrick and G. W. Pickard. Proc Inst Radio Eng 18:649 (bibliog p. 664) Apr '30
- Tables of north Atlantic radio transmission conditions for long-wave daylight signals for the years 1922-1930. L. W. Austin. Proc Inst Radio Eng 20:689 Apr '32
- Transmission and direction of radio waves. E. F. Martin. diags Jour W Soc Eng 35:121; 36:266 Apr '30, Oct '31
- Transmission of power by radio waves. P. Thomas. Can Eng 54:423 Apr 3 '28
- Travel of wireless waves. F. E. Smith. il diags Jour Inst Elec Eng 73:574 (bibliog p. 589-90) Dec '33

Wave propagation in overhead wires with ground return. John R. Carson. Bell Sys Tech Jour 5:539 Oct '26

Wave propagation over continuously loaded fine wires. M. K. Zinn. Bell Sys Tech Jour 9:189 Jan '30

Wave propagation over parallel tubular conductors. S. P. Mead. Bell Sys Tech Jour 4:327 Apr '25

Wireless wave propagation. E. V. Appleton and M. A. F. Barnett. Electrician 94:398 Apr 3 '25

*See also*

Broadcasting  
Communication

#### Around Earth

Propagation of electric waves over the earth. H. W. Nichols and J. C. Schelling. Bell Sys Tech Jour 4:215 Apr '25

Propagation of short waves around the earth. E. Quack. Proc Inst Radio Eng 15:341 Apr '27

Round-the-world signals. E. O. Hurlburt. Proc Inst Radio Eng 16:287 Mar '28

Studies of high frequency radio wave propagation. A. Hoyt Taylor and L. C. Young. Proc Inst Radio Eng 16:561 May '28

#### Atmosphere

Effect of the atmosphere on radio waves. J. M. G. N. Watson. Proc Royal Soc (Lond) 95:546 Ballantine). Proc Inst Radio Eng 15:341 Apr '27

General theory on the propagation of radio waves in the ionized layer of the upper atmosphere. S. Namba. bibliog Proc Inst Radio Eng 21:238 Feb '33

Influence of conditions in the upper atmosphere upon radio communication. E. Merritt and W. Bostwick. Sibley Jour 42:248 Oct '28

Note on the determination of the ionization of the upper atmosphere. J. C. Schelleng. Proc Inst Radio Eng 64:579 May '26

Some notes on wireless methods of investigating the electrical structure of the upper atmosphere. E. V. Appleton. Proc Phys Soc (Lond) 41:43 Dec '28

Studies of high-frequency radio wave propagation. A Hoyt Taylor and L. C. Young. Proc Inst Radio Eng 16:561 May '28

Wireless interference phenomena between ground waves and waves deviated by the upper atmosphere; abstract. E. V. Appleton and M. A. F. Barnett. Jour Fr Inst 203:536 Apr '27

#### Broadcast Station Coverage

Automatic recording of field strength. C. M. Jansky, jr. il Electronics 7:148 May '34

Automatic recording of waves from broadcast stations. Jour Fr. Inst 210:245 Aug '30

Calculation of the service area of broadcast stations. P. P. Eckersley. Proc Inst Radio Eng 18:1160 July '30

Detection of two modulated waves which differ slightly in carrier frequency. Charles B. Aiken. Proc Inst Radio Eng 19:120 Jan '31

Distribution of radio waves from broadcasting stations over city districts. Ralph Bown and G. D. Gillett. Proc Inst Radio Eng 12:395 Aug '24

Low-frequency high power broadcasting as applied to national coverage in the U. S. William H. Wenstrom. Proc Inst Radip Eng 19:971 June '31

On the use of field intensity measurements for the determination of broadcast station coverage. C. M. Jansky, jr. and S. L. Bailey. Proc Inst Radio Eng 20:62 Jan '32

Portable receiving sets for measuring field strengths at broadcasting frequencies. Axel G. Jensen. Proc Inst Radio Eng 14:333 June '26

Radio broadcast coverage of city areas. L. Espenschied. il maps Bell Sys Tech Jour 6:117 Jan '27; Same. Jour Amer Inst Elec Eng 56:25 Jan '27; Abstract. Electrician 98:520 May 13 '27; Discussion. Jour Amer Inst Elec Eng 46:377 Apr '27

Service area of a broadcast station; tests on signal strength and the effects of steel buildings. S. R. Winters. il diags Radio N 9:12 July '27

Simultaneous operation of different broadcast stations on the same channel. P. P. Eckersley. Proc Inst Radio Eng 19:175 Feb '31

Some developments in common frequency broadcasting. G. D. Gillett. Proc Inst Radio Eng 19:1347 Aug '31

Some studies in radio broadcast transmission. Ralph Bown, De Loss K. Martin and Ralph K. Potter. Proc Inst Radio Eng 14:57 Feb '26

Some studies of radio broadcast coverage in the middle west. C. M. Jansky, jr. Proc Inst Radio Eng 16:1356 Oct '28

Use of field intensity measurements for the determination of broadcast station coverage. C. M. Jansky, jr. and G. L. Bailey. Proc Inst Radio Eng 20:62 Jan '32

*See also*

Broadcasting Service Area  
Field Intensity Measurements

#### Direction

Concentrating short radio waves. N. Wells. diags Elec Rev (Lond) 109:700 Nov 6 '31

Determination of the direction of arrival of short radio waves. H. T. Friis, C. B. Feldman and W. M. Sharpless. il diags Proc Inst Radio Eng 22:47 Jan '34

Directional studies of atmospheric waves at high frequencies. Karl G. Jansky. Proc Inst Radio Eng 20:1920 Dec '32

Direction and intensity changes of radio waves. C. C. Bidwell. diags Jour Fr Inst 201:107 Jan '26

Direction and intensity of waves from European stations. Greenleaf W. Packard. Proc Inst Radio Eng 10:161 June '22

Effect of wave damping in radio direction-finding. R. L. Smith-Rose. Jour Inst Elec Eng 63:923. Discussion. p. 927 Sept '25

Focusing short radio waves. N. Wells. diags Elec Rev (Lond) 109:392 Sept 11 '31

General considerations of the directivity of beam systems. R. M. Wilmotte. Jour Inst Elec Eng 66:955 Sept '28

Oscillographic observations on the direction of propagation and fading of short waves. H. T. Friis. Proc Inst Radio Eng 16:658 May '28

Possibilities of directional radio transmission. J. H. Dellinger. Jour Fr Inst 204:239 Aug '27

Transmission and direction of radio waves. E. F. Martin. diags Jour W Soc Eng 35:121; 36:266 Apr '30, Oct '31

*See also*

Directional Reception and Transmission

**PROPAGATION of Waves—Continued****Earth**

- Audio-frequency atmospheric. E. T. Burton and E. M. Boardman. Proc Inst Radio Eng 21:1476 Oct '33
- How earth's rotation sets radio frequencies. P. B. Findley. il diags Radio N 6:1404 Feb '25
- Method for determining the effect of the earth on the radiation from aerial systems. J. S. McPetrie. Jour Inst Elec Eng 70:382 Mar '32
- Propagation of electric waves over the earth. H. W. Nichols and J. C. Schelleng. Bell Sys Tech Jour 4:215 Apr '25
- Propagation of high-frequency currents in ground return circuits. W. H. Wise. Proc Inst Radio Eng 22:522 Apr '34
- Propagation of radio waves over the earth. A. H. Taylor and E. O. Hulbert. Phys Rev 27:189 Feb '26
- Propagation of short waves around the earth. E. Quack. Proc Inst Radio Eng 15:341 Apr '27
- Round-the-world signals. E. O. Hurlburt. Proc Inst Radio Eng 16:287 Mar '28
- Some observations of the behaviour of earth currents and their correlation with magnetic disturbances and radio transmission. Isabel S. Bemis. Proc Inst Radio Eng 19:1931 Nov '31
- Suggestion of a connection between radio fading and small fluctuations in the earth's magnetic field. G. Breit. Proc Inst Radio Eng 15:709 Aug '27
- Tests indicate radio waves penetrate earth and rock. Jour Amer Inst Elec Eng 46:1166 Nov '27
- Tilt of radio waves and their penetration into the earth; editorial. diag Wireless Eng 10:587 Nov '33
- Whistling tones from the earth. Heinrich Barkhausen. Proc Inst Radio Eng 18:1155 July '30

*See also***Prop. of Waves—Ground****Echoes**

- Continuous recording of retardation and intensity of echoes from the ionosphere. L. C. Verman. S. T. Char and A. Mohammed. bibliog il diags Proc Inst Radio Eng 22:906 July '34
- Echoes of radio waves. N. Janco. Proc Inst Radio Eng 22:923 July '34
- Experimental transmissions for observing long delayed echoes. Proc Inst Radio Eng 22:939 Aug '34
- Group velocity and long retardations of radio echoes. G. Breit. Proc Inst Radio Eng 17:1508 Sept '29
- Observations on long-delay radio echoes. J. H. Dellinger. QST 18:42 Aug '34
- Radio echoes. Jour Fr Inst 218:259 Aug '34
- Radio echoes; special signals are being transmitted from two European radio stations for the study of long-delay echoes. Science 80:394 Nov 2 '34
- Radio echo signal research. Radio Serv Bul 156:25 Mar '30
- Short-range echoes with short waves. E. Quack and H. Mogel. Proc Inst Radio Eng 17:824 May '29

- Short-wave echo effect. il Exp Wireless 4:257 May '27
- Some facts and notions about short waves. D. Sinclair. Exp Wireless 3:79; Discussion, 86 Feb '26
- Soundings from a plane by acoustic echo. Electronics 7:49 Feb '34
- Tracing the radio echo. il Sci Amer 139:456 Nov '28
- Wireless echoes. E. V. Appleton. Electrician 105:312 Sept 12 '30
- Wireless echoes of long delay. P. O. Pedersen. Proc Inst Radio Eng 17:1750 Oct '29

**Eclipses**

- Amateur observations during the total eclipse of the sun. R. W. Woodward. il charts QST 17:32 Jan '33
- Changes observed in the direction of radio signals at the time of the eclipse of January 24, 1925. E. Merritt, C. C. Bidwell and H. J. Reich. Jour Fr Inst 199:485 Apr '25
- Continuous Kennelly-Heaviside layer records of a solar eclipse. H. R. Mimno and P. H. Wang. Proc Inst Radio Eng 21:529 Apr '33
- Effect of the solar eclipse of January 24, 1925, on radio reception. Greenleaf W. Pickard. Proc Inst Radio Eng 13:539 Oct '25
- Effects of the eclipse on radio. A. P. Lane and F. X. Walsh. il map Sci Amer 132:224 Apr '25
- Observations in transmission during the solar eclipse of August 31, 1932. John R. Martin and S. W. McCuskey. Proc Inst Radio Eng 21:567 Apr '33
- Observations of the effective height of the Kennelly-Heaviside layer and field intensity during the solar eclipse of August 31, 1932. G. W. Kenrick and G. W. Pickard. Proc Inst Radio Eng 21:546 Apr '33
- Propagation of short waves during a solar eclipse. Edwin J. Alway. Proc Inst Radio Eng 15:998 Dec '27
- Radio observations of the Bureau of Standards during the solar eclipse of August 31, 1932. S. S. Kirby, L. V. Berkner, T. R. Gilliland, and K. A. Norton. Proc Inst Radio Eng 22:247 Feb '34
- Radio waves during the solar eclipse. E. F. W. Alexanderson. Electrician 109:446 Oct 7 '32
- Report concerning the observation of the influence of the propagation of radio-waves of the sun eclipse of the 14th of January, 1925, in the Dutch East Indies. E. C. Holtzappel. Proc Inst Radio Eng 15:61 Jan '27
- Solar eclipse and wireless signals. W. H. Eccles. Electrician 94:208 Feb 20 '25
- Story of the eclipse. il Wireless Age 12:42 Mar '25
- Wireless measurements during the solar eclipse. diags Elec Rev (Lond) 96:214 Feb 6 '25; also in Electrician 94:152 Feb 5 '25

**Fading**

- Automatic fading recorder. Theodore A. Smith and George Rodwin. Proc Inst Radio Eng 15:41 Jan '27
- Diversity receiving system of R.C.A. Communications, Inc. for radiotelegraphy. H. H. Beverage and H. O. Peterson. Proc Inst Radio Eng 19:531 Apr '31

- Diversity telephone receiving system of R.C.A. Communications, Inc. H. O. Peterson, H. H. Beverage and J. B. Moore. Proc Inst Radio Eng 19:562 Apr '31
- Fading. E. W. Marchant. Exp Wireless 3:288-90; Discussion. 294 May '26
- Fading curves along a meridian. Robert C. Colwell. Proc Inst Radio Eng 16:1570 Nov '28
- Fading curves and weather conditions. R. C. Colwell. Proc Inst Radio Eng 17:143 Jan '29
- Mystery of fading. O. Hall. Exp Wireless 3:211 Apr '26; Discussion. P. D. Tyers. 3:393 June '26
- Oscillographic observations on the direction of propagation and fading of short waves. H. T. Friis. Proc Inst Radio Eng 16:658 May '28
- Short period variations in radio reception. W. Pickard. Proc Inst Radio Eng 12:119 Apr '24
- Signal fading. J. C. Jensen. Exp Wireless 4:59 Jan '27
- Some measurements of short wave transmission. R. A. Heising, J. C. Schelleng and G. C. Southworth. Proc Inst Radio Eng 14:613 Oct '26
- Some observations of short period radio fading. T. Parkinson. Proc Inst Radio Eng 17:1042 June '29
- Some studies in radio broadcast transmission. Ralph Bown, De Loss K. Martin and Ralph K. Potter. Proc Inst Radio Eng 14:57 Feb '26
- Study of signal fading; work of the Peterborough radio research station. E. V. Appleton. Jour Inst Elec Eng 66:872 Aug '28; Abstracts. Elec Rev (Lond) 102:793 May 4 '28; Exp Wireless 5:267-72 May '28; Discussion. Jour Inst Elec Eng 66:881 Aug '28; Exp Wireless 5:272 May '28
- Suggestion of a connection between radio fading and small fluctuations in the earth's magnetic field. G. Breit. Nat Research Council Bul 61:150 July '27
- Transatlantic radiotelephone transmission. Lloyd Esponschied, C. N. Anderson, and Austin Bailey. Proc Inst Radio Eng 14:7 Feb '26
- Visual studies of radio fading. E. Merritt, T. McLean and W. E. Bostwick. diags Jour Fr Inst 211:539 May '31
- See also*  
Fading (Main Entry)
- Formulas**
- Graphs to Prof. Sommerfeld's attenuation formula for radio waves. Bruno Rolf. Proc Inst Radio Eng 18:391 Mar '30
- Investigation of the attenuation of electromagnetic waves and the distances reached by radio stations in the wave bands from 200 to 2000 meters. H. Fassbender, F. Eisner and G. Kurlbaum. Proc Inst Radio Eng 19:1446 Aug '31
- Long distance radio receiving measurements and atmospheric disturbances at the Bureau of Standards in 1925. L. W. Austin. Proc Inst Radio Eng 14:663 Oct '26. Discussion. K. Sreenivasan and L. W. Austin. 15:155 Feb '27; G. W. Pickard 15:539 June '27; K. Sreenivasan 15:1002 Dec '27; B. H. Kynaston 16:359 Oct '26
- Note on the accuracy of Rolf's graphs of Sommerfeld's attenuation formula. W. Howard Wise. Proc Inst Radio Eng 18:1971 Nov '30
- Notes on radio transmission. Clifford N. Anderson. Proc Inst Radio Eng 19:1150 July '31
- Preliminary note on proposed changes in the constants of the Austin-Cohen transmission formula. L. W. Austin. Proc Inst Radio Eng 14:377 June '26
- Recent investigations on the propagation of electromagnetic waves. M. Baeumler. Proc Inst Radio Eng 13:5 Feb '25
- Transatlantic radiotelephone transmission. Lloyd Esponschied, C. N. Anderson and Austin Bailey. Proc Inst Radio Eng 14:7 Feb '26
- Ground**
- Effect of the ground on downcoming plane space-waves. E. T. Glas. Exp Wireless 6:663 Dec '29
- Electrical measurements on soil with alternating currents. R. L. Smith-Rose. Jour Inst Elec Eng 75:221 '34
- Optical behavior of the ground for short radio waves. C. B. Feldman. II Proc Inst Radio Eng 21:764 (bibliog p. 800-1) June '33
- Overseas radio extensions to wire telephone networks. Lloyd Esponschied and William Wilson. Proc Inst Radio Eng 19:282 Feb '31
- Polarization of high-frequency waves and their direction finding. Shogo Namba, Eiji Iso and Shiegetoshi Ueno. Proc Inst Radio Eng 19:2000 Nov '31
- Relation between the height of the Kennelly-Heaviside layer and high frequency radio transmission phenomena. A. Hoyt Taylor. Proc Inst Radio Eng 14:521 Aug '26
- Some earth potential measurements being made in connection with the International polar year. G. C. Southworth. map Proc Inst Radio Eng 21:1740 Dec '33
- Some measurements of the electrical constants of the ground at short wavelengths by the wave-tilt method. R. H. Barfield. Jour Inst Elec Eng 75:214 Aug '34
- Some observations of the behaviour of earth currents and their correlation with magnetic disturbances and radio transmission. Isabel S. Bemio. Proc Inst Radio Eng 19:1931 Nov '31
- Variations in high-frequency ground wave ranges. A. H. Taylor. Proc Inst Radio Eng 15:707 Aug '27
- See also*  
Earth
- Ionosphere**
- A test of the existence of the conducting layer. G. Breit and M. Tuve. Phys Rev 28:554 Sept '26
- Cooperation committee program for 1930-1931. Proc Inst Radio Eng 19:1171 July '31
- Emission of special radio signals for the study of the ionosphere. H. A. Thomas. Jour Inst Elec Eng 75:240 Aug '34
- Further observations of radio transmission and the height of the Kennelly-Heaviside layer. G. W. Kenrick and C. K. Jen. Proc Inst Radio Eng 17:2034 Nov '29
- Further studies of the Kennelly-Heaviside layer by the echo-method. L. R. Haistad and M. A. Tuve. Proc Inst Radio Eng 17:1508 Sept '29



**PROPAGATION of Waves—Ionosphere—Cont'd.**

- General theory on the propagation of radio waves in the ionized layer of the upper atmosphere. Shogo Namba. Proc Inst Radio Eng 21:238 Feb '33
- High angle radiation of short electric waves. S. Oda. Proc Inst Radio Eng 15:377 May '27
- Investigations of Kennelly-Heaviside layer heights for frequencies between 1600 and 8650 kilocycles per second. T. R. Gilliland, G. W. Kenrick and K. A. Norton. Proc Inst Radio Eng 20:286 Feb '32
- Ionospheric investigation. T. R. Gilliland. Nature 134:379 Feb '34
- Kennelly-Heaviside layer studies. P. A. de Mars, T. R. Gilliland and G. W. Kenrick. il Proc Inst Radio Eng 19:106 Jan '31
- Kennelly-Heaviside layer and radio-wave propagation. E. O. Hulburt. diags Jour Fr Inst 201:597 May '26
- Kennelly-Heaviside layer height observations for 4405 and 8650 kc. T. R. Gilliland. pl U S Bur Stand Jour Research 5:1057 Nov '30; Same. Proc Inst Radio Eng 19:114 Jan '31; Discussion, F. K. Vreeland. 19:1500 Aug '31
- Measurements of the height of the Kennelly-Heaviside layer. G. W. Kendrick and C. K. Jen. Proc Inst Radio Eng 17:74 Apr '29
- Multifrequency automatic recorder of ionosphere heights. T. R. Gilliland. Proc Inst Radio Eng 22:236 Feb '34
- Note on the determination of the ionization of the upper atmosphere. J. C. Schelleng. Proc Inst Radio Eng 16:1471 Nov '28
- Observations in transmission during the solar eclipse of August 31, 1932. J. R. Martin and S. W. McCuskey. il diags map Proc Inst Radio Eng 21:567 Apr '33
- Observations of Kennelly-Heaviside layer heights during the Leonid meteor shower of November, 1931. J. P. Schafer and W. M. Goodall. Proc Inst Radio Eng 20:1941 Dec '32
- Observations of the effective height of the Kennelly-Heaviside layer and field intensity during the solar eclipse of August 31, 1932. G. W. Kenrick and G. W. Pickard. il Proc Inst Radio Eng 21:546 Apr '33
- Preliminary note on an automatic recorder giving a continuous height record of the Kennelly-Heaviside layer. T. R. Gilliland and G. W. Kenrick. Proc Inst Radio Eng 20:540 Mar '30
- Radio observations at the Bureau of Standards during the solar eclipse of August 31, 1932. L. V. Berkner and T. R. Gilliland. Proc Inst Radio Eng 22:247 Feb '34
- Radio transmission studies of the upper atmosphere. J. P. Schafer and W. M. Goodall. Proc Inst Radio Eng 19:1434 Aug '31
- Rapid method of virtual-height determination. J. P. Schafer and W. M. Goodall. Proc Inst Radio Eng 20:1131 July '32
- Relation of meteor showers and radio reception. G. W. Pickard. Proc Inst Radio Eng 19:1166 July '31
- Report of ionosphere investigations at the Huancaayo magnetic observatory (Peru) during 1933. L. V. Berkner and H. W. Wells. bibliog il Proc Inst Radio Eng 22:1102 Sept '34
- Round-the-world signals. E. O. Hulburt. Proc Inst Radio Eng 16:287 Mar '28
- Short-wave commercial long-distance communication. H. E. Hallborg, L. A. Briggs and C. W. Hansell. Proc Inst Radio Eng 15:467 June '27
- Skip distance effects on superfrequencies. A. H. Taylor. Proc Inst Radio Eng 19:103 Jan '31
- Some observations of short period radio fading. T. Parkinson. Proc Inst Radio Eng 17:1042 June '29
- Some observations of the behavior of earth currents and their correlation with magnetic disturbances and radio transmission. Isabel S. Bemis. Proc Inst Radio Eng 19:1931 Nov '31
- Some observations on skip distance and ultra-high frequencies. T. A. Marshall. Radio N 12:406 Nov '30
- Some studies in radio broadcast transmission. Ralph Brown and others. Proc Inst Radio Eng 14:57 Feb '26
- Studies of the ionosphere and their application to radio transmission. S. S. Kirby, L. V. Berkner and D. M. Stuart. bibliog U S Bur Stand Jour Research 12:15 Jan '34; Same. Proc Inst Radio Eng 22:481 Apr '34
- Summary of progress in the study of radio wave propagation phenomena. G. W. Pickard. Proc Inst Radio Eng 18:649 Apr '30
- Wireless apparatus for the study of the ionosphere. G. Builder. bibliog diags Jour Inst Elec Eng 73:419 pl 1-2 Oct '33
- Wireless studies of the ionosphere. E. V. Appleton. Jour Inst Elec Eng 71:642 (bibliog p649) Oct '32; Abstract. Wireless Eng 9:513 Sept '32
- Wireless telegraphy and magnetic storms. H. B. Maris and E. O. Hulburt. Proc Inst Radio Eng 17:494 Mar '29
- Wireless telegraphy and the ionization in the upper atmosphere. E. O. Hulburt. Proc Inst Radio Eng 18:1231 July '30

**Long-Distance**

- Effects of sun spots and terrestrial magnetism on long-distance reception of low-frequency waves. E. Yokoyama and T. Nakai. Proc Inst Radio Eng 19:882 May '31
- Meteorological influences on long-distance, long-wave reception. E. Yokoyama and T. Nakai. Proc Inst Radio Eng 18:1075 June '30
- Some long-distance transmission phenomena of low-frequency waves. E. Yokoyama and I. Tanimura. Proc Inst Radio Eng 21:263 Feb '33

**Measurement**

- Exact and precise measurement of wave-length in radio transmitting stations. R. Braillard and E. Divoire. il diags Exp Wireless 4:322, 294 June-July '27
- Field-intensity measurements at frequencies from 285 to 5,400 kilocycles per second. S. S. Kirby and K. A. Norton. diags map U S Bur Stand Jour Research 8:463 Apr '32; Same. Proc Inst Radio Eng 20:841 May '32
- Field strength measurements on Daventry. R. Naismith. maps Jour Inst Elec Eng 68:881 July '31; Abstract. Exp Wireless 8:253 May '31; Discussion. Jour Inst Elec Eng 69:885 July '31; Exp Wireless 8:255 May '31
- Instantaneous direct reading goniometer. R. A. Watson-Watt and J. F. Herd. Jour Inst Elec Eng 64:611 May '26

Measurement of the angle of incidence at the ground of downcoming short waves from the ionosphere. A. F. Wilkins. bibliog diags Jour Inst Elec Eng 74:582-8 June '34; Discussion. 75:353 Sept '34

Measurement of the frequency of ultra-radio waves. J. B. Hoag. diags Proc Inst Radio Eng 21:29 Jan '33

Measurements of electrical state of upper stratosphere in polar regions (Kennelly-Heaviside layer). M. A. Bontch-Bruevitch. il diags Proc Inst Radio Eng 22:1124 Sept '34

Note on an automatic field strength and static recorder. W. W. Mutch. Proc Inst Radio Eng 20:1914 Dec '32

Portable receiving sets for measuring field strengths at broadcasting frequencies. A. G. Jensen. Proc Inst Radio Eng 14:333 June '26

Radio field-measuring system for frequencies up to forty megacycles. H. T. Friis and E. Bruce. Proc Inst Radio Eng 14:507 Aug '26

Static recorder. H. T. Friis. Bell Sys Tech Jour 5:282 Apr '26

Use of recording equipment in radio transmission research. P. A. de Mars, G. W. Kenrick and G. W. Pickard. Proc Inst Radio Eng 19:1618 Sept '31

*See also*

Measurements, Wave Form and Phase

#### Night Errors

Cause and elimination of night effects in radio range-beacon reception. H. Diamond. U S Bur Stand Jour Research 10:7 Jan '33

Solution of the problem of night effects with the radio range beacon system. H. Diamond. il diags Proc Inst Radio Eng 21:808 June '33

Some experiments on night errors for long waves. I. Tanimura. Proc Inst Radio Eng 18:718 Apr '30

Theory of night errors in Adcock direction-finding systems. J. F. Coales. bibliog Jour Inst Elec Eng 71:497 Sept '32

*See also*

Directional Reception and Transmission

#### Polarization

Changes in the polarization of radio waves. G. W. Pickard. il diag Radio N 7:1540 May '26

Limiting polarization of downcoming radio waves traveling obliquely to the earth's magnetic field. W. G. Baker and A. L. Green. diags Proc Inst Radio Eng 21:1103 Aug '33

Magneto-ionic theory. J. A. Ratcliffe. Wireless Eng 10:354 July '33

Method of determining the state of polarization of downcoming waves. E. V. Appleton and J. A. Ratcliffe. Proc Royal Soc (Lond) 117A:576 Mar '26

Polarization changes caused by ground absorption. E. F. W. Alexanderson. Gen Elec Rev 29:553 Aug '26

Polarization of high-frequency waves and their direction finding. S. Namba, E. Iso and S. Ueno. il diags Proc Inst Radio Eng 19:2000 Nov '31

Polarization of sky waves in the southern hemisphere. A. L. Green. diags Proc Inst Radio Eng 22:324 Mar '34

Some polarization phenomena of very short waves. E. A. Paulin. diags Phys Rev 33:432 Mar '29

Test for polarization of electron waves by reflection. C. J. Davisson and L. H. Germer. Bell Sys Tech Jour 8:466 July '29

#### Range

An investigation of transmission on the higher radio frequencies. A. Hoyt Taylor. Proc Inst Radio Eng 13:677 Dec '25

Investigation of the attenuation of electromagnetic waves and the distances reached by radio stations in the wave bands from 200 to 2000 meters. H. Fassbender, F. Eisner and G. Kurlbaum. Proc Inst Radio Eng 19:1446 Aug '31

Notes on radio transmission. Clifford N. Anderson. Proc Inst Radio Eng 19:1150 July '31

Long-wave radio receiving measurements at the Bureau of Standards in 1930. L. W. Austin. Proc Inst Radio Eng

Method of representing radio wave propagation conditions. L. W. Austin. Proc Inst Radio Eng

Observation of freak ranges. L. B. Turner. diag Electrician 97:42 July 9 '26; Discussion. 97:100, 176 July 23, Aug 13 '26

Overseas radio extensions to wire telephone networks. Lloyd Espenschied and William Wilson. Proc Inst Radio Eng 19:282 Feb '31

Relation connecting skip distance, wavelength and the constants of the ionized layers. N. H. Edes. Proc Inst Radio Eng 19:1663 Sept '31

Simultaneous operation of different broadcast stations on the same channel. P. P. Eckersley. Proc Inst Radio Eng 19:175 Feb '31

Some developments in common frequency broadcasting. G. D. Gillet. Proc Inst Radio Eng 19:1347 Aug '31

Summary of progress in the study of radio wave propagation phenomena. G. W. Kenrick and G. W. Pickard. Proc Inst Radio Eng 18:649 Apr '30

*See also*

Broadcasting Service Area

#### Reflection and Refraction

Development of directive transmitting antennas by R.C.A. Communications, Inc. P. S. Carter, C. W. Hansel and N. E. Lindenblad. Proc Inst Radio Eng 19:1773 Oct '31

Multiple refraction and reflection of short waves. N. H. Edes. Proc Inst Radio Eng 19:1024 June '31

Note on earth reflection of ultra short radio waves. E. H. Lange. Proc Inst Radio Eng 17:745 Apr '29

Polarization of high-frequency waves and their direction finding. Shogo Namba, Eiji Iso and Shigetoshi Ueno. Proc Inst Radio Eng 19:2000 Nov '31

Polarization phenomena of low-frequency waves. Shogo Namba. Proc Inst Radio Eng 19:1988 Nov '31

Radiation measurements of a short-wave directive antenna at the Nauen High Power Radio Station. M. Baumler, K. Kruger, H. Plendl, and W. Pfitzer. Proc Inst Radio Eng 19:812 May '31

Recent investigations on the propagation of electromagnetic waves. M. Baeumler. Proc Inst Radio Eng 13:5 Feb '25

Reflection and refraction of radio waves. C. A. Randon. il Radio N 9:465 Nov '27

Reflection of electromagnetic waves at ionized media with variable conductivity and dielectric constant. G. J. Elias. Proc Inst Radio Eng 19:891 May '31

### PROPAGATION of Waves—Reflection and Refraction—Continued

- Reflection of radio waves. Science 79:sup6 Apr 20 '34
- Reflection of radio waves from the surface of the earth. L. C. Verman. *il diags Proc Inst Radio Eng* 18:1396 Aug '30
- Reflection of waves at earth's surface; editorial. *diags Wireless Eng* 11:59 Feb. '34
- Refraction of short waves in the upper atmosphere. William G. Blaker and Chester W. Rice. *Trans A. I. E. E.* 45:302 '26
- Refractive index of spaces with free electrons; a mechanical mode. P. O. Pedersen. *il diags Exp Wireless* 7:16 Jan '30
- Relation connecting skip distance, wavelength and the constants of the ionized layers. N. H. Edes. *Proc Inst Radio Eng* 19:1663 Sept. '31
- Some studies in radio broadcast transmission. Ralph Brown, DeLoss K. Martin and Ralph K. Potter. *Proc Inst Radio Eng* 14:57 Feb '26. Errata (Apr '26 p. 160)
- Ultra-short waves; refraction in the lower atmosphere. R. L. Smith-Rose and J. S. McPetrie. *bibliog Wireless Eng* 11:3 June '34

### Short-Wave

- An investigation of transmission on the higher radio frequencies. A. Hoyt Taylor. *Proc Inst Radio Eng* 13:677 Dec '25
- Beam transmission of ultra short waves. Hidetsugu Yagi. *Proc Inst Radio Eng* 16:715 June '28. Discussion. J. H. Dellinger p. 740
- Directional studies of atmospherics at high frequencies. Karl G. Jansky. *Proc Inst Radio Eng* 20:1920 Dec '32
- Diurnal and seasonal performance of high-frequency radio transmission over various long distance circuits. M. L. Prescott. *Proc Inst Radio Eng* 18:1797 Nov '30
- Double and multiple signals with short waves. E. Quack and H. Mogel. *Proc Inst Radio Eng* 17:791 May '29
- Investigation of transmission on the higher radio frequencies. A. Hoyt Taylor. *Proc Inst Radio Eng* 13:677 Dec '25
- Method of calculation of field strengths in high-frequency radio transmission. Shogo Namba and Taro Tsukada. *Proc Inst Radio Eng* 21:1003 July '33
- Propagation of low power short waves in the 1000 kilometer range. K. Kruger and H. Plendl. *Proc Inst Radio Eng* 17:1296 Aug '29
- Propagation of short waves over the North Atlantic. C. R. Burrows. *Proc Inst Radio Eng* 19:1634 Sept '31
- Radio communication on short waves. N. Wells. *il diags Engineering* 122:510 Oct 22 '26
- Relation between the height of the Kennelly-Heaviside layer and high frequency radio transmission phenomena. A. Hoyt Taylor. *Proc Inst Radio Eng* 14:521 Aug '26
- Relative values of long and short waves in wireless communication; a discussion before the radio society of Great Britain. *Exp Wireless* 3:692

- Nov '26; Excerpt (W. H. Eccles). *Elec Rev (Lond)* 99:598 Oct 8 '26
- Short-wave commercial long-distance communication. H. E. Hallborg. J. A. Briggs and C. W. Hansell. *Proc Inst Radio Eng* 15:467 June '27
- Short-wave radio propagation. N. Wells. *diags Elec (Lond)* July 17 '31
- Short waves for long ranges. W. G. H. Miles. *diag Exp Wireless* 3:22. Discussion. 30 Jan '26
- Short wave transmission to South America. C. R. Burrows and E. J. Howard. *Proc Inst Radio Eng* 21:102 Jan '33
- Some characteristics of short wave propagation. J. Hollingworth. *il Jour Inst Elec Eng* 72:229 Mar '33; Abstracts. *Electrician* 109:810 Dec 23 '32; *Elec Rev (Lond)* 111:854 Dec 9 '32; *Wireless Eng* 10:89 Feb '33; Discussion. *Jour Inst Elec Eng* 72:249 Mar '33; *Wireless Eng* 10:90 Feb '33
- Some effects of topography and ground on short-wave reception. R. K. Potter and H. T. Friis. *Proc Inst Radio Eng* 20:699 Apr '32
- Some experiences with short-wave wireless telegraphy. N. H. Edes. *Proc Inst Radio Eng* 18:2011 Dec '30
- Some experiments in short-distance short-wave radio transmission. J. K. Clapp. *Proc Inst Radio Eng* 17:479 Mar '29
- Some measurements of short-wave transmission. R. A. Heising, J. C. Schelleng and G. C. Southworth. *Proc Inst Radio Eng* 14:613 Oct '26
- Some new applications of short radio waves. J. Taylor and W. Taylor. *il diags Exp Wireless* 5:503 Sept '28
- Some practical aspects of short-wave operation at high power. E. E. Hallborg. *Proc Inst Radio Eng* 15:501 June '27
- Studies of high-frequency radio wave propagation. A. Hoyt Taylor and L. C. Young. *Proc Inst Radio Eng* 16:561 May '28
- The propagation of low power short waves in the 1000-kilometer range. K. Kruger and H. Plendl. *Proc Inst Radio Eng* 17:1296 Aug '29
- Transmission characteristics of a short-wave telephone circuit. R. K. Potter. *Proc Inst Radio Eng* 18:581 Apr '30.
- Transoceanic reception of high-frequency telephone signals. R. Morris and W. A. R. Brown. *Proc Inst Radio Eng* 21:63 Jan '33
- Variations of high-frequency ground wave ranges. A. H. Taylor. *Proc Inst Radio Eng* 15:707 Aug '27

*See also*

Communication, Short-Wave

### Solar Phenomena

- Concerning the influence of the eleven-year solar activity period upon the propagation of waves in wireless telegraphy. H. Plendl. *Proc Inst Radio Eng* 20:520 Mar '32
- Correlation of long-wave transatlantic radio transmission with other factors affected by solar activity. C. N. Anderson. *Proc Inst Radio Eng* 16:297 Mar '28
- Correlation of radio reception with solar activity and terrestrial magnetism. G. W. Pickard. *Nat Research Council Bul* 61:133 July '27

- Correlation of radio reception with solar activity and terrestrial magnetism. Greenleaf W. Pickard. Part I. Proc Inst Radio Eng 15:83 Jan '27. Part II (Sept '27, p. 749). Discussion. J. H. Dellinger (Apr '27 p. 326)
- Diversity receiving system of R.C.A. Communications, Inc., for radiotelegraphy. H. H. Beverage and H. O. Peterson. Proc Inst Radio Eng 19:531 Apr '31
- Effects of sun spots and terrestrial magnetism on long-distance reception of low-frequency waves. E. Yokoyama and T. Naki. Proc Inst Radio Eng 19:882 May '31
- Electrical disturbances apparently of extraterrestrial origin. Karl G. Janosky. Proc Inst Radio Eng 21:1387 Oct '33
- Fifteen-month period in solar activity, terrestrial magnetism, and radio reception. G. W. Pickard. Proc Inst Radio Eng 19:353 Mar '31
- Influence of sun spots on radio reception. H. T. Stetson. il diags Jour Fr Inst 210:403 Oct '30
- Instantaneous direct reading goniometer. R. A. Watson-Watt and J. F. Herd. Jour Inst Elec Eng 64:611 May '26
- Long wave radio receiving measurements at the Bureau of Standards in 1930. L. W. Austin. Proc Inst Radio Eng 19:1766 Oct '31
- New phenomenon in sunset radio direction variations. L. W. Austin. Proc Inst Radio Eng 13:409 June '25. Discussion. R. L. Smith-Rose, R. H. Barfield, and L. W. Austin (Dec 1925, p. 781)
- Note on the fifteen-month period in solar activity, terrestrial magnetism and radio reception. Greenleaf W. Pickard. Proc Inst Radio Eng 19:353 Mar '31
- Notes on the effect of solar disturbances on Transatlantic radio transmission. Clifford N. Anderson. Proc Inst Radio Eng 17:1508 Sept '29
- On the influence of solar activity on radio transmission. L. W. Austin and I. J. Wymore. Proc Inst Radio Eng 16:166 Feb '28
- On the relation between longwave reception and certain terrestrial and solar phenomena. K. Sceenivasan. Proc Inst Radio Eng 17:1793 Oct '29
- Overseas radio extensions to wire telephone networks. Lloyd Espenschied and William Wilson. Proc Inst Radio Eng 19:282 Feb '31
- Propagation of short radio waves over the North Atlantic. C. R. Burrows. Proc Inst Radio Eng 19:16344 Sept '31
- Relation of radio propagation to disturbances in terrestrial magnetism. I. J. Wymore. Proc Inst Radio Eng 17:1206 July '29
- Relation of radio reception to sunspot position and area. Greenleaf W. Pickard. Proc Inst Radio Eng 15:1004 Dec '27. Errata (Jan 1928, p. 14)
- Short period variations in radio reception. Greenleaf W. Pickard. Proc Inst Radio Eng 12:119 Apr '24
- Solar activity and radio telegraphy. L. W. Austin. Proc Inst Radio Eng 20:280 Feb '32
- Solar and radio periodicities. C. C. Abbot. Science 75:607 June 10 '32
- Some observations of the behavior of earth currents and their correlation with magnetic disturbances and radio transmission. Isabel S. Bemis. Proc Inst Radio Eng 19:1931 Nov '31
- Suggestion of a connection between radio fading and small fluctuations in the earth's magnetic field. G. Breit. Proc Inst Radio Eng 15:709 Aug '27
- Transatlantic radio telephone transmission. Lloyd Espenschied. C. N. Anderson and Austin Bailey. Proc Inst Radio Eng 14:7 Feb '26
- Use of recording equipment in radio transmission research. P. A. de Mars, A. W. Kenrick and G. W. Pickard. Proc Inst Radio Eng 19:1618 Sept '31

#### Ultra-Short-Wave

- Beam transmission of ultra short waves. Hidetsugu Yagi Proc Inst Radio Eng 16:715 June '28. Discussion. J. H. Dellinger.
- Direct-ray broadcast transmission. T. L. Eckersley. Proc Inst Radio Eng 20:1555 Oct '32
- Effect of rain and fog on the propagation of very short radio waves. J. A. Stratton. Proc Inst Radio Eng 18:1064 June '30
- Note on earth reflection of ultra short radio waves. E. H. Lange. Proc Inst Radio Eng 17:745 Apr '29
- Propagation of waves below ten meters in length. B. Trevor and P. S. Carter. Proc Inst Radio Eng 21:387 Mar '33
- Radiotelegraph and radiotelephony on half-meter waves. Shintaro Uda. Proc Inst Radio Eng 18:1047 June '30
- Report on experiments with electric waves of about 3 meters. A. Esau and W. M. Hahnemann. il Proc Inst Radio Eng 18:471 Mar '30
- Seventy - five - centimeter radio communication tests. W. D. Hershberger. Proc Inst Radio Eng 22:870 July '34
- Some characteristics of ultra-high-frequency transmission. Henry Muyskens and John D. Kraus. Proc Inst Radio Eng 21:1302 Sept '33
- Some details relating to the propagation of very short waves. R. Jouaust. diags Proc Inst Radio Eng 19:479 Mar '31
- Some results of a study of ultra-short-wave transmission phenomena. C. R. England, A. B. Crawford and W. W. Mumford. Proc Inst Radio Eng 21:464 Mar '33
- Spreading of electromagnetic waves from a Hertzian dipole. J. A. Ratcliffe, L. G. Vedy and A. F. Wilkins. diag Jour Inst Elec Eng 70:522 May '32; Abstract. Wireless Eng 9:140 Mar '32; Discussion. 70:536 May '32; Wireless Eng 9:142 Mar '32
- Study of the propagation of wavelengths between three and eight meters. L. F. Jones il diags Proc Inst Radio Eng 21:349 Mar '33
- Superregenerative wave meter for ultra-short waves. H. Ataka. diag Proc Inst Radio Eng 21:1590 Mar '33
- Transmitting on a wavelength of three-quarters of a meter. H. E. Holmann. il diags Radio N 9:1143 Apr '28
- Ultra short radio waves. W. H. Moore, bibliog diags Jour Fr Inst 209:473 Apr '30
- Ultra-short radio waves; experiments by C. E. Cleeton and N. H. Williams. Science 79:sup5 Feb 23 '34

**PROPAGATION of Waves, Ultra-Short-Wave—**  
Continued

- Ultra-short radio waves; refraction in the lower atmosphere. R. L. Smith-Rose and J. S. McPetrie. bibliog *Wireless Eng* 11:3 Jan '34
- Ultra short wave broadcasting. B van der Pol. *Exp Wireless* 6:9 Jan '29
- Ultra-short-wave propagation. J. C. Schelleng, C. R. Burrows and E. B. Ferrell. bibliog *il map Proc Inst Radio Eng* 21:427 Mar '33; Same *Bell System Tech Jour* 12:125 Apr '33

*See also***Ultra-High Frequencies****Weather**

- Correlation of long-wave radio field intensity with passage of storms. I. J. Wymore-Shield. *Proc Inst Radio Eng* 19:1675 Sept '31
- Cyclones and the Kennelly-Heaviside layer. R. C. Colwell. *Proc Inst Radio Eng* 21:721 May '33
- Some correlations of radio reception with atmospheric temperature and pressure. Greenleaf W. Pickard. *Proc Inst Radio Eng* 16:765 June '28
- Sunspots, weather, and radio. W. H. Wenstrom. *il maps Radio N* 11:884 984:1090 Apr-June '30
- Wave propagation and the weather. F. Charman. *diags Exp Wireless* 4:735 Dec '27

**Q****QUARTZ.** See Crystals, Piezoelectric**QUASI-Optical Waves.** See Ultra-High Frequencies**R****RADIATION**

- Action of a reflecting antenna. L. S. Palmer and L. L. K. Honeyball. *diags Jour Inst Elec Eng* 67:1045 Aug '29; *Abstract. Elec Rev (Lond)* 105:337 Aug 23 '29
- Circuit relations in radiating systems and applications to antenna problems. P. S. Carter. *Proc Inst Radio Eng* 20:1004 June '32
- Cooperative investigation of radio wave phenomena. *Radio Serv Bul* 96:15 Apr '25
- Engineering acoustics: antennae for electromagnetic radiation. *Electrician* 110:708 June 2 '33
- Experiments on the propagation of electromagnetic waves; abstract. M. Baumbor and J. Zenneck. *Exp Wireless* 3:451 July '26
- Further measurements on wireless wavefronts. R. L. Smith-Rose and R. H. Barfield. *il diags Exp Wireless* 4:130 Mar '27
- General formulae for the radiation distribution of antenna systems. R. M. Wilnotte. bibliog *Jour Inst Elec Eng* 68:1174 Sept '30
- High angle radiation of short electric waves. S. Uda. *Proc Inst Radio Eng* 15:377 May '27
- Investigations into the mechanism of the transmission of radio signals through space. R. Bown, D. K. Martin and R. K. Potter. *il diags Electrician* 96:168 Feb 12 '26
- Investigation of the attenuation of electromagnetic waves and the distances reached by radio stations in the wave band from 200 to 2000 meters. H. Fassbender, F. Eisner and G. Kurlbaum. bibliog *Proc Inst Radio Eng* 19:1446 Aug '31
- Measurement of the angle of incidence at the ground of downcoming short waves from the inosphere. A. F. Wilkins. *Jour Inst Elec Eng* 74:582 June '34
- Method for determining the effect of the earth on the radiation from aerial systems. J. S. McPetrie. *Jour Inst Elec Eng* 70:382 Mar '32
- Multiple refraction and reflection of short waves. N. H. Edes. *Proc Inst Radio Eng* 19:1024 June '31
- New fields for radio signalling. E. F. W. Alexander. *diags Gen Elec Rev* 28:266 Apr '25
- New field for experimentation; tabulation of received carrier-wave intensity. J. F. Rider. *il diags Radio N* 8:1220 Apr '27
- Polarization of radio waves. E. F. W. Alexander. *il Jour Amer Inst Elec Eng* 45:636 July '26
- Radiation and induction. R. R. Ramsey. *Proc Inst Radio Eng* 21:1586 Nov '33
- Radiation characteristics of a vertical half-wave antenna. J. A. Stratton and H. A. Chinn. *diags Proc Inst Radio Eng* 20:1892 Dec '32
- Radiation distribution of antennae in vertical planes. R. M. Wilnotte. bibliog *Jour Inst Elec Eng* 68:1191 Sept '30
- Radiation measurements of a short-wave directive antenna at the Nauen high power radio station. M. Baumler and others. *il diags Proc Inst Radio Eng* 19:812 May '31
- Radiation resistance and energy capacity of half-wave aeriels. E. Green. *Exp Wireless* 5:82 Feb '28
- Radiation resistance of concentric conductor transmission lines. R. Whitmer. *Proc Inst Radio Eng* 21:1343 Sept '33
- Reflection of electromagnetic waves at ionized media with variable conductivity and dielectric constant. G. J. Elias. *Proc Inst Radio Eng* 19:891 May '31
- Reflection of radio waves from the surface of the earth. L. C. Verman. *il diags Proc Inst Radio Eng* 18:1396 Aug '30
- Relation of radio wave propagation to disturbances in terrestrial magnetism. I. J. Wymore. *U S Bur Stand Jour Research* 2:1201 June 11 '29
- Scattered radiation from short-wave beams. *Wireless Eng* 8:579 Nov '31
- Some developments in common frequency broadcasting. G. D. Gillett. *Proc Inst Radio Eng* 19:1347 Aug '31
- Variations in high-frequency ground wave ranges. A. H. Taylor. *Proc Inst Radio Eng* 15:707 Aug '27

*See also*

Propagation of Waves

**RADIO Range Beacons.** See Beacons**RADIOTELEGRAPHY**

- Application of printing telegraph to long-wave radio circuits. A. Bailey and T. A. McCann. *il fold diag Bell System Tech Jour* 10:601 (bibliog p614-15) Oct '31
- Arc radio transmitters for marine service. *Marine Eng* 30:530 Sept '25

- Cable-wireless merger. *Economist* 107:222 Aug 4 '28
- Concerning the influence of the eleven-year solar activity period upon the propagation of waves in wireless telegraphy. H. Plendl. *Proc Inst Radio Eng* 20:520 (bibliog p538-9) Mar '32
- Die bedeutung der drahtlosen telegraphie fur die wissenschaft. J. Zenneck. *il diags Zeit Ver Deutsch Ing* 73:565 Apr '29
- Der neue Wiener rundfunksender. *il diags Zeit Ver Deutsch Ing* 70:766 June 5 '26
- Design details of a high-power radio telegraphic transmitter using thermionic valves. R. V. Hansford and H. Faulkner. *diags Jour Inst Elec Eng* 65:297 Mar '27; *Abstracts. Elec Rev (Lond)* 99:1013 Dec 17 '26; *Electrician* 98:89 Jan 27 '27; *Exp Wireless* 4:42 Jan '27; *Excerpt. Engineer* 142:723 Mar 31 '26; *Discussion. Jour Inst Elec Eng* 65:316 Mar '27; *Exp Wireless* 4:47 Jan '27
- Diversity receiving system of R.C.A. communications, inc., for radiotelegraphy. H. H. Beverage and H. O. Peterson. *il diags Proc Inst Radio Eng* 19:531 Apr '31
- Facsimile radio-telegraphy. *il Elec Rev (Lond)* 104:234 Feb 8 '29
- High-tension rectifier for a low-power transmitter. T. S. Skeet. *il diag Exp Wireless* 3:599 Oct '26 Oct '26
- Historic rescue; Titanic disaster gave added impetus to the universal adoption of radio on all ocean-going ships. O. E. Dunlap, jr. *il Radio N* 11:997 May '30
- Hochfrequenzmaschinen sender und seine drehzahlregelung. W. Dornig. *il diags Elektrotech Zeit* 46:415 Mar 19 '25
- How your radio or cable message speeds through a nerve center of communication. International telephone and telegraph corporation. M. Wright. *il Sci Amer* 146:332 June '32
- Imperial communications; outline of report of the Imperial wireless and cable conference. C. Crawley. *Elec Rev (Lond)* 103:189 Aug 3 '28; *Electrician* 101:127 Aug '28
- Keying of valve transmitters. W. T. Ditcham. *diags Exp Wireless* 3:526 Sept '26
- Kurze elektrische wellen und ihre anwendung in der drahtlosen telegraphie. A. Esau. *diags Elektrotech Zeit* 46:1869 Dec 10 '25
- Le nouveau systeme de telegraphie Hell-Siemens. *diags Genie Civil* 105:95 July 28 '34
- L'emploi des ondes courtes en T.S.F. G. Malgorn. *il diags Genie Civil* 88:477 May 29-June 5 '26
- Les communications par ondes ultra-courtes entre les aeroportos deLypnye (Angleterre) et de Saint-Inglevert (Pas-de-Calais). *il plan Genie Civil* 104:128, 157 Feb 10 '34; *Abstract (micro-ray link). Electrician* 112:156 Feb 2 '34
- Naval wireless telegraph communications. G. Shearing and J. W. S. Dorling. *diags map Jour Inst Elec Eng* 68:237 Feb '30
- Needs for steadiness in transmitter frequency to prevent interference effects. L. R. Turner. *Electrician* 96:288 Mar 12 '26
- Perfectionnements recents apportees a Pappareil telegraphique Baudot. *Genie Civil* 88:67 Jan 16 '26
- Problem of duplex telegraphy in the mercantile marine wireless service. M. Reed. *diags Wireless Eng* 11:122 Mar '34
- Radio telegraphy and radio telephony. A. S. Angwin. *Jour Inst Elec Eng* 70:145 Jan '32
- Static reducer for C. W. telegraph receivers. O. C. Roos. *il diags Radio N* 8:670 Dec '26
- Super-midget radio transmitter. J. A. Code. *il Electronics* 2:21 July '31
- Radio-telegraphy and radio-telephony; a review of progress. E. B. Moullin. *Jour Inst Elec Eng* 67:170 Jan '29
- Radiotelegraph keying translents. R. Lee. *il diags Proc Inst Radio Eng* 22:213 Feb '34
- Short-wave wireless telegraphy. T. L. Eckersley. *diags Jour Inst Elec Eng* 65:600-38; *Discussion.* 638 June '27
- Silica valves in wireless telegraphy. H. Morris-Airey, G. Shearing and H. G. Hughes. *diags Inst Jour Inst Elec Eng* 65:786 Aug '27; *Abstracts. Exp Wireless* 4:360 June '27; *Engineering* 123:718 June 10 '27; *Electrician* 98:646 June 10 '27; *Discussion. Jour Inst Elec Eng* 65:812 Aug '27
- Solar activity and radiotelegraphy. L. W. Austin. *bibliog Proc Inst Radio Eng* 20:280 Feb '33
- Some developments in the electrical industry during 1926. J. Liston. *il Gen Elec Rev* 30:34 June '27
- Some experiences with short-wave wireless telegraphy. N. H. Edes. *diags Proc Inst Radio Eng* 18:2011 Dec '30
- Supposed conducting layer in the atmosphere and the effect of the earth's magnetic field in radiotelegraphy. G. Breit. *Nat Research Council Bul v* 10, pt 3:62 July '25
- Transoceanic radio communication; radio network of R.C.A. communications, inc. H. H. Beverage, C. W. Hansell and H. O. Peterson. *bibliog il map Elec Eng* 52:331 May '33
- Wireless telegraphy and the ionization in the upper atmosphere. E. O. Hulburt. *Proc Inst Radio Eng* 18:1231 July '30
- 200 kw triode transmitter. B. van der Pol and K. Posthumus. *il diags Electrician* 95:202 Aug 21 '25
- See also*
- |               |              |
|---------------|--------------|
| Communication | Transmitters |
| Marine Radio  |              |
- RADIOTELEPHONY**
- Bell telephone service opens to South America. *il Blast F & Steel P* 18:1023 June '30
- Communication; discussion at A.I.E.E. meeting. *Elec W* 91:399 Feb 25 '28
- Diversity telephone receiving system of R.C.A. communications, inc. H. O. Peterson, H. H. Beverage and J. B. Moore. *il diags Proc Inst Radio Eng* 19:562 Apr '31
- Distortion in wireless telephony, and related applications of the cathode ray oscillograph. E. K. Sandeman and N. Kipping. *il diags Exp Wireless* 2:811 (bibliog p 819 Oct '25
- Engineering acoustics; telephony power-levels. *Electrician* 106:337 Feb 27 '31
- Frequency modulation. B. van der Pol. *Proc Inst Radio Eng* 18:1194 July '30
- Long-range communication; discussion at A.I.E.E. winter convention. *Elec W* 95:301 Feb 8 '30
- Optimum decrement of tuned circuits for the reception of telephony. D. A. Bell. *Wireless Eng* 10:371 July '33

**RADIOTELEPHONY—Continued**

- Radio-telegraphy and radio-telephony. L. B. Turner. diags Jour Inst Elec Eng 65:131 Jan '27
- Radio-telegraphy and radio-telephony; a review of progress. E. B. Moullin. Jour Inst Elec Eng 67:170 Jan '29
- Radio telegraphy and radio telephony. A. S. Angwin. Jour Inst Elec Eng 70:145 Jan '32
- Radio telephone circuit of 5,300 miles connects Bell system telephones with South America. Pub Serv Management 48:188 June '30
- Radio telephone modulation. H. A. Brown and C. A. Keener. il diags Ill U Eng Exp Sta Bul 148:1 '25
- Radio telephony; new services opened in 1931. H. Faulkner. diag Electrician 108:140 Jan 29 '32
- Radio-telephony; several new long distance services opened in 1932. H. Faulkner. Electrician 110:109 Jan 27 '33
- Reception in wireless telephony. L. B. Turner. diag Electrician 96:596 June 11 '26
- Report of committee on radio propagation data. Proc Inst Radio Eng 21:1419 Oct '33
- Short-distance observations on long-wave phenomena. R. Naismith. Inst Elec Eng Jour 69:875 July '31
- Side bands in frequency modulation. E. D. Scott and J. R. Woodyard. il diags Washington U Eng Sta Bul 68:5 '33
- Solar and magnetic activity and radio transmission. L. W. Austin, E. B. Judson and I. J. Wymore-Shiel. Proc Inst Radio Eng 18:1997 Dec '30
- Some earth potential measurements being made in connection with the international polar year. G. C. Southworth. map Proc Inst Radio Eng 21:1740 Dec '33
- Some experiments on night errors for long waves. I. Tanimura. Proc Inst Radio Eng 18:718 Apr '30
- Some long-distance transmission phenomena of low-frequency waves. E. Yokoyama and I. Tanimura. Proc Inst Radio Eng 21:263 Feb '33
- Some problems in short-wave telephone transmission. J. C. Schelleng. il diags Proc Inst Radio Eng 18:913 June '30
- Some results of a study of ultra-short-wave transmission phenomena. C. R. Englund, A. B. Crawford and W. W. Mumford. il maps Proc Inst Radio Eng 21:464 Mar '33
- Some studies of radio transmission over long paths made on the Byrd Antarctic expedition. L. V. Berkner. diags maps U S Bur Stand Jour Research 8:265 Feb '32
- Tables of north Atlantic radio transmission conditions for long-wave daylight signals for the years 1922-1930. L. W. Austin. Proc Inst Radio Eng 20:689 Apr '32
- Telephone transmitter modulation measured at the receiving station. L. B. Turner. diag Exp Wireless 4:3 Jan '27
- Transmission characteristics of a shortwave telephone circuit. R. K. Potter. il diags Proc Inst Radio Eng 18:581 Apr '30
- Two-way radio telephone circuits. S. B. Wright and D. Mitchell. diags plans Bell System Tech Jour 11:368 July '32
- World-wide telephony; its problems and future. B. Gherardi and F. B. Jewett. maps bibliog Bell System Tech Jour 11:485 (bibliog p518) Oct '32
- See also*
- |                               |  |
|-------------------------------|--|
| Broadcasting<br>Communication | Transmitters<br>Ultra-High-Frequencies |
|-------------------------------|--|
- RADIOTELEPHONY, Aviation**
- Air transport communication. R. L. Jones and F. M. Ryan. il diags Jour Amer Inst Elec Eng 49:50 Jan '30
- Applications of radio in air navigation. J. H. Dellinger. il diags Mech Eng 49:29 Jan '27
- Development of radio aids for civil airways. Radio Serv Bul 121:19 Apr '27
- European aviation radio. G. C. Gross. Proc Inst Radio Eng 19:341 Mar '31
- From Argentina to Australia, aviators talk by radiophone. il Dun's Int Rev 56:51 Sept '30
- How the ZR-3 was piloted by radio. H. C. Fleming. il Radio N 6:1134 Jan '25
- Latest in flying laboratories; illustrations of Ford plane used by the Bell telephone laboratories. Radio N 11:607 Jan '30
- Pilot 'phones his airport via radio. H. Crary. il Sci Amer 143:26 July '30
- Provision of radio facilities for aircraft communication. E. L. Nelson and F. M. Ryan. il diag S A E Jour 26:326 Mar '30
- Radio and the "black" sun; Byrd and Amundsen Arctic expeditions. O. E. Dunlap, jr. il Sci Amer 135:110-11 Aug '26
- Simultaneous radiotelephone and visual range beacon for the airways. F. G. Kear and G. H. Wintermute. diags pls U S Bur Stand Jour Research 7:261 Aug '31
- T.A.T.-Maddux two-way radio communication. G. E. Everett. il Aviation 28:752 Apr 12 '30
- Two-way radio communication in air transport service. H. Hoover, jr. il Aero Digest 16:62 Apr '30
- Über die beseitigung der storenden wirkung des elektrischen zundsystems der explosionsmotoren auf den radioempfang bei flugzeugen. V. S. Kulebakin. diags Elektrotech Zeit 46:1061 July 16 '25
- Voices from the clouds; plane-to-ground communication. R. Johnson. il Radio N 11:694 Feb '30
- Voice or code in aircraft radio? W. G. Logue. il Aviation 28:1213 June 21 '30
- Wireless and aeronautics; details of the Marconi ground stations. il Electrician 94:178 Feb 13 '25
- Wireless on aircraft. il Electrician 95:498 Oct 30 '25
- RADIOTELEPHONY, Police**
- Aeroplane and car; demonstration of value of two-way radio communication for police action against motor criminals. il Electrician 113:93 July 20 '34
- Cruiser number 1 reports; short wave radio communication between police cars and headquarters. J. H. Crider. il Sci Amer 149:276 Dec '33
- How the police are using the radio third degree. S. Kaufman. il Radio N 13:105 Aug '31

- Invisible police alarm. O. E. Dunlap, jr. *il Sci Amer* 133:308 Nov '25
- Latest British lilliput tubes, applied to police radio and hearing aids. R. W. Hallows. *il Radio N* 16:279 Nov '34
- Manhunts by radio. R. L. Peters. *il Radio N* 12:136 Aug '30
- Michigan claims right to operate radio for police. F. W. Green. *Pub Util* 5:505 Apr 17 '30
- Municipal radio; radio communication, police, fire-fighting, harbor-patrol and aviation forces, New York city. S. Kaufman. *il Radio N* 14:71 Aug '32
- Network of radio police. *Jour Amer Bankers Assn* 26:69 Apr '34
- New arm of the law. R. L. Peters. *il Radio N* 11:826 Mar '30
- Police radio protection. G. E. Anderson. *il Jour Amer Bankers Assn* 26:42, 44 Apr '34
- Police radio routs racketeers; a year's experience with Detroit's radio police cars. R. L. Peters. *il Radio N* 11:400 Nov '29
- Quick protection; police coordination, through radio and teletype. *il map Jour Amer Bankers Assn* 26:30 May '34
- Radio blocks the getaway. R. L. Peters. *il Jour Amer Bankers Assn* 21:1198 June '29
- Radio goes man-hunting. W. J. Barkley. *il Sci Amer* 144:246 Apr '31
- Radio patrol system of the City of New York. F. W. Cunningham and T. W. Rochester. *Proc Inst Radio Eng* 21:1239 Sept '33
- Radio polices a western city. J. E. Squires. *il Radio N* 9:1223 May '28
- Radio turns crook-catcher. C. B. Davis. *il Nation's Business* 18:100 Mar '30
- Squads—attention; radio enlists in Chicago's war on crime. A. Stringer. *il Radio N* 11 July '29
- Talking back; two-way system used by the Boston police department. *il Gen Elec Rev* 37:477 Oct '34
- RADIOTELEPHONY, Railroad**
- Canadian National demonstrates train telephone service. *il Ry Age* 86:1100 May 11 '29
- Chesapeake & Ohio experiments with radio. *Ry Age* 84:448 Feb 25 '28
- Communication in railroad operation. I. C. Forshew. *Jour Amer Inst Elec Eng* 44:451 May '25; Discussion. 44:777 July '25
- Directing cars by radio among recent experiments. *Dun's Int Rev* 55:60 June '30
- Discussion before A.R.A. telegraph section. *Ry Age* 83:723 Oct 15 '27
- Drahtlose rangierbefehisübermittlung (Rangier-Funk). K. Steinner. *il Elektrotech Zeit* 49:722 May 10 '28
- Electric train operation by radiophone. *il Radio N* 7:1637 June '26
- Freight train radio tried on New Haven. *il Ry Age* 96:376 Mar 17 '34
- La radiophonie dans les trains; l'installation des Chemins de fer de l'Etat. *il diags Genie Civil* 96:213 Mar 1 '30
- Now it's radio for locomotives. *Elec Jour* 25:249 May '28
- Phone service on moving trains; Canadian National makes initial installation between Montreal and Toronto. *il Ry Age* 88:1053 May 3 '30
- Radio in the railroad yards. S. R. Winters. *il Radio N* 8:640 Dec '26
- Radio intercommunicating system for railroad train service. Henry C. Forbes. *Proc Inst Radio Eng* 15:869 Oct '27
- Radio links train and home. J. N. Rentzos. *il Radio N* 7:1636 June '26
- Radio on trains. G. W. Oliver. *Ry Age* 89:806 Oct 18 '30
- Radio on the Canadian National. *il Ry Age* 78:428 Feb 14 '25
- Radio phone between locomotive and caboose. *il Ry Age* 81:100 July 17 '26; *Ry Rev* 79:88 July 17 '26
- Railroad radio-telephone equipment. A. N. Curtiss. *il Elec Jour* 26:77 Feb '29
- Report of the A.R.A. committee on radio and wire carrier systems. *Ry Rev* 79:499 Oct 2 '26
- Telephoning from trains. J. C. Burkholder. *Ry Age* 89:807 Oct 18 '30
- Train telephone a modern marvel. E. W. Gage. *il Prof Eng* 15:9 Sept '30
- Tune in as you travel; installation on Canadian National railways. W. D. Robb. *il Radio N* 11:918 Apr '30
- Wireless on trains. *Engineer* 150:592 Nov 28 '30
- RADIOTELEPHONY, Ship-to-Shore**
- Coastal wireless; radio telephone apparatus to be installed at eight more stations. *il Electrician* 108:698 May 20 '32
- Hello, give me S. S. Lucia; telephone service established in England with Channel boats. H. De A. Donisthorpe. *il diag Radio N* 7:968 Jan '26
- Listening in across Canada. R. D. Meyer. *il Radio N* 7:144 Aug '25
- Long distance telephone calls from ships at sea prove use of service. *Pub Serv Management* 50:157 May '31
- Marine radio telephony. A. R. Boone. *il Radio N* 13:475 Dec '31
- Modern marine wireless equipment. R. Twelvetrees. *il Electrician* 95:35 July 10 '25
- Municipal radio; radio communication, police, fire-fighting, harbor-patrol and aviation forces, New York city. S. Kaufman. *il Radio N* 14:73, 118 Aug '32
- North Atlantic ship-shore radiotelephone transmission during 1930 and 1931. C. N. Anderson. *diags Proc Inst Radio Eng* 21:81 Jan '33
- North Atlantic ship-shore radiotelephone transmission during 1932-1933. C. N. Anderson. *Proc Inst Radio Eng* 22:1215 Oct '34
- Operation of a ship-shore radiotelephone system. C. N. Anderson and I. E. Lattimer. *il diags Proc Inst Radio Eng* 20:407 Mar '32
- Radio extension of the telephone system of ships at sea. H. W. Nichols and Lloyd Espenschied. *Proc Inst Radio Eng* 11:193 June '23



**RADIOTELEPHONY, Ship-to-Shore—Cont'd.**

- Radiophone enables ship-to-ship conversations at sea. *il Jour Elec* 54:112 Feb 1 '25
- Radio telephone service to ships at sea. W. Wilson and L. Espenschied. *il diags Bell System Tech Jour* 9:407 July '30
- Sea-going radiophone. W. Jones. *il diag Radio N* 11:988 May '30
- Ship's motor lifeboat with wireless equipment. *il diags plan Engineer* 139:160 Feb 6 '25
- Ship-to-shore radio-telephony; abstracts. T. F. Purves. *il diags Elec Rev (Lond)* 106:847, 865, 929 May 2-16 '30; *Electrician* 104:516, 553 Apr 25, May 2 '30
- Ship-to-shore telephone service inaugurated between the Leviathan and the telephones of the Bell system. *il Elec W* 95:352 15 '30
- Telephone goes to sea. E. M. Walker. *il map Radio N* 12:210 Sept '30
- Two-way radiotelephone circuits. S. B. Wright and D. Mitchell. *Proc Inst Radio Eng* 20:1117 July '32

**RADIOTELEPHONY, Short-Wave**

- Avalon-Los Angeles radio toll circuit. L. M. Clement, F. M. Ryan, and D. K. Martin. *Proc Inst Radio Eng* 9:469 Dec '21
- La radiotelephonie par ondes courtes projetees; les premieres communications entre Paris et Alger. R. Noel. *il diags Genie Civil* 92:373 Apr 21 '28
- La radiotelephonie a ondes courtes a bande laterale unique. P. Letheule. *il diags Genie Civil* 99:205 Aug 29 '31
- Radiotelegraphy and radiotelephony on half-meter waves. Shintaro Uda. *Proc Inst Radio Eng* 18:1047 June '30
- Solar and magnetic activity and radio transmission. L. W. Austin, E. B. Judson and I. J. Wymore-Shiel. *Proc Inst Radio Eng* 18:1997 Dec '30
- Skip distance effects at superfrequencies. A. H. Taylor. *Proc Inst Radio Eng* 19:103 Jan '31
- Short-wave transmission to South America. C. R. Burrows and E. J. Howard. *il Proc Inst Radio Eng* 21:102 '33
- Some problems in short-wave telephone transmission. J. C. Schelleng. *Proc Inst Radio Eng* 18:913 June '30
- Some results of a study of ultra-short-wave transmission phenomena. C. R. Englund, A. B. Crawford and W. W. Mumford. *il maps Proc Inst Radio Eng* 21:464 May '33
- Transmission characteristics of a shortwave telephone circuit. R. K. Potter. *il diags Proc Inst Radio Eng* 18:581 Apr '30
- Transmitting on a wavelength of three-quarters of a meter. H. E. Hollmann. *il diags Radio N* 9:1143 Apr '28
- Transoceanic telephone service—short-wave transmission. R. Bown. *il diag map Bell System Tech Jour* 9:258 Apr '30
- Ultra-short-wave propagation. J. C. Schelleng, C. R. Burroughs and E. B. Ferrell. *bibliog il map Proc Inst Radio Eng* 21:427 Mar '33
- Voice of Admiral Byrd is heard around the world. *Dun's Int Rev* 55:47 May '30

**RADIOTELEPHONY, Single-Sideband**

- Single side band short-wave wireless telephony; experimental station of Le Materiel telephonique at Trappes. *il diags Engineer* 151:570 May 22 '31
- Single side-band system applied to short-wave telephone links. A. H. Reeves. *diags Jour Inst Elec Eng* 73:245 Sept '33; *Abstracts. Electrician* 110:623 May 12 '33; *Elec Rev (Lond)* 112:631 May 5 '33; *Discussion. Jour Inst Elec Eng* 73:276 Sept '33
- Single wavelength system. *diags Electrician* 107:85 July 17 '31
- Power amplifiers in transatlantic radio telephony. A. A. Oswald and J. C. Schelleng. *Proc Inst Radio Eng* 13:313 June '25
- Production of single side-band for transatlantic radio telephony. R. A. Heising. *Proc Inst Radio Eng* 13:291 June '25
- Some experiments with side-band telephony on short wavelengths. E. H. Robinson. *diags Exp Wireless* 4:715 Dec '27

**RADIOTELEPHONY, Transoceanic**

- Application of printing telegraph to long-wave radio circuits. A. Bailey and T. A. McCann. *il fold diag Bell System Tech Jour* 10:601 (*bibliog* p614 Oct '31
- Atlantic radio telephone transmission. L. Espenschied, C. N. Anderson and A. Bailey. *Electrician* 95:175 Aug 14 '25
- Commercial transatlantic telephony. *il Elec W* 89:163 Jan 15 '27
- Hello, London—New York calling, marks the beginning of a new epoch in communication between two hemispheres. O. E. Dunlap, jr. *il Sci Amer* 136:242 Apr '27
- Inter-continental telephone service four years in the making. *il Dun's Int Rev* 55:34 June '30
- International communication advances. *Elec W* 99:65 Jan 2 '32
- Intercontinental radiotelephone service from the United States. J. J. Pilliod. *il diags map Elec Eng* 50:748 Sept '31
- International telephony. H. S. Osborne. *il maps diag Jour W Soc Eng* 36:148 June '31
- New York-London telephone circuit. S. B. Wright and H. C. Silent. *il diags chart Bell System Tech Jour* 6:736 Oct '27
- Overseas radio extensions to wire telephone networks. L. Espenschied and W. Wilson. *il fold maps diag Proc Inst Radio Eng* 19:282 (*bibliog* p302-3) Feb '31
- Radio telephony; 1933 developments. A. J. Gill. *Electrician* 112:113 Jan 26 '34
- Recent developments in the operation of radio telephone service. F. A. Cowan. *diag map Elec Eng* 50:476 July '31
- Receiving system for long-wave transatlantic radio telephony. A. Bailey, S. W. Dean and W. T. Wintringham. *il diags maps Bell System Tech Jour* 8:309 Apr '29
- Short wave radio used to telephone across Atlantic. J. B. O'Brien. *il Dun's Int Rev* 54:46 Dec '29
- Some observation of the behavior of earth currents and their correlation with magnetic dis-

- turbances and radio transmission. I. S. Bernis. map Proc Inst Radio Eng 19:1931 Nov '31
- Some research problems involved in transoceanic telephony. F. B. Jewett. Amer Soc T M Proc 28 pt 2:27 '28
- Telephone spans the Pacific. R. C. Smith. il map Sci Amer 146:160 Mar '32
- Transatlantic radio telephony. R. Bown. Bell System Tech Jour 6:248 Apr '27
- Transatlantic telephony; service and operating features. K. W. Waterson. Jour Amer Inst Elec Eng 47:270 Apr '28; Same. Bell System Tech Jour 7:187 Apr '28
- Transatlantic telephony—the technical problem. O. B. Blackwell. il diags maps Bell System Tech Jour 7:168 Apr '28; Same cond. Jour Amer Inst Elec Eng 47:369 May '28
- Transatlantic wireless telephony. diag Electrician 96:303, 338 Mar 12 '26; Engineer 141:290 Mar 12 '26; Engineering 121:337 Mar 12 '26
- Transoceanic telephone service — short-wave equipment. A. A. Oswald. il diags Bell System Tech Jour 9:270 Apr '30
- Transoceanic telephone service—short-wave transmission. R. Bown. il diag map Bell System Tech Jour 9:258 Apr '30
- Transoceanic telephone service—general aspects. T. G. Miller. map Jour Amer Inst Elec Eng 49:107 Feb '30
- Transoceanic telephone service—short-wave equipment. A. A. Oswald. il diags Bell System Tech Jour 9:270 Apr '30
- Transoceanic radio-telephony; details of the link between Spain and South America. il Elec R (Lond) 105:572 Nov '29
- Transoceanic radiotelephone interflex. M. Hinder. il diags Radio N 8:1446 June '27
- Transoceanic reception of high-frequency telephone signals. R. M. Morris and W. A. R. Brown. map Proc Inst Radio Eng 21:63 Jan '33
- See also*
- Communication, International
- REACTANCE**
- A reactance theorem. Ronald M. Foster. Bell Sys Tech Jour 3:259 Apr '24
- Coil design for short wave receivers. D. Grimes and W. Barden Electronics 7:174 June '34
- Effective resistance of inductance coils at radio frequencies. S. Butterworth. Exp Wireless and Wireless Eng 3:203 Apr '26
- Note on a modified reactance-frequency chart. J. R. Tolmie. Proc Inst Radio Eng 21:1364 Sept '33
- Radio frequency resistance and inductance of coil used in radio reception. August Hund and H. B. DeGroot. Bur Stand Tech Paper 298 Oct '25
- Reactance and admittance curves applied to tuned circuits with and without resistance. L. T. Bird. diags Exp Wireless 5:327, 371 June-July '28
- Resistance of conductors of various types and sizes as windings of single layer coils. E. L. Hall. Bur Stand Tech Paper 330 Oct '26
- Study of high-frequency resistance of single layer coils. A. J. Palermo and F. W. Grover. Proc Inst Radio Eng 18:2041 Dec '30

*See also*  
Measurements

## RECEIVER Cabinets

- Beauty, resonance, light weight and economy in plastic radio cabinet. il Mod Plastics 12:39 Nov '34
- Cabinet design. R. K. Gerth. il Electronics 6:182 July '33
- Constructs models of metal cabinets by oxy-acetylene welding. J. L. Anderson. il diag Iron Tr Rev 84:1323 May 16 '29
- Designing the radio cabinet. Philip Francisco. il Electronics 2:590 Apr '31
- Designs for wireless receiver cabinets. il Electrician 103:197 Aug 16 '29
- Exhibits at the R. M.A. Chicago show. Radio N 11:161 Aug '29
- How to make a handsome radio console. H. L. Weatherby. diags Radio N 10:920 Apr '29
- Music expressed in architecture. il Amer Arch 132:801 Dec 20 '27
- Small radio cabinets vs. low frequency response. (ed) Electronics 1:345 Oct '30

## RECEIVER Design

- Battery design problems of the air cell receiver. F. T. Bowditch. Proc Inst Radio Eng 20:215 Feb '32
- Band-pass filters in receiver design. diags Wireless Eng 11:231 May '34
- Broadcasting receiving apparatus; the trend of progress. W. L. McPherson. il Electrician 95:352 Sept 25 '25
- Considerations in superheterodyne design. E. G. Watts, jr. Proc Inst Radio Eng 18:690 Apr '30
- Design of non-distorting power amplifiers. E. W. Kellogg. Trans A. I. E. E. 44:302 '25
- Design of tuned circuits to fulfill predetermined conditions. A. L. M. Sowerby. diag Exp Wireless 8:23 Jan '31
- Design principles of long-distance receivers for the broadcast band. C. H. Long. Radio N 14:532 Mar '33
- Designing and testing a commercial short-wave super. J. Millen. il diag Radio N 14:546 Mar '33
- Development of the design and testing of broadcast receivers. A. E. Thiessen. il Radio N 12:510 Dec '30
- Developments in the electrical industry during 1931; broadcast receivers. J. Liston. il diag Gen Elec Rev 35:49 Jan '32
- Engineering acoustics; radio receiver auxiliaries. Electrician 110:519 Apr 21 '33
- Essential factors in the design of receiver and amplifier systems. Aerovox Res W May to Dec '30
- Improved preselector circuit for radio receivers. E. A. Uehling. Electronics 1:279 Sept '30
- Mechanical features of the season's radio set. il Electronics 7:344 Nov '34
- Modernising radio receivers. W. James. diag Elec Rev (Lond) 101:674 Oct 21 '27
- Permissible amplitude distortion of speech in an audio reproducing system. Frank Massa. Proc Inst Radio Eng 21:682 May '33
- Problems in broadcast receiver design. P. P. Eckersley. diags Exp Wireless 3:499 Aug '26

**RECEIVER Design—Continued**

- Problems involved in the design and use of apparatus for testing radio receivers. P. O. Farnham and A. W. Barber. diags Proc Inst Radio Eng 18:1338 Aug '30
- Purpose and design of broadcast receivers; informal discussion at I.E.E. wireless section. Exp Wireless 4:166 Mar '27
- Receivers show improved technical design. il Electronics 4:330 Nov '32
- Trends in radio design and manufacturing. il Electronics 6:151 June '33

**RECEIVER Distortion**

- Distortion cancellation in audio amplifiers. W. Baggally. diags Wireless Eng 10:413 Aug '33
- Distortion in valve characteristics. G. S. C. Lucas. Exp Wireless 8:595 Nov '31
- Distortion in screen-grid valves, with special reference to the variable conductance type. R. O. Carter. Wireless Eng 9:123 Mar '32
- Graphical analysis of output tube performance. C. E. Kilgous. Proc Inst Radio Eng 19:42 Jan '31
- Graphical determination of performance of push-pull amplifiers. B. J. Thompson. Proc Inst Radio Eng 21:591 Apr '33
- Linear distortion in broadcast receivers and their compensation by low frequency equalization devices. Arthur Clausen and Wolfgang Kautter. Proc Inst Radio Eng 20:1456 Sept '32
- Reduction of distortion and cross-talk in radio receivers by means of variable-mu electrodes. S. Ballantine and H. A. Snow. diags Proc Inst Radio Eng 18:2102 Dec '30
- Output characteristics of amplifier tubes. J. C. Warner and A. V. Loughren. Proc Inst Radio Eng 14:735 Dec '26
- Theory of power amplification. Manfred von Ardenne. Proc Inst Radio Eng 16:193 Feb '28

**RECEIVER Fidelity**

- Back to quality in radio receivers. (ed) Electronics 6:106 Apr '33
- Cabinet design. R. K. Gerth. il Electronics 61:82 July '33
- High quality radio broadcast transmission and reception. Stuart Ballentine. Proc Inst Radio Eng Part 1, 22:564 May '34; Discussion. Part II, 23:618 June '35
- Improved fidelity of two-speaker radio receivers. H. S. Knowles. il Electronics 4:154 May '32
- Problems in broadcast receiver design. P. P. Eckersley. diags Exp Wireless 3:499 Aug '26
- Modern super design. M. Silver. il Radio N 14:93 Aug '32
- Problem of pentode output fidelity. L. Tulauskas. Electronics 2:142 Oct '31
- Radio receiver characteristics related to the side-band coefficient of the resonance circuit. S. Takamura. Proc Inst Radio Eng 20:1774 Nov '32
- Receivers; dollar cast of tone quality. W. R. McCanne. Electronics 3:97 Sept '31
- Satisfying the demand for sensitivity, selectivity and quality in the design of a modern r-f tuner. G. H. Browning and J. Millen. il Radio N 12:148 Aug '30

Some characteristics of modern radio receivers and their relation to broadcast regulations. Lewis M. Hull. Proc Inst Radio Eng 17:1334 Aug '29

**RECEIVER Interference**

- Boston analyzes radio interference; Edison electric illuminating company. J. V. MacDonald. il Elec W 97:724 Apr 18 '31
- Effective s.w. antenna for reducing interference. A. H. Lynch. Radio N 14:396 Jan '33
- Electrical interference with broadcast reception. G. W. O. Howe. diags Wireless Eng 10:645 Dec '33
- Eliminating between-station noise in tuning A.V.C. receivers. W. A. Smith. il diags Radio N 14:215 Oct '32
- Electrical interference in motor car receivers. Leslie F. Curtis. Proc Inst Radio Eng 20:674 Apr '32
- Engineering acoustics; interference with radio reception. Electrician 110:563 Apr 28 '33
- Interference from line insulators. W. Jackson. Electrician 103:645 Nov 22 '29
- Interference of electrical plant with the reception of radio broadcasting. A. Morris. diags Jour Inst Elec Eng 74:245. Discussion. p 252 Mar '34
- Interference problems treated individually. il diag Elec West 69:72 Aug '32
- Locating radio interference with the oscillograph. J. K. McNeely and P. J. Konkle. il Proc Inst Radio Eng 18:1216 July '30
- Radio interference from insulator corona. F. O. McMillan. bibliog il diags Elec Eng 51:3 Jan '32
- Radio interference; its causes and elimination. J. McCandless. Electrician 109:198 Aug 12 '32
- Reduction of interference in broadcast reception. Alfred N. Goldsmith. Proc Inst Radio Eng 14:575 Oct '26. Discussion, J. C. Van Horn. 15:40 Jan '27
- Selective circuits and static interference. John R. Carson. Bell Sys Tech Jour 4:265 Apr '25
- Suppressing ignition-interference on radio-equipped aircraft. E. A. Robertson and L. M. Hull. il S A E Jour 27:78. Discussion. p 84 July '30

**RECEIVER Measurements**

- Day-to-day variations in sensitivity of a broadcast receiver. R. P. Glover. Proc Inst Radio Eng 18:683 Apr '30
- Importance of laboratory measurements in the design of radio receivers. W. A. MacDonald. Proc Inst Radio Eng 15:99 Feb '27
- Interpreting receiver performance in terms of laboratory measurements. A. H. Grebe. il Radio N 12:116 Aug '30
- Low-frequency radio receiving measurements at the Bureau of standards in 1931 and 1932. E. B. Judson. Proc Inst Radio Eng 21:1354 Sept '33
- Measuring frequency characteristics with the photoaudio generator. W. Schaffer and G. Lubszynski. il diags Proc Inst Radio Eng 19:1242 July '31
- Measuring the damping coefficient of oscillating circuits. Electronics 6:18 Jan '33
- Meters for radio receiving sets. A. P. Peck. il diags Radio N 8:22 July '26

Method of measuring the overall performance of radio receivers. H. A. Thomas. diags Jour Inst Elec Eng 68:475 Apr '30

New impedance measuring device. A. W. Barber. *il* Electronics 6:194 July '33

Notes on radio receiver measurements. Theodore A. Smith and George Rodwin. Proc Inst Radio Eng 15:387 May '27

Quantitative determination of radio receiver performance. H. D. Oakley. diags Jour Amer Inst Elec Eng 46:568 June '27

Radio-frequency oscillator for receiver investigations. George Rodwin and Theodore A. Smith. Proc Inst Radio Eng 16:155 Feb '28

Standards on radio receivers: method of testing radio receivers. Institute of Radio Engineers, New York '38. 20 pages. \$0.50

#### RECEIVER Noise

Fluctuation noise in radio receivers. Stuart Balantine. Proc Inst Radio Eng 18:1377 Aug '30

Limits to amplification. J. B. Johnson and F. B. Llewellyn. diags Elec Eng 53:1449 Nov '34

Microphonic feed-back phenomena in radio receivers. H. A. Brooke. Jour Inst Elec Eng 70:268 Feb '32

Rapid method of estimating the signal-to-noise ratio of a high gain receiver. F. B. Llewellyn. Proc Inst Radio Eng 19:416 Mar '31

Receiver design for minimum fluctuation noise. Nelson P. Case. Proc Inst Radio Eng 19:963 June '31

Some interfering oscillations experienced in a supersonic-heterodyne receiver. R. L. Smith-Rose. diags Exp Wireless 5:673 Dec '28

Spontaneous background noise in amplifiers due to thermal agitation and shot effects. E. B. Moullin and H. D. M. Ellis. Jour Inst Elec Eng 74:323 Apr '34

#### RECEIVER Power Supply

Air cell; a new breathing battery providing light-socket operation for those beyond the power lines. E. E. Horine. *il* Radio N 12:600 Jan '31

Banks of parallel valves feeding reactive loads without distorting the wave-form. W. Bagally. diags Exp Wireless 7:430 Aug '30

Compensating a-c line fluctuations with line voltage regulators. J. B. Brennan, Jr. *il* Radio N 12:25 July '30

Design of power rectifier circuits. D. McDonald. diags Wireless Eng 8:522 Oct '31

Filament supply for radio receiver from rectified 25 kilocycle current. Hugh A. Brown and Lloyd P. Morris. Proc Inst Radio Eng 18:298 Feb '30

General information and service data on modern battery receivers. *il* Radio N 15:536 Mar '34

Grid circuit power rectification. J. R. Nelson. Proc Inst Radio Eng 19:489 Mar '31

H.T. and L.T. from a 250 volt d.c. supply. A. Robertson. diags Exp Wireless 4:111 Feb '27

Le choix du mode d'alimentation des appareils recepteurs de T.S.F. Genie Civil 90:464 May '27

L.T. and H.T. supply from d.c. main. A. Robertson. diags Exp Wireless 4:336 June '27

Novel current supply for audions. Charles V. Logwood. Proc Inst Radio Eng 13:189 Apr '25

Power pack and power amplifier. M. Silver. *il* Radio N 8:1460 June '27

Power supply of wireless sets. A. E. Irwin. Elec Rev (Lond) 99:829 Nov 19 '26

Practical form radio; use of air cell A battery. E. E. Horine. *il* Radio N 15:462 Feb '34

Radio and electrical development. V. Z. de Ferrante. *il* Elec Rev (Lond) 114:778 June 1 '34

Reduction of filament battery coupling in amplifiers. W. L. Watton. diags Wireless Eng 11:17 Jan '34

System for suppressing hum by a new filter arrangement. P. H. Craig. Proc Inst Radio Eng 19:664 Apr '31. (Erratum May '31 p908)

Theory of the straight line rectifier. F. M. Colebrook. bibliog Exp Wireless 7:595 Nov '30

Tin dry accumulator; promising development for small radio batteries. C. Fery. Electrician 113:189 Aug 10 '34

Voltage divider design. I. F. Jackowski. diags Radio N 13:214 Sept '31

110 volt a.c. supply for car or boat. No Pomeranz. *il* Radio N 16:12 July '34

#### RECEIVER Selectivity

An examination of selectivity. R. H. Angley. Proc Inst Radio Eng 20:657 Apr '32

Definition of selectivity. F. M. Colebrook. Exp Wireless 6:422 Aug '29. Discussion. E. A. Biedermann. 6:552 Oct '29

Definition of selectivity. P. David. Exp Wireless 8:140 Mar '31

Distortionless reception of a modulated wave and its relation to selectivity. Frederick K. Vreeland. Proc Inst Radio Eng 16:255 Mar '28

Examination of selectivity. R. H. Langley. Proc Inst Radio Eng 20:657 Apr '32

High selectivity tone-corrected circuits; editorial. Wireless Eng 9:605 Nov '32

Note on radio-frequency transformer coupled circuit theory. J. R. Nelson. Proc Inst Radio Eng 19:1233 July '31

Numerical expression of selectivity. R. T. Beatty. diags Exp Wireless 7:3661 July '30

Problems in selective reception. M. V. Callendar. sity of the sidebands. W. B. Lewis. diags Exp Wireless 6:133 Mar '29

Selective amplifiers. P. K. Turner. diags Exp Wireless 2:801 Oct '25

Selectivity, a simplified mathematical treatment. B. de F. Bayly. diags Proc Inst Radio Eng 19:873 May '31

Selectivity and response. E. E. Wright. Exp Wireless 8:133 Mar '31

Selectivity of broadcast receivers. C. L. Fortescue. Jour Inst Elec Eng 71:102 June '32

Selectivity of tuned receiving sets. Kenneth W. Jarvis. Proc Inst Radio Eng 15:401 May '27

Shielded neutrodyne receiver. John F. Dreyer, jr., and Ray H. Manson. Proc Inst Radio Eng 14:217 Apr '26

**RECEIVER Selectivity—Continued**

- Side bands and selectivity. Exp Wireless 7:417 Aug '30
- Theory and operation of tuned radio-frequency coupling systems. Harold A. Wheeler and W. A. MacDonald. Proc Inst Radio Eng 19:738 May '31
- Ultra selectivity with crystal filters. il diag Radio N 15:377 Feb '34

**RECEIVER Sensitivity**

- Day-to-day variations in sensitivity of a broadcast receiver. Ralph P. Glover. Proc Inst Radio Eng 18:683 Apr '30
- Satisfying the demands for sensitivity, selectivity and quality in the design of a modern r-f tuner. G. H. Browning and J. Millen. il diags Radio N 12:148 Aug '30
- Sensitivity controls, manual and automatic. Dorman D. Israel. Proc Inst Radio Eng 20:461 Mar '32

**RECEIVER Servicing**

- Cathode ray tubes (applied to service work). J. M. Hollywood and M. P. Wilder. diags Radio N 15:396 Jan '34
- Circuit and constructional details for a universal meter. B. E. Estes. il diags Radio N 11:530 Dec '29
- Complete service unit. W. Gerber., il diags Radio N 13:774, 855 Mar-Apr '32
- Construction and operation of a simple capacity test meter. Aerovox Res W Sept '34
- Elimination of dynamic speaker hum. Aerovox Res W Mar '29
- How to increase efficiency of circuits by proper bypassing and filtering. Aerovox Res W July-Aug-Sept-Oct '29
- How to test condenser capacities. Aerovox Res W Feb-Mar '29
- In the serviceman's workshop; illustrations. Radio N 12:504 Dec '30
- Measurement of capacity and leakage of electrolytic condensers. Aerovox Res W Feb '31
- Measuring the power factor of electrolytic condensers. Aerovox Res W '31
- Meter multipliers: a convenient method of increasing the range of milliameters and voltmeters. Aerovox Res W Jan-Feb '30
- New type of inductance-capacity reactance chart. Aerovox Res W Jan '32
- New vacuum-tube voltmeter. J. I. Heller. il diags Radio N 12:491 Dec '30
- Overlooked factors which cause grief in the design of power supply units. Aerovox Res W Apr '29
- Plug-in thermocouple for r.f. measurements. G. A. Argabrite. il diag Radio N 13:906 May '32
- Principles of voltage divider design. Sidney Fishberg. Aerovox Research Worker. Aug to Dec '28
- Selection of suitable resistors for power supply equipment. Aerovox Res W May '29
- Service data for servicemen; diagrams. Radio N 15:411, 469 Jan-Feb '34
- Servicing broadcast receivers. Lee Manley and W. E. Garrity. Proc Inst Radio Eng 14:541 Aug '26

- Simple method of measuring condenser capacity. Aerovox Res W July-Aug-Sept '31
- Simple guide to trouble shooting. Aerovox Res W Jan '29
- Simplifying your service problems. J. B. Brennan, Jr. il Radio N 11:636 Jan '30
- Testing and installing the Universal auto-radio receiver. W. H. Bullock. il diags Radio N 12:143 Aug '30

**RECEIVER Testing**

- All wave signal generator for production tests. R. F. Shea. il Electronics 7:244 Aug '34
- Building and using the all-purpose modulated oscillator. D. Lewis. il diags Radio N 12:715 Feb '31
- Developments in the testing of radio receivers. H. A. Thomas. diags Jour Inst Elec Eng 71:114 June '32
- Electronic devices in a testing laboratory. C. H. Sharp. il Electronics 4:284 Sept '32
- Engineering ingenuity in production testing. G. E. Fleming. il diags Radio N 12:488 D '30
- Equipment for testing radio receivers in production. L. C. Hollands. il Electronics 2:545 Mar '31
- Flow sheet of production tests and design tests. Electronics 2:497 Feb '31
- Fundamental frequency 100-2100 kc. signal generator. S. Egert and S. Bagno. il diag. Radio N 16:278 Nov '34
- Giving receivers rating tests. J. W. Fulmer. il Radio N 16:98 Aug '34
- Laboratory tests in high-speed production. N. E. Wunderlich and W. F. Diehl. il Radio N 11:614 Jan '30
- New all-method analyzer. J. H. Potts. il diags Radio N 16:210 Oct '34
- Newest apparatus for slow-motion studies of high-speed oscillations. T. Clifton. diags Radio N 13:912 May '32
- One-month's tests on a new seven tube short-wave super; National FB-7. il diags Radio N 15:211 Oct '33
- Proposed standard tests of broadcast radio receivers. diags Proc Inst Radio Eng 18:1282 Aug '30
- Radio receiver production testing. R. P. Glover. il Electronics 2:500 Feb '31
- Radio testing apparatus. E. H. W. Banner. il Elec Rev (Lond) 113:909 Dec 29 '33
- Tests on five ultra-short wave receivers. R. L. Smith-Rose and H. A. Thomas. Wireless Eng 9:186 Apr '32
- Visual test device. O. H. Schuck. il diags Proc Inst Radio Eng 20:1580 Oct '32
- 24 pound laboratory. H. Georges. il Radio N 13:382 Nov '31

**RECEIVERS**

- American radio sets in Europe. (ed) Electronics 2:116 Oct '31
- Calibrating ultra-short wave receivers employing super-regeneration. C. Whitehead. diag Exp Wireless 8:370 July '31
- Description of experimental television receivers; combination television and sound receivers. G. L. Beers. il diags Proc Inst Radio Eng 21:1692 Dec '33

- Engineering control of radio receiver production. V. M. Graham and B. Olney. *Il diags Proc Inst Radio Eng* 18:1351 Aug '30
- Equipment for testing radio receivers in production. L. C. Hollando. *Electronics* 2:545 Mar '31
- Ferro-inductors and permeability tuning. W. J. Polydroff. *Proc Inst Radio Eng* 21:690 May '33
- High quality radio broadcast transmission and reception. Stuart Ballantine. *Proc Inst Radio Eng* Part I, 22:564 May '34. Discussion, Hans Roder 23:256 Mar '35. Part II, 23:618 June '35
- Linear distortion in broadcast receivers and their compensation by low-frequency equalization devices. A. Clausung and W. Kautter. *diags Proc Inst Radio Eng* 20:1456 Sept '32
- Olympia exhibition; a critical review of apparatus and policy. *Il Elec Rev (Lond)* 115 Aug '34
- Performance of modern receivers. P. K. Turner. *diag Elec Rev (Lond)* 99:1072 Dec 31 '26
- Production testing on present day radio receivers. G. G. Thomas. *Il Electronics* 2:498 Feb '31
- Radio receiver characteristics related to the sideband coefficient of the resonance circuit. Satorie Takamura. *Proc Inst Radio Eng* 20:1774 Nov '32
- Receiving system for long-wave transatlantic radio telephony. Austin Bailey, S. W. Dean and W. T. Wintreingham. *Proc Inst Radio Eng. Discussion: J. P. Guthrie, Austin Bailey, August Hund, A. H. Taylor, A. N. Goldsmith, K. S. Van Dyke, W. T. Wintreingham, Haraden Pratt, and F. H. Murray, 17:174 Jan '29*
- Some characteristics of modern radio receivers and their relation to broadcast regulations. Lewis M. Hull. *Proc Inst Radio Eng* 17:1343 Aug '29
- Theory and operation of tuned radio-frequency coupling systems. H. A. Wheeler and W. A. MacDonald. *Il diags Proc Inst Radio Eng* 19:738; Discussion. L. A. Hazeltine. p. 804 May '31
- See also*
- Reception
- RECEIVERS, A-C Operated**
- An a. c. superheterodyne. John F. Rider. *Aerovox Research W* 1:2 Jan '28
- Alternating-current operated radio receivers. M. C. Batsel. *Il Elec Jour* 24:581 Dec '27
- Alternating-current set operation. H. Gernsback. *Radio N* 10:623 Dec '28
- Application of the class B audio amplifier to a-c operated receivers. L. E. Barton. *diags Proc Inst Radio Eng* 20:1085 July '32
- D.C. to A.C.—and how. *Il diags Radio N* 9:1016 Mar '28
- Electrified kit set uses new a-c tubes. *Il diag Radio N* 9:886 Feb '28
- Heating valve filaments by alternating current. W. Redmayne. *diags Elec Rev (Lond)* 96:128 549 Jan '23. Apr 3 '25
- Loud-speaker receiver on a.c. mains. P. Johnson. *diags Exp Wireless* 2:877 Nov '25
- Operation of radio receiving tube filaments on alternating current. K. H. Kingdon and H. M. Mott-Smith, jr. *Gen Elec Rev* 32:139, 228 Mar-Apr '29
- Six-tube set operates on alternating current. *Il diag Radio N* 9:121 Aug '27
- Some problems of a-c operation. C. M. Adams. *Il Radio N* 10:204 Sept '28
- Universal receiver which operates from either a.c. or d.c. lines. H. G. Cisin. *Il diags Radio N* 13:294. 390 Oct-Nov '31
- RECEIVERS, Aircraft**
- Aircraft radio equipment. *Il Elec Rev (Lond)* 101:198 July 29 '27
- Aircraft radio and navigation. R. Gunn. *diags Jour Fr Inst* 205:849 June '28
- Aircraft radio receiver for use with rigid antenna; abstract. F. H. Drake. *Exp Wireless* 6:270-2 May '29
- Aircraft radio receivers and broadcast service. J. C. Hromada. *Il Airway Age* 11:922 July '30
- Airways communication service. E. B. Craft. *Il Bell Sys Tech Jour* 7:797 Oct '28; Same. *Aviation* 25:1090 Oct 6 '28
- All-wave radio receiver for aircraft. R. S. Kruse. *Il Electronics* 1:336 Oct '30
- Compact radio receiving set for use in aircraft. *Il Airway Age* 10:540 Apr '29
- Determination of altitude by detecting radio echoes. E. F. W. Alexanderson. *diag Airway Age* 10:55 Jan '29
- Ignition shielding for radio operation. L. A. Hyland. *Il diags Aviation* 26:886 Mar 23 '29
- Kurzwellenversuche bei der Amerikafahrt des luftschiffes Graf Zeppelin. *Il Elektrotech Zeit* 50:16 Jan 3 '29
- Modern radio equipment for air mail and transport use. A. P. Berejko and C. G. Fick. *Il diag Proc Inst Radio Eng* 20:1284 Aug '32
- Problems of aircraft radio. Z. Bouck. *Il Radio N* 11:18 July '29
- Radio aids to air navigation. *Aviation* 21:466 Sept 13 '26
- Radio beacon receiving system for blind landing of aircraft. H. Diamond and F. W. Dunmore. *Proc Inst Radio Eng* 19:585 Apr '31
- Radio developments applied to aircraft. J. H. Delling and H. Diamond. *Il diag Mech Eng* 51:509 July '29
- Radio equipment for aircraft. D. B. Mirk. *Elec Comm* 13:76 July '34
- Radio equipment on the airship Norge. *Il Aviation* 20:907 June 14 '26
- Radio equipment of the Southern Cross. D. R. Lane. *Il Aviation* 25:27 July 2 '28
- Radio in transatlantic flight. J. Irwin. *Il Radio N* 8:348 Oct '26
- Radio on the Byrd and Wilkins planes. D. R. Lane. *Il Aviation* 26:556 Feb 23 '29
- Radio—the Graf Zeppelin's only contact with the world. T. G. W. Settle. *Il diags Radio N* 11:116
- Receiving sets for aircraft beacon and telephony. H. Pratt and H. Diamond. *Il diags U S Bur Stand Jour Research* 1:543 Oct '28
- RCA Victor airport radio receiver. *Il Aero Digest* 24:51 Feb '34
- Safety in the air; new light-weight radio receiver for small aeroplanes—the Heston weather broadcasting station. *Il Electrician* 108:91 Jan 22 '32; *Elec Rev (Lond)* 110:126 Jan 22 '32

**RECEIVERS, All-Wave**

- All-wave radio receiver for aircraft. R. S. Kruse. il Electronics 1:336 Oct '30
- All-wave electric 9. R. E. Lacault. il diags Radio N 9:908 Feb '28
- All-wave receiver design incorporates novel wave-changer. G. Fraser. il diag Radio N 14:37 July '32
- "All-wave" receivers. il Electronics 7:276 Sept '34
- Another three-range receiver. il diag Radio N 7:448 Oct '25
- Around the world with short-wave radio; all-wave receivers. L. Martin. il Sci Amer 150:308 June '34
- Combine receiver which makes both standard and short-wave broadcasting available. W. H. Scheppele. il diags Radio N 10:338 Oct '28
- Constructional data on a 10 to 700 meter receiver design that brings in everything on the air. J. M. Borst. il diags Radio N 14:276 Nov '32
- Design of an all-purpose broadcast receiver. R. Robert. diags Elec Rev (Lond) 96:168 Jan 30 '25
- Double-range receiver. il Radio N 10:1079 June '29
- Latest all-wave and short-wave receivers. W. C. Dorf. il Radio N 16:27 July '34
- New all-wave receiver (R. C. A.-Victor model 240) il diag Radio N 15:526 Mar '33
- New all-wave super; Philco model 16-X. il diag Radio N 15:592 Apr '34
- Universal all-circuit set. J. Riley. il diags Radio N 8:664 Dec '26

**RECEIVERS, Automobile**

- Auto-radio receiver design. S. Egert. il diags Radio N 11:832 Mar '30
- Automobile-radio standards. S A E Jour 31:sup 26 N '32
- Automotive radios by American Bosch and RCA Victor. il Bus Transportation 11:194 Apr '32
- Broadcast receiver for use in automobiles. Paul O. Furnham. Proc Inst Radio Eng 18:321 Feb '30
- Building and installing an auto-radio receiver. P. A. Eyrick. il diag Radio N 11:912 Apr '30
- Car antenna problems tackled in move to better automobile radio. il S A E Jour 32:sup12 June '33
- Compact five-tube auto radio receiver. M. Silver. il diag Radio N 11:691 Feb '30
- Electrical interference in motor car receivers. L. F. Curtis. il diags Proc Inst Radio Eng 20:674 Apr '32
- Hints on design and installation of automobile radio. M. J. Sheedy. il diags Radio N 14:98, 155 Aug-Sept '32
- Mechanical remote control broadens automotive applications of radio. J. C. Smack. il Automotive Ind 70:492 Apr 21 '34
- New G.E. auto radios. Automotive Ind 71:21 July 7 '34
- Newest portable sets for auto and boat. il Radio N 16:10 July '34
- Operating tests on a modern auto-radio. S. G. Taylor and J. M. Borst. il Radio N 14:578 May '33
- Pentode auto-radio receiver. J. Millen. il diags Radio N 13:116 Aug '31

- Rebuilt broadcast receiver for automobile use. J. B. Brennan, jr. il diags Radio N 11:925 Aur '30
- Some new slants on motor car radio. W. H. Goldstein and J. Margolis. il Radio N 12:260 Sept '30
- Suppressing auto radio noise. G. Browning. il diag Radio N 15:410 Jan '34
- What's new in automobile radio. il Radio N 15:19 July-Sept '33
- 110 volt a. c. supply for car or boat. N. Pomeranz. il Radio N 16:12 July '34

**RECEIVERS, Diversity**

- Diversity receiving systems of R. C. A. Communications, Inc., for radiotelegraphy. H. H. Beverage and H. O. Peterson. Proc Inst Radio Eng 19:531 Apr '31
- Diversity telephone receiving system of R. C. A. Communications, Inc. H. O. Peterson, H. H. Beverage and J. B. Moore. Proc Inst Radio Eng 19:562 Apr '31

**RECEIVERS, Marine**

- Bring your yacht club and boat up-to-date with marine radio. il Radio N 15:718 June '34
- How to build a flyweight portable receiver for plane, glider or outboard motorboat. J. B. Brennan, jr. il diags Radio N 11:980 May '30
- Put radio on your boat. E. M. Walker. il diags Radio N 15:714 June '34
- Radio News floating laboratory tries out an experimental small-boat receiver. W. T. Lees and J. B. Brennan, jr. il diags Radio N 11:412 Nov '29
- Radio News floating laboratory. W. T. Lees. il Radio N 11:309 Oct '29
- S. W. receivers for yachts. C. R. Leutz. il diag Radio N 15:457 Feb '34
- Why not get the utmost from radio on your pleasure boat? L. Jacquet. il diags Radio N 11:212 Sept '29
- 110 volt a. c. supply for car or boat. N. Pomeranz. il Radio N 16:12 July '34

**RECEIVERS, Neutrodyne**

- New receiving set combination; the neutro-heterodyne. H. J. Reich. il Radio N 9:1244 May '28
- The shielded neutrodyne receiver. John F. Dreyer, jr., and Ray H. Manson. Proc Inst Radio Eng 14:217. Discussion, L. A. Hazeltine 14:395 June '26
- Theory and operation of tuned radio-frequency coupling systems. Harold A. Wheeler and W. A. MacDonald. Proc Inst Radio Eng 19:738 May '31. Discussion, L. A. Hazeltine p. 804

**RECEIVERS, Portable**

- Army's new portable radio combination. C. W. Clarke. il diag Radio N 13:377 Nov '31
- Combination hearing-aid radio. S. B. Simer. il diag Radio N 16:81 Aug '34
- Compact traveler's set. H. F. Swartz. il diags Radio N 9:44 July '27
- Companion receiver. A. G. Heller. il diags Radio N 12:877 Apr '31
- German portable superheterodyne. M. L. Muhleman. il diag Radio N 8:1108 Mar '27

- Handy, light vacation set. J. Bernsley. il diag Radio N 8:136 Aug '26
- Portable radio receivers. P. D. Tyers. Elec Rev (Lond) 100:963 June 17 '27
- Portable receiver weighs only 25 pounds. il diag Radio N 9:17 July '27
- Portable super-heterodyne. C. W. Preston. il diags Radio N 8:46 July '26
- Prize portable super-regenerator. J. Riley. il diag Radio N 9:222 Sept '27
- Radiophone transmitter and receiver—9 lbs. S. Egert. il diags Radio N 12:990 May '31
- Superhet travelling companion. il diags Radio N 8:486 Nov '26
- 80-meter phone transmitter and receiver for portable use. S. Egert. il diags Radio N 11:1106 June '30

### RECEIVERS, Remote-Controlled

- Mechanical remote control broadens automobile applications of radio. J. C. Smack. il Automotive Ind 70:482 Apr 21 '34
- Practical remote control systems. S. G. Taylor. il Radio N 12:42 July '30
- RCA remote control unit for superheterodyne. il Dun's Int Rev 57:46 Mar '31
- Remote control for any single dial receiver. H. Georges. il Radio N 14:590 Apr '33
- Remote control in custom-built radio and phonograph installations. S. Stevens. il Radio N 13:268 Oct '31
- Remote control; motorola model S-0. il Radio N 16:116 Aug '34
- Simple remote control device. W. F. Crosby. diags Radio N 10:48 July '28
- Take your choice of remote control. Radio N 11:624 Jan '30
- What price remote control? M. B. Sleeper. il Radio N 12:32 July '30

### RECEIVERS, Short-Wave

- A de-luxe crystal type s.s. receiver. LeRoy Moffet, jr. il diags QST 18:40 May '34
- Adapting broadcast sets to short waves with a short-wave converter; Stromberg-Carlson no. 69 selector. il diag Radio N 16:295 Nov '34
- Amplification and detection of ultra-short electric waves. K. Okabe. diags Proc Inst Radio Eng 18:1028 June '30
- Analysis of a.c. operated short-wave receiver design. J. Millen and R. S. Kruse. il diags Radio N 11:1101 June '30
- Compact amateur five-meter transceiver. E. Glaser. il diag Radio N 16:217 Oct '34
- Crystal controlled short-wave super. F. H. Jones. il diags Radio N 15:204, 280, 346 Oct-Dec '33
- Description of experimental television receivers; combination television and sound receivers. G. L. Beers. il diags Proc Inst Radio Eng 21:1692 Dec '33
- Developments in crystal filters for s.s. superhets. James J. Lamb. il diags QST 17:21 Nov '33
- Featherweight sets for the ultra high frequencies. Ross A. Hull. il diags QST 17:27 Sept '33
- Hammarlund-Roberts Junior Hi-Q 29. D. C. model L. G. Biles. il diag Radio N 10:1009 May '29

- How to build a modern stenode quartz-crystal receiver. Z. Bouck. il diags Radio N 13:933 May '32
- Medium-power 56 mc transceiver. Frank Jacobs. il diag QST 18:21 June '34
- Midget tubes for ultra-high-frequency transmitters and receivers. J. M. Borst. il Radio N 15:521 Mar '34
- Practical short-wave super design. F. H. Jones. il diags Radio N 13:112, 202 Aug-Sept '31
- Pre-selection and image suppression in short-wave superhets. James J. Lamb and F. E. Handy. il diags QST 17:9 Dec '33
- Professional receiver for amateurs and short-wave fans; Hammarlund Comet Pro receiver. G. Fraser. il diag Radio N 14:90, 156 Aug-Sept '32
- Quartz control for frequency stabilization in short-wave receivers. P. von Handel, K. Kruger and H. Plendl. Proc Inst Radio Eng 18:307 Feb '30
- Radiotelegraphy and radiotelephony on half-meter waves. S. Uda. il diags Proc Inst Radio Eng 18:1047 June '30
- Recent commercial developments in short-wave transmitters and receivers. S. E. Anderson, L. M. Clement and G. C. DeCoutouly. Proc Inst Radio Eng 13:413 Aug '25
- Short-wave adapter of advanced design. M. E. Wood. il diags Radio N 13:212 Sept '31
- Short-wave receiver. J. L. Reinartz. il diag Radio N 9:42 July '27
- Short-wave receivers. L. W. Hatry. il diags Radio N 8:811 Jan '27
- Short-wave reception with broadcast superhets. W. C. Dorf. il diag Radio N 13:293 Oct '31
- Short-wave super-heterodyne receiver. F. H. Schnell. il diags Radio N 12:104, 213 324 Aug-Oct '30
- Solving the band-spread problem in short-wave reception. J. Millen. il diags Radio N 12:996 May '31
- Testing the new circuit; short-wave stenode radiostat. H. Andrews. il diags Radio N 12:890 Apr '31
- Tiny transceivers in 5-meter tests. S. G. Taylor. il Radio N 16:154 Sept '34
- 200-2000 meter broadcast receiver design. M. Silver. il diag Radio N 13:469 Dec '31
- See also*
- Communication, Short-Wave

### RECEIVERS, Superheterodyne

- Achievement in low-cost all-wave super design. S. G. Taylor and W. C. Dorf. il diag Radio N 14:544, 614 Mar-Apr '33
- All-wave a.c. superheterodyne de-luxe. H. J. Cox. il diags Radio N 12:882 Apr '31
- An a. c. superheterodyne. John F. Rider. Aerovox Research Worker 1:2 Jan '28
- Automatic gain control for the superhet. James J. Lamb. diags QST 17:32 Nov '33
- Broadcast superheterodyne using a Loftin-White audio channel. G. E. Fleming. il diag Radio N 12:226, 322 Sept-Oct '30
- Circuit details of an a.c. operated screen-grid superheterodyne; the H.F.L. mastertone. H. Welches. il diag Radio N 11:524 Dec '29



**RECEIVERS, Superheterodyne—Continued**

- Double super-heterodyne. J. F. Ramsay. il diag Exp Wireless 5:669 Dec '28
- Engineering behind the R.C.A. radiola superheterodyne. W. L. Carlson, R. S. Holmes and N. E. Wunderlich. il diags Radio N 12:398 Nov '30
- Ganging the tuning controls of a superheterodyne receiver. A. L. M. Sowerby. Wireless Eng 9:70 Feb '32
- Improved laboratory super-heterodyne. E. R. Pfaff. il diag Radio N 7:982 Jan '26
- Improving super performance with the Hopkins band rejector system. E. K. Oxner. il diag Radio N 12:234 Sept '30
- Latest Scott de-luxe all wave super. S. G. Tayler. il Radio N 14:80, 160, 224 Aug-Oct '32
- Modern super design. M. Silver. il diag Radio N 14:93 Aug '32
- New pentode variable-mu superheterodyne. M. Silver. il diag Radio N 13:41 July '31
- Origin of the super-heterodyne method. Walter Schotky. Proc Inst Radio Eng 14:695 Oct '26
- Oscillator condenser design for single control superheterodynes. Z. Bouck. il diag Radio N 13:132 Aug '31
- Pentagrid converter. C. L. Lyons. diags Wireless Eng 10:364 July '33
- Recent developments in superheterodyne receivers. G. L. Beers and W. L. Carlson. Proc Inst Radio Eng 17:501 Mar '29. Discussion. Frederick K. Vreeland and G. L. Beers 17:1454 Aug '29
- Reception tests of a new laboratory-built super. S. G. Taylor and W. C. Dorf. il diags Radio N 14:286 Nov '32
- Solution of the superheterodyne tracking problem. V. D. Landon and E. A. Sven. Electronics 3:250 Aug '32
- Superheterodyne tuning condenser design. L. G. Burnell and H. Schwartzman. il Electronics 7:180 June '34
- Super-heterodyne radio receivers. A. E. Bowyer-Lowe. Elec Rev (Lond) 98:33 Jan 1 '26
- Suppression of interlocking in first detector circuits. P. W. Klipsch. diags Proc Inst Radio Eng 22:699 June '34
- 1934 model laboratory-built super. M. Silver. il Radio N 15:287 Nov '33
- RECEPTION**
- Day-to-day variations in sensitivity of a broadcast receiver. R. P. Glover. Proc Inst Radio Eng 18:683 Apr '30
- Diversity receiving system of R. C. A. Communications, Inc. for radiotelegraphy. H. H. Beverage and H. O. Peterson. Proc Inst Radio Eng 19:531 Apr '31
- Diversity telephone receiving system of R. C. A. Communications, Inc. H. O. Peterson, H. H. Beverage and J. B. Moore. Proc Inst Radio Eng 19:562 Apr '31
- Effects of sun spots and terrestrial magnetism on long-distance reception of low-frequency waves. E. Yokoyama and T. Nakai. Proc Inst Radio Eng 19:882 May '31
- Experimental reception on the world's tallest structure. S. G. Taylor. il Radio N 13:362 Nov '31
- High quality radio broadcast transmission and reception. Stuart Ballantine. Proc Inst Radio Eng Part I—22:564 May '34. Discussion. Hans Roder 23:256 Mar '35. Part II—23:618 June '35
- Note on reception of radio broadcast stations at distances exceeding 12,000 kilometers. L. V. Berkner. Proc Inst Radio Eng 20:1324 Aug '32
- On the relation between long-wave reception and certain terrestrial and solar phenomena. K. Sreenivasan. Proc Inst Radio Eng 17:1793 Oct '29
- Quantitative determination of radio receiver performance. H. D. Oakley. diags Jour Amer Inst Elec Eng 46:568 June '27
- Radio reception and the broadcasting system. B. W. L. McPherson 7:39. Elec Comm July '28
- Receiving system for long-wave transatlantic radio telephony. A. Bailey, S. W. Dean and W. T. Wintringham. il diags Bell System Tech Jour 8:309 Apr '29
- Reception and sunspots. H. T. Stetson. li Electronics 4:122 Apr '32
- Reception in wireless telephony. L. B. Turner. Electrician 96:408 Apr 9 '26
- Reception of frequency modulated radio signals. V. J. Andrew. diags Proc Inst Radio Eng 20:835 May '32
- Reception of radio broadcast stations at distances exceeding 12,000 kilometers. L. V. Berkner. Proc Inst Radio Eng 20:1324 Aug '32
- Reduction of interference in broadcast reception. Alfred N. Goldsmith. Proc Inst Radio Eng 14:575 Oct '26. Discussion, J. C. Van Horn 15:40 Jan '27
- Some effects of topography and ground on short-wave reception. R. K. Potter and H. T. Friis. Proc Inst Radio Eng 20:699 Apr '32
- Some problems of broadcast reception. G. W. O. Howe. Electrician 95:290 Sept. 11 '25
- Statistical theories of matter radiation and electricity. Karl K. Darrow. Bell Sys Tech Jour 8:672 Oct '29
- Study of reception from synchronized broadcast stations. C. B. Aiken. bibliog Proc Inst Radio Eng 21:1265 Sept '33
- Transoceanic reception of high-frequency telephone signals. R. M. Morris and W. A. R. Brown. map Proc Inst Radio Eng 21:63 Jan '33
- Two-way radiotelephone circuits. S. B. Wright and T. Mitchell. Proc Inst Radio Eng 20:1117 July '32
- RECORDING, Recorders**
- Continuous recorder of radio field intensities. K. A. Norton and S. E. Reymer. diags pl U S Bur Stand Jour Research 11:373 Sept '33
- Instrument for projecting and recording the response curves of electrical circuits. C. L. Fortesque and F. Ralph. diags Jour Inst Elec Eng 68:583 May '30
- Radio method for synchronizing recording apparatus. T. Parkinson and T. R. Gilliland. diags pl U S Bur Stand Jour Research 6:195 Feb '31; Same. Proc Inst Radio Eng 19:335 Mar '31

Recording of high speed signals in radiotelegraphy. Julius Weinberger. Proc Inst Radio Eng 10:176 June '22

Some studies in radio broadcast transmission. Ralph Bown, De Loss K. Marton and Ralph K. Potter. Proc Inst Radio Eng 14:57 Feb '26. Errata p160 May '26

Transmission and reception of photoradiograms. Richard H. Ranger. Proc Inst Radio Eng 14:161 Apr '26

Use of automatic recording equipment in radio transmission research. P. A. de Mars, G. W. Kenrick and G. W. Pickard. il diags Proc Inst Radio Eng 19:1618 Sept '31

Wide range scales for fading records by electrical means. G. D. Robinson. diag Proc Inst Radio Eng 19:247 Feb '31

### RECTIFICATION, Rectifiers

A. C. rectification for power purposes. R. MacWhirter. Jour Inst Elec Eng 71:531 Sept '32

Cold cathode rectification. A. E. Shaw. Proc Inst Radio Eng 17:849 May '29

Combined kenotron rectifier and plotron receiver capable of operation by alternating current power. Albert W. Hull. Proc Inst Radio Eng 11:89 Apr '23

Copper-oxide rectifier used for radio detection and automatic volume control. L. O. Grondahl and W. P. Place. il diags Proc Inst Radio Eng 20:1599 Oct '32

Cuprous-oxide rectifier life tests. Electronics 4:18 Jan '33

Current rectification at metal contacts. S. P. Chakravarti and S. R. Kantebet. bibliog diags Proc Inst Radio Eng 20:1519 Sept '32

Detection by a straight line rectifier of modulated and heterodyne signals. E. B. Moullin. Wireless Eng 9:378 July '32

Duplex plate supply using type 83 tubes. G. E. M. Bertram and R. S. Quimby. QST 17:31 Mar '33

Engineering acoustics: valve rectification. diag Electrician 109:114 July 22 '32

Experiments with high velocity positive ions. J. D. Cockcroft and E. T. Walton. Proc Roy Soc (London) 136:169 '32

High level plate circuit rectification. J. R. Nelson. il Electronics 2:550 Mar '31

Linear rectification. Ray Lambert. il Electronics 7:21 Jan '34

Mercury arc rectifiers and circuits. D. C. Prince and F. B. Vodges. McGraw-Hill, New York '27

New selenium tube. G. F. Metcalf and A. J. King. il Electronics 3:234 Dec '31

Polyphase rectification special connections. R. W. Armstrong. Proc Inst Radio Eng 19:17 Jan '31

Quality detectors; a survey of rectification. W. Greenwood and S. J. Preston. diags Wireless Eng 8:648 Dec '31

Rectifier filter circuits. R. Lee. il diags Elec Jour 29:186 Apr '32

Rectifier for modulation measurements. J. L. Potter. il Electronics 6:247 Sept '33

Some considerations in the design of hot-cathode mercury-vapor rectifier circuits. C. R. Dunham. Jour Inst Elec Eng 75:378 '34

Some notes on grid circuit and diode rectification. J. R. Nelson. diag Proc Inst Radio Eng 20:989 June '32; Discussion. 20:1971 Dec '32

Some notes on adjacent channel interference. I. J. Kaar. Proc Inst Radio Eng 22:295 Mar '34

Testing of mercury power vapor tubes. J. Zehner. il Electronics 4:224 July '32

*See also*

Filters  
Power Supply Systems  
Thyratrons

### REGENERATION

Analysis of regenerative amplification. V. D. Landon and K. W. Jarvis. Proc Inst Radio Eng 13:709 Dec '25

Combined electromagnetic and electrostatic coupling and some uses of the combination. Edward H. Loftin and S. Young White. Proc Inst Radio Eng 14:605 Aug '26

Effect of regeneration on the received signal strength. Balth van der Pol. Proc Inst Radio Eng 16:1045 Aug '28; Same condition. 17:339 Feb '29

Experimental study of regenerative ultra-short-wave oscillators. W. H. Wenstrom. il diags Proc Inst Radio Eng 20:113 Jan '32

Operating frequency of regenerative oscillatory systems. Hugo Benioff. Proc Inst Radio Eng 19:1252 July '31

Oscillation in tuned radio frequency amplifiers. B. J. Thompson. Proc Inst Radio Eng 19:421 Mar '31; Discussion

Oscillators with automatic control of the threshold of regeneration. J. Groszkowski. diags Proc Inst Radio Eng 22:145 Feb '34

Regeneration in coupled circuits. E. Leon Chaffee. Proc Inst Radio Eng 12:299 June '24. Errata 12:515 Aug '24

Regeneration theory and experiment. E. Peterson, J. G. Kreer, and L. A. Ware. Proc Inst Radio Eng 22:1191 Oct '34

Regenerative detectors. H. A. Robinson. QST 17:26 Feb '33

Separate regeneration in multi-purpose tube. diag D. C. Ketcham. QST 18:36 Nov '34

Shielded neutrodyne receiver. John F. Dreyer, Jr. and Ray H. Manson. Proc Inst Radio Eng 14:217 Apr '26

Some recent developments of regenerative circuits. Edwin H. Armstrong. Proc Inst Radio Eng 10:244 Aug '22

The limit of regeneration. N. C. Little. Proc Inst Radio Eng Aug '24

Threshold howl in reaction receivers. L. S. B. Adler. Exp Wireless and Wireless Eng 7:197 Apr '30

*See also*

Detection

### RELAYS

Automatic time-delay relay. C. Huff. Proc Inst Radio Eng 20:1019 Oct '32

Broadcasting and relay systems. D. H. N. Caley. Electrician 107:98 July 17 '31

Design characteristics of electromagnets for telephone relays. D. D. Miller. Bell Sys Tech Jour 3:206 Apr '24

**RELAYS—Continued**

- Electronic phase failure relay. C. Stansburg and G. C. Brown. *il Electronics* 6:46 Feb '33
- Electronic voltage relay. J. W. Graff. *Electronics* 7:80 Mar '34
- New type of thyatron relay. George Babat. *Proc Inst Radio Eng* 22:314 Mar '34
- Radio relay control. T. H. Hall. *il Elec Rev (Lond)* 114:699 May 18 '34
- Relays in the Bell system. S. P. Shackleton and H. W. Purcell. *Bell Sys Tech Jour* 3:1 Jan '24

**REPEATERS**

- Limitation of the gain of two-way telephone repeaters by impedance irregularities. George Crisson. *Bell Sys Tech Jour* 4:15 Jan '25
- Negative impedances and the twin 21-type repeater. George Crisson. *Bell Sys Tech Jour* 10:485 July '31
- New quarter ampere repeater tube and its applications. A. R. A. Rendall. *Elec Comm* 11:74 Oct '32
- New standard repeater equipment. S. Lyall. *Elec Comm* 11:66 Oct '32

**RESEARCH**

- Acres of radio; research laboratories of General Electric Company at Schenectady, New York. O. E. Dunlap, jr. *il Sci Amer* 135:178 Sept '26
- Aircraft radio research. *Jour Fr Inst* 210:246 Aug '30
- Air service radio laboratories. H. F. Breckel. *il Radio N* 8:12 July '26
- Annual report of committee on communication. *Jour Amer Inst Elec Eng* 46:714 July '27
- Cathode-ray oscillograph in radio research. *diags Wireless Eng* 9:449 Aug '32
- Development of directive transmitting antennas by R. C. A. communications, inc. P. S. Carter, C. W. Hansell and N. E. Lindenblad. *il diags Proc Inst Radio Eng* 19:1773 Oct '31
- Electrical communication, 1931-33. *Elec Eng* 52:767 Nov '33
- National physical laboratory; aerials, standard transmission, receiver testing. *il diags Engineering* 132:413 Sept 25 '31
- Radio communications; how world-wide speech by wireless has been realized on the foundation of Faraday's experiments. E. H. Shaughnessy. *Electrician* 107:418 Sept 25 '31
- Radio research board; report no. 1. W. G. Baker and others. 32p Australia council for scientific and industrial research, Melbourne '31
- Radio research in the British Empire; abstract. R. A. Watson and O. F. Brown. *Electrician* 107:491 Oct 9 '31
- Radio research; summary of report of the Radio research board. *il Electrician* 112:819 June 15 '34
- Report of the Radio research board for the period ended Mar 31, 1939. *Engineering* 129:467 Apr 11 '30
- Some research problems involved in transoceanic telephony. F. B. Jewett. *Amer Soc T M Proc* 28 pt 2:7 '28

- Technical achievements in broadcasting and its relation to national and international solidarity. Alfred N. Goldsmith. *Proc Inst Radio Eng* 27:1940 Nov '29
- Technical broadcasting problems. J. S. Brown. *Electrician* 95:299 Sept 11 '25
- Unification of radio research facilities in Great Britain. *Science* 77:576 June 16 '33
- Use of automatic recording equipment in radio transmission research. P. A. de Mars, G. W. Kinrick and G. W. Pickard. *il diags Proc Inst Radio Eng* 19:1618 Sept '31

*See also*

Engineering

**RESISTANCE, Resistors**

- Analysis of air condenser loss resistance. W. Jackson. *diag Proc Inst Radio Eng* 22:957 Aug '34
- Analysis of condenser resistance. S. Harris. *il Radio N* 6:1668 Mar '25
- Calculation of harmonic production in thermionic valves with resistive loads. D. C. Espley. *Proc Inst Radio Eng* 21:1439 Oct '33
- Distortion correction in electrical circuits with constant resistance recurrent networks. Otto J. Zobel. *Bell Sys Tech Jour* 7:438 July '28
- Detuning method of measuring the high-frequency resistance of a circuit. E. B. Moullin. *Exp Wireless* 7:367 July '30
- Effect of displacement currents on the high-frequency resistance of circular single-layer coils. A. J. Palermo. *Proc Inst Radio Eng* 20:1807 Nov '32
- Effect of frequency on the value of high resistances of the grid leak type. W. Jackson. *Exp Wireless* 5:677 Dec '28
- Effective resistance of inductance coils at radio frequency. S. Butterworth. *Wireless Eng* 11:12 Jan '34
- Electrometer method for the measurement of radio frequency resistance. P. O. Pedersen. *Proc Inst Radio Eng* 13:215 Apr '25
- Method for measurement of high resistance at high frequency. P. B. Taylor. *diag Proc Inst Radio Eng* 20:1802 Nov '32
- Method of treating resistance stabilized radio-frequency amplifying circuits. B. L. Snavely and J. S. Webb. *Proc Inst Radio Eng* 17:118 Jan '29
- New method of measurement of resistance and reactance at radio frequencies. F. M. Colebrook and R. M. Wilmotte. *diags Jour Inst Elec Eng* 69:497 Apr '31
- Notes on the design of resistance-capacity coupled amplifiers. Sylvan Harris. *Proc Inst Radio Eng* 14:759 Dec '26
- Radiation resistance of concentric conductor transmission lines. Robert Whitner. *Proc Inst Radio Eng* 21:1343 Sept '33
- Resistance stabilized oscillators. F. E. Terman. *il Electronics* 6:190 July '33
- Resistance tuning. Sewall Cabot. *Proc Inst Radio Eng* 22:709 June '34; Discussion, E. W. Herold and Sewall Cabot (Nov '34 p1311)
- Resonant impedance and effective series resistance of high-frequency parallel resonant circuits. H. Inuma. *diag Proc Inst Radio Eng* 19:467 Mar '31

Simplified general method for resistance-capacity coupled amplifier design. David G. C. Luck. Proc Inst Radio Eng 20:1401 Aug '32

Skin-effect resistance measurements of conductors at radio-frequencies up to 100,000 cycles per second. Arthur E. Kennelly and H. A. Affel. Proc Inst Radio Eng 4:523 Dec '16; Discussion. J. Zenneck, E. F. Northrup, H. A. Affel. p575

Study of the high frequency resistance of single layer coils. A. J. Palermo and F. W. Grover. Proc Inst Radio Eng 18:2041 Dec '30. Supplementary note, A. J. Palermo and F. W. Grover (July '31 p1278)

Test procedure for detectors with resistance coupled output. G. D. Robinson. diags Proc Inst Radio Eng 19:806 May '31

Thermal resistivity of solid dielectrics. bibliog diags Jour Inst Elec Eng 68:1313 Oct '30

Variation of the resistance of a radio condenser with capacity and frequency. R. R. Ramsey. Proc Inst Radio Eng 18:1226 July '30

### RESISTANCE Measurements

Design of resistors for precise high frequency measurements. L. Behr and R. E. Tarpley. Proc Inst Radio Eng 20:1101 July '32; Discussion. R. F. Field, L. Behr, and R. E. Tarpley (July '32 p1114)

Detuning method of measuring the high frequency resistance of a circuit. E. B. Moullin. Exp Wireless 7:367 July '30

Electrometer method for the measurements of radio frequency resistance. P. O. Pedersen. Proc Inst Radio Eng 13:215 Apr '25

High-frequency resistance measurement by the use of a variable mutual inductance. W. Jackson. diags Proc Inst Elec Eng 68:296 Feb '30

Measurement of resistance and impedances at high frequencies. J. W. Labus. diags Proc Inst Radio Eng 19:452 Mar '31

Method for measurement of high resistance at high frequency. Paul B. Taylor. Proc Inst Radio Eng 20:1802 Nov '32. Discussion, R. F. Field and P. B. Taylor p1805

Method of measuring the radio-frequency resistance of an oscillatory circuit. H. Inuma. diag Proc Inst Radio Eng 18:537 Mar '30

*See also*

Measurements

### RESISTANCE, Negative

A method of measuring the radio frequency resistance of an oscillatory circuit. H. Inuma. Proc Inst Radio Eng 18:537 Mar '30

Development of a circuit for measuring the negative resistance of plodynatrons. E. N. Dingley, jr. Proc Inst Radio Eng 19:1948 Nov '31

Improved circuits for measuring negative resistance. F. E. Terman. Electronics 6:340 Dec '33

Resonant impedances and effective series resistance of short-wave parallel resonant circuits. Hajime Inuma. Proc Inst Radio Eng 19:467 Mar '31

*See also*

Dynatron Oscillator

### RESONANCE

Absorption of resonance radiation in mercury vapor. A. L. Hughes and A. R. Thomas. Phys Rev 30:466 Oct '27

Depolarization of resonance radiation. P. D. Foote. Phys Rev 30:300 Sept '27

Effect of cavity resonance on the frequency response characteristic of the condenser microphone. Stuart Ballantine. Proc Inst Radio Eng 18:1206 July '30

Help in computing reactance-resonance problems. Gen Radio Exp Vol IX June '34

Notes on loud speaker response measurements and some typical response curves. Benjamin Olney. Proc Inst Radio Eng 19:1113 July '31

Piezo-electric resonator and its equivalent network. K. S. Van Dyke. Proc Inst Radio Eng 16:742 June '28. Errata (February, 1930, p219)

Practical analysis of parallel resonance. R. Lee. Proc Inst Radio Eng 21:271 Feb '33

Radio receiver characteristics related to the side-band coefficient of the resonance circuit. Satoru Takamura. Proc Inst Radio Eng 20:1774 Nov '32

Resonant lines in radio circuits. F. E. Terman. diags Elec Eng 53:1046 July '34

Some general resonance relations and a discussion of Thevenin's theorem. J. G. Brainerd. Proc Inst Radio Eng 21:1050 July '33

*See also*

Circuit Analysis—Resonant Circuits

### REVERBERATION

On the collection of sound in reverberant rooms, with special reference to the application of the ribbon microphone. Harry F. Olsen. Proc Inst Radio Eng 21:655 May '33

Optimum reverberation time for auditoriums. Walter A. Mac Nair. Bell Sys Tech Jour 9:390 Apr '30

## S

### SHIELDING

Effect of screening cans on the effective inductance and resistance of coils. G. W. O. Howe. Wireless Eng 2:155 Mar '34

Experiments on electromagnetic shielding at frequencies between one and thirty kilocycles. Walter Lyons. Proc Inst Radio Eng 21:574 Apr '33

Design of radio-frequency signal generators. J. R. Bird. Proc Inst Radio Eng 19:438 Mar '31

Engine-ignition shielding for radio reception in aircraft. H. Diamond, and F. G. Gardner. Proc Inst Radio Eng 18:840 May '30

Note on radio frequency measurements. Carl Englund. Proc Inst Radio Eng 8:326 Aug '20

Shielded bridge for inductive impedance measurements at speech and carrier frequencies. W. J. Shackelton. Bell Sys Tech Jour 4:142

Shielded neutrodyne receiver. John F. Dreyer, Jr., and Ray H. Manson. Proc Inst Radio Eng 14:217 Apr '26

Shielding in high frequency measurements. J. G. Ferguson. Bell Sys Tech Jour 8:560 July '29

Shielding of electric and magnetic fields. John H. Morecroft and Alva Turner. Proc Inst Radio Eng 13:477 Aug '25

Transmission lines for short wave radio systems. E. J. Sterba and C. B. Feldman. Proc Inst Radio Eng 20:1163 July '32

**SIDEBANDS**

- Amplitude, phase and frequency modulation. Hans Roder. Proc Inst Radio Eng 19:2145 Dec '31. Discussion. D. G. C. Luck and Hans Roder 20:882 May '32
- Interesting side band problem. Exp Wireless 7:651 Dec '30
- Modulation and side bands; relation between amplitude and frequency modulation. N. F. S. Hecht. Wireless Eng 8:471 Sept '31
- On asymmetric telegraphic spectra. C. R. Budch. Proc Inst Radio Eng 19:2191 Dec '31
- Physical reality of side-bands. F. M. Colebrook. diags Exp Wireless 8:4-10 Jan '31; Discussion. E. B. Moullin. 8:257 May '31
- Production of single side-band for transatlantic radio telephony. R. A. Heising. Proc Inst Radio Eng 13:291 June '25
- Radio receiver characteristics related to the side-band coefficient of the resonance circuit. S. Takamura. diags Proc Inst Radio Eng 20:1774 Nov '32
- Relations of carrier and side-bands in radio transmission. R. V. L. Hartley. Proc Inst Radio Eng 11:34 Feb '23
- Required minimum frequency separation between carrier waves of broadcast stations. P. P. Eckersley. Proc Inst Radio Eng 21:193 Feb '33
- Side bands and selectivity. Exp Wireless 7:417 Aug '30
- Single side band short-wave wireless telephony; experimental station of Le Materiel telephonique at Trappes. il diags Engineer 151:570 May 22 '31
- Single side-band system applied to short-wave telephone links. A. H. Reeves. diags Jour Inst Elec Eng 73:245 Sept '33; Abstracts. Electrician 110:623 May 12 '33; Elec Rev (Lond) 112:631 May 5 '33; Discussion. Jour Inst Elec Eng 73:276 Sept '33
- Single wavelength system. diags Electrician 107:85 July 17 '31
- Some experiments with side-band telephony on short wavelengths. E. H. Robinson. diags Exp Wireless 4:715 Dec '27
- Some possibilities of intelligence transmission when using a limited band of frequencies. F. E. Terman. Proc Inst Radio Eng 8:167 Jan '30

*See also*

Carrier Current  
Modulation

**SIGNAL Generators**

- All-wave signal generator for production tests. R. F. Shea. il Electronics 7:244 Aug '34
- Aspects of standard signal generator designs. J. D. Crawford. il Electronics 4:46 Feb '32
- Fundamental frequency 100-2100 kc signal generator. S. Egert and S. Bagno. Radio N 16:278 Nov '34
- Improved audio-frequency generator. E. G. Lapham. Proc Inst Radio Eng 20:272 Feb '32
- Measuring frequency characteristics with the photo-audio generator. W. Schaffer and G.

- Lubszynski. Proc Inst Radio Eng 19:1242 July '31
- Potentiometer arrangement for measuring micro-voltages at radio frequencies. Axel G. Jensen. Phys Rev Vol 26 July '25
- Practical signal generator for servicemen, experimenters and designers. S. Bagno and S. Egert. il Radio N 15:273 Nov '33
- Some considerations on the design of radio frequency signal generators. J. G. Bird. Proc Inst Radio Eng 19:438 Mar '31
- Valve voltmeter for audio frequencies calibrated by direct current. Wireless Eng 10:310 June '33

**SIGNALS**

- Civil aviation signal services; considerations affecting the choice of wavelengths. N. F. S. Hecht and H. L. Crowther. Wireless Eng 10:596 Nov '33
- Comparison of the variation of intensity and direction of radio signals. H. J. Reich. Jour Fr Inst 203:537 Apr '27
- Conditions governing transatlantic reception. S. K. Lewer. diags Exp Wireless 2:958 Dec '25
- Cooperative measurements of radio fading in 1925. J. H. Dellinger, C. B. Jolliffe and T. Parkinson. il diags map U S Bur Stand Sci Pa 561:419 '27
- Cooperative investigation of radio wave phenomena. Radio Serv Bul 96:14 Apr '25
- Detection by a straight line rectifier of modulated and heterodyne signals. E. B. Moullin. Wireless Eng 9:378 July '32
- Effect of shore-station location upon signals. R. A. Heilising. Proc Inst Radio Eng 20:77 Jan '32
- Emission of special radio signals for the study of the ionosphere. H. A. Thomas. il diags Jour Inst Elec Eng 75:240 Aug '34
- Fading radio signals and weather forecasts. R. C. Colwell. Science 76:sup9-10 Nov 18 '32
- Four frequency signalling system. T. S. Skillman. Elec Comm 9:43 July '30
- Guiding the battle fleet by multiplex radio signaling. H. F. Breckel. il diag Radio N 8:1420 June '27
- La determination des longitudes par telegraphie sans fil. G. Malgorn. diags Genie Civil 91:206 Aug '27
- Method of providing course and quadrant identification with the radio range-beacon system. F. W. Dunmore. diags pl U S Bur Stand Jour Research 11:309 Sept '33
- Multiple signals in short-wave transmission. T. L. Eckersley. Proc Inst Radio Eng 18:106 Jan '30
- New procedure of transmitting distress signals by British vessels. Radio Serv Bul 126:10 Sept '27
- Notes on the measurement of radio signals. C. R. Englund. Proc Inst Radio Eng 2:25 Feb '23
- Radio echoes from space. I. J. Saxl. il diags Radio N 15:134 Sept '33
- Reception of frequency modulated radio signals. V. J. Andrew. diags Inst Radio Eng Proc 20:835 May '32
- Some studies of radio transmission over long paths made on the Byrd Antarctic expedition. L. V. Berkner. diags maps U S Bur Stand Jour Research 8:265 Feb '32

Tables of north Atlantic radio transmission conditions for long-wave daylight signals for the years 1922-1930 L. W. Austin. Proc Inst Radio Eng 20:689 Apr '32

Weather forecasting by signal radio intensity. R. C. Colwell. Proc Inst Radio Eng 18:533 Mar '30

Wireless apparatus for the study of the ionosphere. G. Builder. bibliog diags Jour Inst Elec Eng 3:419 pl 1-2 Oct '33

Wireless signal variations. E. V. Appleton and M. A. F. Barnett. diags Electrician 95:678 Dec 11 '25

Wireless signals; their mutual influence in simultaneous detection. E. V. Appleton and D. W. Fry. diag Electrician 109:83 July 15 '32

World longitude-net: U. S. Naval observatory stations at Washington, D. C., and San Diego, California. F. B. Littell. il map Nat Research Council Bul 61:50 July '27

*See also*

Propagation of Waves

## SOUND

Analysis of energy distribution in speech. I. B. Crandall and D. Mackenzie. Bell Sys Tech Jour 1:116 July '22

Sounds of speech. I. B. Crandall. Bell Sys Tech Jour 4:586 Oct '25

The power of fundamental speech sound. C. G. Beck and C. F. Sacia. Bell Sys Tech Jour 5:393 Apr '26

Useful numerical constants of speech and hearing. Harvey Fletcher. Bell Sys Tech Jour 4:375 July '25

Sound in its relation to radio. J. J. Minton. il diags Wireless Age 11:33 July; 38 Aug; 38 Sept; 12 Nov '24; 39 Jan '25

*See also*

Acoustics	Sound Picture Engineering
Loudspeakers	Speech
Microphones	

## SOUND Picture Engineering

Acoustic and light characteristics of sound screens. B. Kreuzer. il Electronics 1:420 Dec '30

Acoustic treatment for sound picture theaters. V. A. Schlenker. il Electronics 2:625 May '31

Acoustical problems of sound picture engineering. W. A. Mac Nair. Proc Inst Radio Eng 19:1606 Sept '31

Comparison of the engineering problems in broadcasting and audible pictures. Porter H. Evans. Proc Inst Radio Eng 18:1316 Aug '30

Control of sound quality in picture production. Carl Dreher. il Electronics 6:10 Jan '33

Design problems of sound-on-film for home movies. A. J. Koenig. il Electronics 2:62 May '30

Effect of optical slits in light valve sound recording. J. P. Livadary. il Electronics 3:54 Aug '30

Frequency characteristics in film recording and reproducing. George Lewin. il Electronics 4:40 Feb '32

Frequency characteristics of optical slits. J. P. Livadary. diags Electronics 2:512 Feb '31

Glow-lamp noiseless recording. E. H. Hansen. il Electronics 3:177 Nov '31

Glow-lamp sound-on-film recording. V. T. Braman. il Electronics 2:679 June '31

Ground noise in sound-on-film pictures. H. G. Tasker. il Electronics 1:333 Oct. '30

Ground noise in sound pictures. H. G. Tasker. il Electronics 1:273 Sept '30

March towards high fidelity in sound. (charts) Electronics 7:185 June '34

Noiseless recording with double triangle slit. G. L. Dimmick and H. Belar. il Electronics 7:142 May '34

Noiseless sound-on-film recording. George Lewin. Electronics 3:102 Sept '31

Phototube circuit design for sound pictures. C. A. Wyeth. il Electronics 3:22 July '31

Progress in sound picture recording. il Electronics 2:542 Mar '31

Radio method for synchronizing recording apparatus. T. Parkinson and T. R. Gilliland. Proc Inst Radio Eng 19:335 Mar '31

RCA photophone system of sound recording and reproduction for sound motion pictures. Alfred N. Goldsmith and Max C. Bastel. Proc Inst Radio Eng 16:1661 Sept '30

Society of motion picture engineers discuss current problems. il Electronics 3:186 Nov '31

Solving current network problems by graphs. W. Waterman. il Electronics 3:60 Aug '31

Some acoustical problems of sound picture engineering. W. A. Mac Nair. Proc Inst Radio Eng 19:1606 Sept '31

Sound in its relation to radio. J. J. Minton. il diags Wireless Age 11:33 July; 38 Aug; 38 Sept; 12 Nov '24; '39 Jan '25

Sound projection system for use in motion picture theaters. A. O. Scriven. Bell Sys Tech Jour 8:197 Jan '29

Sound recording. Electronics 2:647 May '31

Studio practice in noiseless recording. G. Lewin. Electronics 3:146 Oct '31

Symposium of papers presented at meeting of Society of Motion Picture Engineers. Electronics 1:131 June '30

Synchronization and speed control of sound pictures. H. M. Staller 8:185

Technical improvements in 1931. Electronics 2:456 Jan '31

Testing on sound picture channels. F. F. Hutchins. (diags) Electronics 2:502 Feb '31

Unsolved problems of sound-picture technique. Dr. A. N. Goldsmith. il Electronics 1:23 April '30

*See also*

Acoustics
Recording, Recorders

## SPEECH

Analysis of energy distribution in speech. I. B. Crandall and D. Mackenzie. Bell Sys Tech Jour. 1:116 July '22

Audible frequency ranges of speech, music and noise. W. B. Snow. Bell Sys Tech Jour 10:616 Oct '31

Dynamical study of the vowel sounds in speech. Irving B. Crandall. Bell Sys Tech Jour 6:100 Jan '27

**SPEECH**—Continued

- Nature of speech and its interpretation. H. Fletcher. *Bell System Tech Jour* 1:129 Nov '22
- Shielded bridge for inductive and impedance measurements at speech and carrier frequencies. W. J. Shackelton. *Bell System Tech Jour* 6:142 Jan '27
- Sounds of speech. Irving B. Crandall. *Bell System Tech Jour* 4:586 Oct '25
- Speech power and energy. C. F. Sacia. *Bell System Tech Jour* 4:627 Oct '25
- Speech power and its measurement. L. J. Sivian. *Bell System Tech Jour* 8:646 Oct '29
- The power of fundamental speech sounds. C. J. Beck and C. F. Sacia. *Bell System Tech Jour* 5:393 Apr '26
- Useful numerical constants of speech and hearing. Harvey Fletcher. *Bell System Tech Jour* 4:375 July '25

*See also*Loudspeakers  
Microphones**SPEECH Input Equipment**

- Broadcast installations in the new "House of Radio." Gunther Lubszynski and Kurt Hoffmann. *Proc Inst Radio Eng* 19:1955 Nov '31
- Compact, alternating-current operated speech input equipment. W. L. Black. *Proc Inst Radio Eng* 21:1409 Oct '33
- Radio broadcasting transmitters and related transmission phenomena. Edward L. Nelson. *Proc Inst Radio Eng* 17:1949 Nov '29
- Speech input equipment. D. G. Little. *Proc Inst Radio Eng* 17:1986 Nov '29

*See also*

Radiotelephony

**STANDARDS, Crystal**

- An international comparison of radio wavelength standards by means of piezo-electric resonators. W. G. Cady. *Proc Inst Radio Eng* 12:805 Dec '24 Correction. (Apr '25. Contents page)
- Navy's primary frequency standards. Robert H. Worrall and Raymond B. Owens. *Proc Inst Radio Eng* 16:778 June '28
- New type of standard frequency piezo-electric oscillator. Lynde P. Wheeler and Ward E. Bower. *Proc Inst Radio Eng* 16:1035 Aug '28
- Piezo-electric crystals at radio frequencies. A. Meissner. *Proc Inst Radio Eng* 15:281 Apr '27
- The piezo-electric resonator. W. G. Cady. *Proc Inst Radio Eng* 10:83 Apr '22. Correction. Aug '22, contents page.
- Uses and possibilities of piezo-electric oscillators. August Hund. *Proc Inst Radio Eng* 14:447 Aug '26

*See also*

Crystals, Piezoelectric

**STANDARDS, Frequency**

- Correction factor for the parallel wire system used in absolute radio frequency standardization. August Hund. *Proc Inst Radio Eng* 12:817 Dec '24
- Development of standard-frequency transmitting sets. L. Mickey and A. D. Martin. *diags pls U S Bur Stand Jour Research* 12:1-12 Jan '34

Establishment of the Japanese radio-frequency standard. Y. Namba. *il diags Proc Inst Radio Eng* 18:1017 June '30

Frequency stabilization of radio transmitters. Y. Kusunose and S. Ishikawa. *diags Proc Inst Radio Eng* 20:310 Feb '32

Frequency standards; programme of transmissions from the national physical laboratory. *Electrician* 109:482 Oct 14 '32

High precision standard of frequency. W. A. Marrison. *il diags Bell System Tech Jour* 8:493 July '29

Inductance for radio frequencies; a new compact standard. W. H. F. Griffiths. *il diags Wireless Eng* 11:305 June '34

International frequency comparisons by means of modulation emissions. L. Essen. *Jour Inst Elec Eng* 75:289 Sept '34

Method of measuring very short radio wave lengths and their use in frequency standardization. Francis W. Dunmore and Francis H. Engel. *Proc Inst Radio Eng* 11:467 Oct '23. Discussion. Eijiro Takagishi, Shigeyoshi Kawazoe, F. W. Dunmore, and F. H. Engel (Feb '25, pp125-127)

Precision determination of frequency. J. W. Horton and W. A. Marrison. *Proc Inst Radio Eng* 16:137 Jan '28

Radio frequencies; international comparison of standards—co-operation of B.B.C. and N.P.L. *Electrician* 112:336 Mar 9 '34

Radio transmissions of standard frequency. *Proc Inst Radio Eng* 20:1684 Nov '32

Radio transmissions of standard frequencies. *Proc Inst Radio Eng* 21:516 Apr '33

Standard frequency dissemination. M. S. Strock. *Proc Inst Radio Eng* 15:727 Aug '27

Temperature control for frequency standards. J. K. Clapp. *il diags Proc Inst Radio Eng* 18:2003 Dec '30

Testing of frequency monitors for the Federal radio commission. W. D. George. *Proc Inst Radio Eng* 22:449 Apr '34

Thermostat design for frequency standards. W. A. Marrison. *Proc Inst Radio Eng* 16:976 July '28

Transmissions of wireless waves of standard frequencies from the national physical laboratory. *Wireless Eng* 8:531 Oct '31

**STANDARDS, Standing-Wave**

Correction factor for the parallel wire system used in absolute radio frequency standardization. August Hund. *Proc Inst Radio Eng* 12:817 Dec '24

Method of measuring very short radio wave lengths and their use in frequency standardization. Francis W. Dunmore and Francis H. Engel. *Proc Inst Radio Eng* 11:467 Oct '23. Discussion. p647 Oct '25

Stationary waves on free wires and solenoids. A. Press. *Proc Inst Radio Eng* 11:675 Dec '23

**STANDARDS, Tuning-Fork**

A clock-controlled tuning fork as a source of constant frequency. J. G. Ferguson. *Bell System Tech Jour* 3:145 Jan '24

Crystal control applied to the dynatron oscillator. K. A. MacKinnon. *Proc Inst Radio Eng* 20:1689 Nov '32

Method of calibrating a low-frequency generator with a one-frequency source. Sylvan Harris. Proc Inst Radio Eng 14:215 Apr '26

Method of measuring radio frequency by means of a harmonic generator. August Hund. Proc Inst Radio Eng 13:207 Apr '25

Precision determination of frequency. W. A. Mar- rison. Proc Inst Radio Eng 16:137 Feb '28

Valve-maintained tuning fork as a primary stand- ard of frequency. Electrician 111:784 Dec 22 '33

### STANDING Waves

Conduction of high-frequency oscillatory energy. H. O. Roosenstein. Proc Inst Radio Eng 19:1849 Oct '31

Correction factor for the parallel wire system used in absolute radio frequency standardization. August Hund. Proc Inst Radio Eng 12:817 Dec '24

Development of directive transmitting antennas by R.C.A. Communications, Inc. P. S. Carter, C. W. Hansel and N. E. Linderblad. Proc Inst Radio Eng 19:1773 Oct '31

Formation of standing waves on Lecher wires. Aijaz Mohammed and S. R. Kantebet. Proc Inst Radio Eng 19:1983 Nov '31

Method of measuring very short radio wave lengths and their use in frequency standardiza- tion. Francis W. Dunmore and Francis H. Engel. Proc Inst Radio Eng 11:467 Oct '23. Discussion. E. Takagishi, S. Kwazoe, F. W. Dunmore and F. H. Engel. 13:125 Feb '25. Discussion. S. R. Kantebet, F. W. Dunmore, and F. H. Engel, A. Hund. 13:647 Oct '25

Stationary waves on free wires and solenoids. A. Press. Proc Inst Radio Eng 11:675 Dec '23

*See also*

Transmission Lines

**SUPERHETERODYNE.** See Receivers, Super- heterodyne

### SYNTRACTION

Automatic syntraction of two broadcast carriers. Verne V. Gunsolley. Proc Inst Radio Eng 23:244 Mar '35

## T

### TELEVISION

An experimental television system. E. W. Eng- strom and others. Proc Inst Radio Eng 22:1241 Nov '34

Bibliography on television. Electronics 4:265 Aug '32

Description of experimental television transmit- ting apparatus. R. D. Kell. il diags Proc Inst Radio Eng 21:1674 Dec '33

Electrical transmission of pictures and images. J. W. Horton. Proc Inst Radio Eng 17:1540 Sept '29

Electron multiplier. il Electronics 7:34 Feb '34

Iconoscope, a modern version of the electric eye. V. K. Zworykin. il diags Proc Inst Radio Eng 22:16 Jan '34

Image transmission by radio waves. Alfred N. Goldsmith. 17:1536 Sept '29

Image transmission system for two-way television. Herbert E. Ives, Frank Gray, and M. W. Bald- win. Bell Sys Tech Jour 9:448 July '30

Investigation of various electrode structure of cathode ray tubes suitable for television recep- tion. Allan B. Du Mont 20:1878 Dec '32

Measurement of fidelity in television systems. A. F. Murray. il Electronics 2:137 Oct '31

Modulation frequencies in visual transmission. Edwin Lee White. Proc Inst Radio Eng 21:51 Jan '33

Movie television screen. il Electronics 2:602 Apr '31

Multi-channel television apparatus. Herbert E. Ives. Bell Sys Tech Jour 10:33 Jan '31

Problems of cathode ray television. I. G. Maloff. il Electronics 7:10 Jan '34

Production and utilization of television signals. Frank Gray, J. W. Horton, and R. C. Mathes. Bell Sys Tech Jour 6:560 Oct '27

Radio relay link for television signals. Charles J. Young. Proc Inst Radio Eng 22:1286 Nov '34

Radio transmission system for television. E. L. Nelson. il diags Bell System Tech Jour 6:633 Oct '27

Radio vision. C. Francis Jenkins. Proc Inst Radio Eng 15:958 Nov '27

Representative television systems. Electronics 7:305 Oct '34

Requirements of television. E. H. Felix. Elec- tronics 1:235 Aug '30

Resistance-capacitance coupled amplifier in tele- vision (a transient solution for the performance of the resistance-capacitance coupled amplifier or characteristic television signals). Henry M. Lane. Proc Inst Radio Eng 20:722 Apr '32

Resistance-coupled amplifier for television. C. B. Brown, il Electronics 4:265 Aug '32

Selection of standards for commercial radio tele- vision. Julius Weinberger, Theodore A. Smith and George Rodwin. Proc Inst Radio Eng 17:1584 Sept '29

Series modulation for television transmitters. Bradner Brown. il Electronics 4:263 Aug '33

Some optical features in two-way television. Her- bert E. Ives. Bell Sys Tech Jour 10:265 Apr '31

Survey of present-day television systems. il Elec- tronics 7:300 Oct '34

Synchronization of television. H. M. Stoller and E. R. Morton. Bell Sys Tech Jour 6:604 Oct '27

Synchronization system for two-way television. H. M. Stoller. Bell Sys Tech Jour 9:470 July '30

Television. Herbert E. Ives. Bell Sys Tech Jour 6:551 Oct '27

Television direct pickup camera. D. W. Short. il Electronics 2:69 Aug '31

Television nears technical solution. il Electronics 7:172 June '34

Television progress. il Electronics 7:272 Sept '34

Television with cathode-ray tubes. V. K. Zwory- kin. il diags Jour Inst Elec Eng 73:437 Oct '33; Discussion. 74:276 Mar '34

Theoretical notes on certain features of television receiving circuits. G. D. Robinson. Proc Inst Radio Eng 21:833 June '33



**TELEVISION—Continued**

- Where television stands today. *il Electronics* 2:671 June '31
- Wire transmission system for television. D. K. Gannett and E. I. Green. *Bell Sys Tech Jour* 6:616 Oct '27
- Zworykin's iconoscope. *il Electronics* 6:186 July '33

**THYRATRONS**

- Application of thyratrons with special reference to the control of resistance welding; abstract. H. de B. Knight. *Engineer* 158:332 Oct 5 '34
- Capacity effects; their use for thyatron tube control. F. D. Chard. *il diag Electrician* 112:338 Mar 9 '34
- Electronic phase failure relay. C. Stansbury and G. C. Brown. *il Electronics* 6:46 Feb '33
- Industrial applications of thyratrons. *diags Engineer* 158:141 Aug 10 '34
- Kathetron. P. H. Craig. *il Electronics* 6:70 Mar '33
- Life test power supply utilizing thyatron rectifiers. M. W. Lord. *Proc Inst Radio Eng* 21:1097 Aug '33
- New type of thyatron relay. G. Babat. *il diags. Proc Inst Radio Eng* 22:314 Mar '34
- Shield grid thyratrons. O. W. Livingston and H. T. Moser. *il Electronics* 7:14 Apr '34
- Single-tube thyatron inverter. O. W. Livingston and H. W. Lord. *il Electronics* 6:96 Apr '33
- Some characteristics of thyratrons. J. C. Warner. *Proc Inst Radio Eng* 19:1561 Sept. '31
- Thyatron as an oscillator. *Electronics* 6:18 Jan '33
- Thyatron control of mercury-vapor rectifier tubes. H. J. Reich. *il Electronics* 6:48 Feb '33
- Thyatron control of welding in tube manufacture. H. W. Lord and O. W. Livingston. *il Electronics* 6:186 July '33
- Thyatron-controlled color flood-lighting. *il Electronics* 2:470 Jan '31
- Thyatron initial impulse indicator. O. W. Livingston and H. W. Lord. *il Electronics* 6:257 Sept '33
- Thyatron laboratory rectifier. R. M. Kime. *il Electronic* 6:219 Aug '33
- Thyatron tubes in relay practice. R. Wideroe. *diags Elec Eng* 53:1347 Oct '34

*See also*

Rectifiers

**TRANSFORMERS**

- Application of transformer-coupled modulators. J. A. Hutcheson. *Proc Inst Radio Eng* 21:944 July '33
- Audio frequency transformers. John M. Thomson. *Proc Inst Radio Eng* 15:679 Aug '27
- Audio-frequency transformers; voltage-ratio characteristics determined by the low-voltage cathode ray oscillograph. P. Klev, jr. and D. W. Shirley, jr. *diags Jour Amer Inst Elec Eng* 48:907 Dec '29
- Characteristics of output transformers. J. M. Thomson. *Proc Inst Radio Eng* 16:1053 Aug '28
- Combined electromagnetic and electrostatic coupling and some uses of the combination. Edward H. Loftin and S. Young White. *Proc Inst Radio Eng* 14:605 Oct '26
- Current transformers for radio frequencies. P. MacGahan. *il Elec Jour* 31:237 June '34
- Current-transformer methods of producing small, known voltages and currents at radio frequencies for calibrating purposes. D. W. Dye. *diags Jour Inst Elec Eng* 63:597; Discussion. p 603 June '25
- Design for radio set transformers. C. A. Hutberg. *il Electronics* 7:286 Sept '34
- Design of choke coils and transformers which carry a direct current. *Exp Wireless* 5:49 Feb '28
- Design of high-frequency transformers. M. Reed. *bibliog diag Exp Wireless* 8:349 July '31
- Design of the output transformer. R. C. Hitchcock and W. O. Osbon. *il Electronics* 1:381 Nov '30
- Design of transformers for audiofrequency amplifiers with preassigned characteristics. Glenn Koehler. *Proc Inst Radio Eng* 16:1742 Dec '28
- Distortion induced by the use of a transformer; coupling class B amplifiers into power amplifiers for high modulation. C. L. Farrar. *Arkansas U Eng Exp Sta Bul* 10:1 '32
- Efficient tuned radiofrequency transformer. F. H. Drake and G. H. Browning. *Proc Inst Radio Eng* 13:767 Dec '25
- Engineering acoustics; transformer coupling. *diag Electrician* 107:97 July 17 '31
- Ferrocarril and its applications. J. V. Fill. *il Electronics* 7:358 Nov '34
- Hibernik and other magnetic alloys; great improvements due to heat treatments. T. D. Yensen. *Metal Prog* 21:28 June '32
- Iron-core coils for use at r.f. or i.f. W. J. Polydoroff. *Electronics* 7:13 Jan '34
- Iron-core intermediate-frequency transformers. Alfred Crossley. *il Electronics* 6:298 Nov '33
- Loop permeability in iron, and the optimum air gap in an iron choke with d.c. excitation. A. A. Symonds. *il diags Exp Wireless* 5:485 Sept '28
- Low-frequency amplification with transformers. P. R. Dijksterhuis and Y. B. F. J. Groeneveld. *bibliog diags Exp Wireless* 6:374 July '29
- Low-frequency inter-valve transformers. J. Stevens. *Elec Rev (Lond)* 97:4 July 3 '25
- Mechanically resonant transformer. R. Gunn. *il diags Proc Inst Radio Eng* 20:516 Mar '32; abstract. *Elec Rev (Lond)* 110:518 Apr 8 '32
- Microphone amplifiers and transformers. H. L. Kirke. *il diags Exp Wireless* 5:361, 443 July-Aug '28
- Note on radio-frequency transformer theory. H. Diamond and E. Z. Stowell. *Proc Inst Radio Eng* 16:1194 Sept '28
- Plate modulation transformer for broadcasting stations. L. E. Barton. *il diags Arkansas U Eng* 19:1233 July '31
- Polyphase rectification special connections. R. W. Armstrong. *Proc Inst Radio Eng* 19:78 Jan '31. Corrections (April 1931, p682)
- Power transformers for automobile radio vibrators. V. C. MacNabb. *il Electronics* 7:149 May '34

- Principles of transformer design. R. D. Ross. diags Radio N 10:1114 June '29
- Radio-frequency transformer coupled circuit theory. J. R. Nelson. Proc Inst Radio Eng 19:1233 July '31
- Radio frequency transformers as applied to screen-grid valves. S. Butterworth. Exp Wireless 6:293 June '29
- Radio-frequency transformers; their application to screened valves. N. W. McLachlan diags Exp Wireless 4:597 Oct '27
- Resistance capacity coupled transformer. F. Aughtie and W. F. Cope. diags Exp Wireless 8:177 Apr '31
- Testing of audio frequency transformer-coupled amplifiers. H. Diamond and J. S. Webb. Proc Inst Radio Eng 15:767 Sept '27
- Testing power transformers. H. M. Isaacson. il diags Radio N 12:989 May '31
- Theory and operation of tuned radio-frequency coupling systems. Harold A. Wheeler and W. A. MacDonald. Proc Inst Radio Eng 19:738 May '31; Discussion, L. A. Hazeltine p804.
- Transformers for the measurement of large currents at radio frequencies. I. G. Maloff. il Gen Elec Rev 29:555 Aug '26
- Transformer test set; determination of phase shift and amplification. il diags Exp Wireless 3:172 Mar '26
- Transformers. W. J. Leidy. Electronics 6:212 Aug '33
- Untuned radio-frequency amplifier. F. W. Schor. diags Proc Inst Radio Eng 20:87 Jan '32
- See also
- Inductors
- TRANSMISSION**
- Accurate radio frequency transmissions on 5,000 kc. Jour Fr Inst 211:511 Apr '31
- Amplitude, phase, and frequency modulation. H. Roder. Proc Inst Radio Eng 19:2145 (bibliog p2175) Dec '31; Discussion. 20:884 May '32
- Analysis of high modulation transmission. G. F. Lampkin. il Electronics 1:326 Oct '30
- Application of radio transmission phenomena to the problems of atmospheric electricity. J. H. Dellinger. Nat Research Council Bul v 10, pt 3:61 July '25
- Asymmetric telegraphic spectra. C. R. Burch. Proc Inst Radio Eng 19:2191 Dec '31
- Attenuation of overland radio transmission in the frequency range 1.5 to 3.5 megacycles per second. C. N. Anderson. Proc Inst Radio Eng 21:1447 Oct '33
- Attenuation of wireless waves over towns. R. H. Barfield and G. H. Munro. diags maps Jour Inst Elec Eng 67:253 Feb '29
- Better radio transmission by zero carrier waves. G. H. Dacy. il diag Radio N 6:1160 Jan '25
- Binaural broadcasting. F. M. Doolittle. il Elec W 85:867 Apr 25 '25
- Correlation of long-wave radio field intensity with the passage of storms. I. J. W. Shiel. Proc Inst Radio Eng 19:1675 Sept '31
- Cyclones, anticyclones and the Kennelly-Heaviside layer. R. C. Colwell. diags Proc Inst Radio Eng 21:721 May '33
- Determination of the direction of arrival of short radio waves. H. T. Friis, C. B. Feldman and W. M. Sharpless. il diags Proc Inst Radio Eng 22:47 Jan '34
- Direct-ray broadcast transmission. T. L. Eckersley. Proc Inst Radio Eng 20:1555 Oct '32
- Diurnal and seasonal performance of high-frequency radio transmission over various long distance circuits. M. L. Prescott. charts Proc Inst Radio Eng 18:1797 Nov '30
- Effect of meteors on radio transmission through the Kennelly-Heaviside layer. A. M. Skellett. Phys Rev 37:1668 June 15 '31
- Effect of rain and fog on the propagation of very short radio waves. J. A. Stratton. Proc Inst Radio Eng 18:1064 June '30
- Effect of shore station location upon signals. R. A. Heising. diags map Proc Inst Radio Eng 20:77 Jan '32
- Effects of sun spots and terrestrial magnetism on long-distance reception of low-frequency waves. E. Yokoyama and T. Nakai. Proc Inst Radio Eng 19:882 May '31
- Effect of weather conditions on long-distance reception. S. K. Lewer. Exp Wireless 5:152 Mar '28
- Elimination of phase shifts between the currents in two antennas. H. Roder. diags Proc Inst Radio Eng 22:374 Mar '34
- Existence of more than one ionized layer in the upper atmosphere. G. Builder. bibliog il Wireless Eng 9:667 Dec '32
- Experimental transmissions for observing long delayed echoes. Proc Inst Radio Eng 22:939 Aug '34
- Facts and fallacies of radio wave transmission. J. H. Dellinger. Radio N 7:1139 Feb '26
- Field in the immediate neighborhood of a transmitting aerial. Wireless Eng 9:119 Mar '32
- Field-strength measurement. A. L. Green. diags Exp Wireless 8:61 Feb '31
- Fifteen-month period in solar activity, terrestrial magnetism, and radio reception. G. W. Pickard. Proc Inst Radio Eng Proc 19:353 Mar '31
- French system of directional aerials for transmission on short waves. H. Chireix. il diags Exp Wireless 6:235 May '29
- General theory on the propagation of radio waves in the ionized layer of the upper atmosphere. S. Namba. bibliog Proc Inst Radio Eng 21:238 Feb '33
- High-frequency transmission during the summer of 1930. G. W. Kenrick, A. H. Taylor and L. C. Young. il Proc Inst Radio Eng 19:252 Feb '31
- High quality radio broadcast transmission and reception. S. Ballantine. il diags Proc Inst Radio Eng 22:564 May '34
- Investigations into the mechanism of the transmission of radio signals through space. R. Bown, D. K. Martin and R. K. Potter. il diags Electrician 96:168 Feb 12 '26
- Investigations of Kennelly-Heaviside layer heights for frequencies between 1,600 and 8,650 kilocycles per second. T. R. Gilliland, G. W. Kenrick and K. A. Norton, pls U S Bur Stand Jour Research 7:1083 Dec '31; Same. Proc Inst Radio Eng 20:286 Feb '32

**TRANSMISSION—Continued**

- Investigation of short waves. T. L. Eckersley. diags Jour Inst Elec Eng 67:992; Discussion. 1029 Aug '29
- Investigation of the attenuation of electromagnetic waves and the distances reached by radio stations in the wave band from 200 to 2000 meters. H. Fassbender, F. Eisner and G. Kurlbaum. bibliog Proc Inst Radio Eng 19:1446 Aug '31
- Influence of sun spots on radio reception. H. T. Stetson. il diags Jour Fr Inst 210:403 Oct '30
- Interesting sideband problem. Exp Wireless 7:651 Dec '30
- Ionizing effect of meteors in relation to radio propagation. A. M. Skellett. Proc Inst Radio Eng 20:1933 Dec '32
- Long-distance transmission of static impulses. S. W. Dean. il Proc Inst Radio Eng 19:1660 Sept '31
- Low-frequency radio receiving measurements at the Bureau of standards in 1931 and 1932. E. B. Judson. Proc Inst Radio Eng 21:1354 Sept '33
- Low-frequency radio transmission. P. A. de Mars G. W. Kenrick and G. W. Pickard. il diag Proc Inst Radio Eng 18:1488 Sept '30
- Magnetic storms and wireless transmission. E. V. Appleton. Electrician 98:256 Mar 11 '27
- Magneto-ionic theory. J. A. Ratcliffe. Wireless Eng 10:354 July '33
- Method for calculating transmission properties of electrical networks consisting of a number of sections. A. Alford. Proc Inst Radio Eng 21:1210 Aug '33
- New field for experimentation; tabulation of received carrier-wave intensity. J. F. Rider. il diags Radio N 8:1220 Apr '27
- Optics of radio-transmission. E. Merritt. Jour Opt Soc Am 21:90 Feb '31; Same. Proc Inst Radio Eng 20:29 Jan '32
- Phase shift in radio transmitters. W. A. Fitch. bibliog il diags Proc Inst Radio Eng 20:863 May '32
- Polarization of sky waves in the southern hemisphere. A. L. Green. diags Proc Inst Radio Eng 22:324 Mar '34
- Possibilities of directional radio transmission. J. H. Dellinger. Jour Fr Inst 204:239 Aug '27
- Radio transmission over light beam at Schenectady. Electrician 109:296 Sept 2 '32
- Radio transmissions of standard frequency. Proc Inst Radio Eng 20:1684 Nov '32
- Radio transmission studies of the upper atmosphere. J. P. Schafer and W. M. Goodall. il Proc Inst Radio Eng 19:1434 Aug '31
- Radio transmission system for television. E. L. Nelson. il diags Bell System Tech Jour 6:633 Oct '27
- Radiation and electrical power transmission. W. E. Sumpner. diags Jour Inst Elec Eng 75:512 Oct '34
- Recent advances in wireless propagation both in theory and practice. A. S. Eve. Jour Fr Inst 200:327 Sept '25
- Short-distance observations on long-wave phenomena. R. Naismuth. Jour Inst Elec Eng 69:875 July '31
- Solar and magnetic activity and radio transmission. L. W. Austin, E. B. Judson and I. J. Wymore-Shiel. Proc Inst Radio Eng 18:1997 Dec '30
- Some earth potential measurements being made in connection with the International polar year. G. C. Southworth. Map Proc Inst Radio Eng 21:1740 Dec '33
- Some problems in short-wave telephone transmission. J. C. Schelleng. il diags Proc Inst Radio Eng 18:913 June '30
- Some results of a study of ultra short wave transmission phenomena. C. R. Englund, A. B. Crawford and W. W. Mumford. Bell Sys Tech Jour 12:197 Apr '33
- Statistical study of conditions affecting the distance range of radio telephone broadcasting stations. C. M. Jansky, jr. U S Bur Stand Tech Pa 297:641 '25
- Studies of the ionosphere and their application to radio transmission. S. S. Kirby, L. V. Berkner and D. M. Stuart. bibliog V. S. Bur Stand Jour Research 12:15 Jan '34. Same Proc Inst Radio Eng 22:481 Apr '34
- Symposium on wire transmission of symphonic music and its reproduction in auditory perspective. Harvey Fletcher and others. Bell Sys Tech Jour 13:239 Jan '34
- Systems for wideband transmission over coaxial lines. L. Espenschied and M. E. Strieby. Bell Sys Tech Jour 13:654 Oct '34
- Time factor in telephone transmission. O. B. Blackwell. Bell Sys Tech Jour 11:53 Jan '32
- Transmission and direction of radio waves. E. F. Martin. diags Jour W Soc Eng 36:266 Apr '30
- Transmission and reception of photoradiograms. Richard H. Ranger. Proc Inst Radio Eng 14:161 Apr '26
- Transmission characteristics of a short-wave telephone circuit. R. K. Potter. il diags Proc Inst Radio Eng 18:581 Apr '30
- Transmission lines for short wave radio systems. E. J. Sterba and C. B. Feldman. Bell Sys Tech Jour 11:411 July '32
- Wide-band open-wire program system. H. S. Hamilton. Bell Sys Tech Jour 13:351 Jan '34
- Wireless transmission. C. E. Snell. diags Elec Rev (Lond) 99:138, 207 July 23, Aug 6 '26

*See also*

Communication  
Propagation of Waves

Calculations, Tables, etc.

- Calculation of radiation resistance of antennas and antenna combinations. R. Bechmann. Proc Inst Radio Eng 19:1471 Aug '31
- Calculation of output and distortion in symmetrical output systems. J. R. Nelson. Proc Inst Radio Eng 20:1763 Nov '32
- Calculation of the service area of broadcast stations. P. P. Eckersley. il Proc Inst Radio Eng 18:1160 Jul '30
- Choice of power for a radio station. N. N. Tsiklinsky. Proc Inst Radio Eng 14:381 June '26
- Design of constant resistance attenuators. T. S. Rangachari. diags Wireless Eng 11:596 Nov '34
- Effective height of closed aerials. V. I. Bashenoff and N. A. Mjasoedoff. diags Proc Inst Radio Eng 19:984 June '31

- Fourier analysis of radio-frequency power amplifier wave forms. L. B. Hallman, jr. Proc Inst Radio Eng 20:1640 Oct '32
- Gain control and the decibel. H. Stanesby. diags Wireless Eng 9:18 Jan '32
- Graphs to Prof. Sommerfeld's attenuation formula for radio waves. B. Rolf. Proc Inst Radio Eng 18:391 Mar '30; Discussion. W. H. Wise. 18:1971 Nov '30
- Investigation into the factors controlling the economic design of beam arrays. T. Walmsley. bibliog diags Jour Inst Elec Eng 74:24. Discussion. p 574 June '34
- Interpolation methods used with harmonic frequency standards. J. K. Clapp. Proc Inst Radio Eng 18:1575 Sept '30
- Practical application of the transmission unit. C. W. Smith. Bell Sys Tech Jour 3:409 July '24
- Table of frequency and oscillation constant (IC). Radio N 12:633 Jan '31
- Tables of North Atlantic radio transmission conditions for long-wave daylight signals for the years 1922-1930. L. W. Austin. Proc Inst Radio Eng 20:689 Apr '32
- Transmission curves of high-frequency networks. S. J. Model. diags Proc Inst Radio Eng 21:114 Jan '33; Correction. 21:1238 Sept '33
- TRANSMISSION, Carrier-Current**
- Carrier in cable. A. B. Clark and B. W. Kendall. Bell Sys Tech Jour 12:251 July '33
- Carrier-current communication on submarine cables. H. W. Hitchcock. Bell Sys Tech Jour 5:636 Oct '26
- Carrier systems for wideband transmission over coaxial lines. L. Espenscheid and M. E. Strieby. Bell Sys Tech Jour 13:654 Oct '34
- Carrier systems on long distance telephone lines. H. A. Affel, C. S. Demarest and C. W. Green. Bell Sys Tech Jour 7:564 July '28
- New Key West-Havana carrier telephone cable. H. A. Affel, W. S. Gorton, and R. W. Chesnut. Bell Sys Tech Jour 11:197 Apr '32
- Precision methods used in constructing electric wave filters for carrier systems. G. R. Harris. Bell Sys Tech Jour 11:264 Apr '32
- Recent advances in marine radio communication. T. M. Stevens. Proc Inst Radio Eng 14:197 Apr '26
- TRANSMISSION, Short-Wave**
- Five-meter transmission. R. E. Kolo. il diags Radio N 7:807 Dec '25
- Measurement of the angle of incidence at the ground of downcoming shortwaves from the ionosphere. A. F. Wilkins. bibliog diags Jour Inst Elec Eng 74:582 June '34; Discussion. 75:353 Sept '34
- Multiple signals in short-wave transmission. T. L. Eckersley. Proc Inst Radio Eng 18:105 Jan '30
- Observations of Kennelly-Heaviside layer heights during the Leonid Meteor shower of November, 1931. J. P. Schafer and W. M. Goodall. Proc Inst Radio Eng 20:1941 Dec '32
- Observations of the effective height of the Kennelly-Heaviside layer and field intensity during the solar eclipse of August 31, 1932. G. W. Kenrick and G. W. Pickard. il Proc Inst Radio Eng 21:546 Apr '33
- Observations in transmission during the solar eclipse of August 31, 1932. J. R. Meartin and S. W. McCuskey. il diags map Proc Inst Radio Eng 21:567 Apr '33
- Optical behavior of the ground for short radio waves. C. B. Feldman. il Proc Inst Radio Eng 21:764 (bibliog p800) June '33
- Polarization of high-frequency waves and their direction finding. S. Namba, E. Iso and S. Ueno. il diags Proc Inst Radio Eng 19:2000 Nov '31
- Propagation of waves below ten meters in length. B. Trevor and P. S. Carter. Proc Inst Radio Eng 21:387 Mar '33
- Propagation of waves of 150 to 2000 kilocycles per second (2000 to 150 meters) at distances between 50 and 2000 kilometers. B. van der Pol and others. Proc Inst Radio Eng 21:996 (bibliog p1001-2) July '33
- Propagation of short radio waves over the North Atlantic. C. R. Burrows. bibliog il Proc Inst Radio Eng 19:1634 Sept '31
- Refraction of short radio waves in the upper atmosphere. W. G. Baker and C. W. Rice. Jour Amer Inst Elec Eng 45:535; Discussion. 571 June '26
- Relation connecting skip distance, wave-length, and the constants of the ionized layers. N. H. Edes. Proc Inst Radio Eng 19:1663 Sept '31
- Report on experiments with electric waves of about 3 meters; their propagation and use. A. Esau and W. M. Hahnemann. il Proc Inst Radio Eng 18:471 Mar '30
- Short-wave transmission to South America. C. R. Burows and E. J. Howard. il Proc Inst Radio Eng 21:102 Jan '33; Same. Elec Eng 52:529 Aug '33
- Skip distance effects on superfrequencies. A. H. Taylor. Proc Inst Radio Eng 19:103 Jan '31
- Some characteristics of ultra-high-frequency transmission. H. Muyskens and J. D. Kraus. il map Proc Inst Radio Eng 21:1302 Sept '33
- Some observations on skip distance and ultra-high frequencies. T. A. Marshall. Radio N 12:406 Nov '30
- Some problems in short-wave telephone transmission. J. C. Schelling. Proc Inst Radio Eng 18:913 June '30
- Some studies in radio broadcast transmission. Ralph Bown, De Loss K. Martin and Ralph K. Potter. Bell Sys Tech Jour 5:143 Jan '26
- Study of the propagation of wavelengths between three and eight meters. L. F. Jones. il diags Proc Inst Radio Eng 21:349 Mar '33
- Tests of radio propagation on short wave-lengths. M. L. Prescott. il Gen Elec Rev 30:113 Feb '27
- Transmission characteristics of a shortwave telephone circuit. R. K. Potter. il diags Proc Inst Radio Eng 18:581 Apr '30
- Transmission curves of high-frequency networks. S. J. Model. diags Proc Inst Radio Eng 21:114 Jan '33; Correction. 21:1238 Sept '33
- Transmitting on a wavelength of three-quarters of a meter. H. E. Hollmann. il diags Radio N 9:1143 Apr '28

**TRANSMISSION, Short-Wave—Continued**

Transoceanic telephone service—short-wave transmission. R. Bown. il diag map Bell System Tech Jour 9:258 Apr '30

Ultra-high-frequency experiments. J. L. Reinartz. il diags Radio N 9:360 Oct '27

Ultra-short-wave propagation. J. C. Schelleng. C. R. Burrows and E. B. Ferrell. bibliog il map Proc Inst Radio Eng 21:427 Mar '33

*See also*

Communication Propagation of Waves  
Field Intensity

**TRANSMISSION, Suppressed-Carrier**

Application of printing telegraph to long-wave radio circuits. Austin Bailey and T. A. McCann. Proc Inst Radio Eng 19:2177 Dec '31

Asymmetric telegraphic spectra. C. R. Burch. Proc Inst Radio Eng 19:2191 Dec '31

Power amplifiers in trans-Atlantic radio telephony. A. A. Oswald and J. C. Schleg. Proc Inst Radio Eng 13:313 June '25

Production of single side-band for trans-Atlantic radio telephony. R. A. Heising. Proc Inst Radio Eng 13:291 June '25

**TRANSMISSION Lines**

Application of printing telegraph to long-wave radio circuits. Austin Bailey and T. A. McCann. Proc Inst Radio Eng 19:2177 Dec '31

Chart atlas of complex hyperbolic functions. A. E. Kennelly. Howard Univ Press, Cambridge, Mass. 1924

Communication with quasi optical waves. E. Karplus. Proc Inst Radio Eng 19:1715 Oct '31

Conduction of high-frequency oscillatory energy. H. O. Roosenstein. Proc Inst Radio Eng 19:1849 Oct '31

Development of directive transmitting antennas by R.C.A. Communications, Inc. P. S. Carter, C. W. Hansel and N. E. Lindenblad. Proc Inst Radio Eng 19:1773 Oct '31

Diversity receiving system of R.C.A. for radiotelegraphy. H. H. Beverage and H. O. Peterson. Proc Inst Radio Eng 19:531 Apr '31

Electromagnetic theory of coaxial transmission lines and cylindrical shields. S. A. Schelkunoff. Bell Sys Tech Jour 13:352 Oct '34

Formation of standing waves on lecher wires. Aijaz Mohammed and S. R. Kantebet. Proc Inst Radio Eng 19:1983 Nov '31

Graphical methods for problems involving radio-frequency transmission lines. Hans Roder. Proc Inst Radio Eng 21:290

Linearly tapered loaded transmission lines. John W. Arnold and Roland C. Starr. Proc Inst Radio Eng 20:1811 Nov '32

Measurement of resistances and impedances at high frequencies. J. W. Labus. Proc Inst Radio Eng 19:452 Mar '31

Monitoring the operation of short-wave transmitters. Hans Miigel. Proc Inst Radio Eng 19:214 Feb '31

Output networks for radio-frequency power amplifiers. W. L. Everitt. Proc Inst Radio Eng 19:725 May '31

Radio broadcasting transmitters and related transmission phenomena. Edward L. Nelson. Proc Inst Radio Eng 17:1949 Nov '29

Radiation resistance of concentric conductor transmission lines. Robert Whitmer. Proc Inst Radio Eng 21:1343 Sept '33

Resonant lines in radio circuits. F. E. Terman. Elec Eng 53:1046 July '34

Sinusoidal currents in linearly tapered loaded transmission lines. John W. Arnold and Paul F. Bechberger. Proc Inst Radio Eng 19:304 Feb '31

Some observations on the behaviour of earth currents and their correlation with magnetic disturbances and radio transmission. Isabel S. Bemis. Proc Inst Radio Eng 19:1931 Nov '31

Speech input equipment. D. G. Little. Proc Inst Radio Eng 17:1986 Nov '29

Systems for wideband transmission over coaxial lines. L. Espenscheid and M. E. Strieby. Bell Sys Tech Jour 13:654 Oct '34

Telephone communication over power lines by high frequency currents. C. A. Boddie. Proc Inst Radio Eng 15:559 July '27

Theoretical and practical aspects of directional transmitting antennas. E. J. Sterba. Proc Inst Radio Eng 19:1184 July '31

Transmission and reception of ultra-short waves that are modulated by several modulated high frequencies. Manfred von Ardenne. Proc Inst Radio Eng 20:933 June '32

Transmission lines. H. A. Affel, R. W. Chesnut, and R. H. Mills. Bell Sys Tech Jour 13:285 Aug '34

Transmission lines as frequency modulators. Austin V. Eastman and Earl D. Scott. Proc Inst Radio Eng 22:878 July '34

Transmission lines for short wave radio systems. E. J. Sterb and C. B. Feldman. Proc Inst Radio Eng 20:1163 July '32

Wave resonance tuning and application to radio transmission. William R. Blair and Louis Cohen. Proc Inst Radio Eng 17:1893 Oct '29

*See also*

Lecher Wires

**TRANSMITTERS**

Absolute calibration of condenser transmitters. L. J. Sivian. Bell Sys Tech Jour 10:96 Jan '31

Application of quartz plates to radio transmitters. O. M. Hovgaard. il diags Proc Inst Radio Eng 20:767 May '32

Automatic radio transmitter designed for emergency use. C. P. Mason. il Radio N 10:1075 June '29

B.B.C.'s latest station; a description of the new Falkirk transmitter. il Elec Rev (Lond) 110:778 May 27 '32

Circuit, constructional and operating details of a low-power transmitter. il diags Radio N 12:156 Aug '30

Crystal control of transmitters; Telefunken high-power broadcasting arrangements. R. Bechmann. il diags Wireless Eng 11:249 May '34

Der parallelkondensator in frequenzvervielfachungs-schaltungen. G. Hilpert and H. Seydel. il diags Elektrotech Zeit 50:149 Jan 31 '29

Description of the quartz control of a transmitter at 1785 kilocycles per second. L. Essen. diags Jour Inst Elec Eng 74:595 June '34

- Development of standard-frequency transmitting sets. L. Mickey and A. D. Martin. diags pls U S Bur Stand Jour Research 12:1 Jan '34
- Die anwendung kurzer elektromagnetischer wellen in der funktechnik. C. W. Kollatz and F. Noack. il diags Zeit Ver Deutsch Ing 72:885, 913 June 23-30 '28
- Der grossrundfunksender Berlin. W. Brecht. il diags Zeit Ver Deutsch Ing 78:190 Feb 10 '34
- Deutsche grossender. W. Meyer. il diags Zeit Ver Deutsch Ing 78:975 Aug 18 '34
- Development of a visual type of radio range transmitter having a universal application to the airways. W. E. Jackson and S. L. Bailey. bibliog il diags Proc Inst Radio Eng 18:2059 Dec '30
- Determination of power in the antenna at high frequencies. A. H. Taylor and H. F. Hastings. Proc Inst Radio Eng 19:1370 Aug '31
- Direct-current generators of very high voltage for service in radio transmission. S. R. Bergman. il diags Gen Elec Rev 31:596 Nov '28
- Design and distribution of wireless broadcasting stations for a national service. P. P. Eckersley Jour Inst Elec Eng 66:501 May '28; Abstract. Exp Wireless 5:189 Apr '28; Discussion. Jour Inst Elec Eng 66:520 May '28; Exp Wireless 5:196 Apr '28
- Design of transmitting aerials for broadcasting stations. P. P. Eckersley. T. L. Eckersley and H. L. Kirke. diags Jour Inst Elec Eng 67:507 Apr '29; Abstract. Electrician 102:757 June 21 '29; Discussion. Jour Inst Elec Eng 67:520 Apr '29
- Distortion induced by the use of a transformer; coupling class B amplifiers into power amplifiers for high modulation. C. L. Farrar. Arkansas U Eng Exp Sta Bul 10:1 '32
- Droitwich transmitter. il Electrician 113:323 Sept 14 '34; Elec Rev (Lond) 115:333, Sept 14 '34; Engineer 158:257 Sept 14 '34
- Elimination of harmonics in vacuum tube transmitters. Y. Kusunose. diags Proc Inst Radio Eng 20:340 Feb '32
- Flash-arc in high-power valves; the Rocky Point effect. B. S. Gossling. diags Jour Inst Elec Eng 71:460 Sept '32; Abstracts. Electrician 108:536 Apr 15 '32; Elec Rev (Lond) 110:526 Apr 8 '32; Wireless Eng 9:391 July '32; Discussion. Jour Inst Elec Eng 71:483 Sept '32; Wireless Eng 9:392 July '32
- Frequency stabilization of radio transmitters. Y. Kusunose and S. Ishikawa. diags Proc Inst Radio Eng 20:310 Feb '32
- Giant of broadcasting; powerful transmitter of the General Electric at South Schenectady. O. E. Dunlap, jr. il Sci Amer 137:500 Dec '27
- High power pentode as an electron coupled transmitter. J. C. W. Drabble and R. A. Yeo. il diags Wireless Eng 10:648 Dec '33; Discussion. A. D. Hodgson. 11:73 Feb '34
- Measurement of harmonic power output of a radio transmitter. P. M. Honnell and E. B. Ferrell. il diags Proc Inst Radio Eng 22:1181 Oct '34
- Measurement of power and efficiency of radio transmitting apparatus. G. Pession and T. Gorio. diags Proc Inst Radio Eng 19:377 Mar '31
- Messungen der elektromagnetischen feldstarke zur bestimmung der reichweite eines rundfunksenders; abstract. S. Lemoine. maps Elektrotech Zeit 48:1778 Dec 1 '27
- Navy's big new transmitter. S. R. Winters. il Radio N 8:1088 Mar '27
- Phase shift in radio transmitters. W. A. Fitch. bibliog il diags Proc Inst Radio Eng 20:863 May '32
- Piping system for power tube cooling water at radio station KDKA. E. M. Sollie. il plan Heating-Piping 3:839 Oct '31
- Progress in radio transmitters. D. G. Little. il diags Elec Jour 28:689 Dec '31
- Radio broadcasting transmitters and related transmission phenomena. E. L. Nelson. bibliog il diag Bell System Tech Jour 9:121 Jan '30
- Radio telegraph transmitter. il Marine Eng 30:639 Nov '25
- Radiotelegraphy and radiotelephony on half-meters waves. Shintaro Uda. Proc Inst Radio Eng 18:1047 June '30
- Radio lighthouses for airports; 4-meter beam transmitter, aimed vertically. J. R. Irwin. il Radio N 11:1084 June '30
- Rotating-loop radio transmitters, and their application to direction-finding and navigation. T. H. Gill and N. F. S. Hecht. diags Jour Inst Elec Eng 66:241 Mar '28; Abstracts. Exp Wireless 5:85 Feb '28; Electrician 100:29 Jan 13 '28; Discussion. Jour Inst Elec Eng 66:274 Mar '28
- Rundfunk-gleichwellensender. P. R. Arendt. bibliog il diags map Zeit Ver Deutsch Ing 78:1177 Oct 13 '34
- Signal corps R.O.T.C. high frequency transmitter station 8-BWU. H. J. Schroeder. il diag Sibley Jour 42:207 June '28
- Some developments in broadcast transmitters. I. J. Kaar and C. J. Burnside. il diags Proc Inst Radio Eng 18:1623 Oct '30
- Some developments in the electrical industry during 1928. J. Liston. il Gen Elec Rev 32:39 Jan '29
- Some experiments on the application of the rotating-beacon transmitter to marine navigation. R. L. Smith-Rose and S. R. Chapman. maps Jour Inst Elec Eng 66:256 Mar '28; Abstracts. Exp Wireless 5:88 Feb '28; Electrician 100:29 Jan 13 '28; Elec Rev (Lond) 102:123 Jan 20 '28; Discussion. Jour Inst Elec Eng 66:274 Mar '28
- Suppression of radio-frequency harmonics in transmitters. J. W. Labus and H. Roder. diags Proc Inst Radio Eng 19:949 June '31
- Theoretical discussion of various possible aerial arrangements for rotating-beacon transmitters. R. L. Smith-Rose. Jour Inst Elec Eng 66:270 Mar '28; Abstract. Exp Wireless 5:90 Feb '28; Discussion. Jour Inst Elec Eng 66:274 Mar '28
- Twenty-watt aircraft transmitter. A. P. Bock. il diag Proc Inst Radio Eng 19:1569 Sept '31
- Wireless broadcasting transmitting station for dual programme service. P. P. Eckersley and N. Ashbridge. diags plans Jour Inst Elec Eng 68:1149; Discussion. 1170 Sept '30
- Western Electric broadcasting equipment has high service characteristics. il Elec W 90:1156 Dec 3 '27
- WLW 500-kilowatt broadcast transmitter. il diag Proc Inst Radio Eng 22:1151 Oct '34
- 20-40 kilowatt high-frequency transmitter. I. F. Byrnes and J. B. Coleman. il diags Proc Inst Radio Eng 18:422 Mar '30

**TRANSMITTERS—Continued****Power Supplies**

- Broadcasting with oil engine power; station KSTP. P. J. Stieger. *il Power* 75:159 Feb 2 '32
- Choice of power for a radio station. N. N. Tsiklinsky. *Proc Inst Radio Eng* 14:381 June '26
- Droitwich transmitter; Diesel generator sets. *il Electrician* 113:323 Sept 14 '34; *Engineer* 158:257 Sept 14 '34; *Elec Rev (Lond)* 115:333 Sept 14 '34
- Five meter power supply (including modulator). G. W. Ray. *il diags Radio N* 15:733 June '34
- Hot-cathode mercury-vapor rectifier tubes. H. C. Steiner and H. T. Maser. *bibliog il diags Proc Inst Radio Eng* 18:67; *Discussion*. 84 Jan '30
- New phase of high power on radio; WGY is now on 200 kilowatts. *il Pub Serv Management* 48:123 Apr '30
- Operation of tube oscillators on a common load. S. I. Model. *diags Proc Inst Radio Eng* 21:1722 Dec '33
- Plate-voltage supply for naval vacuum-tube transmitters. E. C. Raguette. *il Proc Inst Radio Eng* 18:49; *Discussion*. 84 Jan '30
- Power equipment for aircraft radio transmitters. J. D. Miner. *Proc Inst Radio Eng* 19:59 Jan '31
- Power equipment at KDKA's new station. R. L. Davis. *il diag Elec Eng* 50:865 Nov '31
- Supplying service where continuity is paramount; power supply for Crosley radio corporation station, Cincinnati. F. E. Sanford. *il diag Elec W* 102:722 Dec 2 '33

**TRANSMITTERS, Portable**

- Army's new portable radio combination. C. W. Clarke. *il diag Radio N* 13:377 Nov '31
- Portable short-wave transmitter and multi-wave receiver. W. H. Wenstrom. *il diags Radio N* 11:33, 128 July-Aug '29
- Portable short wave transmitter. C. J. Burnside. *il Wireless Age* 12:26 June '25
- Radio fights forest fire. G. A. Duthie. *Radio N* 14:137 Sept '32
- Radiophone transmitter and receiver—9 lbs. S. Egert. *il diags Radio N* 12:990 May '31
- Walking transmitters link out-of-the-way broadcasts. E. M. Walker. *il Radio N* 13:749 Mar '32
- 80-meter phone transmitter and receiver for portable use. S. Egert. *il diags Radio N* 11:1106 June '30

**TRANSMITTERS, Short-Wave**

- Compact amateur five-meter transceiver. E. Glaser. *il diag Radio N* 16:217 Oct '34
- Crack 40-80 meter set. E. W. Thatcher. *il diags Radio N* 7:605 Nov '25
- Discovering unexplored ultra frequencies. J. L. Reinartz. *il Radio N* 6:2220 June '25
- Experimenting with five meters. W. A. Bruno. *il diags Radio N* 6:1158, 1422 Jan-Feb '25
- Filtering amateur transmitters to meet U S regulations. Aerovox Res W Mar-Apr '31
- Five-meter transmitter. W. B. Arvin. *il diag Radio N* 6:2074 May '25
- Fundamental circuit details and constructional data for a practical crystal control 56 megacycle

- transmitter. J. Millen. *il diags Radio N* 14:206 Oct '32
- High quality 80-meter phone transmitter for amateur use. J. B. Brennan, jr. *il diags Radio N* 12:314 Oct '30
- How to construct a 56 megacycle magnetron transmitter. J. Millen. *il diags Radio N* 14:142, 206 Sept-Oct '32
- Modern amateur transmitter. Stanley P. McMinn. Aerovox Research W June '34
- Monitoring the operation of short-wave transmitters. H. Mogel. *il diag Proc Inst Radio Eng* 19:214 Feb '31
- New circuit for the production of ultra-short-wave oscillations. H. N. Kozanowski. *il diags Proc Inst Radio Eng* 20:957 June '32
- New methods of frequency control employing long lines. J. W. Conklin, J. L. Finch and C. W. Hansell. *diags Proc Inst Radio Eng* 19:1918 Nov '31
- On short waves; design and operation of a short-wave transmitter. J. Bernsley. *il diag Radio N* 8:1136 Mar '27
- Practical working data on  $\frac{3}{4}$  meter transmission. J. Millen *il diags Radio N* 14:348 Dec '32
- Practical 5 and 10 meter transmitters for short-wave exploration. A. Binneweg, jr. *il diags Radio N* 12:412 Nov '30
- Radiotelegraphy and radiotelephony on half-meter waves. S. Uda. *il diags Proc Inst Radio Eng* 18:1047 June '30
- Radio wave propagation; an ultra short wave demonstration model. E. C. S. Megaw. *il diags Wireless Eng* 11:583 '34
- R. f. amplifiers for amateur transmitters. E. M. Glaser. *il diags Radio N* 14:530; 15:734; 16:83 Mar '33, June, Aug '34
- Rugby radio station; recent developments in radio telephony. *il diags Engineering* 130:541 Oct '31
- Short-wave-oscillator adjustment and operation. A. Binneweg, jr. *il diags Radio N* 8:1368 May '27
- Rugby shortwave transmitter. H. G. Whiting. *il diags Electrician* 105:76, 113 July 18-25 '30
- Shenandoah short wave transmitter. S. R. Winters. *il Radio N* 6:1170 Jan '25
- Short-wave transmitter. A. Binneweg, jr. *il diags Radio N* 11:528 Dec '29
- Short wave transmitters and methods of tuning. J. T. Tykociner and L. P. Garner. *il diags Ill U Eng Exp Sta Bul* 161:5 '27
- Suggestions that improved one 5-watter. K. Rovalde. *diags Radio N* 6:1169 Jan '25
- Ten meters for ten dollars; an ultra short-wave transmitter. D. Bennett. *il diags Radio N* 13:296 Oct '31
- Tiny transceivers in 5-meter tests. S. G. Taylor. *il Radio N* 16:154 Sept '34
- Transmission and reception below ten meters. J. Millen. *il diags Radio N* 13:1009 June '32
- Year's work below forty meters. J. L. Reinartz. *il diags Radio N* 6:1894 Apr '25
- TRANSMITTERS, Radiotelegraph.** See Radiotelegraphy
- TRANSMITTERS, Radiotelephone.** See Radiotelephony
- TRANSMITTERS, Television.** See Television.

## U

## ULTRA-HIGH Frequencies

- Amplification and detection of ultra-short electric waves. Kinjiro Okabe. Proc Inst Radio Eng 18:1028 June '30
- Application of frequencies above 30,000 kilocycles to communication problems. H. H. Beverage, H. O. Peterson and C. W. Hansell. il diag map Proc Inst Radio Eng 19:1313 Aug '31
- Communication with quasi optical waves. E. Karplus. 19:1715 Oct '31
- Determination of electric properties at very high frequencies. J. G. Chaffee. Proc Inst Radio Eng 22:1009 Aug '34
- Detection of microwaves. N. Carrara. diag Proc Inst Radio Eng 20:1615 Oct '32
- Diode for ultra high frequency oscillations. J. S. McPetrie. diags Wireless Eng 11:118 Mar '34
- Ellipse diagram of a Lecher wire system. Ataka Hikosaburo. Proc Inst Radio Eng 21:303 Feb '33
- Experimental study of regenerative ultra-short-wave oscillators. William H. Wenstrom. Proc Inst Radio Eng 20:113 Jan '32
- Experimental transmitting and receiving apparatus for ultra short waves. R. L. Smith-Rose and J. S. McPetrie. diags Exp Wireless 6:532 Oct-Nov '29
- Generation and utilization of ultra-short waves in radio communication. Frederick A. Kolster. Proc Inst Radio Eng 22:1335 Dec '34
- Generation of centimetre waves. F. W. Chapman. bibliog diags Wireless Eng 9:500 Sept '32
- Investigation of the magnetron short-wave oscillator. E. C. S. Megaw. bibliog diag Jour Inst Elec Eng 72:326 Apr '33; Abstract. Elec Rev (Lond) 112:12 Jan 6 '33; Discussion. Jour Inst Elec Eng 72:348 Apr '33
- Magnetostatic oscillators for generation of ultra-short-waves. G. R. Kilgore. Proc Inst Radio Eng 20:1741 Nov '32
- Measurement of the frequency of ultra-radio waves. J. B. Hoag. diags Proc Inst Radio Eng 21:29 Jan '33
- Micro radio waves; recent experimental work. G. Marconi. il diags Electrician 110:3 Jan 6 '33
- New circuit for the production of ultra-short-wave oscillations. H. N. Kozaowski. il diags Proc Inst Radio Eng 20:957 June '32
- Practical working data on  $\frac{1}{2}$  meter transmission. J. Millen. il diags Radio N 14:348 Dec '32
- Propagation of waves below ten meters in length. B. Trevor and P. S. Carter. Proc Inst Radio Eng 21:387 Mar '33
- Radiotelephony with ultra-short waves; abstracts. G. Marconi. Engineering 134:771 Dec 30, '32; Electrician 109:758 Dec 9 '32; Elec Rev (Lond) 111:854 Dec 9 '32
- Resonant impedance and effective series resistance of high-frequency parallel resonant circuits. Hajime Inuma. Proc Inst Radio Eng 19:467 Mar '31
- Some characteristics of ultra-high-frequency transmission. H. Muyskens and J. D. Kraus. il map Proc Inst Radio Eng 21:1302 Sept '33

Some polarization phenomena of very short radio waves. E. A. Paulin. diags Phys Rev 33:432 Mar '29

Some results of a study of ultra-short-wave transmission phenomena. C. R. Englund, A. B. Crawford and W. W. Mumford. il maps Proc Inst Radio Eng 21:464 Mar '33

Sound transmission system for two-way television. D. G. Blattner and L. G. Bastwick 9:748

Study of the propagation of wavelengths between three and eight meters. L. F. Jones. il diags Proc Inst Radio Eng 21:349 Mar '33

Transmission and reception below ten meters. J. Millen. il diags Radio N 13:1009 June '32

Transmission and reception of ultra-short waves that are modulated by several modulated high frequencies. M. von Ardenne. il diags Proc Inst Radio Eng 20:933 June '32

Transmission curves of high-frequency networks. S. J. Model. diags Proc Inst Radio Eng 21:114 Jan '33

Ultra short radio waves. W. H. Moore. bibliog diags Jour Fr Inst 209:473 Apr '30

Ultra-short waves for limited range communication. W. J. Brown. il diags Proc Inst Radio Eng 18:1129 July '30

Ultra-short radio waves; refraction in the lower atmosphere. R. L. Smith-Rose and J. S. Petrie. bibliog Wireless Eng 11:3 Jan '34

Ultra-short wave propagation. J. C. Schelleng. C. R. Burrows and E. B. Ferrell bibliog il map Proc Inst Radio Eng Jour 21:427 Mar '33; Same. Bell System Tech Jour 12:125 Apr '33

Use of short waves in radio communications. E. M. Deloraine. Elec Comm 8:213 Feb '30

Vacuum tube electronics at ultra-high frequencies. F. B. Llewellyn. Proc Inst Radio Eng 21:1532 Nov '33; Same. Bell System Tech Jour 13:59 Jan '34

Vacuum tubes for generating frequencies above one hundred megacycles. C. E. Fay and A. L. Samuel. Proc Inst Radio Eng 23:199 Mar '35

Vacuum tubes of small dimensions for use at extremely high frequencies. B. J. Thompson and G. M. Rose, jr. il diags Proc Inst Radio Eng 21:1707 Dec '33

Wide film sound picture camera. il Electronics 2:459 Jan '31

## See also

Dynatron	Transmission
Magnetron	Transmitters
Propagation of Waves	Vacuum Tubes

## V

## VACUUM Tube Characteristics

Analysis of two triode circuits. John H. Morecroft and Axel G. Jensen. Proc Inst Radio Eng 12:579 Oct '24. Discussion. Lewis M. Hull and J. H. Morecroft

Application of the X-L filament to power tubes. J. C. Warner and O. W. Plke. Proc Inst Radio Eng 13:589 Oct '25

Characteristic surfaces of the triode. J. R. Tolmie. Proc Inst Radio Eng 12:177 Apr '24



**VACUUM-Tube Characteristics—Continued**

- Experimental determination of the fundamental dynamic characteristics of a triode. Eijiro Takagishi. Proc Inst Radio Eng 12:609 Oct '24
- Four-element tube characteristics as affecting efficiency. David C. Prince. Proc Inst Radio Eng 16:805 June '28
- Method for testing and rating electron tube generators. L. M. Hul. Proc Inst Radio Eng 10:373 Oct '22
- Oscillographic study of electron tube characteristics. E. Leon Chaffee. Proc Inst Radio Eng 10:440 Dec '22
- Output characteristics of amplifier tubes. J. C. Warner and A. V. Loughren. Proc Inst Radio Eng 14:735 Dec '26. Discussion. D. F. Whiting and A. V. Loughren Mar '27
- Phase angle of vacuum tube transconductance at very high frequencies. F. B. Llewellyn. Proc Inst Radio Eng 22:947 Aug '34.
- Recent developments in high vacuum receiving tubes—radiotrons, Model UV-199 and Model UV-201-A. J. C. Warner. Proc Inst Radio Eng 11:587 Dec '23
- Some characteristics and applications of four-electrode tubes. J. C. Warner. Proc Inst Radio Eng 16:424 Apr '28
- Use of an oscillograph for recording vacuum-tube characteristics. W. A. Schneider. Proc Inst Radio Eng 16:674 May '28
- Vacuum tubes as power oscillators. D. C. Prince. Part I. Proc Inst Radio Eng 11:275 June '23. Part II (Aug 1923, P. 405). Part III (Oct 1923, p. 527)
- Vacuum tube characteristics in the positive grid region by an oscillographic method. H. V. Kozanowski and I. E. Mourontseff. Proc Inst Radio Eng 21:1082 Aug '33

**VACUUM-Tube Circuit Theory**

- Efficiency of three-electrode tubes used for the production of continuous waves in radio telegraphy, that is, for the conversion of direct current into alternating current. Marius Latour and H. Chireix. Proc Inst Radio Eng 11:551 Oct '23
- Equivalent circuit of a vacuum tube modulator. John R. Carson. Proc Inst Radio Eng 9:241 Jan '21
- Equivalent circuits of an electron triode and the equivalent input and output admittances. E. L. Chaffee. Proc Inst Radio Eng 17:1633 Sept '29
- Extension of the theory of three-electrode vacuum tube circuits. S. A. Levin and L. C. Peterson. diags Bell System Tech Jour 13:523 Oct '34
- Negative circuit constants. Lal C. Verman. Proc Inst Radio Eng. 19:676 Apr '31
- New method for determining the efficiency of vacuum-tube circuits. A. Crossley and R. M. Page. Proc Inst Radio Eng 16:1375 Oct '28
- Note on the mathematical theory of the multi-electrode tube. Peter Caporale. Proc Inst Radio Eng 18:1594 Sept. '30
- On the variation of generated frequency of a triode oscillator due to changes in filament current, grid voltage, plate voltage, or external resistance. Keith B. Eller. Proc Inst Radio Eng 16:1706 Dec '28
- Operation of thermionic vacuum tube circuits. F. B. Llewellyn. Bell Sys Tech Jour 5:433 July '26
- Output networks for radio-frequency power amplifiers. W. L. Everitt. Proc Inst Radio Eng 19:725 May '31
- Polyphase rectification special connections. R. W. Armstrong. Proc Inst Radio Eng 19:78 Jan '31. Corrections (Apr 31, p. 682)
- Regeneration theory and experiment. E. Peterson, J. G. Kreer and L. A. Ware. diags Proc Inst Radio Eng 22:1191 Oct '36; Same. Bell Sys Tech Jour 13:680 Oct '34
- Theory of multielectrode tubes. H. A. Pidgeon. diags Elec Eng 53:1485. Nov '34
- Tuned-grid, tuned-plate, self-oscillating vacuum-tube circuit. J. Warren Wright. Proc Inst Radio Eng 16:1113 Aug '28
- Electron tubes in industry. K. Henney. bibliog 490p \$5 McGraw-Hill '34
- Electron tubes—their industrial application. W. R. King. il diag Amer Inst Chem Eng Trans v 28:1. Discussion. 10 '32
- Electronic voltage control of d-c generators. W. P. Koehel. Electronic 7:86 Mar '34
- Electronic voltage regulators in power plants. Electronic 7:354 Nov '34
- Electronic voltage relay. J. W. Graff. il Electronics 7:80 Mar '34
- Factors affecting adoption of electronic control in industry. C. Stansbury. il diags Elec W. 103:154 Jan 27 '34; Abstract. Mec Eng 56:300 May '34
- Frequency control with thermionic tubes. il Electronics 7:284 Sept '34
- Furnace temperature control: the use of vacuum tubes. il diags Elec Rev (Lond) 115:117 July 27 '34
- Heavy duty industrial amplifier tube. C. B. Upp. il Electronics 5:162 May '32
- High power welding rectifier. D. Silverman and J. H. Cox. il diags Elec Eng 53:1380 Oct '34
- Ignitron; new industrial power tube. D. D. Knowles and E. G. Bangratz. il diags Elec Jour 30:501 Dec '33
- Ignitron type of inverter. C. F. Wagner and L. R. Ludwig. il diags Elec Eng 53:1384 Oct '34
- Improved welding timer expands spot-welding use; ignitrons. Elec W 103:460 Mar 24 '34
- Motor control by electron tubes. F. H. Gulliksen. il Electronics 7:179 June '34
- New timer for resistance welding. R. N. Stoddard. il diags Elec Eng 53:1366 Oct '34
- Potentials from insulators; gradient across grounded unitfil with thermionic valve, provides line-voltage pilot and synchronism check. J. W. Graff and J. T. Johnson, Jr. il diags Elec W 104:830 Nov. 10 '34
- Seam welding controlled by electronic discharge; abstract. diag Mech Eng 56:629 Oct '34
- Two applications of nonlinear circuits. T. M. Austin and F. W. Cooper. diags Elec Eng 53:294 Feb '34
- Type RR-4 photo-troller developed by Westinghouse electric & mfg. Co. il Steel 95:50 July 23 '34
- Westinghouse type HA electronic timer. il Amer Mach 78:330 Apr 25 '34

**VACUUM-Tube Design**

Calculation of characteristics and the design of triodes. Guziro Kusunose. Proc Inst Radio Eng 17:1706 Oct '29

Development of a new power amplifier tube. C. R. Hanna, L. Sutherlin and C. B. Upp. Proc Inst Radio Eng 16:462 Apr '28. Discussion. J. C. Warner and A. V. Loughren p. 474

Recent trends in receiving tube design. J. C. Warner, E. W. Ritter and D. F. Schmit. Proc Inst Radio Eng 20:1247 Aug '32

**VACUUM-Tube Manufacture**

Analysis of vacuum tube production costs. Electronics 2:665 June '31

Comments on the use of "getters." G. D. O'Neill. Electronics 2:510 Feb '31

Costs in radio tube manufacture. T. E. Conway. Electronics 5:222 July '32

Manufacture of mercury vapor rectifier tubes. P. G. Weiller. il Electronics 6:99 Apr '33

Materials entering into tubes. Electronics 1:367 Nov '30

Measurement of vacuum in radio tubes. M. D. Sarbey. Electronics 2:594 Apr '31

Nickel in radio tube manufacture. A. J. Marino. il Electronics 6:4 Jan '33

Processes in vacuum tube manufacture. E. R. Wagner. Electronics 7:213 July '34

Raw materials costs in tube manufacture. Electronics 1:366 Nov '30

Raw materials in vacuum tube manufacture. E. R. Wagner. Electronics. 7:104 Apr '34

Role of barium in vacuum tubes. J. A. Becker. Electronics 1:390 Nov. '30

Role of vacuum tubes in a tube factory. W. P. Koechel. il Electronics 6:121 May '33

Shrinkage control in radio tube manufacture. L. L. Schreiner. il Electronic 4:332 Nov '32

Vacuum tube performance vs. manufacturing tolerances. W. Charton. il Electronics 5:44 Feb '32

Vacuum-tube production test. A. F. Van Dyck and F. H. Engel. Proc Inst Radio Eng 16:1532 Nov '28

**VACUUM-Tube Noise**

Fluctuation noise in radio receivers. Stuart Ballantine. Proc Inst Radio Eng 18:1377 Aug '30

Fluctuation noise in vacuum tubes. G. L. Pearson. Bell Sys Tech Jour 13:642 Oct '34

Limits to amplification. J. B. Johnson and F. B. Llewellyn. Elec Eng 53:1449 Nov '34

Measurement and reduction of microphonic noise in vacuum tubes. D. B. Penick. Bell Sys Tech Jour 13:614 Oct '34

Microphonic improvements in vacuum tubes. Alan C. Rockwood and Warren R. Ferris. Proc Inst Radio Eng 17:1621 Sept '29

Rapid method of estimating the signal-to-noise ratio of a high-gain receiver. F. B. Llewellyn. Proc Inst Radio Eng 19:416 Mar '31

Receiver design for minimum fluctuation noise. Nelson R. Case. Proc Inst Radio Eng 1:963 June '31

Spontaneous background noise in amplifiers due to thermal agitation and shot effects. E. B. Moullin and H. D. M. Ellis. Jour Inst Elec Eng 74:323 Apr '34

Study of noise in vacuum tubes and attached circuits. F. B. Llewellyn. Proc Inst Radio Eng 18:243 Feb '30

**VACUUM-Tube Voltmeters**

An electron tube wattmeter and voltmeter and a phase-shifting bridge. H. M. Turner and F. T. McNamara. Proc Inst Radio Eng 18:1743 Oct '30

Alternating current measuring instruments as discriminators against harmonics. Irving Wolff. Proc Inst Radio Eng 19:647 Apr. '31

Compensated electron-tube voltmeter. H. M. Turner. Proc Inst Radio Eng 16:799 June '28

Dynatron vacuum tube voltmeter. Rinaldo de Cola. il Electronics 2:62 May '31

Importance of laboratory measurements in the design of radio receivers. W. A. MacDonald. Proc Inst Radio Eng 15:99 Feb '27. Discussion. H. D. Oakley, Norman Snyder, J. H. Dellinger and Harold A. Wheeler (Ap '27 p. 329)

Improvement in vacuum tube voltmeters. R. M. Somers. Proc Inst Radio Eng 21:56 Jan '33

Measuring frequency characteristics with the photo-audio generator. Walter Schaffer and Gunther Lubczyanski. Proc Inst Radio Eng 19:1242 July '31

Multi-range vacuum tube voltmeter. L. Tulauskas. Electronics 1:170 July '30

Portable vacuum tube voltmeter for measurement of glass electrode potentials with examples of estimations. F. Edes. diag Science 78:556 Dec 15 '33

Radio field strength measuring system for frequencies up to forty megacycles. H. T. Friis and E. Bruce. Proc Inst Radio Eng 14:507 Aug '26

Radio-frequency potentiometer. William W. MacAipine. Proc Inst Radio Eng 17:1144 July '30

Screen-grid voltmeter and its application as a resonance indicator. Ronold King. Proc Inst Radio Eng 18:1388 Aug '30

Screen-grid voltmeter without external leak. Donald King. Proc Inst Radio Eng 22:77 June '34

Thermionic voltmeter method for the harmonic analysis of electrical waves. Chauncey Guy Suits. Proc Inst Radio Eng 18:178 Jan '30

Use of the electron tube peak voltmeter for the measurement of modulation. C. B. Jolliffe. Proc Inst Radio Eng 17:660 Apr '29

Vacuum-tube voltmeter with logarithmic response. F. V. Hunt. diags Rev Sci Instr 4:672 Dec '33

Vacuum-tube voltmeter design. Harry R. Lubcke. Proc Inst Radio Eng 17:864 May '29

**VACUUM TUBES**

Amplification of weak currents and their application to photo-electric cells. G. Ferrit, R. Jouaust and R. Mesny. Proc Inst Radio Eng 13:461 Aug '25

**VACUUM TUBES—Continued**

- Analysis and reduction of output disturbances resulting from the alternating-current operation of the heaters of indirectly heated cathode triodes. J. O. McNally. Proc Inst Radio Eng 20:1263 Aug '32
- Behavior of alkali vapor detector tubes. Hugh A. Brown and Chas T. Knipp. Proc Inst Radio Eng 15:49 Jan '27
- Bridge method for the measurement of interelectrode admittance in vacuum tubes. E. T. Hoch. Proc Inst Radio Eng 16:487 Apr '28
- Characteristics of 1934 tubes. (chart) Electronics 7:151 May '34
- Circuit for determining heating time of tubes. W. P. Koechel. il Electronics 4:293 Sept '32
- "Cold" filamentless radio tube. C. W. Hough. il Electronics 3:82 Nov '31
- Cold tubes in Germany—Dr. Seibt's patents. Electronics 3:183 Nov '31
- Detector-output tube systems. J. R. Nelson. il Electronics 6:94 Apr '33
- Developments in the electrical industry during 1933; electronic tubes. J. Liston. il Gen Elec Rev 37:36 Jan '34
- Diode for ultra high frequency oscillations. J. S. McPetrie. diags Wireless Eng 11:118 Mar '34
- Direct-capacity bridge for vacuum tube measurements. Lincoln Walsh. Proc Inst Radio Eng 16:482 Apr '28. Discussion, p. 486
- Dynamic measurement of electron tube coefficients. W. N. Tuttle. Proc Inst Radio Eng 21:844 June '33
- Effect of surface charges in vacuum discharge tubes. A. R. Olson and T. F. Young. Phys Rev 25:58 Jan '25
- Electron conduction in thermionic valves. W. E. Bnham. Elec Comm 11:223 Apr '33
- Electron emitting alloys of nickel and barium. Randolph Duffendack and Wolfe. il Electronics 6:244 Sept '33
- Electron oscillations without tuned circuits. W. H. Moore. diag Proc Inst Radio Eng 22:1021 Aug '34
- Evolution of the thermionic tube. il Electronics 7:147 May '34
- Exact compensation for the effect of A and B battery changes when using the vacuum tube as a DC amplifier. R. C. Dearle and L. A. Matheson. diags Rev Sci Instr 1:215 Apr '30
- Gaseous discharge tubes for radio receiver use. J. F. Dreyer, jr. il Electronics 6:40 Feb '33
- Graphical analysis of output tube performance. C. E. Kilgour. Proc Inst Radio Eng 19:42 Jan '31
- Graphite anodes in transmitting tubes. D. E. Piedogle. il Electronics 6:338 Dec '33
- Heavy duty industrial amplifier tube. C. B. Upp. il Electronics 4:162 May '32
- High efficiency vacuum tube oscillating circuit. D. C. Prince and F. B. Vogdes. Proc Inst Radio Eng 12:623 Oct '24
- Inverted vacuum tube, a voltage-reducing power amplifier. Frederick Emmons Terman. Proc Inst Radio Eng 16:447 Apr '28
- Measurement of direct interelectrode capacitance of vacuum tubes. A. V. Loughren and H. W. Parker. Proc Inst Radio Eng 17:957 June '29
- Measurement of vacuum-tube capacities by a transformer balance. Harold A. Wheeler. Proc Inst Radio Eng 16:476 Apr '28
- Method for realizing the full amplification factor of high mu tubes. O. H. A. Schmitt. diag Rev Sci Instr 4:661 Dec '33
- New tubes—detectors, rectifiers, amplifiers. il Electronics. 4:118, 252 Apr, Aug '32
- New tubes and new tube materials. Electronics 6:93 Apr '33
- Operation of tube oscillators on a common load. S. I. Model. diags Proc Inst Radio Eng 21:1722 Dec '33
- Oscillators with automatic control of the threshold of regeneration. J. Groszkowski. diags Proc Inst Radio Eng 22:145 Feb '34
- Phase angle of vacuum tube transconductance at very high frequencies. F. B. Llewellyn. diags Proc Inst Radio Eng 22:947 Aug '34
- Photoelectric electron tubes. H. A. Brown and C. T. Knipp. Proc Inst Radio Eng 10:451 Dec '22
- Puncture damage through the glass wall of a transmitting vacuum tube. Yujiro Kusunose. Proc Inst Radio Eng 15:431 May '27
- Radiation-cooled power tubes for radio transmitters. H. E. Mendenhall. il Electronics 4:316 Oct '32
- Radio-frequency oscillator for receiver investigations. George Rodwin and Theodore A. Smith. Proc Inst Radio Eng 16:155 Feb '28
- Recent trends in receiving tube design. J. C. Warner, E. W. Ritter and D. F. Schmit. il diag Proc Inst Radio Eng 20:1247 Aug '32
- Separate regeneration in multi-purpose tube. diag D. C. Ketcham. QST 18:36 Nov '34
- Shielded neutrodyne receiver. John F. Dreyer, Jr. and Ray H. Manson. Proc Inst Radio Eng 14:217 Apr. '26. Discussion. L. A. Hazeltine. June '26 p. 395
- Standardization in the radio vacuum-tube field. W. C. White. Proc Inst Radio Eng 18:373 Mar '30
- Theory of thermionic tubes. E. L. Chaffee. Chap IX McGraw-Hill, New York '33
- Thermionic cathodes for gas filled tubes. E. F. Lowry. il Electronics 6:280 Oct '33
- Thermionic tubes. Frederic K.S. McCullough. Proc Inst Radio Eng 10:468 Dec '22
- Thermionic vacuum tubes. L. H. Bedford. Elec Comm 6:218 Apr '28
- Thermionic vacuum tubes for short waves. W. T. Gibson. Elec Comm 8:230 Feb '30
- Triple-twin tubes. Charles F. Stromeyer. Proc Inst Radio Eng 20:1149 July '32
- Tube life vs. maximum economy. Electronics 2:482 Jan '31
- Tubes with cold cathodes. August Hund. il Electronics 6:6 Jan '33
- Use of a vacuum tube as a plate-feed impedance. J. W. Horton. diags Jour Fr Inst 216:749 Dec '33
- Vacuum tubes of small dimensions for use at extremely high frequencies. B. J. Thompson and G. M. Rose, jr. il diags Proc Inst Radio Eng 21:1707 Dec '33
- Variation of grid plate capacity of 58 type tube. il Electronics 4:319 Oct '32
- World's largest tube. il Electronics 3:191 Nov '31

## Diodes

- Diode for ultra-high-frequency oscillations. J. S. McPetrie. *Exp Wireless and Wireless Eng* 11:118 Mar '34
- Diode detection analysis. C. E. Kilgour and J. M. Glessner. *Proc Inst Radio Eng* 21:930 July '33
- Straight line detection with diodes. E. Roberts. *Jour Inst Elec Eng* 75:379 '34; *Wireless section I.E.E.* 9:325 Sept '34
- Gas-filled thermionic tubes. A. W. Hull. *Trans A.I.E.E.* 47:753 '28
- New type of ultra-short-wave oscillator. I. E. Mourontseff and A. V. Noble. *Proc Inst Radio Eng* 20:1328 Aug '32
- Some notes on grid circuit and diode rectification. J. R. Nelson. *Proc Inst Radio Eng* 20:989 June '32

## Pentodes

- Characteristics of the UV-858 power tube for high-frequency operation. M. A. Acheson and H. F. Dart. *Proc Inst Radio Eng* 20:449 Mar '32
- Design problems of power pentodes for radio receivers. B. V. K. French. *Electronics* 2:576 Apr '31
- Electron oscillations with a triple-grid tube. Ferdinand Hamburger, jr. *Proc Inst Radio Eng* 22:79 Jan '34
- Further note upon the pentode with capacitive coupling. L. G. A. Sims. *diags Wireless Eng* 9:67 Dec '32
- Graphical analysis of output tube performance. C. E. Kilgour. *Proc Inst Radio Eng* 19:42 Jan '31
- Harmonic analysis applied to the power pentode. H. E. Rhodes. *diag Electronics* 1:118 June '30
- High power pentode as an electron coupled transmitter. J. C. W. Drabble and R. A. Yeo. *il diags Wireless Eng* 10:648 Dec. '33. Discussion. A. D. Hodgson. 11:73 Feb '34
- Output networks for radio-frequency power amplifiers. W. L. Everitt. *Proc Inst Radio Eng* 19:725 May '31
- Pentode tubes used as triodes. J. R. Nelson. *il Electronics* 2:226 Dec '31
- Performance of output pentodes. J. M. Glessner. *Proc Inst Radio Eng* 19:1391 Aug '31
- Power detection characteristics of pentode tubes. H. A. Brown and C. T. Knipp. *il Electronics* 4:126 Apr '32
- Power output characteristics of the pentode. S. Ballantine and H. L. Cobb. *diags Proc Inst Radio Eng* 18:450 Mar '30
- Problem of pentode output fidelity. L. Tulauskas. *Electronics* 2:142 Oct '31
- The r. f. pentode. E. W. Ritter. *il Electronics* 4:10 Jan '32
- Vacuum tubes as power oscillators. D. C. Prince. *Proc Inst Radio Eng* 11:275 June '23

## Tetrodes

- Circuit analysis applied to the screen-grid tube. J. R. Nelson. *Proc Inst Radio Eng* 17:320 Feb '29

- Detection characteristics of screen-grid and space-charge grid tubes. F. E. Terman and Birney Dysart. *Proc Inst Radio Eng* 17:830 May '29
- Detection with the four-electrode tube. J. R. Nelson. *Proc Inst Radio Eng* 16:822 June '28. Discussion. F. B. Llewellyn and J. R. Nelson (Jan 1929, p. 185)
- Experimental study of the tetrode as a modulated radio-frequency amplifier. H. A. Robinson. *Proc Inst Radio Eng* 20:131 Jan '32
- Marconi four electrode tube and its circuit. H. de A. Domsthorpe. *Proc Inst Radio Eng* 12:411 Aug '24
- Mathematical theory of the four-electrode tube. J. G. Brainerd. *Proc Inst Radio Eng* 17:1006 June '29
- New tubes—characteristics of variable-mu tetrodes. Keith Henney. *il Electronics* 2:540
- Notes on a periodic amplification and application to the study of atmospheric. R. August Hund. *Proc Inst Radio Eng* 16:1072 Aug '28
- Oscillations in tuned radio-frequency amplifiers. B. J. Thompson. *Proc Inst Radio Eng* 19:421 Mar '31
- Piezo-electric oscillator circuits with four electrode tubes. J. R. Harrison. *Proc Inst Radio Eng* 16:1455 Nov '28. Discussion. August Hund, J. R. Harrison, W. G. Cady and Alfred N. Goldsmith p. 1467
- Resonant impedance and effective series resistance of high-frequency parallel-resonant circuits. Hajime Iinuma. *Proc Inst Radio Eng* 19:467 Mar '31
- Some characteristics and applications of four electrode tubes. J. C. Warner. *Proc Inst Radio Eng* 16:424 Apr '28
- Study of the possibilities of radio-frequency voltage amplification with screen-grid and with triode valves. F. M. Colebrook. *Jour Inst Elec Eng* 74:187 Feb '34.
- Thermionic tetrode voltage control. *il Electronic* 6:19 Jan '33
- The screen-grid tube. N. H. Williams. *Proc Inst Radio Eng* 16:840 June '28
- Vacuum tubes as high frequency oscillators. E. D. McArthur and E. E. Spitzer. *Proc Inst Radio Eng* 19:1971 Nov '31
- Variable-mu tetrodes in logarithmic recording. Stuart Ballantine. *Electronics* 2:472 Jan '31

## Triode

- Calculation of class C amplifier and harmonic generator performance of screen-grid and similar tubes. Frederick Emmons Terman and John H. Ferns. *Proc Inst Radio Eng* 22:359 Mar '34
- Calculation of harmonic production in thermionic valves with resistive loads. D. C. Espley. *Proc Inst Radio Eng* 21:1439 Oct '33
- Equivalent circuits of an electron triode and the equivalent input and output admittances. E. L. Chafee. *Proc Inst Radio Eng* 17:1633 Sept '29
- Extension of the theory of three-electrode vacuum-tube circuits. S. A. Levin and Liss C. Peterson. *Bell System Tech Jour* 13:523
- Four-electrode vacuum tube as beat-frequency oscillator. S. Reid Warren, Jr. *Proc Inst Radio Eng* 18:544 Mar '30

**VACUUM Tubes—Continued**

- Graphical representation of the three constants of a triode. I. Miura. Proc Inst Radio Eng 19:1488 Aug '31
- Harmonic production and cross modulation in thermionic valves with resistive loads. D. C. Espley. Proc Inst Radio Eng 22:781 June '34
- Method of alignment applied to anti-logarithmic triode characteristics. W. A. Barclay. charts Exp Wireless 7:671 Dec '30
- On the production of ultra-short wave oscillations with cold cathode discharge tubes. Kinjiro Okabe. Proc Inst Radio Eng 21:1593 Nov '33
- Phase angle of vacuum tube transconductance at very high frequencies. F. B. Llewellyn. Proc Inst Radio Eng 22:947 Aug '34
- Quarter century of the triode. (ed) Electronics 2:480 Jan '31
- Retarding-field tube, as a detector for any carrier frequency. H. E. Hollmann. Proc Inst Radio Eng 22:630 May '34
- Study of the possibilities of radio-frequency voltage amplification with screen-grid and with triode valves. F. M. Colebrook. bibliog diags. Jour Inst Elec Eng 74:187 Feb '34. Discussion. 74:361 Apr '34
- Theory of available output and optimum operating conditions for triode valves. M. V. Callendar. Proc Inst Radio Eng 21:909 July '33
- Vacuum tubes of small dimensions for use at extremely high frequencies. B. J. Thompson and G. M. Rose, Jr. Proc Inst Radio Eng 21:1707 Dec '33
- Variations in the amplification factor of triodes. F. E. Terman and A. L. Cook. Proc Inst Radio Eng 18:1044 June '30

**VACUUM Tubes, Cathode-Ray. See Cathode Ray****VACUUM Tubes, Control Uses of**

- Calculating machines and vacuum tubes. il Electronics 0:224 Aug '33
- Compensated automatic synchronizer. H. T. Seeley. il diags Elec Eng 53:960 June '34. Discussion. 53:1528 Nov '34
- Electronic regulator for a-c generators. F. H. Gulliksen. il diags Elec Eng 53:877 June '34. Discussion. 53:1530 Nov. '34.

**VACUUM Tubes, Dynatron**

- Crystal control applied to the dynatron oscillator. K. A. MacKinnon. Proc Inst Radio Eng 20:1689 Nov '32
- Development of a circuit for measuring the negative resistance of pliodynatrons. Edwar N. Dingley, Jr. Proc Inst Radio Eng 19:1948 Nov '31
- Dynatron detector—a new heterodyne receiver for continuous and modulated waves. Albert W. Hull. E. H. Hennelly and F. R. Elder. Proc Inst Radio Eng 10:320 Oct '22
- Resonant impedance and effective series resistance of high-frequency parallel resonant circuits. Hajime Inuma. Proc Inst Radio Eng 19:467 Mar '31

The dynatron; vacuum tube possessing negative resistance. Albert W. Hull. Proc Inst Radio Eng 6:5 Feb '18

*See also*

Dynatron  
Negative Resistance

**VACUUM Tubes, Magnetron**

- An investigation of the magnetron short-wave oscillator. E. C. S. Megaw. Jour Inst Elec Eng 72:326 '33. Also, Wireless Section I.E.E. 8:72 June '33
- Magnetostatic oscillators for generation of ultra-short waves. G. R. Kilgore. Proc Inst Radio Eng 20:1741 Nov '32
- Magnetron oscillation of new type. Kinjiro Okabe. Proc Inst Radio Eng 18:1748 Oct '30
- New treatment of electron tube oscillators with feed-back coupling. C. K. Jen. Proc Inst Radio Eng 19:2109 Dec '31
- Note on magnetron theory. F. T. McNama. Proc Inst Radio Eng 22:1037 Aug '34
- Note on the theory of the magnetron oscillator. E. C. S. Megaw. Proc Inst Radio Eng 21:1749 Dec. '33
- Note on the theory of the magnetron oscillator. J. Barton Hoag. Proc Inst Radio Eng 21:1132 Aug '33
- On the magnetron oscillation of new type. Kinjiro Okabe. Proc Inst Radio Eng 18:1748 Oct '30
- On the short-wave limit of magnetron oscillators. Kinjiro Okabe. Proc Inst Radio Eng 17:652 Apr '23
- The magnetron. Albert W. Hull. A Jour A. I. E. E. 40:715 '21
- Vacuum tubes as high-frequency oscillators. E. D. McArthur and E. E. Spitzer. Proc Inst Radio Eng 19:1971 Nov '31
- Vacuum tubes as high frequency oscillators. M. J. Kelly and A. L. Samuel. Elec Eng 53:1516 Nov '34
- See also*  
Magnetron

**VACUUM Tubes, Testing and Rating**

- Direct reading short circuit test for vacuum tube. A. G. Richardson. il Electronic 4:233 July '32
- Experimental determination of the fundamental dynamic characteristics of a triode. Eijiro Takagishi. Proc Inst Radio Eng 12:609 Oct '24
- Life testing of tungsten filament triodes. William C. White. Proc Inst Radio Eng 13:625 Oct '25
- Method for testing and rating electron tube generators. L. M. Hull. Proc Inst Radio Eng 10:373 Oct '22
- Recent development in high vacuum receiving tubes—radiotrons, Model UV-199 and Model UV-201. J. C. Warner. Proc Inst Radio Eng 11:587 Dec '23
- "Unit" tube manufacturing layout. Kauer & Brindle. il Electronics 2:630 May '31
- X-rays in testing tubes. (Picture feature) Electronics 1:323 Oct '30

**VACUUM Tubes, Ultra-High-Frequency**

- "Acorn" tubes for ultra-high frequencies. Bernard Slazberg. *il Electronic* 7:282 Sept '34
- Amplification and detection of ultra-short electric waves. K. Okabe. *Proc Inst Radio Eng* 18:1028 June '30
- Communication with quasi-optical waves. E. Karplus. 19:1715 *Proc Inst Radio Eng* Oct '31
- Generation and utilization of ultra-short waves in radio communication. Federick A. Kolster. *Proc Inst Radio Eng* 22:1335 Dec '34
- New forms of short wave tubes. I. E. Mouromsteff, G. R. Kilgore and H. V. Noble. *il Electronics* 4:278 Sept '32
- Resonant impedance and effective series resistance of high-frequency parallel resonant circuits. Hajime Inuma. *Proc Inst Radio Eng* 19:467 Mar '31
- Tubes for generating 18 cm. waves. *il Electronics* 3:4 July '31
- Vacuum tubes as high-frequency oscillator. E. D. McArthur and E. E. Spitzer. *Proc Inst Radio Eng* 19:1971 Nov. '31
- Vacuum tube electronics at ultra-high frequencies. F. B. Llewellyn. *Proc Inst Radio Eng* 21:1532 Nov '33; Same. *Bell System Tech Jour* 13:59 Jan '34
- Vacuum tubes of small dimension for use at extremely high frequencies. B. J. Thompson and G. M. Rose, Jr. *il diags Proc Inst Radio Eng* 21:1707 Dec '33

**VIBRATION**

- Observations on modes of vibration and temperature coefficients of quartz crystal plates. F. R. Lack. *Proc Inst Radio Eng* 17:1123 July '29
- Problems in selective reception. M. V. Collendar. *Proc Inst Radio Eng* 20:1427 Sept '32.
- Vibrations of quartz plates. Robert Cameron Colwell. *Proc Inst Radio Eng* 20:88 May '32

**VOLTAGE Measurements**

(See Measurements: Voltage, Current and Power)

**VOLTMETERS. See Vacuum-Tube Voltmeters****VOLUME Control**

- A radio beacon and receiving system for blind landing of aircraft. H. Diamond and F. W. Dunmore. *Proc Inst Radio Eng* 19:585 Apr '31
- Acoustically compensated volume control for radio and phonograph sets. I. Wolff and J. F. Cornell. *il Electronics* 6:50 Feb '33
- Automatic volume control for radio receiving sets. Harold A. Wheeler. *Proc Inst Radio Eng* 16:30 Jan '28
- Copper-oxide rectifier used for radio detection and automatic volume control. L. O. Grondahl and W. P. Place. *Proc Inst Radio Eng* 20:1599 Oct '32
- Diversity telephone receiving system of R. C. A. Communications, Inc. H. O. Peterson, H. H. Beverage, and J. B. Moore. *Proc Inst Radio Eng* 19:562 Apr '31

*See also*

**Automatic Volume Control****W****WAVE Filters**

- Applications of the method of alignment to reactance computations and simple filter theory. W. A. Barclay. *diag Exp Wireless* 7:59 Feb '30
- Extensions to the theory and design of electric wave filters. O. J. Zobel. *Bell System Tech Jour* 10:284 Apr '31
- Impedance of smooth lines and design of simulating networks. Roy S. Hoyt. *Bell System Tech Jour* 2:1 Apr '23
- Line filter for program system. H. S. Hamilton. *Bell System Tech Jour* 13:382 Jan '34
- Mutual inductance in wave filters with an introduction on filter design. K. S. Johnson and T. E. Shea. *Bell System Tech Jour* 4:52 Jan '25
- Physical theory of electric wave filter. G. A. Campbell. *Bell System Tech Jour* 1:1 July '22
- Precision methods used in constructing electric wave filters for carrier systems. G. R. Harris. *Bell System Tech Jour* 11:264 Jan '32
- Theory and design of composite electric wave filters. O. J. Zobel. *Bell System Tech Jour* 2:1 Jan '23
- Theory of electrical artificial lines and filters. A. C. Bartlett. pp53-58. John Wiley & Sons, N. Y. 1931
- Transient oscillations in electric wave-filters. J. R. Carson and O. J. Zobel. *Bell System Tech Jour* 2:1 July '23
- Transmission characteristics of electric wave filters. O. J. Zobel. *Bell System Tech Jour* 3:567
- Transmission networks and wave filters. T. E. Shea. D. Van Nostrand Co., N. Y. C. '29
- Transmission of pictures over telephone lines. H. E. Ives, J. W. Horton, R. D. Parker and A. B. Clark. *Bell System Tech Jour* 4:187 Apr '25

**WAVELENGTH. See Allocation, Frequency****WAVEMETERS**

- Ellipse diagram of a lecher wire system. A. Hikosaburo. *Proc Inst Radio Eng* 21:303 Feb '33
- Harmonic method of calibrating a wavemeter. E. Leon Chaffee. *Proc Inst Radio Eng* 5:361 Oct '17
- Measurement of the frequency of ultra-radio waves. J. Barton Hoag. *Proc Inst Radio Eng* 21:29 Jan '33
- Method of measuring very short radio wavelengths and their use in frequency standardization. F. W. Dunmore and F. H. Engel. *Proc Inst Radio Eng* 11:467 Oct '23
- Piezoelectric crystal resonators and crystal oscillators applied to the precision calibration of wavemeters. *Proc Amer Acad* 59:81 May '23
- Sensitizing the wavemeter for intermediate frequencies. A. G. Richardson. *il Electronics* 4:130 Apr '32
- Standard inductances for wavemeters and other radio frequency purposes. W. H. F. Griffiths. *Exp Wireless* 6:543 Oct '29
- Superregenerative wavemeter for ultra-short waves. H. Ataka. *Proc Inst Radio Eng* 21:1590 Nov '33
- Ultra-short-wave wavemeters. W. H. Moore. *il Electronics* 6:311 Nov '33

**WAVE Propagation.** See Propagation of Waves

**WIRE Transmission**

Application to radio of wire transmission engineering. Lloyd Espenschied. Proc Inst Radio Eng 10:344 Oct '22

High efficiency in audio-frequency amplifiers designed for use on rediffusion systems. E. K. Sandeman. il diags Wireless Eng 11:351 July '34

Line filter for program system. A. W. Clement. diags Elec Eng 53:562 Apr '34; Same. Bell system Tech Jour 13:382 July '34

Main rediffusion; utilizing supply networks for radio reception. diags Electrician 112:770 June 1 '34

Present status of wire transmission theory and some of its outstanding problems. J. R. Carson. Bell System Tech Jour 7:268 Apr '28

Principles of audio-frequency wire broadcasting. P. P. Eckersley. diags Jour Inst Elec Eng 75:333 Sept '34

Rigorous and approximate theories of electrical transmission along wires. J. R. Carson. Bell Sys Tech Jour 7:11 Jan '28

Simultaneous transmission and reception in radio telephony. Noburu Marumo. Proc Inst Radio Eng 8:199 June '20

Telephone communication over power lines by high frequency currents. C. A. Boddie. Proc Inst Radio Eng 15:559 June '27. Discussion. R. D. Duncan, Jr., Alexander Nyman. Dec. 27 p1055

Wide-band open-wire program system. H. S. Hamilton. il diags Elec Eng 53:550 Apr '34; Same. Bell System Tech Jour 13:351 July '34

Wire line systems for national broadcasting. A. B. Clark. il plans maps Bell System Tech Jour 9:141 Jan '30

Wire transmission system for television. D. K. Gannett and E. I. Green, Bell Sys Tech Jour 6:616 Oct '27

**WHISTLING Tones from Earth**

Audio-frequency atmospherics. E. T. Burton and E. M. Boardman. Proc Inst Radio Eng 21:1476 Oct '33

Whistling tones from the earth. Heinrich Barkhausen. Proc Inst Radio Eng 17:1155 July '30. Discussion. A. M. Curtis. 18:145 Jan '31

*See also*

Transmission

**WUNDERLICH Tube**

Description of the Wunderlich tube. F. E. Terman. Radio Eng 12:25 May '32

**X**

**X-RAYS**

Atom is X-rayed by new process. Electronics 1:363 Nov '30

Giant two-section X-ray tube. il Electronics 2:99 Sept '31

Gigantic welded pipe tested with X-ray. il Electronics 7:154 May '34

Industrial X-rays for examining metal. Electronics 6:45 Feb '33

Million-volt X-ray tube. Electronics 5:292 Sept '32

Television scanning technique applied to X-ray diagnosis. Electronics 7:253 Aug '34

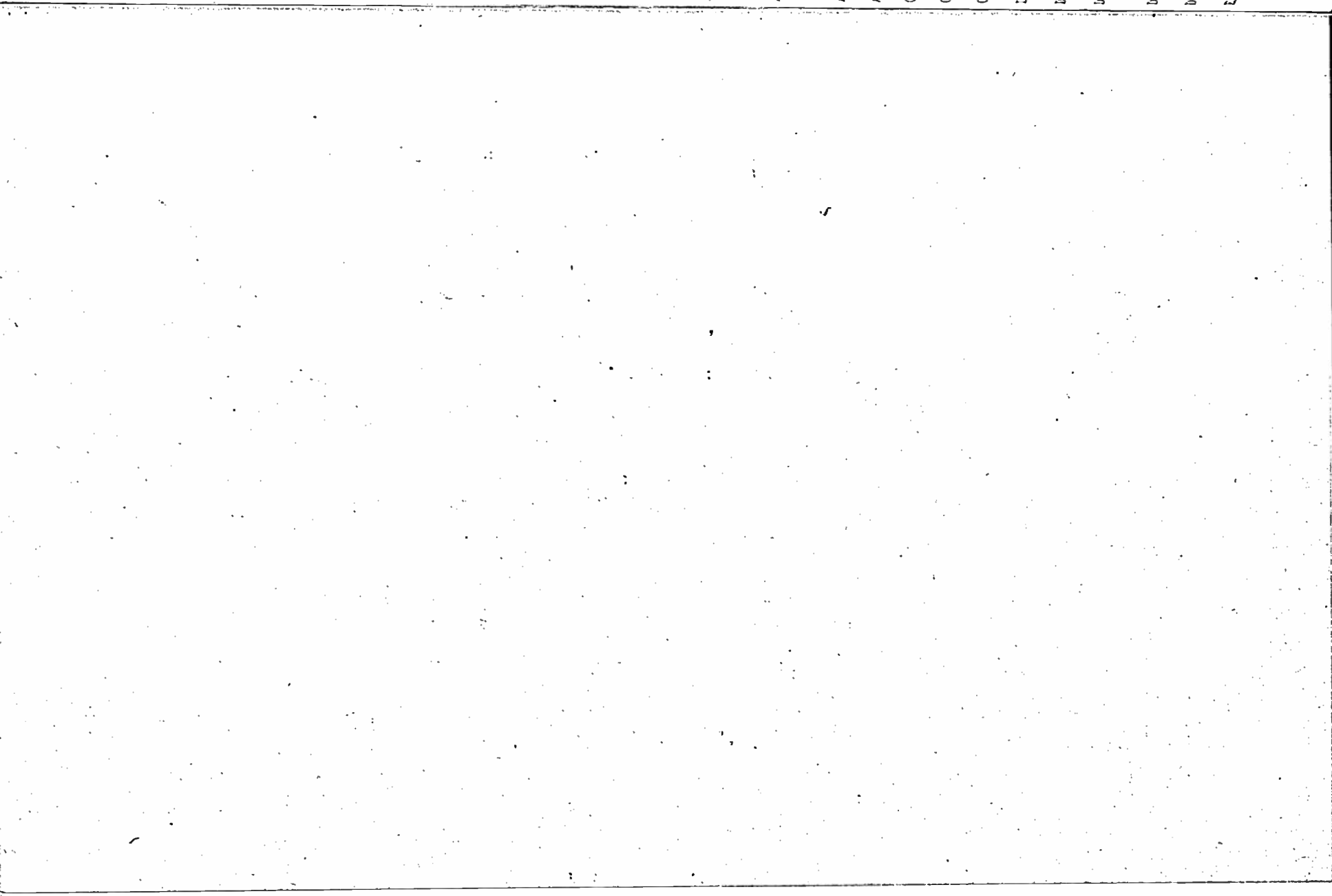
X-ray fluoroscope. Electronics 5:291 Sept '32

X-rays in testing tubes. il Electronics 1:323 Oct '30

600,000 volt X-ray tube. il Electronics 2:603 Apr '31

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## ACOUSTICS

- Acoustic impedance of porous materials. L. L. Baranek. Jour Amer Acoustical Soc 13:248 Jan '42
- Acoustic models of radio antennas. E. C. Jordan and W. L. Everitt. Proc Inst Radio Eng 29:186 Apr '41
- Acoustic testing of high fidelity receivers. Harold A. Wheeler and Vernon E. Whitman. Proc Inst Radio Eng 23:610 June '35
- Acoustical design and treatment for speech broadcast studios. E. J. Content and L. Green, jr. bibliog Proc Inst Radio Eng 32:72 Feb '44
- Acoustical design of broadcasting studios. H. L. Kirke and A. B. Howe. bibliog il diags Jour Inst Elec Eng 78:404; Discussion. 423 Apr '36
- Acoustical instruments. E. C. Wentz. Bell System Tech Jour 14:388 July '35
- Acoustical labyrinth; abstract. B. J. Olney. Electronics 9:12 Dec '36
- Acoustics; a handbook for architects and engineers. P. L. Marks. 143p \$3 Chemical Pub Co. '41
- Acoustics at the new NBC studios. il Electronics 15:34 Mar '42
- Acoustics in studios. M. Rettinger. plans Proc Inst Radio Eng 28:296 July '40
- Acoustics of small rooms and studios; abstract. J. Moir. plan Electronics 18:286 Feb '45
- Applied acoustics. H. F. Olson and F. Massa. 2d ed 494p Blakiston Press '39
- Architectural acoustics; sound, its fundamental properties and behaviour. S. L. Macdonald and P. M. Morse. il diags Arch Forum 71:131 Aug '39
- Atmospheric propagation of sound. Electronics 15:102 Dec '42
- Audible audio distortion. H. H. Scott. bibliog diags Electronics 18:126 Jan '45
- Columbia's new studio acoustics. S. Kaufman. il Radio N 17:208 Oct '35
- Contributions to the acoustics of radio studios. W. Furrer. Jour Amer Acoustical Soc 14:239 Apr '43
- Cornstalk acoustical board. Electronics 11:52 Apr '38
- Data on new acoustic stethoscope. H. F. Olson. il Electronics 16:184 Aug '44
- Design of electronic megaphone. il Electronics 17:200 May '44
- Determination of acoustic characteristics of halls by optical experiments. R. Vermeulen. diags Electronics 14:119 June '41
- Distortion in loudspeakers caused by Doppler effect. Electronics 16:256 June '43
- Dramatic use of controlled sound. Noel Urquhart. il Electronics 8:121 Apr '35
- Electro-acoustic reactions; with special reference to quartz crystal vibrators. A. T. Starr. diags Wireless Eng 17:247, 303 June-July '40
- Equipment for automatic measurement of audio-frequency circuits developed by Columbia broadcasting system. il Proc Inst Radio Eng 27:sup2 Apr '39
- Free-field sound room. il Electronics 17:148 Apr '44
- Haydite units supply sound insulation in NBC building. il Concrete 51:21 July '43
- Hearing aid circuits. il Electronics 16:165 Sept '43
- La resonance electroacoustique et ses applications recentes. M. Adam. il diag Genie Civil 108:580 June 20 '36
- Making walls sound-proof; radio and moving picture studios. M. Rettinger. diags Eng N 124:723 May 23 '40
- New studios for C.B.S.; controlled acoustics a feature. il plans Electronics 13:23 Sept '40
- New technique in radio studios; wood paneling for acoustic control; station WABC. il Sci Amer 153:46 July '35
- Notes on some practical comparison tests made between several acoustic measurement methods. E. T. Dickey. Proc Inst Radio Eng 25:1136 Sept '37
- Performance of broadcast studios designed with convex surfaces of plywood. C. P. Bower. il Jour Amer Acoustical Soc 13:244 Jan '42
- Portable reverberation meter. H. J. Sabine. il Electronics 10:30 Mar '37
- Reverberation control in motion picture recording. J. K. Hilliard. il Electronics 11:15 Jan '38
- Review of acoustical patents. R. W. Young. diags Jour Amer Acoustical Soc 16:214 Jan '45
- Scott high-fidelity receivers. E. H. Scott. Proc Inst Radio Eng 29:295 June '41
- Selected problems in architectural acoustics; problems pertaining to recording studios and conditions of microphone pickup. M. Rettinger. Proc Inst Radio Eng 31:18 Jan '43
- Standards on electroacoustics; 1938. 37 p Institute of Radio Engineers, New York 50c
- Synthetic production and control of acoustic phenomena by a magnetic recording system. S. K. Wolf. Proc Inst Radio Eng 29:365 July '41
- Synthetic reverberation. Peter C. Goldmark and Paul S. Hendricks. Proc Inst Radio Eng 27:747 Dec '39
- Telecommunication; acoustics in broadcasting stations. Electrician 116:41, 67 Jan 10 '36
- Theater acoustic recommendations of the Academy research council, theater standardization committee. bibliog il diags Jour Soc Motion Picture Eng 36:267 Mar '41
- Theater acoustics and sound equipment. W. Moody. il Radio N 32:29 Aug '44
- Wide range adjustable acoustic impedance. W. F. Meeker and F. H. Slaymaker. bibliog diags Jour Amer Acoustical Soc 16:178 Jan '45

See also

Broadcasting Studios  
Noise; Sound

- ADJACENT Channel Interference.** See Modulation
- AERIALS:** See Antennas
- AERONAUTICAL Radio**
- Additional u-h-f installations planned for domestic airways. *Civil Aero Jour* 2:93 Apr 15 '41
- Aeronautical radio, inc. H. Roberts. map *Aero Digest* 33:65 July '38
- Aircraft radio and electrical equipment. Howard K. Morgan. Pitman, N.Y.C. '39
- Aircraft radio communication. H. K. Morgan. *Aeronautical Eng Rev* 1:19 Aug '42
- Aircraft radio design. A. F. Trumbull. *il Electronics* 16:98 Nov '43
- Aircraft radio labs. responsible for research, development, engineering, and inspection for equipment required by Army air corps. J. H. Gardner. *il Radio N* 27:8 Feb '42
- Aircraft radio vibration. L. B. Hallman, jr. *Communications* 20:5 May '40
- Airport communications. *Electronics* 14:90 Nov '41
- Airport control with UHF. H. C. Hurley. *Electronic Indus* 2:100 Oct '43
- Application of electronics to aircraft flight control. W. H. Gille and R. J. Kutzler. *il diag Elec Eng* 63: *Trans* 849 Nov '44. Also *Mach Design* 16:117 Nov '44
- Approach control for aircraft. G. A. Gilbert. *il diags Radio N* 32:25 Dec '44
- Army airways communications system. *il Electronics* 17:98 Aug '44
- Army radio direction-finding networks. G. Twist. *il Electronics* 17:118 Nov '44
- Around the world with the Army airways communications system. *il map Aero Digest* 45:56 Apr 1 '44
- Automatic devices aid airway safety. *Electronic Indus* 4:120 Jan '44
- Aviation radio communications. A. E. Brundage. *il Aero Digest* 27:34 Oct '35
- Aviation aids promote flying safety. P. S. Sandretto. *il Electronics* 16:103 Mar '43
- Azimuth indicator for ground stations. C. Walsh. *Aviation* 40:124 Dec '41
- Cathode-ray tube used as aircraft instrument indicator. *il Electronics* 13:36 Mar '40
- Chicago-N. Y. run to use vhf radio. *Aviation N* June 12 '44
- Coast guard radio. D. Fink. *il Aviation* 37:48 May '38
- Communications lifeline of the ATC. R. L. Sigeron. *il Aero Digest* 43:128 Dec '43
- Contributions of the engineer to aeronautics. R. C. Gazley. *Air Commerce Bul* 9:301 June '38
- Control tower operations recorded on 24-hour basis; sound recorders for radio messages. *il Aviation* 41:165 Apr '42
- Developments in aircraft radio area. *il Electronics* 11:20 Feb '38
- Electronic recorder for flight testing. Thomas A. Dickinson. *Electronic Indus* 4:100 Apr '45
- Engineering work of the Federal communications commission; police, aviation, and maritime services. W. N. Krebs. *Proc Inst Radio Eng* 32:324 June '44
- Fabricating wood aircraft "skins". J. P. Taylor. *il Electronics* 17:102 Apr '44
- Facsimile tests; Finch telecommunications laboratory testing radio facsimile transmissions from ground to plane. *Aviation* 37:48 Oct '38
- Federal airways. C. I. Stanton. *il Radio N* 29:100 June '43
- Flying electronics. V. Zeluff. *il Sci Amer* 172:348 June '45
- Flying the Pacific by radio. *il Electronics* 9:7 Apr '36
- Funkpeilverfahren der Reichsflugsicherung. O. Heer. *il diags V D I* 82:66 Jan 15 '38; *Abstract. Genie Civil* 112:395 May 7 '38
- Gathering weather data by balloons carrying radio transmitters. *il Electronics* 10:28 Dec '37
- Great spiderweb; story of war-born Army airways communications system. H. D. Colson and R. C. Fleischman. *il Radio N* 32:37 Oct '44
- Impetus which aviation has given to the application of ultra-high frequencies. W. E. Jackson. *Proc Inst Radio Eng* 28:49 Feb '40
- Improved radio system for northern transcontinental air route. *Nat Safety N* 32:59 July '35
- International airways radio communications. L. H. Simson. *il Radio N* 29:130 June '43
- Medium high frequency visual ground direction finder; azimuth-indicating radio system. D. S. Little. *il diags Aero Digest* 40:70 Jan '42
- Microwaves to detect aircraft. *il Electronics* 8:284 Sept '35
- Minimizing radio disturbances on airplanes. J. Delmonte. *diags Aero Digest* 26:28 Jan '35
- Modern aircraft radio. W. L. Nye. 346p biblog (345p) \$4 Aviation press, San Francisco '37
- Modern control tower design. *Electronic Indus* 2:80 Aug '43
- Nazi aircraft radio. J. H. Jupe. *il Electronics* 15:58 Nov '42
- Needed regulations in aircraft radio. H. W. Roberts. *Aero Digest* 33:81 Sept '38
- New flight testing apparatus radios precise plane data; instrument developed by the Consolidated-Vultee aircraft corporation. *il diags Product Eng* 14:395, 512 July-Aug '43
- Overlapping radio bands pose cost problem to private flyers. W. P. Lear. *Aviation N* 3:38 Mar 26 '45
- Panoramic principles. W. Moullic. *il Electronic Indus* 3:86 July '44
- Panoramic reception applied to aerial navigation. *Electronics* 13:42 Dec '40
- Panoramic reception shows promise in radio navigation. *il Electronics* 11:36 July '38
- Plywood masts expedite field radio installation for air force. *il Aero Digest* 45:118 May 15 '44
- Postwar airways; communications planning. A. Scott. *Air Transport* 1:51 Dec '43
- Postwar civilian-aircraft-radio field. M. Silver. *il diags Electronics* 16:86 Aug '43
- Postwar control of air traffic. *il Electronics* 17:148 Mar '44
- Power transformers for aircraft use. Harry Holubow. *Electronic Indus* 1:69 Nov '42

Precipitation-static interference on aircraft and at ground stations. Herbert M. Hucke. Proc Inst Radio Eng 27:301 May '39

Pre-flight inspection. il Electronics 17:113 Feb '44

Principles of aeronautical engineering. P. C. Sandretto. McGraw-Hill, N.Y.C. '42

Radio and its relation to the airport and traffic control. L. H. Simson. Air Commerce Bul 7:101 Nov '35

Radio in aircraft; shielding and bonding data. H. W. Roberts. il diags Radio N 16:122 Jan '35

Radio in aviation. C. I. Stanton. Elec Eng 63:215 June '44; Same cond. Civil Aero Jour 5:29 Mar 15 '44; Abstract. Aviation N 1:44 Mar 6 '44

Radio interference with CAA systems. J. M. Wisenbach. diag Elec West 89:45 Aug '42

Radio maintenance for aircraft. A. F. Trumbull. il Electronics 17:118 July '44

Radio-noise elimination in military aircraft. G. Weinstein and others. Elec Eng 63:Trans 793 Nov '44

Radio shielding on air transports. H. E. Gray. diag S A E Jour 41:527 Nov '37; Abstract. Automotive Ind 76:747 May 15 '37

Radio system of American airlines. H. W. Roberts. diag Aero Digest 31:38 Oct '37

Radio technical committee for aeronautics. 2d meeting, Camden, N. J. Dec. 3. Air Commerce Bul 7:162 Jan '36

Review of radio communications in the mobile services. I. F. Byrnes. Proc Inst Radio Eng 23:423 May '35

Review of radio communications in the mobile services. C. N. Anderson. Proc Inst Radio Eng 24:402 Mar '36

Servicing airborne radio. G. Sonbergh. il Electronic Industries 3:76 Oct '44

Simultaneous radio range and telephone transmission. W. E. Jackson and D. M. Stuart. Proc Inst Radio Eng 25:314 Mar '37

Some principles in aeronautical ground-radio-station design. P. C. Sandretto. Proc Inst Radio Eng 27:5 Jan '39

Standardization of aircraft radio. D. S. Little. il diag Aero Digest 40:76 Apr 99 May '42

Tests of frequency modulation for aircraft communication. I. R. Weir. il Electronics 13:34 Nov '40

Trend toward very high frequencies in aviation radio. L. LeKashman. il plan diag Aero Digest 48:65 Feb 15 '45

Ultra-short waves for air navigation. H. W. Roberts. bibliog il diags Aero Digest 31:66 Nov '37

Western Electric contributes to aeronautical progress. F. C. McMullen. il Aeronautical Eng Rev 2:27 Feb '43

What the Navy requires of radio. Lt. Comdr. W. B. Chamberlain. Electronic Industries. 1:42 Feb '43

Wireless and its application to commercial aviation. J. M. Furnival. il diag map Roy Aeronautical Soc Jour 40:159. Discussion. 188 Mar '36

World aviation radio problems discussed in informal sessions. Aviation N 1:43 June 19 '44

See also

Communication, Military

## AIRCRAFT Antennas

Air associates automatic antenna system. il Aviation 40:77 May '41

Aircraft antenna characteristics. P. J. Holmes. il Electronics 15:40 Dec '42

Aircraft antenna charts. P. J. Holmes. Electronics 15:46 Dec '42

Aircraft antennas. G. L. Haller. il diags Proc Inst Radio Eng 30:357 Aug '42

Antennas for air navigation with list of broadcast stations suitable for aeronautical direction finding. D. J. Fink. il Electronics 9:34 Feb '36

Antenna reel; an automatic type for trailing wires types. il Aviation 34:34 Oct '35

Beacon antenna characteristics. H. K. Morgan. diags Air Commerce Bul 9:77 Oct '37

Constants of fixed antennas on aircraft. G. L. Haller. il Proc Inst Radio Eng 26:415 Apr '38

Design data for ground plane antennas. H. W. Hasenbeck. diags Electronics 16:98 Aug '43; Discussion. G. H. Brown 16:338 Dec '43

Design problems of directional loop antennas for aircraft; abstract. G. F. Levy. diags Aviation 41:135. Mar '42

Development of a new station location or Z-marker antenna system. J. C. Hromada. il diags Proc Inst Radio Eng 32:454 Aug '44

Development of aircraft radio antennas. R. McGuire and J. Delmonte. Communications 20:5 Mar '40

Experiments with underground ultra-high-frequency antenna for airplane landing beam. H. Diamond and F. W. Dunmore. pl diag J Research Nat Bur Stand 19:1 July '37; Same. Proc Inst Radio Eng 25:1542 Dec '37

Heintz & Kaufman motor-drawn aircraft antenna reel. diag Aero Digest 27:41 Nov '35

Lear aviation automatic antenna reel. il Aero Digest 37:180 July '40

Loop antenna for aircraft. G. F. Levy. bibliog il diags Proc Inst Radio Eng 31:56 Feb '43; correction 31:384 July '43

Navigation with loop antennas. H. W. Roberts. diags Aero Digest 31:72 Sept '37

New anti-static antennas for high-speed aircraft. H. W. Roberts. il Aero Digest 29:36 Dec '36

Solenoid-whip aerial. W. R. Wilson. il diags Electronics 14:56 Jan '41

Transmitting antenna and a directional loop for aircraft. il Aviation 41:281 Feb '42

Transport aircraft antenna characteristics. E. F. Kiernan diags Electronics 17:126 Dec '44

Ultra high frequency antennae in aviation radio. J. C. Hromada. il diag Radio N 27:14 May '42

Vacuum relay for aircraft antenna. Frank S. McCullough. Electronic Indus 2:79 May '43

## AIRCRAFT Blind Landing Systems

Automatic control of aircraft. C. D. Barbulesco. diags Elec Eng 60:122 Mar '41; Abstract. Electronics 14:96 Apr '41

Automatic landings by radio; system developed by United air lines. il Sci Amer 156:364 Dec '36

Blind flying; Lorenz guiding system at Heston airport. il Electrician 116:291 Feb 28 '36; Elec Rev (Lond) 118:315 Feb 28 '36

Blind landing. il Electronics 10:26 July '37

**AIRCRAFT Blind Landing Systems—Continued**

- Blind landing agreement; standard specifications for instrument landing equipment to be used in airline operations. *Aero Digest* 31:92 Sept '37
- Blind landing instrument and photographic log undergo tests. *Air Commerce Bul* 10:68 Sept '38
- Blind landing; Metcalf new system. *Aviation* 35:45 July '36
- Blind landing of airplanes; low-power low-frequency transmitter. *Science* 95:sup 6 Jan 30 '42
- Blind landings with electronic system. *il Electronics* 17:176 Aug '44
- Blind landing system improved. *il Aero Digest* 31:44 Aug '37
- Blind landing; the Lorenz blind landing system. *il Electronics* 10:26 July '37
- Development of the C. A. A. instrument landing system at Indianapolis. A. Alford, W. E. Jackson, P. F. Byrne and H. B. Fisher. *Elec Comm* 18:285 '40
- Experiments with underground ultra-high-frequency antennas for airplane landing beam. H. Diamond and F. W. Dunmore. *Proc Inst Radio Eng* 25:142 Dec '37
- Instrument landing problems in 1940. H. W. Roberts. *il Aero Digest* 36:80 May '40
- Landing blind; system in use at Pittsburgh airport. C. S. Van Dresser. *il plan Radio N* 20:16 July '38
- Latest type of AAF blind landing equipment. M. E. Montgomery. *Electronic Indus* 4:100 Jan '45
- Metcalf-M.I.T.; progress reported on new blind-landing system. *Aviation* 37:40 July '38
- New system for blind landing of airplanes. K. Baumann and A. Ettinger. *diag Proc Inst Radio Eng* 24:751 May '36
- New UHF landing system at La Guardia. *Electronic Indus* 2:62 Jan '43
- Practical use of radio as a direct aid to the landing approach in conditions of low visibility. R. S. Blucke. *il diags. Roy Jour Aeronautical Soc* 42:483; Discussion p 500 June '38
- Present state in the art of blind landing of airplanes using ultra-short waves in Europe. E. Kramar. *il diags Proc Inst Radio Eng* 23:1171 Oct '35
- Radio blind landing system to be installed on Mid-continental airway. *diag Air Commerce Bul* 6:179 Feb '35
- Radio lands the plane. H. W. Perry. *il diag Radio N* 20:22 Aug '38
- Three spots and a horn; BAC-MIT blind landing system based on Irving Metcalf's three-light method. D. G. Fink. *il diags Aviation* 37:28 Sept '38
- Zero-zero; two systems for blind landing of aircraft by radio. E. A. Currell. *il diag Aviation* 34:22 Aug '35

*See also*

Aircraft Instrument Landing Systems  
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**AIRCRAFT Direction Finders**

- Aircraft compass. Samuel Ostrolenk. *il Electronics* 9:12 Aug '36
- Aircraft radio compass. *il Electronics* 8:349 Oct '35
- Army radio direction finder networks. G. Twist. *il diags Electronics* 17:118 Nov '44

- Automatic position indicator for aircraft. *il Electronics* 18:180 May '45
- Automatic radiogoniometers; method of measuring the time constants of oscillating circuits. J. Marique. *Wireless Eng* 16:121 Mar '39
- Aviation aids promote flying safety. P. C. Sandretto. *il diag Electronics* 16:193 Mar '43
- Aviation by radio. L. LeKashman. *il maps Radio N* 30:19 Oct '43
- Bendix automatic radio direction finder. *il Aero Digest* 37:175 Sept '40
- Bendix direction finders. *il Aero Digest* 31:42 Aug '37
- Directional antenna; American Airlines communication antenna. *il Aero Digest* 30:68 Feb '37
- Electronic compass for aircraft. D. W. Moore, Jr. *il Electronics* 17:25 Dec '44
- Fairchild RC-4, aircraft radio direction finder. *il Aero Digest* 31:92 Sept '37
- Flight instruments; radio direction finder. *Jour Aeronautical Sci (Aeronautical Rev Sec)* 9:55 Dec '41
- Gyro flux gate compass. *il Electronics* 16:146 Dec '43
- Kruesi commercial radio compass. *diag Aviation* 37:72 Feb '35
- Kruesi radio compass for commercial use. F. W. Lutz. *diag Aero Digest* 26:50 Feb '35
- Lear direction finder, model ADF-7. *il Aero Digest* 36:144 Feb '40
- Learradio automatic direction finder. *il Aero Digest* 33:96 Nov '38
- New electronic compass for aircraft. D. W. Moore, Jr. *diag Electronics* 17:214 Dec '44
- New RCA aircraft radiocompass. A. M. Harned. *il diags Aero Digest* 29:38 Aug '36
- Outline of practical radio navigation. *map Aero Digest* 47:80 Oct 15 '44
- Practical aspects of radio navigation of aircraft. H. W. Roberts. *il diags Aero Digest* 30:56 Feb '37
- Radio compass; description of apparatus and its operation. J. P. Gaty. *il diags Aviation* 35:24 May 15 June '36
- RCA radio compass. *il Aviation* 35:40 Sept '36
- Research in aviation radio. F. C. McMullen. *il Aero Digest* 35:48 Sept '39
- Saints' direction finder approach pattern. L. Le Kashman. *il map Aero Digest* 47:92 Dec 15 '44
- Some design consideration in Adcock direction finders. H. W. Roberts. *diags Aero Digest* 32:52 May '38
- Sperry-RCA automatic direction finder. *il diag Aero Digest* 33:95 Nov '38
- Standard Adcock radio direction finding equipment at aerodromes reduces night error; abstract. H. Busignies. *Electronics* 11:60 Mar '38
- Telemetry applied to aircraft compass. *Electronics* 10:28 July '37
- Two new Lear releases; automatic direction finder and accessory indicator combined with gyro compass. *il Aviation* 39:50 Nov '40
- Visual direction finders. D. S. Bond. *il Electronics* pt 1 16:140 Nov; pt 2 16:140 Dec '43; pt 3 17:144 Jan '44
- Western Electric radio compass. *il Aviation* 35:50 Feb '36
- Wireless direction finding. R. Keen. 803p Iiffe and Sons, Ltd., London '38

**AIRCRAFT Equipment, Miscellaneous**

Aircraft radio disconnect plugs. A. F. Trumbull. *il Electronics* 17:134 Jan '44

Aircraft radio equipment approved, 1940. *Civil Aero Jour* 2:78 Mar 15 '41

Aircraft radio; new equipment for communication and navigation. K. Henney and D. Fink. *il Aviation* 36:44 Nov '37

Aircraft radio and electrical equipment. H. K. Morgan. 374p bibliog (p369) \$4.50 Pitman '39

Aircraft radio equipment approved for scheduled air-carrier use; tabulation. *il Aero Jour* 1:41 Feb '40

Aircraft radio equipment for use on European air lines. A. D. Hodgson. *il plan Proc Inst Radio Eng* 23:979 Sept '35

Airmy ground communication equipment. R. B. Colton. *il Elec Eng* 64:173 May '45

Bendix communications unit. *il Aero Digest* 37:89 Nov '40

CAA radio equipment. T. B. Bourne. *il Radio N* 27:59 Jan '42

CAA radio equipment. R. G. Nichols. *il Radio N* 27:33 May '42

Cathode-ray tube used as aircraft instrument indicator. *il Electronics* 13:36 Mar '40

Commercial aircraft aids. *il Electronics* 15:86 Dec '42

Direct-reading radio-wave-reflection-type absolute altimeter for aeronautics. Sadahiro Matsuo. *Proc Inst Radio Eng* 26: 848 July '38

Electronic autopilot circuits. W. H. Gille and H. T. Sparrow. *il Electronics* 17:110 Oct '44

Electronic plane pilot. *il Electronics* 16:154 Nov '43

Electronic wing de-icer. *Electronics* 16:110 Jan '43

Electro-sonic altimeter for aircraft. J. H. Jupe. *Electronics* 13:54 Apr '40

Enemy radio equipment. (Signal Corps photos). *Electronic Indus* 3:78 Feb '44

Flexibility keynote in new lightweight radio equipment. W. W. Macdonald. *il Aviation* 41:197 Sept '42

Flight recorder for aircraft. H. D. Giffen. *il diags Radio N* 29:14 Apr '43

High-altitude test for aircraft radio equipment. *Electronic Indus* 1:36 Dec '42

Installation and maintenance of aircraft radio equipment. C. J. Schauers. *il diags Radio N* 24:10 Oct '40

KHAHX—Cuba; description of radio equipment. D. G. Fink. *il Aviation* 36:36 Sept '37

Learadio system. *il Aero Digest* 37:90 Nov '40

Modern vibration control installations for aircraft radio and instruments. *il Aero Digest* 49:89 June 1 '45

Motorola aeronautical two-way radio communication and direction finding system. *il Aero Digest* 36:171 May '40

Plywood masts expedite field radio installation for air force. *il Aero Digest* 45:118 May 15 '44

Precipitation-static interference on aircraft and at ground stations. H. M. Hucke. *Proc Inst Radio Eng* 27:301 May '39

Radio equipment for aircraft. G. S. Evans. *il Aero Digest* 25:46 Dec '34

Radio equipment for communication between the ground and aircraft. *il Aviation* 35:74 July '36

Radio equipment for the personal plane. W. P. Lear. *il Aero Digest* 47:56 Nov 15 '44

Radio equipment on B-29 superfortress. *Electronic Indus* 4:92 Sept '44

Radio for private aircraft; communications, maintenance. H. T. Sagert. *il Aero Digest* 35:42 Dec '39

Radio on bombers. *Electronic Indus* 4:113 June '44

Radio station reminders. *il Aero Digest* 49:121 May 15 '45

Service apparatus for aircraft radio. H. W. Roberts. *il Aero Digest* 36:42 Jan '40

Terrain clearance indicator. R. C. Newhouse. *Bell System Tech Jour* 18:222 Jan '29

Very-high-frequency radio noise elimination. T. B. Owen. *diags Elec Eng* 63: Trans 949 Dec '44

Vibrator operates aircraft fluorescent from battery. *il Electronics* 16:114 Jan '43

X-ray for aircraft carriers. *il Electronics* 17:184 Feb '44

**AIRCRAFT Instrument Landing Systems**

AAF instrument approach system is result of many years' research. *Aviation N* 2:34 Jan 15 '45

Automatic landings; device to tie up radio landing aids with automatic piloting. *il Aviation* 35:53 June '36

CAA-RTCA instrument landing installation. *il Electronic Industries* 3:92 May '44

Demonstration of instrument landing equipment; the Lorenz system at Indianapolis. D. G. Fink. *il Aviation* 36:20 July '37

Development of the Civil aeronautics authority instrument landing at Indianapolis. W. E. Jackson, P. F. Byrne, A. Alford, H. B. Fischer. *Trans A.I.E.E.* 59:849 '40

Flight paths of radio instrument landing system. *Electronics* 17:236 Mar '44

Flightray multiple instrument indicator. P. R. Bessett and J. Lyman. *Jour Aero Sci* 7:199 Mar '40

Instrument and radio flying. E. A. Cutrell. *il diags Aviation* 34:11 June '35

Instrument landing of aircraft. Bowles, Barrow, Hull, Lewis and Kerr. *Elec Eng* 59:45 Dec '40

Instrument landing system for aircraft. H. W. Roberts. *il diags Aero Digest* 29:43, 46 Oct; 32 Nov '36

Instrument landing systems will aid war effort. A. C. Prell. *il diags Aviation* 41:197 June '42

Instrument landing, today and tomorrow. H. W. Roberts. *il Aero Digest* 32:79 June '38

L'infrastructure des bases aeriennes; le radio-guidage des avions. U. Cassan. *Soc Ing Civilis Memoris* 90:295 May '37

New radio landing beam placed under the center of the landing field. W. Davis. *Science* 85:sup9 May 21 '37

Status of instrument landing systems. W. E. Jackson. *bibliog Proc Inst Radio Eng* 26:631 June '38

Training pilots to fly the beam. A. F. Bonnalle. *il Sci Amer* 151:322 June '36

Ultra short wave guide ray beacon and its application. E. Kramar and W. Hahnemann. *Proc Inst Radio Eng* 26:17 Jan '38

**AIRCRAFT Instrument Landing Systems—Cont'd**

- Unbending the beams; report of progress on modernizing the airways, with special reference to winter operations. *il map Aviation* 37:20 Jan '38
- United air lines' instrument landing system. *il Aero Digest* 28:60 June '36
- Washington institute of technology air-track system of instrument landing. *il diag Aero Digest* 30:60 Apr '37

*See also*

Aircraft Blind Landing Systems  
Radio Range

**AIRCRAFT Receivers**

- Airlines radio requirements met with a 24-pound receiver. D. S. Little. *il Aero Digest* 38:45 Jan '41
- Airport radio equipment; abstract. L. Arnson. *Pub Works* 75:89 June '44
- Aviation radio; Bendix aircraft radio receiver; other receivers. C. J. Schauers. *il Radio N* 27:25 Feb 28 Mar '42
- Bendix aircraft radio receiver; other receivers. C. J. Schauers. *il Radio N* 27:25 Feb; 28 Mar '42
- Flexibility keynote in new lightweight radio equipment. W. W. Macdonald. *il Aviation* 41:197 Sept '42
- Lear portable station; transmitter, receiver, power, all in one box. *il Aviation* 37:48 Oct '38; *Aero Digest* 33:96 Oct '38
- Messerschmitt Me 109 radio. W. P. Lear. *il Aviation* 40:100 Aug '41
- New RCA transmitter and receiver. *il Aviation* 36:45 Nov '37
- Panoramic reception; all stations on dial of receiver may be indicated simultaneously on cathode-ray oscilloscope; suited to radio navigation. *il Electronics* 13:14 June '40
- Private flyer's radio equipment. D. S. Little. *diags Aero Digest* 38:54 Mar '41
- Radio aids to aviation; radio-range beacons, marker stations, runway landing beams for airfields and receivers to pick up signals. C. L. Moser. *il diags Radio N* 18:334 Dec '36
- Radio equipment of German air raiders. J. H. Jupe. *il Electronics* 14:50 Apr '41
- RCA aircraft radios. *il Aero Digest* 27:60 July '35
- RCA aircraft receivers; models AVR-7D, E, F and G. *il Aero Digest* 31-81 Nov '37
- Receiver tube operation in aircraft. J. E. M. Lagasse and W. W. H. Dean. *Electronics* 14:56 Nov '41
- Recent advances in aircraft radio production. W. D. Van Dyke. *il diags Aero Digest* 38:69 Mar '41
- Simplified airport radio; transceiver. N. J. Clark. *il diags Aero Digest* 27:30 Nov '35
- Static crash eliminator in the Western Electric 17-A radio receiver. *Aero Digest* 27:49 Sept '35
- Ultra-high frequency aircraft receiver. P. D. McKeel. 26p bibliog U S Civil Aeronautics Authority, Washington '41
- AIRCRAFT Transmitters**
- Airplane 56 mc transceiver. M. N. Beitman. *il diag Radio N* 19:59 June '38

- Beacon marker transmitter installed at WENS for the benefit of aircraft. L. H. Nafzgar. *il Electronics* 9:29 May '36
- Collins aircraft transmitter. *il Aero Digest* 31:60 Oct '37
- Collins dial-tuned transmitter for airliners. *il Aviation* 37:63 Apr '38
- Emergency radio transmitter automatically sends out SOS signals. *il Aero Digest* 43:318 July '43
- Gathering weather data by balloons carrying radio transmitters. *il Electronics* 10:28. Dec '37
- German VHF Command set. R. A. Gordon. *il Electronics* 17:132 Apr '44
- Jap radio equipment. R. A. Gordon. *il Electronics* 17:126 May '44
- Lear developments; compass and transmitter. *il Aviation* 37:42 June '38
- Military transmitter in mass production. *il C. T. Read. Electronics* 17:121 Apr '44
- New RCA aircraft transmitters. *Aviation* 40:98 Oct '41
- Radio news private flyer's transmitter. K. A. Koptzky and O. Read. *il diag Radio-N* 23:6 Feb '40
- Radio progress during 1942; transmitters. *Proc Inst Radio Eng* 31:128 Apr '43
- RCA transmitter model AVT -7B. *il Aero Digest* 31:81 Nov '37
- Stancor transmitter. *il Aero Digest* 31:83 Nov '37
- Two new transmitters; the Shreve-Aero and the AR-30-W for private flyer. *il Aviation* 37:47 Mar '38
- Walter communicator aircraft transmitters. *il Aero Digest* 37:154 Aug '40
- Western Electric eleven-pound transmitter. *il Aero Digest* 27:54 Aug 35; *Aviation* 34:34 Aug '35
- Westinghouse aircraft transmitter. *Aero Digest* 26:48 June '35; *il Sci Amer* 152:268 May '35

**ALARMS, Automatic. See Marine Radio****ALLOCATION, Frequency**

- Allocations in the ultra-high-frequency spectrum; reference sheet. *Electronics* 10:34 Dec '37
- Application of the public water supply industry for radio channel allocations. *map Am Water Works Assn J* 36:1285 Dec '44
- Battle of the spectrum. H. Corey. *Pub Util* 34:476 Oct 12 '44
- Battle over FM; FCC urged to allot wider band for postwar reception. *Bsns W* p19 Nov 11 '44
- Carriers accept 33 clear radio channels. *Ry Age* 118:455 Mar 10 '45; *Same. Ry Mech Eng* 119:173 Apr '45
- Channel allocations for WERS. *Electronics* 16:158 Feb '43
- Communications commission standardizes radio terms; radio frequency bands. *Ind Stand* 14:111 Apr '43
- Emergency radio channels for utilities. H. L. Davis, jr. *Elec World* 122:89 Oct 28 '44
- Engineering work of the Federal communications commission; international point-to-point and allocation problems. P. F. Siling. *Proc Inst Radio Eng* 32:326 June '44
- FCC allocation plan. *Electronics* 18:92 Mar '45
- FCC announces allocations from 25 to 30,000 mc. *Electronics* 18:318 Feb '45

- FCC deliberations on resolving conflicting applications for radio space. Pub Util 34:668 Nov 23 '44
- FCC maps radio channels for oil industry use; warns effective allocation depends on peace. Nat Pet N 37:10 Jan 17 '45
- FCC's tough job; reassignment of radio frequencies. Bsns W p36 Nov 18 '44
- Fears FCC will make historical mistake on radio-telephones. Pub Util 34:567 Oct 26 '44
- Federal communications commission assigns ultra-high aircraft frequencies. Aviation 37:45 Jan '38
- Federal communications commission hearing on frequency allocation. A. Hazeltine. Proc Radio Eng 24:1407 Nov '36
- Fight for the ether; frequency modulation group wants to take one channel away from television interests. il Business Week p30 Jan 27 '40
- FM battle rages; Armstrong disputes FCC findings on interference in the present band. Bsns W p64 Feb 3 '45
- FM gets go sign; new allocations for frequency modulation radio and for television. Business Week p21 May 25 '40
- Frequency allocation for multi-channel systems. S. W. Lichtman. Electronics 17:120 Oct '44
- Frequency assignments in the radio spectrum for stations in the United States. Electronics 13:pt2 fold chart Sept '40
- Future of citizens' radiocommunication service; proposal to allocate band for civilian use of walkie-talkie equipment. Electronics 18:194 May '45
- Frequency spectrum; radio broadcasting, radio communication color chart. Gen Elec Rev 47: insert 16b June '44
- Hearing before Federal communications commission reveals phenomenal advances in induction heating; assignment of frequencies requested. Steel 116:81 Jan 29 '45
- International radio frequency proposals. Electronics 17:92 Nov '44
- Long-distance radio; allocation of frequencies; discussion meeting of Radio section of Institution of electrical engineers. Elec Rev (Lond) 136:164 Feb 2 '45
- More television room. O. B. Hanson. Electronic Indus 2:196 '43
- New FCC broadcast allocations. Radio N 19:48 June '38
- New high-frequency allocations; Federal communications commission assigns various broadcast services new space in the ether. Electronics 9:31 June '36
- Practical limitations of the broadcast allocation structure. C. B. Jolliffe. Elec Eng 56:666 June '37
- Radio frequencies and their allocation. Civil Aero Jour 1:80 Mar 15 '40
- Radio frequencies available to public utilities for emergency work. Edison Elec Inst Bul 6:316 July '38
- Radio frequencies; reallocation in United States. J. Stokley. Science 93:sup8 Mar 28 '41
- Radio spectrum. R. N. Farr. Science 100:sup 10 Nov 17 '44
- Radio wave-band decisions. Elec Rev (Lond) 122:642 May 6 '38
- Report on the FCC frequency allocation hearing. diags Electronics 17:92 Dec '44
- Should broadcasting occur in the 500-550 kc. band? improved marine radio equipment would reduce interference. C. B. Aiken. map Electronics 9:17 Oct '36
- Sixty clear channels for train communications. Ry Age 118:936 May 26 '45; Same. Ry Mech Eng 119:269 June '45
- Statement of the SMPE in opposition to the brief of the Columbia broadcasting system as it relates to theater television. P. J. Larsen. Soc Motion Picture Eng J 44:263 Apr '45
- Statement of the SMPE on allocation of frequencies in the radio spectrum from 10 kilocycles to 30,000,000 kilocycles for theater television service. diag Soc Motion Picture Eng J 44:105 Feb '45
- Story of broadcasting in the years to come; FCC allocation hearings. Radio N 32:12 Dec '44
- Telecommunication; allocation of frequencies. Electrician 115:441 Oct 11 '35
- Telephone industry asking radio frequency allocations. Pub Util 34:556 Oct 26 '44
- Testimony on behalf of electric utilities at F.C.C. hearing to review radio frequency allocations. R. V. Dondanville and G. H. Underhill. Edison Elec Inst Bul 12:341 Nov '44
- Ultra-high frequency domain. A. N. Goldsmith. Elec Eng 56:662 June '37
- U.S. gets new frequencies for international broadcasting. Radio N 20:59 Nov '38
- U.S.A. airline radio frequencies. Radio N 19:50 Apr '38
- 51 radio channels requested by utilities. Elec World News ed 122:9 Nov 4 '44
- 3650-3950 kcs. requisition; amateur frequencies taken for military use; interference prevention. R. P. Turner. diag Radio N 26:33 Oct '41

#### AMMETERS

- Bearing-type high-frequency electrodynamic ammeter. Harry R. Meahl. Proc Inst Radio Eng 26:734 June '38; Discussion. John H. Miller and Harry R. Meahl. 27:474 July '39
- Compensated thermocouple ammeter. W. N. Goodwin, Jr. Elec Eng 55:23 Jan. '36
- Electric instruments; performance at higher than operating frequencies; simple, practical methods of checking accuracy. S. C. Richardson. il Gen Elec Rev 46:565 Oct '43
- Electrodynamic ammeter for use at frequencies from one to one hundred megacycles. H. M. Turner and P. C. Michel. biblog il Proc Inst Radio Eng 25:1367 Nov '37
- Experiments with thermocouple milliammeters at very high radio frequencies. G. F. Gainsborough. biblog diags Jour Inst Elec Eng 91 pt 3:156 Sept '44
- Frequency errors in radio-frequency ammeters. J. D. Wallace and A. H. Moore. Proc Inst Radio Eng 25:327 Mar. '37
- Improved vacuum tube microammeter. A. W. Vance. Rev Sci Instruments 7:489 Dec '36
- Measuring R-F power with three ammeters. J. L. Hollis. diag Electronics 18:142 June '45
- Oscillating high-frequency ammeter. diags Wireless Eng 18:93 Mar '41



**AMMETERS—Continued**

- Rectifier milliammeters. T. A. Ledward. *diag Electrician* 130:239 Mar 5 '43
- Sensitive feedback voltmeter with rugged milliammeter indicator. L. Fleming. *diags Electronics* 15:88 Apr '42
- Shielding of radio-frequency ammeters. J. D. Wallace. *Proc Inst Radio Eng* 29:1 Jan. '41
- Theory and design of hot-wire ammeters for frequencies of 25 to 100 megacycles. C. L. Fortescue. *diags Jour Inst Elec Eng; Discussion.* 200 Aug. '36
- Thermocouple ammeters for ultra-high frequencies. John H. Miller. *Proc Inst Radio Eng* 24:1567 Dec '36
- Valve ammeter for the measurement of small alternating currents of radio frequency. H. E. M. Barlow. *diags Jour Inst Elec Eng* 77:612; *Discussion.* 623 Nov. '35
- Voltmeters, ammeters and wattmeters; instruments make use of three electrical effects according to the type of measurement. *Elec West* 90:47 Jan '43
- Voltmeter with 5-ma meter. E. M. Yard. *il Electronics* 17:160 July '44

*See also*

**Measurements****AMPLIDYNE Generator**

- Amplidyne; a mechanical amplifier. *Electronics* 13:54 Apr '40
- Amplidyne; control for paper making. *Electronic Indus* 2:69 Feb '43
- Amplidyne generator. *diags Mech Eng* 62:320-1 Apr '40; *Electronics* 13:54 Apr '40
- Amplidyne-electronic equipment increases versatility of paper machine. G. V. Kullgren. *il Paper Tr Jour* 115:57 Nov 26 '42
- Amplidyne generator, a dynamoelectric amplifier for power control. E. F. W. Alevanderson, M. A. Edwards and K K Bowman. *il diag Gen Elec Rev* 43:104 Mar '40
- Amplidyne puts electrical short-circuits to useful work. *il Sci Amer* 170:29 Jan '44
- Amplidyne system of control. E. F. W. Alexander and others. *il diags Proc Inst Radio Eng* 32:513 Sept '44
- Control equipments for induction heating. F. E. Ackley. *il diag Gen Elec Rev* 47:19 Mar '44
- Design characteristics of amplidyne generators. A. Fisher. *il diags Gen Elec Rev* 43:107 Mar '40
- Fundamental principles of amplidyne applications. F. E. Crever. *bibliog Elec Eng* 62:trans 603 Sept '43
- Industrial applications of amplidyne generators. D. R. Shoultz, M. A. Edwards and F. E. Crever. *il diags Gen Elec Rev* 43:114 Mar '40
- Large dynamometers use amplidynes. H. H. Vernon. *il diag Power Pl Eng* 48:89 Feb '44
- New industrial control device. *diag Electrician* 124:363 May 17 '40
- Speed regulating device outstanding on new paper-making machine; electronic amplifier in combination with an amplidyne control. *il Paper Tr* Jan 113:114 Nov 27 '41
- Steady-state theory of the amplidyne generator. T. D. Graybeal. *bibliog diag Elec Eng* 61:Trans 750 Oct '42

**AMPLIFICATION, Amplifiers**

- All-purpose public address amplifier. A. Besse. *il diag Radio N* 27:10 Apr '42
- Amplidyne; a mechanical amplifier. *Electronics* 13:54 Apr '40
- Amplification of galvanometer deflections. A. H. Taylor. *diags Rev Sci Instr* 8:124 Apr '37; *Abstract. Electronics* 10:46 June '37
- Amplification of transients; discussion of paper by C. H. Smith, G. Builder. *diags Wireless Eng* 12:246 May '35
- Amplifier characteristics at low frequencies, with particular reference to a new method of frequency compensation of single stages. G. W. Edwards and E. C. Cherry. *bibliog diags Jour Inst Elec Eng* 87:178 Aug '40
- Amplifier for direct-current galvanometers. A. W. Sear. *il diag Electronics* 13:28 Jan '40
- Amplifier measuring technique. E. F. Kiernan. *diags Electronics* 10:18 July '37
- Amplifier theory applied to regulators. J. M. Cage. *bibliog diags Electronics* 18:140 Jan. '45
- Amplifiers. *Engineering Dept. Aerovox Res W.* 9:6-7 June-July '37
- Amplifying and recording technique in electrobiology, with special reference to the electrical activity of the human brain. G. Parr and W. G. Walter. *il diags Jour Inst Elec Eng* 90 pt 3:129 Sept '43; *Discussion.* 90 pt 3:142; 91 pt 3:95 Sept '43, June '44
- Amplitude distortion. J. H. O. Harries. *diags Wireless Eng* 14:63 Feb. '37
- Amplitude range control. S. B. Wright. *Bell Sys Tech Jour* 17:520 Oct '38
- Application of conventional vacuum tubes in unconventional circuits. E. H. Shepard, Jr. *Proc Inst Radio Eng* 24:1573 Dec '36
- Automatic phase reversal amplifier. R. P. Crosby. *diags Electronics* 14:64 Oct '41
- AVC amplifiers for bridge null detectors. L. Fleming. *diags Electronics* 18:198 Jan '45
- Beam controlled amplifier. E. T. Rudkin. *diag Electronics* 10:40 June '37
- Cascade amplifiers with maximal flatness. V. D. Landon. *diags RCA Rev* 5:347, 481 Jan-Apr '41
- Causes for the increase of the admittances of modern high frequency amplifier tubes on short waves. H. J. O. Strutt and A. van der Ziel. *Proc Inst Radio Eng* 26:1011 Aug '38
- Contribution to tube and amplifier theory. W. E. Benham. *bibliog chart (insert) Proc Inst Radio Eng* 26:1093 Sept. '38
- Control of a gas-filled valve through a phase-shifting input valve; relay-amplifier. L. B. Turner. *il diags Wireless Eng* 14:229 May '37
- Control of the effective internal impedance of amplifiers by means of feedback. H. F. Mayer. *Proc Inst Radio Eng* 27:213 Mar '39
- Control scheme uses tubeless amplifier. A. S. Fitzgerald. *il diag Elec W* 107:1592 May 8 '37
- Coupling circuits for high-frequency amplifiers; abstract. A. Jaumann. *Wireless Eng* 21:337 July '44
- Determination of the quiescent operating point of amplifiers employing cathode bias. J. N. Thurston. *diags Proc Inst Radio Eng* 33:135 Feb '45
- Differential amplifier. J. F. Toennies. *diags Rev Sci Instr* 9:95 Mar '38
- Electronic amplifier valves with static secondary-emission multiplication (frequencies up to 100

- mc/s); abstract. W. Flechsig and M. Sandhagen. *Wireless Eng* 18:379 Sept '41
- Electronic megaphones; units using vacuum-tube amplifiers aid navy in maintaining communications among convoyed ships. *il diags Electronics* 16:125 Nov '43
- Electronic vibrato control for amplifiers. B. Ephraim. *diag Electronics* 14:52 Feb '41
- Flexible amplifier. L. Moore. *il diags Radio N* 27:12 Feb '42
- Flexible equalizing amplifier; used for equalizing loudspeakers, recording heads, playback equipment, or telephone lines. E. G. Cook. *il diags Electronics* 15:36 July '42
- Grounded-grid amplifiers. L. Katz. *diags Proc Inst Radio Eng* 32:641 Oct '44
- Grounded plate amplifier for the F-M transmitter. A. A. Skene. *diags Electronics* 15:106 Nov '42
- Harmonic analysis of overbiased amplifiers. V. R. Furst. *il Electronics* 17:143 Mar '44
- High-efficiency grid-modulated amplifier. F. E. Terman and J. R. Woodyard. *diags Proc Inst Radio Eng* 26:929 Aug '38
- High fidelity amplifier. D. C. Duncan. *il diag Radio N* 19:51 June '38
- High fidelity pre-amplifier. C. G. Sims and C. B. Lester. *il diag Radio N* 25:12 Apr '41
- High-gain amplifier for 150 megacycles. G. Rodwin and L. M. Klenk. *Proc Inst Radio Eng* 28:257 June '40
- High-gain wideband laboratory amplifier. F. A. Everest. *il Electronics* 12:16 Feb '39
- Inductively compensated tetrode amplifiers. D. M. Johnstone. *diags Wireless Eng* 15:208 Apr '38
- Inexpensive, precision amplifier for the lab. J. H. Potts. *il diag Radio N* 18:228 Oct '36
- Input resistance of vacuum tubes as u-h-f amplifiers. W. R. Ferris. *Proc Inst Radio Eng* 24:82 Jan '36
- Instrument amplifier. G. Kelley. *il diag Radio N* 18:424 Jan '37
- Inverted amplifier; applying input excitation in series with cathode of a power amplifier, with grid grounded. C. E. Strong. *il diags Electronics* 13:14 July '40
- Judging an amplifier by means of the transient characteristic. J. Haartjes. *diag Electronics* 15:80 Mar '42
- Limiting sensitivity of the alternating-current method of photo-cell-current amplification. E. A. Johnson. W. H. Mock and R. E. Hopkins. *bibliog diag Jour Amer Opt Soc* 29:506 Dec '39
- Limits to amplification. J. B. Johnson and F. B. Llewellyn. *Bell Sys Tech Jour* June '35
- Linear and grid-modulated r-f amplifiers. F. E. Terman and R. R. Buss. *Proc Inst Radio Eng* 29:104 Mar '41
- Linear plate modulation of triode r-f amplifiers. Chao-Ying Meng. *Proc Inst Radio Eng* 28:563 Dec '40
- Load-rating theory for multi-channel amplifiers. B. I. Holbrook and J. T. Dixon. *Bell Sys Tech Jour* 18:624 Oct '39
- Method for neutralizing hum and feedback caused by variations in the plate supply. K. B. Gonsler. *Proc Inst Radio Eng* 26:442 Apr '38
- Multiple amplifier. L. A. Kubetsky. *il diags Inst Radio Eng Proc* 25:421 Apr '37
- Multistage photocell current amplifier. Walter Richter. *il Electronics* 8:245 Aug '35
- Necessary conditions for instability of electrical circuits. D. G. Reid. *Wireless Eng* 14:588 Nov '37
- Neon tube coupled amplifier circuit for radio cosmic-ray receivers. S. A. Korff. *diag Rev Sci Instr* 9:256 Aug '38; *Abstract. Electronics* 11:69 Nov '38
- New test method for amplifiers and components of communication engineering; abstract. H. Knapp and A. Gerrmann. *Wireless Eng* 21:95 Feb '44
- New type of gas-filled amplifier tube. J. D. LeVan and P. T. Weeks. *diags Proc Inst Radio Eng* 24:180 Feb '36
- Novel amplifier for use with a piezo-crystal installation. N. G. Calvert. *il diag Electrician* 117:164 Aug 7 '36
- Open-grid tubes in low-level amplifiers. R. J. Meyer. *bibliog Electronics* 17:126 Oct '44
- Pentode amplification chart. *Radio N* 31:45 Apr '44
- Performance of self biased modulated amplifiers. R. I. Sarbacher. *bibliog Electronics* 16:99 Apr '43
- Pentode lock-in amplifier of high-frequency selectivity. W. C. Michels and N. L. Curtis. *diag Rev Sci Instr* 12:445 Sept '41
- Photoelectric galvanometer amplifier. G. Asset. *il diags Electronics* 18:126 Feb '45
- Power output of a-c operated amplifiers. W. A. Schwarzmann. *diags Electronics* 16:94 Aug '43
- Practical volume expansion. C. M. Sinnett. *Electronics* 8:14 Nov '35
- Principles of klystron amplifiers; abstract. R. O. Hoxby. *Electronics* 17:204 Nov '44
- Program-operated level-governing amplifier. W. L. Black and N. C. Norman. *Proc Inst Radio Eng* 29:573 Nov '41
- Pulse amplifier. R. B. Roberts. *diag Rev Sci Instr* 9:98 Mar '38
- Reactance amplifiers using iron core reactors, saturated by d.c. from copper oxide rectifiers. *il Electronics* 10:28 Oct '37
- Reduction of the effect of spontaneous fluctuations in amplifiers for metric and decimetric waves; abstract. M. J. O. Strutt and A. van der Ziel. *Wireless Eng* 22:134 Mar '45
- Relaxation amplifier. *il Electronics* 15:145 June '42
- Repeater amplifier. *il Electronic Indus* 4:98 Apr '45
- Review of the development of sensitive phototubes. Alan M. Glover. *Proc Inst Radio Eng* 29:413 Aug '41
- Review of ultra-high frequency vacuum tube problems. B. J. Thompson. *RCA Rev* 3:146 Oct '38
- Signal mixing amplifier. *il Electronic Indus* 3:122 Nov '44
- Some notes on linear and grid-modulated radio-frequency amplifiers. Frederick Emmons Terman and Robert Rumsey Buss. *Proc Inst Radio Eng* 29:104 Mar '41
- Stethophone amplifier. Charles Singer. *il Electronics* 12:66 June '39
- Strain-gage amplifier. N. G. Branson. *il diag Gen Elec Rev* 48:55 Apr '45

**AMPLIFICATION, Amplifiers—Continued**

- Strain gage amplifier design; abstract. W. R. Me-haffey. diag Electronics 17:244 Nov '44
- Theory of the single stage amplifier. B. Salzberg. bibliog diags Proc Inst Radio Eng 24:879 June '36
- Two-stage oscillograph amplifier. C. Dykes. il diag Wireless Eng 14:641 Dec '37
- Vacuum tube amplifier for small direct voltages. J. Razek. diags Jour Fr Instr 219:317 Feb '35
- Variable equalizer amplifier for reproduction of records. H. Rahmel. il diags Electronics 14:26 July '41
- Vogad for radiotelephone circuits. S. B. Wright, S. Doba and A. C. Dickieson. Proc Inst Radio Eng 27:254 Apr '39
- Volume expansion amplifier. C. G. McProud. il Electronics 13:17 Aug '40
- 6L6 amplifier. L. Oxman. diags Electronics 9:30 Sept '36

**AMPLIFICATION Factor**

- Amplification factor chart. E. R. Jervis. Elec-tronics 12:45 June '39
- Calculation of triode constants. J. H. Fremlin. Elec Comm 18:39 July '39
- Formulas for the amplification factor of triodes. B. Salzberg. Proc Inst Radio Eng 30:134 Mar '42
- Note on the variations in the amplification factor of triodes. F. E. Terman and A. L. Cook. Proc Inst Radio Eng 18:1044 June '30

*See also***Vacuum Tube Characteristics****AMPLIFIER Design**

- Aids in the design of intermediate frequency systems. P. C. Gardines and J. E. Maynard. chart Proc Inst Radio Eng 32:674 Nov '44
- Calibrated response curve tracer. G. L. Ham-burger. il diags Wireless Eng 22:170 Apr '45
- Circuit design to improve the frequency response of output transformers. C. A. Moreno. Stan-ford Univ '40
- Compensated amplifier chart. Y. J. Lin and J. D. Trimmer. il Electronics 12:35 Sept '39
- Design of two-tube microphone amplifier. Paul von Kunits. il Electronics 8:512 Dec '35
- Designing a public address amplifier. L. M. Dezet-tel. il diags Radio N 27:18 Apr '42
- Graphical design of cathode-output amplifiers. D. L. Shapiro. diags Proc Inst Radio Eng 32:263 May '44
- Graphical determination of power amplifier per-formance. R. I. Sarbacher. Electronics 15:52 Dec '42
- Grid-current flow as a factor in the design of vacuum-tube power amplifiers. W. L. Everitt and Karl Spangenberg. Proc Inst Radio Eng 26:612 May '38
- Some fundamental considerations in military am-plifier design. S. L. Chertok. il Jour Soc Mo-tion Picture Eng 43:10 July '44
- Universal amplification charts. F. E. Terman. il Electronics 10:34 June '37
- Universal equalizer provides audio frequency amplifier design data. Electronics 16:120 Aug '43
- Zero phase shift amplifier design. L. R. Malling. diags Electronics 18:136 Mar '45

**AMPLIFIER Distortion**

- Amplifier without phase distortion. diags Elec-tronics 10:26 June '37
- Analysis of distortion in class B audio amplifiers. T. McLean. diags Proc Inst Radio Eng 24:487 Mar '36
- Distortion-free amplifier. P. O. Pedersen. diags Proc Inst Radio Eng 28:59 Feb '40
- Distortion in compensated amplifiers. J. D. Trim-mer and Y. J. Liu. diags Electronics 13:22 July '40
- Distortion in valves with resistive loads. A. Bloch. Wireless Eng 15:592 Dec '39
- Distortion in negative feedback amplifiers. R. W. Sloane. Wireless Eng 14:259 May '37; Discus-sion. 14:369; 15:20 July '37, Jan '38
- Distortion produced by delayed diode automatic volume control. K. R. Sturley. diags Wireless Eng 14:15 Jan '37
- Distortion tests by the intermodulation method. John K. Hilliard. Proc Inst Radio Eng 29:614 Dec '41. Discussion. Benjamin F. Miessner. 30:420 Sept '42
- Fluctuations in space-charge limited currents at moderately high frequencies; fluctuations in vacuum-tube amplifiers and input systems. B. J. Thompson, D. O. North and W. A. Harris. diags RCA Rev 5:505; 6:114 Apr-July '41
- Interpretation of amplitude and phase distortion in terms of paired echoes. Harold A. Wheeler. Proc Inst Radio Eng 27:359 June '39. Discussion. Charles R. Burrows and C. W. Carnahan. p384
- Low distortion limiting amplifier. E. G. Cook. Electronics 12:38 June '39
- Low distortion volume expansion using negative feedback. B. J. Stevens. Wireless Eng 15:143 Mar '38
- Measuring distortion in audio-frequency ampli-fiers. Engineering Dept. Aerovox Res W 12:7 July '40
- Methods for checking RF distortion or cross-modulation of pentode amplifiers. E. W. Her-old. Electronics 13:82 Apr '40
- Non-linear distortion in transmission systems. R. A. Brockbank and C. A. A. Wass. Jour Inst Elec Eng 92pt 3:45 Mar '45

*See also***Distortion  
Phase****AMPLIFIER Measurements**

- Amplifier measuring technique. E. F. Kiernan. diags Electronics 10:18 July '37
- Calculation and design of resistance-coupled amplifiers using pentode tubes. F. E. Terman, W. R. Hewlett, C. W. Palmer and W. Y. Pan. Trans A. I. E. E. 59:879 '40
- Distortion tests by the intermodulation method. John K. Hilliard. Proc Inst Radio Eng 29:614 Dec '41; Discussion. 30:429 Sept '42
- Measurement of amplification and phase shift in amplifiers. E. E. Wright and G. E. G. Graham. il diags Wireless Eng 13:259 May '36
- Measurement of radio-frequency power; cathode-ray wattmeter. A. H. Taylor. il diags Proc Inst Radio Eng 24:1342 Oct '36
- Modulated-beam cathode-ray phase meter; meas-uring characteristics of amplifiers used in vibra-

- tion measurement. A. Watton, jr. biblog il diags Proc Inst Radio Eng 32:268 May '44
- Monarch amplifier gain measuring set. Proc Inst Radio Eng 27:sup2 Feb '39
- Phase-shifting device for the rapid determination of audio-frequency amplifier characteristics. K. Spangenberg and W. Palmer. Proc Inst Radio Eng 27:555 Sept '39
- Sixty cycle bridge for the study of radio frequency power amplifiers. A. Noyes, jr. Proc Inst Radio Eng 23:785 July '35
- What's the distortion percentage? Directions for construction distortion meter. W. Breedon. il Radio N 21:24 Mar '39

**AMPLIFIER Neutralization.** See Neutralization

### AMPLIFIERS, Audio-Frequency

- Applying neutralization to a-f amplifiers. P. W. Klipsch. Electronics 7:252 Aug '34
- Audio frequency amplifiers. E. F. Kiernan. il Electronics 10:18 July '37
- Audio frequency compensating circuits. S. Cutler. diags Electronics 15:63 Sept '42
- Audio amplifier testing unit. Engineering Dept. Aerovox Res W 15:9 Sept '43
- Audio-frequency response curve tracer. J. B. Sherman. il diags Proc Inst Radio Eng 26:700 June '38
- Comparative analysis of water-cooled tubes as class B audio amplifiers. I. E. Mouromtseff and H. N. Kozanowski. Proc Inst Radio Eng 23:1224 Oct '35
- Design of audio-frequency amplifier circuits using transformers. P. W. Klipsch. diags Proc Inst Radio Eng 24:219 Feb '36
- Direct-current and audio-frequency amplifier. L. J. Black and H. J. Scott. Proc Inst Radio Eng 28:269 June '40
- Frequency response curve tracer; checking audio amplifiers and acoustical apparatus. S. F. Carlisle, jr. and A. B. Mundel. il diags Electronics 14:22 Aug '41
- Phase-shifting device for the rapid determination of audio-frequency amplifier characteristics. Karl Spangenberg and Winslow Palmer. Proc Inst Radio Eng 27:555 Sept '39
- Quasi transients in class B audio-frequency push-pull amplifiers. A. Pen-Tung Sah. Proc Inst Radio Eng 24:1522 Nov '36
- Recording audio analyzer. il diags Electronics 16:100 July '43
- Retroaction in audio amplifiers. M. Marinesco. diags Wireless Eng 13:131 Mar '36
- Taking complete a.f. amplifier data. Engineering Dept. Aerovox Res W 14:5 May '42
- Universal equalizer provides a-f amplifier design data. il diags Electronics 16:120 Aug '43
- Voltage surges in audio-frequency apparatus. Elmer H. Fisher. Proc Inst Radio Eng 17:841 May '29

### AMPLIFIERS, Class A

- Calculation of Class A amplifier and harmonic generator performance of screen-grid and similar tubes. F. E. Terman and J. H. Ferns. Proc Inst Radio Eng 22:359 Mar '34

- Class B amplifiers considered from the conventional class A standpoint. J. R. Nelson. Proc Inst Radio Eng 21:858 June '33
- Class A push-pull calculations. E. W. Houghton. diags Electronics 10:18, 33 June '37
- Optimum conditions for maximum power in Class A amplifiers. Wayne B. Nottingham. Proc Inst Radio Eng 29:620 Dec '41
- Optimum conditions in Class A amplifiers. G. W. O. Howe. diags Wireless Eng 20:53 Feb '43; Discussion. 20:302 June '43
- Output transformer response. F. E. Terman and R. R. Ingebretsen. Electronics 9:30 Jan '36
- Theoretical study of the three-element vacuum tube. John R. Carson. Proc Inst Radio Eng 7:187 Apr '19

### AMPLIFIERS, Class B

- Analysis of class B and class C amplifiers. B. F. Miller. diags Proc Inst Radio Eng 23:496 May '35
- Analysis of distortion in class B audio amplifiers. T. McLean. diags Proc Inst Radio Eng 24:487 Mar '36
- Automatic compensation for class B bias and plate voltage regulation. R. J. Rockwell and G. F. Platts. Proc Inst Radio Eng 24:553 Apr '36
- Class B amplifiers considered from the conventional class A standpoint. J. R. Nelson. Proc Inst Radio Eng 21:858 June '33
- Class B radio frequency amplifier chart. Electronics 10:41 Nov '37
- Class B and AB audio amplifiers; output transformer design. G. Koehler. Electronics 9:14 Feb '36
- Comparative analysis of water-cooled tubes as class B audio amplifiers. I. E. Mouromtseff and H. N. Kozanowski. Proc Inst Radio Eng 23:1224 Oct '35
- Design of class B amplifiers. C. J. de Lusanct de la Sabloniere. diags Wireless Eng 12:133 Mar '35
- Experimental Doherty 5kw amplifier. C. E. Strong and G. C. Samson. Elec Comm 16:233 '38
- High audio output from relatively small tubes. L. E. Barton. Proc Inst Radio Eng 19:1131 July '31
- High-frequency power amplifiers; calculation of B and C types. F. M. Kosa. Wireless Eng 14:647 Dec '37; Discussion. 15:269 May '38
- High-gain linear amplifier employing degeneration. A. A. Petranks and L. C. Van Atta. diags Rev Sci Instr 11:103 Mar '30
- Optimum operating conditions for class B radio-frequency amplifiers. W. L. Everitt. diags Proc Inst Radio Eng 24:305 Feb '36
- Quasi transients in class B audio-frequency push-pull amplifiers. A. P. Sah. il diags Proc Inst Radio Eng 24:1522 Nov. '36
- Recent developments of the class B audio- and radio-frequency amplifiers. L. E. Barton. diags Proc Inst Radio Eng 24:985 July '36

### AMPLIFIERS, Class C

- Anode dissipation in anode-modulated class C amplifiers. R. G. Mitchell. Wireless Eng 18:443 Nov '41
- Analysis of class B and class C amplifiers. Burton F. Miller. Proc Inst Radio Eng 23:510 May '35
- Analysis of class C amplification. M. Reed. Wireless Eng 12:296 June '35

**AMPLIFIERS, Class C—Continued**

- Analysis of the operation of vacuum tubes as class C amplifiers. I. E. Mourontseff and H. N. Kozanowski. *il Proc Inst Radio Eng* 23:752, 24:654 July '35, Apr '36
- Calculation and design of class C amplifiers. F. E. Terman and W. C. Roake. *bibliog diags Proc Inst Radio Eng* 24:620 Apr '36
- Graphical method of finding the optimal operating conditions of triodes as class C telegraph transmitters. J. C. Frommer. *Proc Inst Radio Eng* 30:519 Nov '42
- Modulating class C amplifiers. M. D. Post. *diags Radio N* 32:38 Dec '44
- Power amplifier plate tank circuits. A. B. Newhouse. *diags Electronics* 14:32 Nov '41
- Power-tube performance in class C amplifiers and frequency multipliers as influenced by harmonic voltage. R. I. Sarbacher. *il diags Proc Inst Radio Eng* 31:607 Nov '43

**AMPLIFIERS, Direct-Coupled (Direct-Current)**

- Balanced direct-current amplifier for alternating-current operation. R. Stair and I. F. Hand. *diag Rev Sci Instr* 11:257 Aug '40
- Behavior of a balanced d.c. amplifier. R. C. Spencer and L. Schulz. *bibliog diag Rev Sci Instr* 14:10 Jan '43
- Direct-current amplifier and its application to industrial measurements and control. D. C. Gall. *il diags Jour Inst Elec Eng* 89 pt 2:434 Oct '42
- D-c amplified automatic volume control circuit time constants. K. R. Sturley and F. Duerden. *diags Wireless Eng* 18:358 Sept '41
- D-c amplifier design techniques. E. L. Ginzton. *diags Electronics* 17:98 Mar '44
- D-c amplifier for logarithmic recording. J. P. Taylor. *il diag Electronics* 10:24 Mar '37
- D-c amplifier for measuring potentials in living organisms. C. T. Lane. *il diag Electronics* 10:31 June '37
- Direct-coupled push-pull oscillograph driver stage. *Electronics* 10:40 Aug '37
- Direct-coupled amplifier. G. J. Kelley. *il diag Radio N* 18:660 May '37
- Direct current amplifier for photocell applications. R. W. Gilbert. *diag Electronics* 11:44 Jan '38
- Direct current amplifier circuits for use with the electrometer tube. D. B. Penick. *Rev Sci Inst* 6:115 Apr '35
- Direct current amplifier with a standard tube to measure ionization currents. H. Tatel, H. S. Moncton and O. Lohr. *diag Rev Sci Instr* 9:229 July '38; *abstract. Electronics* 11:82 Sept '38
- Direct-current and audio-frequency amplifier. L. J. Black and H. J. Scott. *il diags Proc Inst Radio Eng* 28:269 June '40
- Direct-current amplifiers. *diags Electronics* 11:42 Mar '38
- Evolution of the direct current amplifier. *diags Electronics* 9:62 Nov. '36
- High-gain d-c amplifier for bio-electric recording. H. Goldberg. *diags Elec Eng* 59; *Trans* 60 Jan '40
- Modulated carrier for D. C. amplifiers. S. Javna. *il Electronic Indus* 3:102 Jan '44
- Modulation measurement; use of diode rectifier followed by a linear d-c amplifier. C. G. Seright. *diags Electronics* 9:23 Aug '36

- Potentiometric direct-current amplifier and its applications. R. W. Gilbert. *diags Proc Inst Radio Eng* 24:1239 Sept '36
- Sensitive d-c amplifier with a-c operation. S. E. Miller. *il Electronics* 14:27 Nov '41
- Stable-direct-coupled amplifier. G. R. Mezger. *il diags Electronics* 17:106 July '44
- Stabilized neon-tube direct-coupled amplifier. W. H. Huggins. *il diag Elec Eng* 60; 437 Sept '41
- Theory of auto-compensating d.c. amplifiers utilizing direct mechanical control; abstract. L. Merz. *Jour Roy Aeronautical Soc* 48:607 Sept '44

**AMPLIFIERS, Feedback**

- Analysis of feedback and prevention of oscillation in h.f. amplifiers. T. Chew. *diags Radio N* 27:14 June '42
- Application of feedback to wideband output amplifiers. F. A. Everest and H. P. Johnson. *Proc Inst Radio Eng* 28:11 Feb '40
- Balanced feed-back amplifiers. Edward L. Ginzton. *Proc Inst Radio Eng* 26:1367 Nov '38
- Comparison of voltage- and current-feed-back amplifiers. E. H. Schulz. *diags Proc Inst Radio Eng* 31:25 Jan '43; *Correction. 31:384 July '43*
- Compression with feedback. H. H. Stewart and H. S. Pollock. *diag Electronics* 13:19 Feb '40
- Determining feedback characteristics graphically. *il Electronics* 14:87 Oct '41
- Diminution of variations of amplification by negative feedback, referred to the same amplification factor; abstract. J. Peters. *Wireless Eng* 19:473 Oct '42
- Distortion in negative feedback amplifiers. R. W. Sloane. *Wireless Eng* 14:259 May '37
- Equivalent circuits of the feedback amplifier. A. Fairweather. *diags Wireless Eng* 18:151 Apr '41
- Feedback. E. K. Sandeman. *diags Wireless Eng* 17:342 Aug '40
- Feedback amplifier. H. H. Stewart and H. S. Pollock. *il Electronics* 13:19 Feb '40
- Feedback amplifier design. F. E. Terman. *diags Electronics* 10:12 Jan '37
- Feedback amplifier for cathode-ray oscilloscopes. G. R. Mezger. *il Electronics* 17:26 Apr '44
- Feedback amplifiers for radio receivers, transmitters and carrier telephone. *diag Electronics* 9:30 July '36
- Frequency discrimination by inverse feedback. G. H. Fritzinger. *bibliog diags Proc Inst Radio Eng* 26:207 Feb '38
- Frequency response characteristic of amplifiers employing negative feedback. F. E. Terman and W. Y. Pan. *Communications* 19:5 Mar '39
- Input-resistance of feedback amplifiers; abstract. H. Bartels. *diag Electronics* 13:74 Jan '40
- Method of neutralizing hum and feedback caused by variation in the plate supply. K. B. Gonser. *diags Proc Inst Radio Eng* 26:442 Apr '38
- Negative feedback. A. C. Bartlett. *Wireless Eng* 15:90 Feb '38
- Practical feedback amplifiers. J. B. Russell. *il Electronics* 10:16 Apr '37
- Relations between attenuation and phase in feedback amplifier design. H. W. Bode. *diags Bell System Tech Jour* 19:421 July '40

- Some properties of negative feedback amplifiers. L. I. Farren. bibliog diags Wireless Eng 15:23 Jan '38
- Some applications of negative feedback with particular reference to laboratory equipment. F. E. Terman, R. R. Buss, W. R. Hewlett and F. C. Cahill. Proc Inst Radio Eng 27:649 Oct '39
- Stability factor of negative feedback in amplifiers. S. Becker. bibliog Proc Inst Radio Eng 32:351 June '44
- 60-watt amplifier utilizing negative feedback. J. H. Potts. il diags Radio N 18:740 June '37
- See also  
Feedback
- AMPLIFIERS, Intermediate-Frequency**
- Aids in the design of intermediate-frequency systems. P. C. Gardiner and J. E. Maynard. chart Proc Inst Radio Eng 32:674 Nov '44
- Intermediate frequency valves for frequency-modulated receivers. D. E. Foster and John A. Rankin. Proc Inst Radio Eng 29:546 Oct '41
- Neutralization of screen-grid tubes to improve the stability of intermediate-frequency amplifiers. C. A. Hultberg. diags Proc Inst Radio Eng 31:663 Dec '43
- Variable selectivity and the intermediate frequency amplifier. W. T. Cocking. diags Wireless Eng 13:119, 179, 237 Mar-May '36
- Visual alignment of wide-band I-F amplifiers. H. A. Cook and H. Moss. il diags Electronics 17:130 Oct '44
- AMPLIFIERS, High-Efficiency Linear**
- New high-efficiency power amplifier for modulated waves. W. H. Doherty. il diags Proc Inst Radio Eng 24:1163 Sept '36; Abstract. Bell System Tech Jour 15:469 July '36
- Some notes on linear and grid-modulated radio-frequency amplifiers. F. E. Terman and R. R. Buss. Proc Inst Radio Eng 29:104 Mar '41
- AMPLIFIERS, Power**
- Adjusting the class B linear power amplifier. L. B. Hallman. il Electronics 8:219 July '35
- Compact 50-KW power amplifier (WNBI) (WRCA). Raymond F. Guy. Electronic Indus 2:82 Apr '43
- Graphical determination of power amplifier performance. R. I. Sarbacher. Electronics 15:52 Dec '42
- Grid-current flow as a factor in the design of vacuum-tube power amplifiers. W. L. Everitt and K. Spangenberg. Proc Inst Radio Eng 26:612 May '38
- Grid compensated power amplifiers. W. Baggally. Wireless Eng 12:496 Sept '35
- High-frequency power amplifiers; calculation of B and C types. F. M. Kosa. Wireless Eng 14:647 Dec '37; Discussion. 15:269 May '38
- Ideal beam power amplifier. I. A. Mitchell. il diags Radio N 18:143, 214 Sept-Oct '36
- Modulated high-frequency power amplifiers. T. C. MacNamara. diag Wireless Eng 13:294 June '36
- Power amplifier for ultra-high frequencies. A. L. Samuel; N. E. Sowers. bibliog il diags Proc Inst Radio Eng 24:1464 Nov '36
- Power amplifier plate tank circuits. A. B. Newhouse. diags Electronics 14:32 Nov '41
- Radio frequency power amplifier chart. E. H. Schulz. Electronics 12:33 Dec '39
- Sixty-cycle bridge for the study of radio frequency power amplifiers. Atherton Noyes, Jr. Proc Inst Radio Eng 23:785 July '35
- Stabilizing of high-frequency power amplifiers. J. Greig. diags Jour Inst Elec Eng 76:702 June '35
- Telecommunication; power amplifiers. Electrician 115:642 Nov '35
- 150-watt final amplifier for 10-20 meters. E. M. Walker. diags Radio N 19:468 Feb '38
- AMPLIFIERS, Push-Pull**
- Amplification of direct voltages with a high-frequency push-pull circuit; Abstract. F. Kerkhof. Wireless Eng 20:249 May '43
- Bridge-type push-pull amplifiers. Leonard Tulanskas. Electronics 6:134 May '33
- Balanced amplifiers. F. Offner. Proc Inst Radio Eng 33:202 Mar '45
- Class A push-pull calculations. E. W. Houghton. diags Electronics 10:18 June '37
- Direct-coupled push-pull oscillograph driver stage. Electronics 10:40 Aug '37
- Geometry of push-pull amplification. R. L. Russell. diags Wireless Eng 21:463 Oct '44; Discussion. D. A. Bell. 21:584 Dec '44
- Graphical determination of performance of push-pull audio amplifiers. B. J. Thompson. Proc Inst Radio Eng 21:591 Apr '33
- Modifications of the push-pull output stage. K. A. Macfayden. diags Wireless Eng 12:528-639 Oct, Dec '35
- Quasi transients in class B audio-frequency push-pull amplifiers. A. P. Sah. il diags Proc Inst Radio Eng 24:1522 Nov '36
- Resistance coupling for push-pull amplification. Walter Richter. il Electronics 8:382 Oct '35
- AMPLIFIERS, Radio-Frequency**
- Amplification by r. f. pentodes; Abstract. W. Kleen and H. Rothe. diag Electronics 9:52 Oct '36
- Class B radio frequency amplifier chart. Electronics 10:41 Nov '37
- Formulas for R. F. voltage amplifiers. Electronic Indus 2:69 June '43
- Graphical design of an intermediate-frequency transformer with variable selectivity. Cyril Baranovsky and Arthur Jenkins. Proc Inst Radio Eng 25:340 Mar '37
- Grounded-grid radio-frequency voltage amplifiers. M. C. Jones. bibliog diags Proc Inst Radio Eng 32:423 July '44
- High-efficiency r. f. amplifiers. Engineering Dept. Aerovox Res W 14:7 July '42
- Linear and grid-modulated radio-frequency amplifiers. F. E. Terman and R. R. Buss. il diags Proc Inst Radio Eng 29:104 Mar '41
- Linear plate modulation of triode radio-frequency amplifiers. C. Meng Proc Inst Radio Eng 28:563 Dec '40
- Recent developments of the class B audio- and radio frequency amplifiers. Loy E. Barton. Proc Inst Radio Eng 24:985 July '36
- RF power amplifier operation. Engineering Dept., Aerovox Res W 13:4 Apr '41
- Sixty-cycle bridge for the study of radio frequency power amplifiers. Atherton Noyes, Jr. Proc Inst Radio Eng 23:785 July '35
- Some notes on linear and grid modulated radio frequency amplifiers. F. E. Terman and R. R. Buss. Proc Inst Radio Eng 29:104 Mar '41

**AMPLIFIERS, Remote**

- Convenient remote amplifier. A. H. Smith. *diag Electronics* 17:174 Aug '44
- Integrated remote amplifier system. A. J. Ebel. *diags Electronics* 14:46 Aug '41
- Midget remote amplifier. V. H. Voss. *il diag Electronics* 14:60 Sept '41
- Midget remote amplifier used at KCMO. L. C. Sigmon. *il diag Electronics* 11:38 Jan '38
- New system for the remote control of radio broadcast receivers. J. B. Sherman. *diags Proc Inst Radio Eng* 23:47 Jan '35
- Practical remote amplifiers. R. W. Carlson. *il diag Electronics* 11:25 Aug '38
- Radio News a.c. preamplifier and remote control. A. J. Haynes. *il diag Radio N* 19:540 Mar '38
- Receiver control by transmitted signal, alert receiver; device would enable stations to turn on receivers for news, civilian defense purposes, etc. H. B. Deal. *il diags RCA Rev* 6:167 Oct '41; *Abstract. Electronics* 15:86 Jan '42
- Remote amplifier with selective pre-emphasis. N. Wilcox. *il diag Electronics* 14:68 Oct '41
- Remote-controlled radio-frequency booster for a broadcast station. J. L. Hollis. *il diags maps Proc Inst Radio Eng* 32:525 Sept '44
- Remote receiver tuning at KDYL; solution to a short-wave press service problem. J. M. Baldwin. *diag Electronics* 9:19 Aug '36

*See also*

**Remote Control****AMPLIFIERS, Resistance-Capacitance Coupled**

- Amplification loci of resistance-capacitance coupled amplifiers. A. C. Seletzky. *diags Elec Eng* 55:1364 Dec '36; *Discussion. 56:877 July '37*
- Calculating charging time in RC circuits. Edison Williams. *Electronic Indus* 1:58 Dec '42
- Calculation of the low frequency cut-off of resistance-coupled amplifiers; abstract. H. Pitsch. *diags Electronics* 13:57 Feb '40
- Calculation and design of resistance-coupled amplifiers using pentode tubes. F. E. Terman, W. R. Hewlett, C. W. Palmer and W. Y. Pan. *Trans A. I. E. E.* 59:879 '40
- Designing resistance-coupled amplifiers (amplifiers with pentodes). J. van Lienden. *diags Radio N* 18:739 July '37
- Formulas for resistance-coupled amplifiers. *Electronic Indus* 2:63 May '43
- High-frequency correction in resistance-coupled amplifiers. E. W. Herold. *Communications* 18:11 Aug '38
- Improvements in resistance coupled amplifiers. O. H. Schmitt. *diags Electronics* 10:51 Apr '37
- Leaky condensers in resistance coupled amplifiers. O. H. Schmitt. *diag Rev Sci Instr* 8:91 Mar '37
- Limitations of resistance coupled amplification. W. F. Curtis. *diag Proc Inst Radio Eng* 24:1230 Sept '36
- Resistance coupled amplifier data. *il Electronics* 10:29 Feb '37
- Resistance-coupling design charts for determining the gain of resistance-capacitance coupled audio amplifiers. G. Koehler. *Electronics* 9:25 Aug '36
- Time delay in resistance-capacity circuits. E. W. Kellogg and W. D. Phelps. *diags Electronics* 11:26 Feb '38

**AMPLIFIERS, Ultra-High Frequency**

- Causes for the increase of the admittances of modern high-frequency amplifier tubes on short waves. M. J. O. Strutt and A. van der Ziel. *bibliog il diags Proc Inst Radio Eng* 26:1011 Aug '38
- Characteristic constants of h.f. pentodes; measurements at frequencies between 1.5 and 300 Mc/s. M. J. O. Strutt. *il diags Wireless Eng* 14:478 Sept '37
- Development problems and operating characteristics of two new ultra-high-frequency triodes. W. G. Wagener. *bibliog il diags Proc Inst Radio Eng* 26:401 Apr '38
- High frequency oscillator and amplifier. Russell H. Varian and Sigurd F. Varian. *Jour Applied Phys* 10:321 May '39
- Input resistance of vacuum tubes as ultra-high-frequency amplifiers. W. R. Ferris. *diags Proc Inst Radio Eng* 24:82; *Discussion. p. 105 Jan '36*
- Negative grid triode oscillator and amplifier for ultra-high frequencies. A. L. Samuel. *bibliog il diag Proc Inst Radio Eng* 25:1243 Oct '37; *Abstract. Bell System Tech Jour* 16:568 Oct '37
- Orbital-beam secondary-electron multiplier for ultra-high-frequency amplification. H. W. Wagner and W. R. Ferris. *Proc Inst Radio Eng* 29:598 Nov '41
- Power amplifier for ultra-high frequencies. N. E. Sowers. *il diags Bell System Tech Jour* 16:22 Jan '37
- Principles of klystron amplifiers; abstract. R. O. Haxby. *Electronics* 17:204 Nov '44
- Theoretical gain and signal-to-noise ratio of the grounded-grid amplifier at ultra-high frequencies. M. Dishal. *bibliog diags Proc Inst Radio Eng* 32:276 May '44
- UHF amplifier. *il Electronic Indus* 3:136 Jan '44
- UHF power amplifier of novel design. A. V. Haeff. *il Electronics* 12:30 Feb '39

**AMPLIFIERS, Video-Frequency (Wide Band)**

- Analysis and design of video amplifiers. S. W. Seeley and C. N. Kimball. *RCA Rev* 3:290 Jan '39
- Application of feedback to wide-band output amplifiers. F. A. Everest and H. R. Johnston. *diags Proc Inst Radio Eng* 28:71 Feb '40
- Broadband amplifiers. Madison Cawein. *Electronic Indus* 2:92 Oct '43
- Choice of tubes for wideband amplifiers. Dale Pollack. *il Electronics* 12:38 Apr '39
- Design of broad-band amplifiers. Madison Cawein. *Electronic Indus* 2:70 Sept '43
- High-frequency correction in resistance-coupled amplifiers. E. W. Herold. *Communications* 18:11 Aug '38
- Improved high-frequency compensation for wide-band amplifiers. A. B. Bereskin. *diags Proc Inst Radio Eng* 32:608 Oct '44
- Oscillograph amplifiers for very wide frequency ranges. M. von Ardenne. *il diags Wireless Eng* 13:59 Feb '36
- Performance of coupled and staggered circuits in wide band amplifiers. D. Weighton. *bibliog diags Wireless Eng* 21:468 Oct '44

- Shunt-peaking compensation; graphical method of determining shunt inductance in plate circuit of wide-band video amplifier; reference sheet. W. H. Freeman. *diag Electronics* 13:35 Jan '40
- Simple television preamplifier. R. Muniz and A. Tait. *il diags Electronics* 14:39 Apr '41
- Simplified television I-F systems. Garrard Mountjoy. *RCA Rev* 4:299 Jan '40
- Some notes on video amplifier design. A. Preisman. *RCA Rev* 2:421 Apr '38
- Transient response of multistage video-frequency amplifiers. A. V. Bedford and G. L. Fredendall. *Proc Inst Radio Eng* 27:277 Mar '39
- Ultimate bandwidths in high-gain multistage video amplifiers. W. R. MacLean. *diag Proc Inst Radio Eng* 32:12 Jan '44
- Video amplifier design. R. L. Freeman and J. D. Schantz. *Electronics* 10:22 Aug '37
- Video output systems. D. E. Foster and J. A. Rankin. *RCA Rev* 5:409 Apr '41
- Visual alignment of wide band i-f amplifiers. K. C. Cook and Harold Moss. *il Electronics* 17:130 Oct '44
- Wide-band amplifiers for television. Harold A. Wheeler. *Proc Inst Radio Eng* 27:429 July '39
- Wide band amplifier design. E. J. Bukstein. *diags Radio N* 30:21 Aug '43
- Wideband amplifiers and frequency multiplication. D. L. Jaffe. *il Electronics* 15:56 Apr '42
- Wide-band amplifiers for measuring purposes, for very large frequency ranges; abstract. R. Wunderlich. *Wireless Eng* 22:85 Feb '45
- Wide-band inductive-output amplifier. A. V. Haeff and L. S. Nergaard. *il diags Proc Inst Radio Eng* 28:126 Mar '40
- Wide-band television amplifiers. F. A. Everest. *Electronics* 11:16 Jan '38
- See also*  
Television Amplifiers
- ANTENNA Calculations, Design, Etc.**
- A, B, C's of antenna design. I. Queen. *il diags Radio N* 19:263 Nov '37; 20:49 July '38
- Antenna design for field-strength gain. H. W. Kohler. *Proc Inst Radio Eng* 32:611 Oct '44
- Antenna theory and experiment. S. A. Schelkunoff. *bibliog diags Jour Ap Phys* 15:54 Jan '44
- Calculating antenna impedance. *Electronics* 18:268 Jan '45
- Calculating antenna radiation patterns. R. W. Cronshey. *il Elec Eng* 63:331 Sept '44; *Discussion*. 64:131 Mar '45
- Calculation of aerial capacitance. G. W. O. Howe. *Wireless Eng* 20:157 Apr '43
- Calculation of ground wave field intensity over a finitely conducting spherical earth. K. A. Norton. *bibliog charts Proc Inst Radio Eng* 29:623 Dec '41
- Calculator for two-element directive arrays. J. G. Rountree. *diags Proc Inst Radio Eng* 32:760 Dec '44
- Cathode-ray antenna phasemeter. J. P. Taylor. *il Electronics* 12:62 Apr '39
- Chart for rhombic antenna design. *Electronic Indus* 3:112 Oct '44
- Charts for the determination of the r.m.s. value of horizontal radiation pattern of two-element broadcast arrays. K. Spangenberg. *Proc Inst Radio Eng* 30:237 May '42
- Computing antenna height. C. C. Jinks. *Electronics* 11:30 July '38
- Constants of fixed antennas on aircraft. G. L. Haller. *il Proc Inst Radio Eng* 26:415 Apr '38
- Design chart for phase shifting and amplitude control networks. W. S. Duttera. *Electronics* 15:53 Oct '42
- Design data for ground plane antennas. H. W. Hasenbeck. *diags Electronics* 16:98 Aug '43; *Discussion*. G. H. Brown. 16:338 Dec '43
- Design of doublet antenna systems for all-wave radio reception. H. A. Wheeler and V. E. Whitman. *bibliog diags Proc Inst Radio Eng* 24:1257 Oct '36
- Development of the general antenna array equation. W. T. Thomson. *Jour Ap Phys* 15:420 May '44
- Directional antenna design. E. A. Laport. *diags Electronics* 9:22 Apr '36
- Dummy dipole network. H. Salinger. *Proc Inst Radio Eng* 32:115 Feb '44
- Electrical oscillations of a prolate spheroid; the antenna problem. L. Page. *Phys Rev* 65:111 Feb 1, '44
- Estimating the total output of a certain array of aeriels and the current distribution among its members. E. B. Moullin. *Jour Inst Elec Eng* 91 pt3:23 Mar '44
- Extended aerial systems; calculating the polar diagrams. E. Green. *diags Wireless Eng* 19:195 May '42
- Field strength measurements. H. M. Smith. *il Electronics* 9:20 Aug '36
- Machine for calculating polar diagrams. H. P. Williams. *diag Electronics* 16:196 Sept '43
- Mechanical calculator for directional antenna patterns. W. G. Hutton and R. M. Pierce. *il diags Proc Inst Radio Eng* 30:233 May '42
- Method of calibrating a field-strength measuring set. F. M. Colebrook and A. C. Gordon-Smith. *diag Jour Inst Elec Eng* 88 pt3:15 Mar '41
- Radial ground system chart. G. H. Brown. *Electronics* 11:33 Jan '38
- Simple method for observing current amplitude and phase relations in antenna arrays. J. F. Morrison. *il diags Proc Inst Radio Eng* 25:1310-26 Oct '37
- Solution of definite integrals occurring in antenna theory. S. Weinbaum. *Jour Ap Phys* 15:840 Dec '44
- Standards on radio wave propagation measuring methods. *bibliog diags Proc Inst Radio Eng* 30:1 pt2 July '42
- Standards on transmitters and antennas, 1938. 42p Institute of radio engineers, New York '38
- Ultrashort electromagnetic waves; design of radiators or antennas for ultrashort waves. A. Alford. *bibliog diags Elec Eng* 62:303, 338 July-Aug '43
- ANTENNA Impedance**
- Experimentally determined impedance characteristics of cylindrical antennas. G. H. Brown and O. M. Woodward, jr. *diags Proc Inst Radio Eng* 33:257 Apr '45
- Impedance of a vertical half-wave antenna above an earth of finite conductivity. W. L. Barrow. *Proc Inst Radio Eng* 23:150 (*bibliog p166*) Feb '35



**ANTENNA Impedance—Continued**

- Impedance of short, long, and capacitively loaded antennas with a critical discussion of the antenna problem. R. King and C. W. Harrison, jr. bibliog diags Jour Ap Phys 15:170 Feb '44
- Mutual and self-impedance for coupled antennas. R. King and C. W. Harrison, jr. bibliog diags Jour Ap Phys 15:481 June '44
- Mutual impedance of antennas. C. W. Harrison, jr. bibliog Jour Ap Phys 14:306 June '43
- Self-impedance of a symmetrical antenna. R. King and F. G. Blake, jr. charts Proc Inst Radio Eng 30:335 July '42

*See also*

**Impedance****ANTENNA Masts**

- Baltimore mast. il Mod Plastics 19:39 Mar '42
- Erection of a 220ft. wireless mast. il diags Engineer 169:532, 536 June 14 '40
- Low cost wooden mast; station WJBC. V. J. Andrew and A. M. McGregor. diag Electronics 9:46 May '36
- Mast support for v. h. f. and u. h. f. antennas; suitable for FM and television. H. Cohen. il diags Radio N 31:30 June '44
- New kind of skyhook; the ladder mast. James Millen. QST 21:16 July '37
- Plywood antenna masts. il QST 29:27 May '45
- Problem of antenna masts. E. M. Walker. il diags Radio N 19:20 July '37

*See also*

**Antennas, Tower Towers****ANTENNA Polarization. See Propagation of Waves—Polarization****ANTENNA Radiation**

- Antenna radiation chart. (Ref sheets.) L. J. Gla-coletto. Electronics 12:35 July '39
- Application of vertical-incidence ionosphere measurements to oblique-incidence radio transmission. N. Smith. Jour Research Nat Bur Stand 20:683 May '38
- Approximate representation of the electromagnetic field in the vicinity of a symmetrical radiator. C. W. Harrison, jr. Jour Ap Phys 15:544 July '44
- Broadcast antenna for low angle radiation. J. W. Labus. diags Proc Inst Radio Eng 23:935 Aug '35
- Calculating antenna radiation patterns. R. W. Cronshey. il Elec Eng 63:331 Sept '44
- Charts for the determination of the root-mean-square value of the horizontal radiation pattern of two-element broadcast antenna arrays. K. Spangenberg. Proc Inst Radio Eng 50:237 May '42
- Control of radiating properties of antennas. C. A. Nickle, R. B. Dome and W. W. Brown. diags Inst Radio Eng 22:1362 Dec '34; Discussion. 23:1264 Oct '35
- Determination of the radiation diagrams of radiator groups; directive or anti-fading aerial systems and acoustic radiators; an electro-mechanical method; abstract. H. Kleinwachter. Wireless Eng 19:576 Dec '42

Energy distribution in the near field of electromagnetic radiators, in particular in front of diaphragms and reflectors (treated by acoustical methods); abstract. H. Born. Wireless Eng 21:188 Apr '44

- Radiation energy and earth absorption for dipole antennae. A. Sommerfeld and F. Renner. diag. Wireless Eng 19:351, 409, 457 Aug-Oct '42
- Radiation from antennas. S. A. Schelkunoff and C. B. Feldman. bibliog Proc Inst Radio Eng 30:511 Nov '42
- Radiation from rhombic antennas. Donald Foster. Proc Inst Radio Eng 25:1327 Oct '37
- Radiation from vee antennas. C. W. Harrison, jr. bibliog diags Proc Inst Radio Eng 31:362 July '43
- Series for the wave function of a radiating dipole at the earth's surface. S. O. Rice. Bell System Tech Jour 16:101 Jan '37
- Significant radiation from directional antennas of broadcast stations for determining-sky-wave interference at short distances. J. H. Dewitt, jr. and A. D. Ring. bibliog diags Proc Inst Radio Eng 32:668 Nov '44
- Sources of spurious radiations in the field of two strong signals. A. J. Ebel. diag Proc Inst Radio Eng 30:81 Feb '42
- Study of the electromagnetic field in the vicinity of a radiator. F. R. Stansel. bibliog diag tables Proc Inst Radio Eng 24:802 May '36
- Theoretical investigations of radiation diagrams and radiation resistance for progressive waves of various phase velocities; abstract. W. Jachnow. Wireless Eng 20:87 Feb '43
- Voltage/db conversion device; linear polar-coordinate graphs readily interpreted; antenna radiation problem. E. Dyke. Electronics 17:146 Sept '44

*See also*

**Radiation****ANTENNA Resistance**

- Concerning new methods of calculating radiation resistance, either with or without ground. W. W. Hansen and J. G. Beckerley. diags Proc Inst Radio Eng 24:1594 Dec '36
- Effective resistance of closed antennas. V. I. Bashenoff and N. A. Mjasoedoff. diags Proc Inst Radio Eng 24:778 May '36
- Input resistance of dipole aeriels; abstract. H. Kaufmann. Wireless Eng 20:354 July '43
- Radiation resistance of aeriels whose length is comparable with the wavelength. E. B. Moul-lin. diags Jour Inst Elec Eng 78:540-63 May '36

**ANTENNAS**

- Acoustic models of radio antennas. E. C. Jordan and W. L. Everitt. il diags Proc Inst Radio Eng 29:186 Apr '41
- Aerial characteristics. N. Wells. bibliog il diags Jour Inst Elec Eng 89 pt 3:76 June '42; Discussion. 89 pt 3:95 June '42; 90 pt 3:24 Mar '43
- Aerial characteristics; relation between transmission and reception. R. E. Burgess. bibliog Wireless Eng 21:154 Apr '44
- Aeriels with rotating-field phase adjustment; abstract. H. Bruckmann. Wireless Eng 21:596 Dec '44
- Antenna power divider. E. Travis. diags Electronics 17:131 July '44

- Beacon antenna characteristics. H. K. Morgan. diags Air Commerce Bul 9:77 Oct '37
- Cathode-ray antenna phasemeter. J. P. Taylor. il Electronics 12:62 Apr '39
- Coupled antennas and transmission lines. R. King. diags Proc Inst Radio Eng 31:626 Nov '43
- Current distribution and radiation properties of a shunt-excited antenna. Pierre Baudoux. Proc Inst Radio Eng 28:271 June '40
- Data on single and new double-type J antennas. A. J. Haynes. il diags Radio N 19:342 Dec '37
- Distribution of current along a symmetrical center-driven antenna. R. King and C. W. Harrison, jr. bibliog diags Proc Inst Radio Eng 31:548 Oct '43; Correction. 31:697 Dec '43
- Distribution of ultra-high-frequency currents in long transmitting and receiving antennae. L. S. Palmer and K. G. Gillard. bibliog diag Jour Inst Elec Eng 83:415 Sept '38
- Drehbare richtantenne fur den hollandischen kurzwellen-weltrundfunk. P. J. H. A. Nordlohne. il V D I 82:942 Aug 6 '38
- Extended aerial systems; calculating the polar diagrams. E. Green. diags Wireless Eng 19:195 May '42
- Fundamental considerations on the current and potential distribution on aerials; abstract. O. Zinke. Wireless Eng 18:377 Sept '41
- Gemeinschaftsantenne fur störungsarmen rundfunkempfang. diags Zeit Ver Deutsch Ing 80:1090 Aug 29 '36
- Ground system as a factor in antenna efficiency. G. H. Brown, R. F. Lewis and J. Epstein. il Proc Inst Radio Eng 25:753 June '37
- High quality radio broadcast transmission and reception. S. Ballantine. il diag Proc Inst Radio Eng 22:617 May '34; Discussion. 23:256 Mar '35
- Horizontal rhombic antennas. E. Bruce. A. C. Beck and L. R. Lowry. il diags Proc Inst Radio Eng 23:24 Jan '35; Same. Bell System Tech Jour 14:135 Jan '35
- Investigations on umbrella aerials; abstract. G. Rosseler and K. Vogt. Wireless Eng 20:141 Mar '43
- L'antenne tournante de la station radioelectrique de Huizen (Pays-Bas). il Genie Civil 112:67 Jan 15 '38
- Mathematical theory of linear arrays. S. A. Schelkunoff. diags Bell System Tech Jour 22:80 Jan '43
- Mechanical calculator for directional antenna patterns. W. G. Hutton and R. M. Pierce. il diags Proc Inst Radio Eng 30:233 May '42
- Modification of Hallen's solution of the antenna problem. M. C. Gray. Jour Ap Phys 15:61 Jan '44
- Modified protective gap for transmitting antennas. A. Leeman. diags Electronics 16:128 May '43
- Multifrequency tuned antenna system. Howard K. Morgan. il Electronics 13:42 Aug '40
- New form of antenna; V-doublet system. Electrician 114:824 June 21 '35; Same abr. Gen Elec Rev 38:395 Aug '35
- Optimum current distributions on vertical antennas. L. La Paz and G. A. Miller. bibliog diag Proc Inst Radio Eng 31:214 May '43
- Physical reality of space and surface waves in the radiation field of radio antennas. K. A. Norton. bibliog Proc Inst Radio Eng 25:1192 Sept '37; Correction. 25:1366 Nov '37
- Polarisation measurements in the field of a horizontal transmitting dipole; abstract. J. Grosskopf and K. Vogt. Wireless Eng 21:437 Sept '44
- Pretuned turnstile antenna. G. H. Brown and J. Epstein. il diags Electronics 18:102 June '45
- Principle of reciprocity in antenna theory. M. S. Neiman. bibliog Proc Inst Radio Eng 31:666 Dec '43; Discussion. D. O. North. 32:556 '44
- Problem of antenna masts. E. M. Walker. il diags Radio N 19:20 July '37
- Quadrant aerial; an omni-directional wide-band horizontal aerial for short waves. N. Wells. diags Jour Inst Elec Eng 91 pt 3:182 Dec '44
- Radiation energy and earth absorption for dipole antennae. A. Sommerfeld and F. Renner. diag Wireless Eng 19:351, 409, 457 Aug-Oct '42
- Radiation field of a symmetrical center-driven antenna of finite cross section. C. W. Harrison, jr. and R. King. Proc Inst Radio Eng 31:693 Dec '43
- Radiation field of long wires, with application to vee antennas. C. W. Harrison, jr. bibliog diags Jour Ap Phys 14:537 Oct '43
- Radio-frequency distributing systems. F. X. Rettenmeyer. bibliog il diags Proc Inst Radio Eng 23:1286 Nov '35
- Radiating systems and wave propagation. A. G. Kandoin. il Electronics 15:39 Apr '42
- Receiver aerial coupling circuits. K. R. Sturley. diags Wireless Eng 18:137, 190 Apr-May '41
- Relative field strength meter, for locating interference and to discover the best u.h.f. antenna location. T. Chew. il diag Radio N 25:19 May '41
- Self-impedance of a symmetrical antenna. R. King and F. G. Blake, jr. charts Proc Inst Radio Eng 30:335 July '42
- Short-wave dipole aerials. N. Wells. bibliog diags Wireless Eng 20:219 May '43
- Shunt condenser aerial coupling. S. W. Amos. diags Wireless Eng 19:549 Dec '42
- Shunt-excited antenna. J. F. Morrison and P. H. Smith. il diag Proc Inst Radio Eng 25:673 June '37
- Simple method for observing current amplitude and phase relations in antenna arrays. John F. Morrison. Proc Inst Radio Eng 25:1310 Oct '37
- Some aspects of radio reception at ultra-high frequency; the antenna and the receiver input circuits. E. W. Herold and L. Malter. diags Proc Inst Radio Eng 31:423 Aug '43
- Terminal functions for antennas. D. D. King and R. King. bibliog diags Jour Ap Phys 15:186 Feb '44
- Theory and performance of corner reflectors for aerials; abstracts. E. B. Moullin. Electrician 133:408 Nov 3 '44; Elec Rev (Lond) 135:625 Nov 3 '44
- Theory of antennas of arbitrary size and shape. S. A. Schelkunoff. bibliog Proc Inst Radio Eng 29:493 Sept '41; Correction. 31:38 Jan '43
- Transmitting antenna and a directional loop for aircraft. il Aviation 41:281 Feb '42
- Using antenna relays. E. M. Walker. il diags Radio N 19:90 Aug '37

**ANTENNAS—Continued**

Vertical vs. horizontal polarization. G. H. Brown. diags Electronics 13:20 Oct '40

Wavelength of oscillations along transmission lines and antennas. E. M. Siegel. Texas U Eng Research Ser no. 32:1 '40

**ANTENNAS, Adcock**

Calibration of four-aerial direction finders. W. Ross. Jour Inst Elec Eng 85:192 '39 Same. Wireless sec I. E. E. 14:229 Sept '39

Improved medium wave Adcock direction finder. R. H. Barfield and R. A. Fereday. Wireless sec I. E. E. 13:33 Mar '38

Polarization errors in direction finders. R. A. Watson-Watt. Wireless Eng 13:3 Jan '36

Radio direction finding on wavelengths between 2 and 3 metres. R. L. Smith-Rose. Wireless sec I. E. E. 15:161 Sept '40. Same. Jour Inst Elec Eng 87:154 '40

Radio direction finding on wavelengths between 6 and 10 metres. R. L. Smith-Rose and H. G. Hopkins. Jour Inst Elec Eng 83:87 '38. Same. Wireless sec I. E. E. 13:303 Sept '38

Sense finding device for use with spaced-aerial direction finders. R. A. Fereday. Jour Inst Elec Eng 84:96 '39

Short-wave Adcock direction finder. R. H. Barfield and W. Ross. Jour Inst Elec Eng 81:683 '37. Same. Wireless sec I. E. E. 13:39 Mar '38

*See also*

Antennas, Directional  
Direction Finders

**ANTENNAS, Beam**

Experiments with underground ultra high frequency antenna for airplane landing beam. H. Diamond and F. W. Dunmore. pl diag Jour Research Nat Bur Stand 19:1 July '37. Same. Proc Inst Radio Eng 25:1542 Dec '37

Beamscope, new radio development. il Gen Elec Rev 41:339 July '38

Developments in the beam array. A. W. Ladner. Engineering 142:468, 514 Oct 30-Nov 6 '36; Excerpts. Engineer 162:228 Sept 18 '36

For five-meter DX try this directive rotary beam. S. Perlman. il diags Radio N 18:396 Jan '37

H-beam antenna. W. A. Meissner. il Radio N 19:267 Nov '37

International beams; short-wave broadcasts. R. F. Guy. il maps Sci Amer 165:268 Nov '41

Motor-driven rotary beam antenna. R. J. Long. il diags Radio N 20:18 Oct '38

Rotary beams for the ultra-high frequencies. L. M. Mockaday. il diags Radio N 19:266 Nov '37

Rotatable antenna at PCJ. D. J. Fruin. il Electronics 11:30 Feb '38

**ANTENNAS, Broadcast**

Adjusting unequal-tower broadcast arrays. G. H. Brown and J. M. Baldwin. il diags Electronics 16:118 Dec '43

Broadcast antenna. A. B. Chamberlain and W. B. Lodge. Proc Inst Radio Eng 24:11 Jan '36

Broadcast antenna for "low angle" radiation. J. W. Labus. Proc Inst Radio Eng 23:935 Aug '35

Broadcast transmission developments and progress during 1934. H. A. Chinn and C. W. Horn. Proc Inst Radio Eng 23:431 May '35

Critical study of the characteristics of broadcast antennas as affected by antenna current distribution. G. H. Brown. Proc Inst Radio Eng 24:48 Jan '36

Critical study of two broadcast antennas. Carl E. Smith. Proc Inst Radio Eng 24:1329 Oct '36

Droitwich broadcasting station. N. Ashbridge, H. Bishop and B. N. MacLarty. diags Jour Inst Elec Eng 77:447, 460; Discussion. 474 Oct '35

Electrical properties of aerials for medium and long wave broadcasting. W. L. McPherson. Elec Comm 17:44 July '38

Fading characteristics of the top-loaded WCAU antenna. G. H. Brown and J. G. Leitch. il diags map Proc Inst Radio Eng 25:583 May '37

Horizontal-polar-pattern tracer for directional broadcast antennas. F. A. Everset and W. S. Pritchett. il diags Proc Inst Radio Eng 30:227 May '42

General consideration of tower antennas for broadcast use. H. E. Gihring and G. H. Brown. il Proc Inst Radio Eng 23:311 Apr '35

Impedance measurements on broadcast antennas. D. B. Sinclair. Communications 19:5 July '39

Measurement of broadcast coverage and antenna performance. W. H. Fitch and W. S. Duttera. RCA Rev 3:340 Jan '39

New vertical broadcasting antenna for station WGY. E. G. Semon and others. il Gen Elec Rev 41:134 Mar '38

Phase and magnitude of earth currents near radio transmitting antennas. G. H. Brown. Proc Inst Radio Eng 23:168 Feb '35

Phasing networks for broadcast arrays; graphical methods applied. C. R. Cox. diags Electronics 17:120 June '44

Radio field intensity and distance characteristics of a high vertical broadcast antenna. Samuel S. Kirby. Proc Inst Radio Eng 24:859 June '36

Researches in radiotelephony; multiple-unit steerable antenna. R. Brown. diags map Jour Inst Elec Eng 83:395 Sept '39; Same cond. Electrician 121:335 Sept 23 '38; Abstract. Elec Rev (Lond) 122:640 May 6 '38

Rotatable antenna at PCJ. D. J. Fruin. il Electronics 11:30 Feb '38

Some comments on broadcast antennas. R. N. Harmon. Proc Inst Radio Eng 24:36 Jan '36

Tailored radio waves; concentrating broadcasting service by design of antenna system. A. Maxwell. Il diags map Sci Amer 157:138 Sept '37

Transoceanic radiotelephone development; multiple unit steerable antenna. R. Brown. Proc Inst Radio Eng 25:1131 Sept '37

Turnstile antenna for ultra-high-frequency broadcasting; Abstract. G. H. Brown and J. Epstein. Proc Inst Radio Eng 29:221 Apr '41

WABC's new two-way antenna. Ogden Prestholdt. Electronic Indus 4:88 Feb '45

*See also*

Broadcasting

**ANTENNAS, Directional**

Adjustment of directional antennas. W. S. Duttera. il diags Electronics 16:91 Apr '43

Aerials with rotating-field phase adjustment; abstract. H. Bruckmann. Wireless Eng 21:596 Dec '44

Antenna arrays around cylinders. P. S. Carter. bibliog diags Proc Inst Radio Eng 31:671 Dec '43

- Antenna arrays with closely spaced elements. John D. Kraus. Proc Inst Radio Eng 28:76 Feb '40
- Antennas a rayonnement zenithal reduit. H. Chie-reix. L'onde Electrique 15:440 July '36
- Approximate representation of the distant field of linear radiators. R. King. Proc Inst Radio Eng 29:458 Aug '41
- Calculator for the element directive arrays. diags Proc Inst Radio Eng 32:760 Dec '44
- CBS international broadcast facilities. A. B. Chamberlain. Proc Inst Radio Eng 30:118 Mar '42
- Characteristics of the two-antenna array. C. W. Harrison, jr. biblog Proc Inst Radio Eng 31:75 Feb '43
- Charts for the determination of the root-mean-square value of the horizontal radiation pattern of two-element broadcast antenna arrays. Karl Spangenberg. Proc Inst Radio Eng 30:237 May '42
- Comparative merits of different types of directive aerials for communications. J. A. Smale. Jour Inst Elec Eng 91 pt3:12 Mar '44; Same abr. Electrician 132:74 Jan 28 '44; Same cond. Elec Rev (Lond) 134:119 Jan 28 '44
- Comparison between electric horns and other directional radiators; abstract. O. Schafer. Wireless Eng 22:90 Feb '45
- Corner-reflector antenna. J. D. Kraus. il diags Proc Inst Radio Eng 28:513 Nov '40
- Design of "flat-shooting" antenna arrays. W. W. Hansen and L. M. Hollingsworth. Proc Inst Radio Eng 27:137 Feb '39
- Design problems of directional loop antennas for aircraft; abstract. G. F. Levy. diags Aviation 41:135 Mar '42
- Determination of the radiating system which will produce a specified directional characteristic. Irving Wolff. Proc Inst Radio Eng 25:630 May '37
- Development of the general antenna array equation. W. T. Thomson. Jour Ap Phys 15:420 May '44
- Dipoles and reflectors. S. Goldman. diags Electronics 13:20 May '40
- Directional antenna; American Airlines communication antenna. il Aero Digest 30:68 Feb '37
- Directional antenna chart; reference sheet. W. S. Duttera. Electronics 13:33 Feb '40
- Directional antennas. G. H. Brown. Proc Inst Radio Eng 25:78 Jan '37
- Directional array field strengths. A. R. Rumble. Electronics 10:16 Aug '37
- Directional characteristic of a half-wave doublet goniometer. R. J. Dwyer. Jour Ap Phys 15:513 June '44
- Directional radiation patterns. A. J. Ebel. diags Electronics 9:29 Apr '36
- Electromechanical calculator for directional-antenna patterns. C. E. Smith and E. L. Gove. biblog il diags Elec Eng 62:Trans78 Feb '43
- Elevated transmitter for testing direction finders. R. H. Barfield. il diags Wireless Eng 15:495 Sept '38
- Experiments with directivity steering for fading reduction. E. Bruce and A. C. Beck. il diag Proc Inst Radio Eng 23:357 Apr '35; Same. Bell System Tech Jour 14:195 Apr '35
- Ground systems as a factor in antenna efficiency. G. H. Brown, R. F. Lewis and J. Epstein. il Proc Inst Radio Eng 25:753 June '37
- Horizontal-polar-pattern tracer for directional broadcast antennas. F. Alton Everest and Wilson S. Pritchett. Proc Inst Radio Eng 30:227 May '42
- Horizontal rhombic antennas. E. Bruce, A. C. Beck and L. R. Lowry. il diags Proc Inst Radio Eng 23:24 Jan '35; Same. Bell System Tech Jour 14:135 Jan '35
- Improved medium-wave Adcock direction-finder. R. H. Barfield and R. A. Fereday. diags Jour Inst Elec Eng 81:676 Uov '37
- Installation of antennas for direction finding. J. C. Franklin. Air Commerce Bul 9:256 Apr '38
- Measured performance of horizontal dipole transmitting arrays; abstracts. H. Page. Electrician 133:408 Nov 3 '44; Elec Rev (Lond) 135:625 Nov 3 '44
- Mechanical calculator for directional antenna patterns. William G. Hutton and R. Morris Pierce. Proc Inst Radio Eng 30:233 May '42
- Method of exciting the aerial system of a rotating radio beacon. H. A. Thomas. biblog diags Jour Inst Elec Eng 77:285 Aug '35
- Multiple unit steerable antenna for shortwave reception. H. T. Friis and C. R. Feldman. biblog il diags Proc Inst Radio Eng 25:841 July '37; Same. Bell Sys Tech Jour 16:337 July '37
- Multiunit electromagnetic horns. W. L. Barrow and C. Shulman. Proc Inst Radio Eng 28:130 Mar '40
- New principle in directional antenna design. W. W. Hansen and J. R. Woodyard. diags Proc Inst Radio Eng 26:333 Mar '38
- New studio-to-transmitter antenna. M. W. Scheldorf. il diags Proc Inst Radio Eng 33:106 Feb '45
- Phasing networks for broadcast arrays; graphical methods applied. C. R. Cox. diags Electronics 17:120 June '44
- Polar diagram of a simple broadside array. G. W. O. Howe. Wireless Eng 19:193 May '42
- Quadrant aerial; an omni-directional wide-band horizontal aerial for short waves. N. Wells. diags Jour Inst Elec Eng 91 pt 3:182 Dec '44
- Radiating system for 75-megacycle cone-of-silence marker. Edmund A. Laport and James B. Knox. Proc Inst Radio Eng 30:26 Jan '42
- Radio relay systems developed by the Radio Corporation of America; couplings between directional antennas. C. W. Hansell. diags Proc Inst Radio Eng 33:164 Mar '45
- Remarks on the absorption surfaces of directive aerials; abstract. K. Franz. Wireless Eng 20:352 July '43
- Rhombic antenna design. A. E. Harper. Van Nostrand, New York '41
- Rhomic transmitting aerial; increasing the power efficiency. L. Lewin. Wireless Eng 18:180 May '41

**ANTENNAS, Directional—Continued**

Short-wave Adcock direction-finder. R. H. Barfield and W. Ross. diags Inst Jour Inst Elec Eng 81:682 Nov '37

Significant radiation from directional antennas of broadcast stations for determining sky-wave interference at short distances. J. H. Dewitt, jr. and A. D. Ring. bibliog diags Proc Inst Radio Eng 32:668 Nov '44

Simple method for observing current amplitude and phase relations in antenna arrays. J. F. Morrison. Proc Inst Radio Eng 25:1310 Oct '37

Simplifying the adjustment of antenna arrays. John F. Morrison. Bell Lab Record 25:1310 Oct '37

Single-sideband Musa receiving system for commercial operation on transatlantic radiotelephone circuits. F. A. Polkinghorn. Proc Inst Radio Eng 28:157 Apr '40

Source of interstellar interference when antenna system is directed towards some part of the Milky way. K. C. Jansky. Proc Inst Radio Eng 23:1158 Oct '35

Theory and performance of corner reflectors for aerials; abstracts. E. B. Moullin. Electrician 133:408 Nov 3 '44; Elec Rev (Lond) 135:625 Nov 3 '44

Turnstile antenna. George H. Brown. il Electronics 9:15 Apr '36

WTAR directional array. G. H. Brown. il Electronics 11:38 Jan '38

*See also*

Direction Finders

**ANTENNAS, FM**

Antennas for f-m reception. J. G. Aceves. diags Electronics 14:42 Sept '41

Frequency modulation. August Hund. McGraw-Hill, New York '44

FM circular antenna. M. W. Scheldorf. il diags Gen Elec Rev 46:163 Mar '43

Multicoupler antenna system includes FM reception. il Rev Sci Instr 13:86 Feb '42

New FM radio relay antenna. il Electronics 16:230 June '43

Police satellite system; FM signals automatically relayed to central point by two mountain-top stations; design of 60-degree corner reflector receiving antennas. E. S. Naschke. il diags Electronics 17:94 May '44

Square-loop f-m antenna at WBRL. J. P. Taylor. il diags Electronics 18:96 Mar '45

*See also*

Frequency Modulation

**ANTENNAS, Horn Radiator**

Biconical electromagnetic horns. W. L. Barrow. L. J. Chu, and J. J. Jansen. Proc Inst Radio Eng 27:769 Dec '39

Electromagnetic horn design. L. J. Chu and W. L. Barrow. Trans A. I. E. E. 58:333 July '39

Metal horns as directive receivers of ultra-short waves. G. C. Southworth and A. P. King. Proc Inst Radio Eng 27:95 Feb '39

Metal horns as radiators of electric waves. A. P. King. Bell System Jour 18:247 Apr '40

Multiuunit electromagnetic horns. W. L. Barrow and Carol Shulman. Proc Inst Radio Eng 28:130 Mar '40

Rectangular hollow-pipe radiators. W. L. Barrow and F. M. Greene. Proc Inst Radio Eng 26:1498 Dec '38

Sectoral electromagnetic horn. W. L. Barrow and F. D. Lewis. Proc Inst Radio Eng 27:41 Jan '39

Theory of the electromagnetic horn. W. L. Barrow and L. J. Chu. Proc Inst Radio Eng 27:51 Jan '39

*See also*

Antennas, Ultra-High-Frequency

**ANTENNAS, Loop**

Bearing error and sensitivity of a loop antenna in an abnormally polarized field. F. S. Howes and F. M. Wood. Proc Inst Radio Eng 32:231 Apr '44

Circular loop antennas at ultra-high frequencies. J. B. Sherman. bibliog diags Proc Inst Radio Eng 32:534 Sept '44

Design problems of directional loop antennas for aircraft; abstract. G. F. Levy. diags Aviation 41:135 Mar '42

Fairchild direction finder with streamlined loop. il Aviation 37:45 Jan '38

Iron-core loop antennas. W. J. Polydroff. Electronic Indus 2:84 Nov '43

Loop antennas with uniform current. D. Foster. Proc Inst Radio Eng 32:603 Oct '44

Loop antennas for aircraft. G. F. Levy. il diags Proc Inst Radio Eng 31:56 Feb '43; correction. 31:384 July '43

Measurement of loop-antenna receivers. W. O. Swinyard. il diags Proc Inst Radio Eng 29:382 July '41

Method of measuring the effectiveness of electrostatic loop shielding. D. E. Foster and C. W. Finnigan. diags Proc Inst Radio Eng 31:253 June '43

Navigation with loop antennas. H. W. Roberts. diags Aero Digest 31:72 Sept '37

Northwest radio loop antenna installation. il Aero Digest 31:81 Nov '37

Radiating characteristics of short-wave loop aerials. E. M. Williams. Proc Inst Radio Eng 28:480 Oct '40

Reactance and effective height of screened loop aerials. R. E. Burgess. diag Wireless Eng 21:210 May '44

Right on the nose; Plexiglas shields directional loop radio antenna on Northwestern airlines' Sky Zephyrs. il Mod Plastics 15:28 June '38

Theory of loop antenna with leakage between turns. P. B. Taylor. diags Proc Inst Radio Eng 25:1574 Dec '37

Transmitting antenna and a directional loop for aircraft. il Aviation 41:281 Feb '42

Ultra-high-frequency loop antennas. A. Alford and A. G. Kandoian. Elec Comm 18:255 '40

**ANTENNAS, Parabolic Radiator**

Beam properties of small parabolic reflectors with various excitations. R. Bromel. Hochfrequenz Technik und Elektroakustik 48:81, 121 '36

Beitrag zur berechnung von reflectoren fur elektrische wellen. Walter Kohler. Hochfrequenz Technik und Elektroakustik 48:81, 121 '36

Full parabolic reflectors for microwaves. C. I. H. A. Stahl. Philips Transmitting News 3:14 '37

*See also*

Antennas, Ultra-High-Frequency

**ANTENNAS, Receiving**

- Antenna systems. Electrician 121:340, 441, 469, 513, 541 Sept 23, Oct 14-Nov 4 '38
- Central antenna system. D. J. Fruin. *il* Electronics 12:37 Nov '39
- Design of doublet antenna systems. H. A. Wheeler and V. E. Whitman. Proc Inst Radio Eng 24:1257 Oct '36
- Die wirkungsweise von vollmetal und gitterreflektoren bei ultra kuzen wellen. Walter Kohler. Hochfrequenz Technik und elektro Akustic. 39:207 '32
- Distribution of ultra-high-frequency currents in long transmitting and receiving antennae. L. S. Palmer and K. G. Gillard. bibliog *diag* Jour Inst Elec Eng 83:415 Sept '38
- Effect at radio frequencies of a power system on radio-receiving systems. C. V. Aggers. W. E. Pakala and W. A. Stickel. Elec Eng 62:Trans 169-72 Apr '43
- Measurement of effective height of automobile antennas. G. Mountjoy. RCA Rev 3:369 Jan '39
- Minimum noise levels obtained on short-wave radio receiving systems; effect of diathermy machines. K. G. Jansky. bibliog *il* Proc Inst Radio Eng 25:1517 Dec '37
- Multiple reflections between two tuned receiving antennae. L. S. Palmer, W. Abson and R. H. Barker. bibliog Jour Inst Elec Eng 83:424 Sept '38
- New antenna kit design. W. L. Carlson and V. D. Landon. RCA Rev 2:60 July '37
- New antenna system for noise reduction. V. D. Landon and J. D. Reid. Proc Inst Radio Eng 27:188 Mar '39
- Radio link; diversity reception. Electrician 119:573 Nov 12 '37
- Radio frequency distributing systems. F. X. Rettenmeyer. Proc Inst Radio Eng 23:1286 Nov '35
- Radio-receiving antennas of the noise-reducing type. R. B. Dome. *diags* Gen Elec Rev 40:580 Dec '37
- RCA spiderweb snags all waves. S. G. Taylor. *il* Radio N 18:292 Nov '36
- Receiver aerial coupling circuits. K. R. Sturley. *diags* Wireless Eng 18:137, 190 Apr-May '41
- Receiving antenna. R. King and C. W. Harrison, jr. *diags* Proc Inst Radio Eng 32:18 Jan '44
- Receiving antenna in a plane-polarized field of arbitrary orientation. C. W. Harrison, jr. and R. King. *diags* Proc Inst Radio Eng 32:35 Jan '41
- Reception with short antennas. E. Siegel. *diag* Electronics 9:48 Jan '36
- Reflecteurs et lignes de transmission pour ondes ultra courtes. R. Darbord. L'onde electrique 11:54 '32
- Shielded loop for noise reduction in broadcast reception. Stanford Goldman. *il* Electronics 2:20 Oct '38
- The sectoral electromagnetic horn. W. L. Barrow and F. D. Lewis. Proc Inst Radio Eng 27:41 Jan '39

**ANTENNAS, Tower**

- Adjusting unequal-tower broadcast arrays. G. H. Brown and J. M. Baldwin. *il* *diags* Electronics 16:118 Dec '43

- Consideration of the radio-frequency voltages encountered by the insulating material of broadcast tower antennas. George H. Brown. Proc Inst Radio Eng 27:566 Sept '39
- General considerations of tower antennas for broadcast use. H. E. Gihring and G. H. Brown. *il* Proc Inst Radio Eng 23:311 Apr '35
- How to move 640 ft tower. Electronic Indus 2:116 Nov '43
- KDKA's new antenna reaches for the clouds; illustrations. Electronics 11:24 Feb '38
- Low cost wooden mast; station WJBC. V. J. Andrew and A. M. McGregor. *diag* Electronics 9:46 May '36
- New skyscraper antenna for KDKA. Elec Jour 34:450 Nov '37
- Radio antenna suspended from 1,000 foot towers. J. Feld. bibliog *fold pls* Franklin Inst Jour 239:363 May '45
- Radio marker beacon used to indicate to airmen location of radio towers. Air Commerce Bul 6:119 Nov '34
- Seventeen years of broadcasting; KDKA installs tallest antenna. W. W. Rogers. *il* *diag* Radio N 19:391 Jan '38
- Steel antenna mast. G. Frazer. *il* Radio N 17:527 Mar '36
- Structural aspects of WGY's 625-ft vertical radiator. E. G. Semon. *il* *diags* Civil Eng 8:531 Aug '38
- WNAX, tallest U. S. broadcast tower. *il* Electronics 16:104 Dec '43

**ANTENNAS, Ultra-High Frequency**

- Adjusting rotary antenna elements by remote control. QST 25:40 July '41
- Antennas at Empire State. N. E. Lindenblad. Communications 21:9 May '41
- Antennas for 112 mc. mobile work. QST 26:14 Feb '42
- Circular antenna for ultrahigh frequencies. QST 26:19 Nov '42
- Circular loop antennas at ultra-high frequencies. J. B. Sherman. bibliog *diags* Proc Inst Radio Eng 32:534 Sept '44
- Coaxial antenna for 112 mc. R. H. Parker QST 29:40 June '45
- Dispersion transmitter; antenna system to eliminate skip distance effects. H. W. Kline. *diags* Radio N 32:28 Dec '44
- Experimental study of parasitic wire reflectors on 2.5 meters. A. W. Nagy. bibliog *il* *diags* Proc Inst Radio Eng 24:233 Feb '36
- Experiments with underground ultra-high frequency antenna for airplane landing beam. H. Diamond and F. W. Dunmore. *pl* *diag* Jour Research Nat Bur Stand 19:1 July '37; Same. Proc Inst Radio Eng 25:1542 Dec '37
- Half-wave dipole aerial. G. W. O. Howe. Wireless Eng 21:557 Dec '44
- Inexpensive mounting for a 112 mc. array. QST 28:60 Jan '44
- Loading of a Lecher-wire line by an inductively coupled load; abstract. J. Gensel. Wireless Eng 22:239 May '45
- Measurement on dipoles in the decimetric-wave region; abstract. P. Lange. Wireless Eng 18:465 Nov '41

**ANTENNAS, Ultra-High-Frequency—Continued**

- Micro-ray communication. W. L. McPherson and E. H. Ullrich. *diags Jour Inst Elec Eng* 78:632; Discussion. p. 658 June '36
- New U-beam antenna for five meters. R. Ames. *il Radio N* 19:207 Oct '37
- Notes on ultra-high-frequency antenna heights. *QST* 25:38 July '41
- Pennsylvania Turnpike u-h-f traffic control system; antenna and feeder details. *il diags plans. Electronics* 15:40 May '42
- Q-matching transformer for 112 mc. antenna. *QST* 28:58 Oct '44
- Radiation resistance of a half-wave dipole aerial. G. W. O. Howe. *diags Wireless Eng* 22:153 Apr '45
- Relative field strength meter for locating interference and to discover the best u-h-f antenna location. T. Chew. *il Radio N* 25:19 May '41
- Rotary beam for mobile u-h-f relay work. G. Rider. *il Electronics* 14:48 May '41
- Rotary beams for the ultra-high frequencies. L. M. Cockaday. *il diags Radio N* 19:266 Nov '37
- Simple 28-mc. vertical antenna. *QST* 25:40 Jan '41
- Six-element vertical array for 113 mc. *QST* 28:70 Sept '44
- Some aspects of radio reception at ultra-high frequency; the antenna and the receiver input circuits. E. W. Herold and L. Malter. *diags Proc Inst Radio Eng* 31:423 Aug '43
- Theoretical gain and signal-to-noise ratio of the grounded-grid amplifier at ultra-high frequencies. M. Dishal. *bibliog diags Proc Inst Radio Eng* 32:276 May '44
- Turnstile antenna; new ultra-high frequency radiating system. G. H. Brown. *il diags Electronics* 9:14 Apr '36
- Ultra-high frequency antenna coupling unit. R. D. Rietzke. *diag Electronics* 14:74 Nov '41
- Ultra-high frequency antenna of simple construction. G. H. Brown and J. Epstein. *Communications* 20:3 July '40
- Ultra-high frequency antennae in aviation radio. J. C. Hromada. *il Radio N* 27:14 May '42
- Ultra-high frequency dummy antenna. S. Cutler. *il diags Electronics* 18:129 May '45
- Ultra-high-frequency loop antennas. A. Alford and A. G. Kandoian. *Elec Comm* 18:255 '40
- Ultra-high frequency technique; radiating systems and wave propagation. A. G. Kandoian. *bibliog diags Electronics* 15:39 Apr '42
- Ultrashort electromagnetic waves; design of radiators or antennas for ultrashort waves. A. Alford. *bibliog diags Elec Eng* 62:303, 338 July-Aug '43
- Universal-angle VHF antenna mounting. *QST* 28:56 Mar '44
- Utilizing antennas radiating at one-quarter wave length (90 deg.) or less; abstract. G. H. Brown. R. F. Lewis and J. Epstein. *Electronics* 10:11 June '37
- 10-meter antennas E. M. Walker. *il diags Radio N* 18:664 May '37
- 112 mc mobile coaxial antenna; car-mounted transmitting and receiving equipment. S. G. Taylor. *il diags Radio N* 27:20 June '42

*See also*

Ultra-High Frequencies

**ANTENNAS, Vertical**

- Adjusting unequal tower broadcast arrays. G. H. Brown and J. M. Baldwin. *Electronics* 16:118 Dec '43
- Impedance of a vertical half-wave antenna above an earth of finite conductivity. W. L. Barrow. *Proc Inst Radio Eng* 23:150 Feb '35
- New vertical broadcasting antenna for station WGY. E. G. Semon and others. *il Gen Elec Rev* 41:134 Mar '38
- Optimum current distributions on vertical antennas; abstract. L. La Paz and G. A. Miller. *Proc Inst Radio Eng* 29:225 Apr '41
- Radio field-intensity and distance characteristics of a high, vertical broadcast antenna. S. S. Kirby. *diags pls map Jour of Research Nat Bur Stand* 16:289 Apr '36; Same. *Proc Inst Radio Eng* 24:859 June '36
- Radiation field of a vertical transmitting dipole over stratified ground; abstract. J. Grosskopf. *Wireless Eng* 20:245 May '43
- Relations between attenuation and phase in feedback amplifier design. H. W. Bode. *Bell Sys Tech Jour* 19:421 July '40
- Simple-construction attenuation network. F. King. *diags Electronics* 11:48 Sept '38
- Unsymmetrical attenuators. P. M. Honnell. *diags Electronics* 15:41 Aug '42
- Volume indicator; attenuator for measurements on high-gain amplifiers and transmitters. S. G. Carter. *il diags Electronics* 11:22 July '38
- 20-100 mc. signal generator. C. J. Franks. *Electronics* 9:16 Aug '36

**ANTENNAS, Wide-Band**

- Aerial coupling systems for television. W. E. Benham. *bibliog diags. Wireless Eng* 15:555 Oct '38
- Antenna arrays around cylinders. P. S. Carter. *bibliog diags Proc Inst Radio Eng* 31:671 Dec '43
- Antennas and transmission lines at the Empire State television station. N. E. Lindenblad. *Communications* 20:13 May '40
- Antennas for television receivers. E. M. Noll. *diags Radio N* 33:40 May '45
- Biconical electromagnetic horns. W. L. Barrow, L. J. Chu and J. J. Jansen. *il diags Proc Inst Radio Eng* 27:769 Dec '39
- Effect of the receiving antenna on television reception fidelity. S. W. Seeley. *RCA Rev* 2:433 Apr '38
- Heat-treated television; electric heater protects antenna. *il Gen Elec Rev* 44:696 Dec '41
- Mast support for v.h.f. and u.h.f. antennas; suitable for FM and television. H. Cohen. *il diags Radio N* 31:30 June '44
- Multi-wire dipole antennas. J. D. Kraus. *diags Electronics* 13:26 Jan '40
- Radiation resistance of aeriels whose length is comparable with the wavelength. E. B. Moullin. *Jour Inst Elec Eng* 78:540 '36
- Radiation resistance of surfaces of revolution, such as cylinders, spheres and cones. E. B. Moullin. *Jour Inst Elec Eng* 88:50 Mar '41
- Self-impedance of a symmetrical antenna. Ronald King and F. G. Blake, jr. *Proc Inst Radio Eng* 30:335 July '42
- Simple television antennas. P. S. Carter. *RCA Rev* 4:168 Oct '39

- Television antenna; indoor device. J. F. Rider. Radio N 23:10 Feb '40
- Television reception with built-in antennas for horizontally and vertically polarized waves. W. L. Carlson. il diag RCA Rev 6:443 Apr '42
- Television transmitting antenna for Empire State building. N. E. Lindenblad. RCA Rev 3:387 Apr '39
- Theory of antennas of arbitrary size and shape. S. A. Sohelkunoff. Proc Inst Radio Eng 29:493 Sept '41
- Vertical vs. horizontal polarization. G. H. Brown. diags Electronics 13:20 Oct '40
- See also*  
Television Antennas
- APPARATUS, Radio, Effects of Climate Upon**
- Effects of humidity on terminal-strip design. L. L. George, jr. il diags Electronics 18:116 Mar '45
- Electronic equipment in humid climates. D. H. Gardner and J. S. Watt. 2:60 Feb '43
- Electronic humidity meter. E. Moen. diag Electronics 14:76 June '41
- Extreme climatic conditions; their influence on radio equipment and components, and of methods of testing. P. R. Coursey. Wireless Eng 21:412 Sept '44
- Frequency stability of tuned circuits; performance of coils tuned by air-dielectric capacitors, during variations in air density and humidity. G. V. Eltgroth. Electronics 17:118 Feb '44
- Fungus and moisture protection. R. Proskauer and H. E. Smith. bibliog il Electronics 18:119 May '45
- Humidity; measuring effects on materials and parts used in radio equipment. H. A. Snow. il Electronics 9:25 Oct '36
- Humidity recorders. E. B. Wheeler. Bell System Tech Jour 3:238 Apr '24
- Mould and humidity in radio and signals equipment. C. P. Healy and J. C. Niven. il Proc Inst Radio Eng 33:300 May '45
- Repairing defective tropically-designed transformers. J. S. Anderson. diags Radio N 32:45 Dec '44
- Tropical factors affecting electronic products. L. F. Dytrt. bibliog il Radio N 32:32 Dec '44
- Waterproofing radio and electronic equipment. E. C. Warrick. diags Electronics 18:212 Apr '45
- ATMOSPHERICS**
- Advance against snow static; UAL flying laboratory. D. G. Fink. il Aviation 36:30 Aug '37
- Aircraft-precipitation-static radio interference. E. C. Starr. Trans A.I.E.E. Sup 60:363 '41
- Approach to the problem of radio precipitation static. C. J. Breitwieser. diags Aviation 43:142 Apr: 151 May '44
- Atmospherics in radio broadcast reception at Calcutta. S. P. Chakravarti, P. B. Ghosh, and H. Ghosh. Proc Inst Radio Eng 27:780 Dec '39
- Cathode-ray oscillographic investigations on atmospherics. Harold Norinder. Proc Inst Radio Eng 24:287 Feb '36
- Cosmic static. Grobe Reber. Proc Inst Radio Eng 30:367 Aug '42
- Direction characteristics of tropical storm static. Stephan P. Sashoff and Wilmar K. Roberts. Proc Inst Radio Eng 30:131 Mar '42
- Directional recording of radio atmospherics. F. E. Lutkin. bibliog il diags maps. Jour Inst Elec Eng 82:289 Mar '38
- Experimental investigation of the characteristics of certain types of noise. Karl G. Jansky. Proc Inst Radio Eng Dec '39.
- Fighting artificial static in France; abstract. M. Adam. Electronics 9:74 Sept '36
- Investigation on atmospherics in high-frequency channels 2-20 mc/s; with particular attention to sunrise and sunset periods; abstract. S. R. Khastgir and M. I. Ali. Wireless Eng 20:496 Oct '43
- Locating of tropical storms by means of associated static. J. Weil and W. Mason. bibliog il diags Univ of Florida Eng Exp Sta Bul 3:1 '36
- Note on the source of interstellar interference. Karl G. Jansky. Proc Inst Radio Eng 23:1158 Oct '35
- Peak field strength of atmospherics due to local thunderstorms at 150 megacycles. J. P. Schafer and W. M. Goodall. Proc Inst Radio Eng 27:202 Mar '39
- Precipitation static. D. S. Little. il diag Aero Digest 39:56 Nov '41
- Precipitation static interference on aircraft and at ground stations. H. M. Hucke. Proc Inst Radio Eng 27:301 May '39
- Precipitation-static radio interference phenomena originating on aircraft. E. C. Starr. il diags Oregon State Coll Eng Exp Sta Bul 10:1 '39
- Radio atmospherics from a high-tension test line. H. Norinder. il diags Wireless Eng 13:414 Aug '36
- Rain static. Howard K. Morgan. Proc Inst Eng 24:959 July '36
- Relation between lightning discharges and atmospherics in radio receiving. H. Norinder. il Jour Fr Inst 221:585 May '36
- Some note on rain static in Japan. Tomozo Nakai. Proc Inst Radio Eng 25:1375 Nov '37
- Some studies in high-frequency atmospheric noise at Dacca by the Warbler method. S. R. Khastgir and M. Kameswar Rao. Proc Inst Radio Eng 28:511 Nov '40
- Static emanating from six tropical storms and its use in locating the position of the disturbance. S. P. Sashoff and J. Weil. Proc Inst Radio Eng 27:696 Nov '39
- Static neutralizer. F. Thone. Science 98:sup12 July 2 '43
- Study of the D region of the ionosphere by recordings of atmospherics; abstract. R. Rivault. Wireless Eng 22:132 Mar '45
- Transmission of radio waves; atmospherics. Electrician 124:125 Feb 16 '40
- See also*  
Propagation of Waves
- ATTENUATION, Attenuators**
- Alternative treatment of the attenuation of waves in a coil-loaded telephone line. G. H. Metson. Jour Inst Elec Eng 87:69 July '40
- Attenuator design. R. F. Blackwell and T. A. Straughan. diags Wireless Eng 21:122 Mar '44
- Attenuator design; formulas for calculating resistance networks. D. Espy. diags charts Electronics 14:51 Nov '41
- Attenuator to indicate volume on amplifiers and transmitters. S. G. Carter. il Electronics 11:22 July '38



**ATTENUATION, Attenuators—Continued**

- Coaxial cable attenuation measurements at 300 megacycles. H. H. Race and C. V. Larrick. *il diags Gen Elec Rev* 44:507 Sept '41
- Computing reactance attenuation. *il Electronics* 9:40 May '36
- D-c substitution method of measuring high frequency attenuation; abstract. H. B. Noyes. *diag Electronics* 14:68 Dec '41
- Design and testing of multirange receivers. D. E. Harnett and N. P. Case. *Proc Inst Radio Eng* 23:578 June '35
- Design for dissymmetrical T pads. E. Y. Webb, jr. *charts Electronics* 16:123 July '43
- Designing resistive attenuating networks. P. K. McElroy. *Proc Inst Radio Eng* 23:213 Mar '35; Correction. 23:682 June '35
- Equalizer design; attenuation and phase functions of frequency-transmission characteristics in circle diagrams. M. J. Di Toro. *diags Electronics* 17:118 Apr '44
- Errors in the calibrated losses of symmetrical resistance networks. Arthur W. Mellon. *Proc Inst Radio Eng* 29:387 July '41
- Forty commonly used pads; table of values of elements of resistive attenuators for input and output impedances encountered in communications circuits. A. Shelton. *Electronics* 13:53 Apr '40
- Isolating radio interference; how west coast utility protects its commercial radio customers from disturbances; use of attenuation coils. H. N. Kalb. *il Elec W* 105:482 Mar '35
- Lattice attenuating networks. G. C. Omer, jr. *diag Proc Inst Radio Eng* 25:620 May '37
- Measurement of the attenuation and propagation velocity of electromagnetic oscillations in metallic tubes; abstract. A. Riedinger. *Wireless Eng* 19:66 Feb '42
- Network theory, filters, and equalizers. F. E. Terman. *bibliog diags Proc Inst Radio Eng* 31:233, 288:302 May-June '43; Correction. 31:656 Dec '43
- Nomograms for symmetrical attenuation circuits. E. A. Hanney. *Wireless Eng* 13:486 Sept '36
- Relation between the effective ground conductivity (as obtained by the dipole measuring method) and the attenuation of propagation; abstract. J. Grosskopf and K. Vogt. *Wireless Eng* 21:131 Mar '44

*See also***Equalizers, Networks****AUTOMATIC Frequency Control**

- Automatic frequency and phase control of synchronization in television receivers. K. R. Wendt and G. L. Fredenhall. *il diags Proc Inst Radio Eng* 31:7 Jan '43
- Automatic frequency control. C. Travis. *diags Proc Inst Radio Eng* 23:1125 Oct '35
- Automatic frequency control; tuning circuit for superheterodynes. *diag Electronics* 9:48 Mar '36
- Automatic frequency control design considerations. S. Y. White. *il diag Electronics* 9:28 Sept '36
- Automatic frequency phase control of synchronization in television receivers. K. R. Wendt and G. L. Fredenhall. *il Proc Inst Radio Eng* 31:7 Jan '43

Automatic tuning, simplified circuits, and design practice. D. E. Foster and S. W. Seeley. *Proc Inst Radio Eng* 25:289 Mar '37

Improvements in automatic frequency control circuits. R. L. Freeman. *diags Electronics* 9:20 Nov '36

RCA crystal attachment to provide crystal control of receiver frequency. *Aero Digest* 30:58 Jan '37; *il Aviation* 35:39 Dec '36

Theory of the discriminator circuit for automatic frequency control. H. Roder. *bibliog diags Proc Inst Radio Eng* 26:590 May '38

*See also***Frequency Discriminators****AUTOMATIC Selectivity Control**

Automatic selectivity control. G. L. Beers. *diags Proc Inst Radio Eng* 23:1425 Dec '35

Automatic selectivity control. H. F. Mayer. *diags Electronics* 9:32 Dec '36

Receiver with automatic selectivity control responsive to interference. John F. Farrington. *Proc Inst Radio Eng* 27:239 Apr '39

Sensitivity controls, manual and automatic. Dorman D. Israel. *Proc Inst Radio Eng* 20:461 Mar '32

Some applications of negative feedback with particular reference to laboratory equipment. F. E. Terman and others. *Proc Inst Radio Eng* 10:649 Oct '39

*See also***Receiver Selectivity****AUTOMATIC Tuning Control**

Automatic tuning, simplified circuits, and design practice. D. E. Foster and S. W. Seeley. *diags Proc Inst Radio Eng* 25:289 Mar '37

Automatic tuning; some applications of the principle to test apparatus. F. L. Hill. *diags Wireless Eng* 13:370 July '36

Five-band receiver for automobile service. J. H. Little and F. K. Rettenmeyer. *Proc Inst Radio Eng* 29:151 Apr '41

French push button radio receiver. *il Electronics* 10:50 Dec '37

Inductance tuning. *Electronics* 10:22 Dec '37

Locked-in oscillator; its application to automatic tuning and measurement of modulation. S. Byard and W. H. Eccles. *diags Wireless Eng* 18:2 Jan '41

Mystery control. R. G. Herzog. *Communications* 18:20 Oct '38

New system of inductive tuning; sliding-contact variable inductance. P. Ware. *il diags Proc Inst Radio Eng* 26:308 Mar '38

New system of remote control. C. N. Kimball. *RCA Rev* 2:303 Jan '38

Permeability tuned push button system. J. P. Tucker. *il diags Electronics* 11:12 May '38

Push-button station selection. B. V. K. French. *diags Electronics* 10:16 Sept '37

Push-button tuning; midwest model VT-20. W. C. Dorf. *il diags Radio N* 19:277, 329 Nov-Dec '37

Radios that remember; time-control unit which permits preselection of programs throughout entire day and night, on five different stations. *Gen Elec Rev* 41:464 Oct '38

Scott's new 24-hour automatic tuning receiver. *Radio N* 19:28 May '38

Survey of the latest trends in touch tuning by push-button control systems. il diag Radio N 19:330 Dec '37

Teledynamic control by selective ionization with application to radio receivers. S. W. Seeley, H. B. Deal, and C. N. Kimball. Proc Inst Radio Eng 26:813 July '38

*See also*

Transmitters—Tuning

### AUTOMATIC Volume Control

Automatic volume control for radio receiving sets. H. A. Wheeler. Proc Inst Radio Eng 16:30 Jan '28

AVC amplifiers for bridge null detectors. L. Fleming. diags Electronics 18:198 Jan '45

AVC doubler. P. Mandel. Electronics 9:44 Jan '36

AVC for CW reception. QST 25:26 Jan '41

Copper-oxide rectifier used for radio detection and automatic volume control. L. O. Grondahl and W. P. Place. Proc Inst Radio Eng 20:1599 Oct '32

D.C. amplified automatic volume control circuit time constants. K. R. Sturley and F. Duerden. diags Wireless Eng 18:353 Sept '41

Public address AVC. Harry Paro. Electronics 10:24 July '37

Sensitivity controls; manual and automatic. Dorman D. Israel. Proc Inst Radio Eng 20:461 Mar '32

Supervisory and control equipment for audio-frequency amplifiers. Harry Schon. Proc Inst Radio Eng 21:228 Feb '33

Time constants for automatic volume control filter circuits. K. R. Sturley. diags Wireless Eng 15:480 Sept '38

Vogad for radiotelephone circuits. S. B. Wright, S. Doba, and A. C. Dickieson. Proc Inst Radio Eng 21:228 Feb '33

*See also*

Volume Compressor

Volume Expander

## B

### BALLISTICS

Radio frequency device for detecting the passage of a bullet. C. I. Bradford. Proc Inst Radio Eng 29:578 Nov '41

Theoretical and experimental investigations of electron motions in alternating fields with the aid of ballistic models. H. E. Hollmann. Proc Inst Radio Eng 29:70 Feb '41

**BARKHAUSEN-Kurz Oscillator.** See Oscillators, Barkhausen-Kurz

### BATTERIES

Battery radio design. P. Marsal. il Electronics 11:12 Jan '38

Battery substitutions for portables. G. Garvin. il Radio N 28:28 July '42

Current-economizing circuit for battery receivers. J. Frommer. diag Wireless Eng 13:314 June '36

Improvements in B battery portability. H. F. French. Proc Inst Radio Eng 29:299 June '41

Variable B voltage supply for lab or classroom. A. H. Brolly and J. L. Lahey. il diag Electronics 16:156 Oct '43

Willard storage battery for use in portable radio sets. il Sci Amer 165:214 Oct '41

*See also*

Power Supply Systems

### BEACONS

Beacon antenna characteristics. H. K. Morgan. diags Air Commerce Bul 9:77 Oct '37

Crystal-controlled wireless beacons. il Engineer 160:19 July 5 '35; Electrician 115:52 July 12 '35

Les applications de l'electricite dans le service des phares. P. Besson. il Soc Ing Civils Bul 87:517 May '34

Method of exciting the aerial system of a rotating radio beacon. H. A. Thomas. Jour Inst Elec Eng 77:285 '35. Same. Wireless section, I E E 10:256 Sept '35

New Swedish radio beacon erected at Rumeli on the coast of the Black Sea. H. Lundbergh. Sci Amer 154:148 Mar '36

Radio beacons in navigation; recommended practices. Marine Rev 65:64 Apr '35

Buoy radiobeacons for inshore navigation. W. W. Macdonald. il diags Electronics 16:88 July '43

*See also*

Aeronautical Radio

Marine Radio

**BLIND Landing.** See Aircraft Blind Landing Systems

**BLOCKING Oscillators.** See Oscillators

### BRIDGES

Analysis of the bridge-controlled oscillator. J. K. Clapp. Gen Radio Exp Vol 18 May '44

AVC amplifiers for bridge null detectors. L. Fleming. diags Electronics 18:198 Jan '45

Bridge measurements with a visual null indicator. diag Electronics 9:52 Nov '36

Bridged-T method of measuring the constants of a coil. diags Wireless Eng 18:135 Apr '41

Bridged-T and parallel-T circuits for measurements at radio frequencies. W. N. Tuttle. Proc Inst Radio Eng 28:23 Jan '40

Calculation and construction of a quartz bridge filter, and various circuits for quartz bridge filters; abstract. E. Hudec. Wireless Eng 19:419 Sept '42

Cathode-ray mill indicator for Wien bridge. C. J. Markey. diags Electronics 18:125 Mar '45

Electronics applied to heat transfer tests; circuits employ Wheatstone bridge and photoelectric relay; units applicable to other measurement and control problems. R. V. Brown. il diags Electronics 16:113 July '43

Impedance bridge. diags Electronics 14:66 Aug '41

Impedance bridge for L-C-R measurements. R. P. Turner. il diags Radio N 33:42 June '45

Inductance and capacitance bridge. S. J. Lammataro. Bell Lab Record 16:341 June '38

Method for measuring small direct capacitances. I. G. Easton. Gen Radio Exp Vol 18 Sept '44

New bridge for the direct measurement of impedance. A. Serner. diags Wireless Eng 14:59 Feb '37

**BRIDGES—Continued**

- New instrument and a new circuit for coil and condenser checking. W. N. Tuttle. General Radio Exp Vol. 12 Aug-Sept '37
- New type of null instrument for measuring impedance at frequencies up to 30 mc. D. B. Sinclair. Proc Inst Radio Eng 28:310 July '40
- Phase-indicating null indicator for bridges. il Electronics 17:242 Aug '44
- Practical audio bridge circuit. W. Moody. diag Electronics 14:62 May '41
- Radio-frequency bridges. H. L. Kirke. Electrician 133:349 Oct 20 '44
- Radio-frequency bridge for impedance measurements from 400 kilocycles to 60 megacycles. D. B. Sinclair: bibliog il diags Proc Inst Radio Eng 28:497 Nov '40
- Resonance bridge for use of frequencies up to 10 megacycles per second. C. L. Fortescue and G. Mole. Jour Inst Elec Eng 82:687 '38. Same Wireless sec I.E.E. 13:112 June '38
- Radio frequency bridge for impedance measurements from 400 kc. to 60 mc. D. B. Sinclair. Proc Inst Radio Eng 28:497 Nov '40
- Stabilized bridge circuit. H. P. Kalmus. diag Electronics 12:30 Dec '39
- Radio-frequency measurements by bridge and resonance methods. L. Hartshorn. 265p bibliog(p254-5) \$4.50 Wiley '41
- Sixty-cycle bridge for the study of radio-frequency power amplifiers. A. Noyer, jr. Proc Inst Radio Eng 23:785 July '35
- Ultra sensitive bridge. J. E. Jennings. il Electronics 12:38 Sept '39
- Vacuum tube alternating-current bridge detector. W. M. Breazeale. diag Rev Sci Instr 7:250 June '36
- Versatile Q meter. F. E. Planer. il Electronics 16:190 Sept '43
- Voltage control with non-linear Wheatstone bridge. Walter Richter. il Electronics 13:20 June '40
- Wide range Wheatstone bridge. J. Avins. il Electronics 12:38 July '39
- 5 megacycle impedance bridge. C. H. Young. Bell Lab Record 15:261 Apr '37

*See also*

Measurements—Circuit Constants  
Wheatstone Bridge

**BROADCASTING**

- Alaskan carrier current system. Electronic Indus 2:74 Sept '43
- Asymmetric sideband broadcasting. P. P. Eckersley. bibliog il diag Proc Inst Radio Eng 26:1041 Sept '38
- Asymmetric sideband transmission. N. Koomans. Proc Inst Radio Eng 27:687 Nov '39
- Broadcast and short-wave bands; abstract. R. Moebes. Wireless Eng 20:139 Mar '43
- Broadcast operating methods. Electronic Indus 2:94 Sept '43
- Broadcast relay service at Accra. Elec Rev (Lond) 117:386 Sept 20 '35
- Broadcast transmission developments and progress during 1934. H. A. Chinn and C. W. Horn. Proc Inst Radio Eng 23:428 May '35
- Broadcasters discuss wartime problems at fifth Broadcast engineering conference. diags Electronics 15:30 Apr '42
- Broadcasting control problems. J. Noble. il Sibley. Jour 49:91 May '35
- Broadcasting "on location." D. F. Langham. il Electronics 14:40 Feb '41
- Broadcasting under war conditions. J. B. Epperson and B. Dudley. Electronics 15:34 Aug '42
- CBS radio nets; broadcasters have organized their networks to meet any emergency. D. Coulter. il Radio N 27:31 Feb '42
- Columbia's 330-mc FM emergency system. il Electronic Indus 2:62 Sept '43
- Cryptographic broadcasts; possibilities of use by spies. A. Toombs. Radio N 25:15 Jan '41
- Discernibility of changes in program band width for high fidelity broadcasting. D. K. Gannett and I. Kerney. diags Bell System Tech Jour 23:1 Jan '44
- Discussion on post-war planning in radio communication. Jour Inst Elec Eng 89 pt 3:169 Sept '42
- Electrical interference with broadcasting; interim report of the I.E.E. committee to the council. Jour Inst Elec Eng 75:801 Dec '34; Excerpt. Electrician 113:632 Nov 16 '34
- Elimination of interstation interference. J. Robinson. Wireless Eng 12:179 Apr '35
- Engineering requirements for program transmission circuits. F. A. Cowan, R. G. McCurdy and I. E. Lattimer. bibliog il map Elec Eng 60:Trans 142 Apr '41; Same. Bell System Tech Jour 20:235 Apr '41
- European view of American radio programs. C. F. Atkinson. Ann Amer Acad 177:81 Jan '35
- Experimental polyphase broadcasting. P. Loyet. il diags Proc Inst Radio Eng 30:213 May '42
- FCC committee recommends change in system under which major radio broadcasting companies obtain outlet stations. Pub Util 26:31 July 4 '40
- FCC discusses the case for high power broadcasting. il Electronics 9:13 Nov '36
- Frequency modulation—a revolution in broadcasting? il Electronics 13:10 Jan '40
- High quality radio broadcast transmission and reception. S. Ballantine. il diags Proc Inst Radio Eng 22:564 May '34; Discussion. 23:256 Mar '35
- Inaugural address; future of broadcasting. N. Ashbridge. maps Jour Inst Elec Eng 89 pt 1:17 Jan '42; Excerpts. Engineer 172:301 Oct 31 '41; Elec Rev (Lond) 129:469 Oct 31 '41; Abstract Electrician 127:252 Oct 31 '41
- Long distance broadcasting. N. Ashbridge. Engineer 169:415, 444 May 3-10 '40
- Maintenance of broadcast operations in wartime; Canadian broadcasting corporation. J. A. Ouimet. il Proc Inst Radio Eng 31:93 Mar '43
- National policy for radio broadcasting; report of a committee of the National economic and social planning association. C. B. Rose, jr. 289p \$3 Harper New York '40
- NBC defense net. N. Trammell. il Radio N 27:72 Jan '42
- Network broadcasting. C. A. Rackey. il diags map Elec Eng 60:16 Jan '41

- Opera broadcasting at NBC. *il Electronics* 10:30 Dec '30
- Principles and practices of network radio broadcasting. D. Sarnoff. 111p RCA institutes technical press. New York '39
- Progress in 1938 on all fronts of electronic endeavor. *il Electronics* 12:20 June '39
- Radio developments during 1935. C. M. Jansky, jr. *Proc Inst Radio Eng* 24:385 Mar '36
- Radio over the mains; abstracts. P. P. Eckersley. *Electrician* 124:95 Feb 2 '40; *Elec Rev (Lond)* 126:130 Feb 2 '40
- Radio system standards. Ralph R. Batcher. *Electronic Indus* 2:83 Dec '43
- Radio-telegraphy and radio-telephony. A. S. Angwin. *Jour Inst Elec Eng* 76:177 Feb '35
- Radio—the fifth estate; broadcasting in the United States and other countries compared; advertising, censorship, laws. *Pub Util* 16:501 Oct 10 '35
- Relay links in broadcasting (WGAR) W. L. Widlar. *Electronic Indus* 2:84 May '43
- Remote monitor for directional broadcasting. M. A. O'Bradovick. *il Electronics* 17:131 Sept '44
- Reverberation control in broadcasting. H. A. Chinn. *il Electronics* 11:27 May '38
- Review of technical developments in broadcasting. H. Bishop. *bibliog il plan Jour Inst Elec Eng* 89 pt 1:35 Jan '42
- Should broadcasting occur in the 500-550 kc band? C. B. Aiken. *il Electronics* 9:17 Oct '36
- Some fundamental aspects of radio broadcasting economics. H. S. Hettinger. *Harvard Business Rev* 14 no 1:14 Oct '35
- Standard broadcasting reference data. *Electronics* 14:40 June '41
- Third network; Mutual broadcasting system. *Business Week* p14 July 6 '35
- To compete with radio; wired broadcasting. *Ptr Ink* 172:33 Aug 22 '35
- WABC builds an island transmitter. *il Eng N* 127:617 Oct 30 '41
- Wartime developments in carrier current communication. G. Abraham. *Electronics* 16:76 Jan '43
- Weak spots in the American system of broadcasting. A. Perry. *Ann Amer Acad* 177:22 Jan '35
- What radio broadcasting means in the war effort. Neville Miller. *Proc Inst Radio Eng* 30:482 Oct '42
- Wire broadcasting investigations at audio and carrier frequencies. T. Walmsley. *il diags plans Jour Inst Elec Eng* 87:76 July '40; *Excerpt. Electrician* 124:184 Mar 8 '40; *Abstract. Elec Rev (Lond)* 126:275 Mar 8 '40; *Discussion. Jour Inst Elec Eng* 87:101 Jul '40
- BROADCASTING, Common-Frequency**
- Common-channel interference between two frequency-modulated signals. H. A. Wheeler. *diags Proc Inst Radio Eng* 30:34 Jan '42
- Common-wave broadcasting and the interaction of modulation (Luxembourg effect); abstract. F. Vilbig. *Wireless Eng* 20:79 Feb '43
- Operation of several transmitters on the same wavelength; editorial. *Wireless Eng* 11:639 Dec '34; *Discussion. 12:23, 85 Jan-Feb '35*
- Present practice in the synchronous operation of broadcast stations as exemplified by WGBM and KFAB. L. McC. Young. *Proc Inst Radio Eng* 24:433 Mar '36
- Rundfunk-gleichwellensender. P. R. Arendt. *bibliog il diags map Zeit Ver Deutsch Ing* 78:1177-82 Oct 13 '34; *Abstract. Genie Civil* 106:440 May 4 '35
- BROADCASTING, Foreign**
- American station list; North Central and South America, exclusive of the United States. *Radio N* 16:692 May '35
- British Columbia broadcast relay system. N. R. Olding. *il Electronics* 17:92 Sept '44
- Broadcast station list; Africa, Australia, Asia. *Radio N* 17:281 Nov '35
- Broadcasts abroad; international chain circuits British and French bans on radio advertising. *Business Week* p30 Feb 2 '35
- Broadcasting in Canada. H. Charlesworth. *Ann Amer Acad* 177:42 Jan '35
- Broadcasting in Great Britain. C. G. Graves. *Ann Amer Acad* 177:55 Jan '35
- Broadcasting on 546 kc; Budapest I. (Lakihegy) station. V. A. Babits. *map Electronics* 10:32 Jan '37
- Broadcast relay service at Accra. *Elec Rev (Lond)* 117:386 Sept 20 '35
- Commercial and cultural broadcasting in Mexico. P. L. Barbour. *map Ann Amer Acad* 208:94 Mar '40
- Droitwich broadcasting station. *il diags plan Engineering* 140:49 pl 3 Jul 12 '35
- European station list. *Radio N* 16:755; 17:340 June-Dec '35
- Foreign radio broadcasting services. Middle and long wave bands (160-1500 kc—200-2000 meters)—corrected to Oct 15, 1935. 28 1 U.S. Bur of foreign and domestic commerce. Washington; pa 25c Supt of doc '35
- German broadcasting. H. Dressler-Andress. *Ann Amer Acad* 177:61 Jan '35
- La nouvelle station de radiodiffusion Radio-Mondial, aux Essarts-le-Roi, pres de Rambouillet. M. Adam. *il diags plan Genie Civil* 112:325 Apr 16 '38
- La nouvelle station de radiodiffusion Radio Zurich. *diags Genie Civil* 105:584 Dec 22 '34
- La transmission telephonique, a haute frequence, des emissions radiodiffusees en Allemagne. *diag Genie Civil* 116:237 Apr 6 '40
- Le nouveau poste national de la radiodiffusion francaise, a Allouis (Cher). M. Adam. *il diags Genie Civil* 115:349 Nov 11 '39
- Progress in radio broadcasting in England. *Electronics* 13:102 Apr '40
- Radiobroadcasting in Canada. A. Frigon. *Elec Eng* 60:Trans 896 Sept '41
- Radio in Canada. M. Denison. *Ann Amer Acad* 117:49 Jan '35
- Radio broadcasting in the Soviet Union. R. Ziglin. *Ann Amer Acad* 177:66 Jan '35
- Rundfunk-gleichwellensender. P. R. Arendt. *bibliog il diags map Zeit Ver Deutsch Ing* 78:1177-82 Oct 13 '34; *Abstract. Genie Civil* 106:440 May 4 '35

**BROADCASTING, Foreign—Continued**

- Sharing Latin radio; U.S. firms use of local broadcasting chains in South America. *Business Week* p64 Oct 19 '40
- South African broadcasting equipment. *Il Engineer* 169:524 June 7 '40

**BROADCASTING, International**

- Broadcast transmission developments and progress during 1934. H. A. Chinn and C. W. Horn. *Proc Inst Radio Eng* 23:428 May '35
- CBS international broadcast facilities. A. B. Chamberlain. *bibliog diags plan maps. Proc Inst Radio Eng* 30:118 Mar '42; Same. *Electronics* 14:30 July '41
- CBS plans Latin America network. *Ptr Ink* 193:66 Dec 27 '40
- CBS goes to Latin America; short-wave transmitting stations, Brentwood, L. I. for transmission to Central and South America and to Europe. A. B. Chamberlain. *diags maps Electronics* 14:30 July '41
- FCC monitoring set-up; Foreign broadcast monitoring service. J. L. Fly. *Radio N* 27:71 Jan '42
- International broadcasting; why long-distance transmission is possible with low power. M. L. Muhleman. *Il Sci Amer* 152:232 May '35
- International short-wave; foreign stations, call letters, frequencies, time schedules. K. R. Boord. *Radio N* 31:44 June through Dec '44
- NBC's international broadcasting system. R. F. Guy. *Il diags maps RCA Rev* 6:12 July '41
- Open questions in inter-American broadcasting. P. L. Barbour. *bibliog Ann Amer Acad* 213:116 Jan '41
- U.S. and world communications; shall we unify our international cable, radio, and telephone facilities into a monopoly? *maps Fortune* 29:128 May '44

**BROADCASTING, Short-Wave**

- CBS goes to Latin America; short-wave transmitting stations. Brentwood, L.I. for transmission to Central and South America and to Europe. A. B. Chamberlain. *diags maps Electronics* 14:30 July '41
- High frequency broadcast chart. *Electronics* 13:41 Dec '40
- High frequency pre-emphasis. J. L. Hathaway. *Il Electronics* 12:29 Nov '39
- Inter-American short-wave radio. J. W. G. Ogilvie. *maps For Comm W* 18:3 Mar 24 '45
- International beams; short-wave broadcasts. R. F. Guy. *Il maps Sci Amer* 165:268 Nov '41
- NBC short-wave listening post. G. O. Milne. *Il plan RCA Rev* 6:82 July '41
- Office of War information short wave broadcast control center. *Il Electronics* 16:114 Oct '43
- Progress in short-wave broadcasting. N. Ashbridge. *Engineering* 155:17 Jan 1 '43
- Short wave Asiatic log for the West coast. *Radio N* 23:64 Jan '40
- Short wave broadcast technic. H. G. Towlson. *Electronic Indus* 4:90 Feb '45

Single side-band short-wave system for transatlantic telephony. F. A. Polkinghorn and N. F. Schlaack. *Il diags Proc Inst Radio Eng* 23:701 July '35; Same. *Bell System Tech Jour* 14:489 July '35

Terrestrial magnetism and its relation to worldwide short-wave communications. H. E. Hallborg. *maps charts Proc Inst Radio Eng* 24:455 Mar '36

U.S. short-wave broadcast control center, new Office of war information radio headquarters. *Il plans Electronics* 16:114 Oct '43

World short wave time-table. *Radio N* 16:408, 492, 496 Jan-Feb '35

**BROADCASTING, Ultra-High-Frequency**

- Broadcasting of sound and vision on ultra-short waves. G. W. O. Howe. *Wireless Eng* 12:177 Apr '35
- High-fidelity broadcasting at ultra-high frequencies. E. W. Herold. *Proc Inst Radio Eng* 26:383 Mar '38
- NBC's new FM transmitter (W2XWG). *Il Electronic Indus* 2:60 June '43
- New 41 mc. W8XH. R. J. Kingsley. 9:19 Jan '36
- Precision tuning problem in ultra-high-frequency broadcasting. S. Y. White. *Il Electronics* 16:91 May '43
- Role of ultra-high frequencies in post-war broadcasting. K. I. Jones and D. A. Bell. *Jour Inst Elec Eng* 91 pt3:11 Mar '44

*See also*

**Ultra-High Frequencies****BROADCASTING Service Area**

- Allocation survey. FCC report 18108. Sept 1 '36
- Analysis of continuous records of field intensity at broadcast frequencies. K. A. Norton, S. S. Kirby, and G. H. Lester. *Proc Inst Radio Eng* 23:1183 Oct '35
- Balloon antenna explores new location for WBZ. *Il Electronics* 11:36 Jul '38
- Better coverage; amplitude modulation compared with frequency modulation. *diags Gen Elec Rev* 43:425 Oct '40
- Broadcast coverage; technical aspects; methods of measurement, influence of soil, frequency. R. F. Guy. *Il Electronics* 9:16 May '36
- Broadcasters adopt standard formula for measuring station physical coverage. P. H. Erbes, jr. *Ptr Ink* 203:33 May 7 '43
- Characteristics of American broadcast receivers as related to the power and frequency of transmitters. Arthur Van Dyck and Dudley E. Foster. *Proc Inst Radio Eng* 25:387 Apr '37
- Engineering factors involved in relocating WEAf. R. F. Guy. *Il maps RCA Rev* 5:455 Apr '41
- Measurement of broadcast coverage and antenna performance. W. A. Fitch and W. S. Duttera. *RCA Rev* 2:396 Apr '38
- Measurement of radio frequency power. A. Hoyt Taylor. *Proc Inst Radio Eng* 24:1342 Oct '36
- Problem of measuring radio coverage. L. D. H. Weld. *maps Amer Statist Assn Jour* 33:117 Mar '38
- Radio transmission anomaly: cooperative observations between the U.S. and Argentine. J. H. Dellinger and A. T. Cosentino. *Proc Inst Radio Eng* 28:431 Oct '40

Service area of medium-power broadcast stations. P. E. Patrick. bibliog diags Proc Inst Radio Eng 30:404 Sept '42

Some engineering and economic aspects of radio broadcast coverage. Glenn D. Gillett and Marcy Eager. Proc Inst Radio Eng 24:190 Feb '36. Erratum (June p834)

*See also*

Measurements, Field Intensity

### BROADCASTING Station Control Equipment

Air-raid alarm for broadcast station use. Victor Voss. il Electronics 16:100 Feb '43

Audio frequency compensating circuits. Stanley Cutler. il Electronics 15:63 Sept '42

Audio-frequency mixers. M. F. Cooper. diags Wireless Eng 21:117 Mar '44

Audio mixer design. R. W. Crane. diags Electronics 18:120 June '45

Automatic air raid monitor. il Electronics 15:60 July '42

Automatic air-raid alarm for broadcast stations use. V. Voss. diags Electronics 16:100 Feb '43

Automatic line level recording apparatus. F. A. Peachey. diags Wireless Eng 13:462 Sept '36

Automatic monitoring circuit; monitoring programs to intercept air raid warnings; any type of receiver with automatic volume control will operate device. F. Marx. il diags Electronics 15:39 Mar '42

Circuit breaker for radio speech-control circuits; National broadcasting company studios in Radio City. R. W. Bauer and J. W. Seaman. il Gen Elec Rev 37:484 Nov '34

Columbia broadcasting service robot timer; delaying the signal on station KFAB to synchronize with WBBM. A. D. McCusker. il diags Radio N 19:47 June '38

Compact telephone and volume indicator set. G. Chinski. il diags Electronics 13:46 Jan '40

Conserving station equipment. A. H. Smith. diags Electronics 15:82 Nov '42

Dual time signal at WQXR. R. D. Valentine. il Electronics 17:108 Nov '44

Electric timing device using synchronous clock mechanism, phototube, and amplifier; may be used to transmit timing impulses or control time sequence operations; equipment at WBNY. R. W. Carlson. diags Electronics 11:28 Oct '38

Electronic device to relieve broadcast station operators of monitoring another station. Frank Marx. il Electronics 15:39 Mar '42

Flexible equalizing amplifier. E. G. Cook. il Electronics 15:36 July '42

Flexible studio control console. H. Klimpel. il diags Electronics 14:44 Feb '41

Flux navigator; enables WABC's personnel to reach island station in fog; magnetic field from power cable guides vessel. D. D. Jones. il diags Electronics 16:74 Feb '43

Frequency-modulation station monitor. H. R. Summerhayes, jr. il diags Proc Inst Radio Eng 30:399 Sept '42

Hi-F1 transcribing. Electronic Indus 2:90 May '43

Improved mixer potentiometer; applicable to recording music, re-recording, and radio broadcasting. K. B. Lambert. il diags Soc Motion Picture Eng Jour 37:263; Discussion. 289 Sept '41

Input switching console. J. B. Epperson. il diags Electronics 11:38 June '38

Integrated remote amplifier system. A. J. Ebel. diags Electronics 14:46 Apr '41

Le centre de radiodiffusion Britannique de Droitwich, pres de Birmingham. M. Adam. il diags plans Genie Civil 108:101 Feb 1 '36

Les nouvelles stations francaises de radio-diffusion. M. Adam. il diags maps Genie Civil 107:603 Dec 28 '35

Low-frequency signals operate receiver. il diags Elec W 117-2000 June 13 '42

Midget remote amplifier used at KCMO. L. C. Sigman. il diags Electronics 11:38 Jan '38

Mikes, mixers, and monitors. O. T. Read. il diags Radio N 20:40 Aug '38

Modulation monitoring. E. Divoire. diags Electronics 9:70 Sept '36

Nerve center of a broadcast network; NBC master control room; program routing. J. Ryan. il map Radio N 20-6 Sept '38

New broadcast control desk. S. Kaufman. il Radio N 16:469 Feb '35

New standard volume indicator and reference level. H. A. Chinn, D. K. Gannett, and R. M. Morris. Proc Inst Radio Eng 28:1 Jan '40

New standard volume indicator and reference level. H. A. Affel, H. A. Chinn and R. M. Morris. il Electronics 12:28 Feb '39

New transmission system avoids coupling equipment for broadcast tower lighting. Electronics 9:38 Jul '36

Porcelain pipe at WHAM; prevention of electrolytic corrosion in cooling water system. J. J. Long, jr. il diags Electronics 11:24 Oct '38

Practical remote amplifiers. R. W. Carlson. il diags Electronics 11:25 Aug '38

Practical volume compression for use in broadcast stations. L. B. Hallmann, jr. diags Electronics 9:15 June '36

Precision time control; amplified tuning fork power supply in National broadcasting company studios and control rooms at New York. il diags Electronics 15:49 Dec '42

Program failure alarm for broadcast stations. H. A. Chinn and R. B. Moe. il Electronics 12:20 June '39

Program-operated level-governing amplifier. W. L. Black and N. C. Norman. il Proc Inst Radio Eng 29:573 Nov '41

Program quality analyzer. Electronics 16:168 Sept '43

Reducing fader leakage. J. H. Greenwood. diags Electronics 15:77 Oct '42

Remote receiver tuning at KDYL; solution to a short-wave press service problem. J. M. Baldwin. diags Electronics 9:19 Aug '36

Remote monitor for directional broadcasting. M. A. Bradovick. il Electronics 17:131 Sept '44

Reverberation control in broadcasting. H. A. Chinn. plans Electronics 11:28 May '38

Self-checking carrier tone alarm. P. A. Berg. il Electronics 16:174 Nov '43

Sensitive carrier-tone alarm. L. H. Appleman. il Electronics 17:154 Feb '44

Simple station identification device. N. H. Blake. diags Electronics 14:58 May '41

Simplified carrier-failure and tone alarm system for broadcast stations. J. Herold. diags Electronics 16:315 Mar '43

Simplified control panel at KDNO. George Ing. il Electronics 10:24 Sept '37

**BROADCASTING Station Control Equipment—**  
Continued

- Sound effects machine with high impedance mixing. M. J. Weiner. *diag* Electronics 11:56 June '38
- Sound illusion pre-amplifier. C. F. Sheaffer. *diag* Electronics 11:14 Sept '38
- Transcription control box. E. L. Marven. *diag* Electronics 14:58 Dec '41
- Using phone line for remote indication of over-modulation. A. Leeman. *diags* Electronics 16:144 July '43
- Versatile level meter. F. Schumann. *il diag* Electronics 11:13 Mar '38

*See also*

Frequency Monitors Volume Indicators Transmitters

**BROADCASTING Station Design**

- Design and equipment of a fifty-kilowatt broadcast station for WOR. J. R. Poppele, F. W. Cunningham and A. W. Kishpaugh. *il diags plan* Proc Inst Radio Eng 24:1063 Aug '36
- Droitwich broadcasting station. N. Ashbridge, H. Bishop and B. N. MacLarty. *diags map* Jour Inst Elec Eng 77:437 Oct '35
- Economics in broadcast equipment design. V. J. Andrew. Electronics 9:40 Sept '36

*See also*

Acoustics Transmitters Antennas

**BROADCASTING Stations**

- Air castle of the South; WSM, Nashville, Tenn. *il Sales Management* 43:66 Sept 15 '38
- Atomic energy starts new radio station; WBZ. *il diags* Power Pl Eng 44:103 Oct '40
- Audio and measuring facilities for the CBS international broadcast stations. H. A. Chinn. *Elec Comm* 21:174 '43
- Attractive steel house of unique construction built for the WDAE broadcasting station of Tampa, Fla. *il Iron Age* 135:37 Apr 4 '35
- Broadcast station statistics (chart). Electronics 10:24 Jan '37
- Broadcast stations as frequency standards. G. Dexter. *il Radio N* 31:32 Mar '44
- Broadcasting network engineering technic. *Electronic Indus* 3:90 Apr '44
- Burghhead broadcast transmitting station. *il Engineering* 142:417 Oct 16 '36; *Electrician* 117:463 Oct 16 '36; *Elec Rev (Lond)* 119:530 Oct 16 '36
- Commercial 50-kilowatt frequency-modulation broadcast transmitting station. H. P. Thomas and R. H. Williamson. *il diags map* Proc Inst Radio Eng 29:537 Oct '41
- Columbia's KNX. J. Goldby. *il Radio N* 20:10 Aug '38
- Conserving station equipment. A. H. Smith. *il Electronics* 15:82 Nov '42
- Design and equipment of a fifty-kilowatt broadcast station for WOR. J. R. Poppele, F. W. Cunningham and A. W. Kishpaugh. *il diags plan* Proc Inst Radio Eng 24:1063 Aug '36
- Droitwich broadcasting station. N. Ashbridge, H. Bishop and B. N. MacLarty. *diags* Jour Inst Elec Eng 77:456 Oct '35
- KWKW one-kw at Pasadena. Paul W. Spargo. *Electronic Indus* 2:90 Aug '43
- Nerve center of a broadcast network; NBC master control room; program routing. J. Ryan. *il map* Radio N 20:6 Sept '38
- New 10-50 kw KYW. J. Strong. *il Radio N* 16:626 Apr '35
- New 50-kw WOR. S. Kaufman. *il map* Radio N 16:626 Apr '35
- Pioneer west coast network. *Electronic Indus* 3:116 Mar '44
- Push-button switching for the small broadcaster. H. H. Wood. *il Electronics* 14:32 May '41
- Rules and standards for broadcast stations. R. F. Guy. *Electronics* 12:11 Aug '39
- San Francisco's Radio City; views and plans. *Arch Rec* 92:37 Nov '42
- Seventeen years of broadcasting; KDKA installs tallest antenna. W. W. Rogers. *il diag* Radio N 19:391 Jan '38
- Utilization of uranium energy to turn on the new 50,000-watt transmitter of radio station WBZ. *diags* Mech Eng 62:741 Oct '40
- United nations North Africa installation. G. Sonbergh. *Electronic Industries* 3:100 Feb '44
- WABC, key station of Columbia broadcasting system. E. M. Ostlund. *Elec Comm* 21:61 '42
- WEAF, Port Washington. *il map diag* Electronics 13:20 Sept '40
- WRLC features innovations. *il Radio N* 26:20 Oct '41
- WGY broadcasting station, Schenectady, N.Y.; views, plan and construction outline. *Arch Forum* 69:272 Oct '38

**BROADCASTING Studios**

- Acoustics in studios. M. Rettinger. *Proc Inst Radio Eng* 28:296 July '40
- Broadcast studio audio-frequency systems design. Howard A. Chinn. *Proc Inst Radio Eng* 27:83 Feb '39
- Broadcasting studio, station KSOO, Sioux Falls, S.D.; views and plan. *Arch Forum* 68:147 Feb '38
- CBS broadcasting studios. Hollywood, California; with views, plans and construction outline. *Arch Forum* 68:454 June '38
- CBS Hollywood studios. H. A. Chinn and R. A. Bradley. *Proc Inst Radio Eng* 27:421 July '39
- CBS studio building, New York city; views, plans, construction outline. *Arch Forum* 73:199-204 Sept '40
- Chicago broadcasting studios, station WGN; radio El Mundo studios, Buenos Aires, Argentine; Birmingham, England, broadcasting house; views. *Arch Forum* 64:484 June '36
- Columbia broadcasting studios; views, construction outline and data sheet. *Arch Forum* 64:478, 487 June '36
- Columbia broadcasting system builds new home for KNX. *il plans* Electronics 11:20 Apr '38
- Design decade. *il Arch Forum* 73:312 Oct '40
- Exponential studio (WOR). *Electronic Indus* 2:77 June '43
- In the control room. T. R. Wiseman. *Radio N* 26:54 Nov '41
- Insulated lead-coated copper roof; WGN broadcasting studio, Chicago. *il diags* Sheet Metal Worker 26:356 Apr '35

L'isolement phonique du pavillon de la radiodiffusion a l'Exposition internationale de Bruxelles. I. Katel. il diags plan Genie Civil 107:15 July 6 '35

Materials and construction of speech broadcast studios. Lonsdale Green, jr. Electronic Indus 2:74 May '43

NBC studios 6A and 6B. G. M. Nixon. il RCA Rev 6:259 Jan '42

New styles in broadcast studios. M. S. Cummings. il Radio N 17:583 Apr '36

New WGY studios, the last word in modernism. il Gen Elec Rev 41:378 Aug '38

Performance of broadcast studios designed with convex surfaces of plywood. C. P. Boner. il Jour Amer Acoustical Soc 13:244 Jan '42

Problems in steel framing; building addition to house WGN studios. A. Smith. il Eng N 116:914 June 25 '36

Station WJSY, Wheaton, Md.; views. Arch Rec 89:96 Feb '41

Studio, Columbia broadcasting system, New York; views and plan. Arch Forum 65:372 Oct '36

Stucco mechanically polished on Columbia broadcasting studios. W. B. Kaspareit. il Amer Concrete Inst Jour 12:605 Apr '41

Studio input modifications. E. Travis. diags Electronics 14:52 Aug '41

Two studios in New York city for N. B. C.; views and plans. Arch Forum 76:161 Mar '42

*See also*

Acoustics

#### Air-Conditioning

Air conditioning under glass; National broadcasting company's Hollywood studio. il Dom Eng 155:47 May '40

Air conditioning speeds up electrical transcription; studios of the World broadcasting system. A. V. Osier. Refrig Eng 39:200 Mar '40

Air conditioning machinery for display; National broadcasting company's Hollywood, Calif. studio. il Refrig Eng 39:367 June '40

Air conditioning the WOR broadcasting studios. plan Sheet Metal Worker 29:36, 38 Jul '38

Air-conditioning KDKA studios; with cost data. D. A. Myer. front flow chart il plan Elec Jour 32:413 Oct '35

Conditional air can't go on the air at Hollywood Radio City; maintenance of sound-proof system. H. C. Alber. il Heating-Piping 15:476 Sept '43

Comprehensive air conditioning; studio comfort control in Broadcasting house. London. il Elec Rev (Lond) 122:459 Apr 1 '38

National broadcasting company completely conditions its San Francisco Radio City plant. S. E. Locke. il Heat & Ven 39:21 Nov '42

Radio studios help to make buying public air conditioning conscious; KDKA studios, Pittsburgh. il Dom Eng 145:60 Apr '35

Radio studio air conditioning plant approaches ultimate in sound control; NBC studio in Hollywood. C. Strock. il diags plans Heat & Ven 37:15 Apr '40

Tribune Tower air conditions tested. Heating-Piping 10:463 Jul '38

Unique system conditions Asheville radio and newspaper building. S. C. Minnich, jr. il diag Heat & Ven 37:19 May '40

#### BROADCASTING Theaters

Broadcasting theater, CBS station KNX, Hollywood, California; views, plans and schedule of equipment and materials. Arch Rec 84:108 July '38

Broadcasting theaters. N. B. Geddes. il diags plan Arch Rec 84:125 July '38

**BROADCASTING Transmitters.** See Transmitters, Broadcasting

**BUNCHING, Electron.** See Klystron

## C

#### CABINETS

Acoustic networks in radio receiver cabinets; abstract. H. Knowles. Electronics 9:10 Dec '36

Acoustical labyrinth. B. J. Olney. il Electronics 10:24 Apr '37

Built-in features; radio phonograph cabinets. il diags Arch Forum 75:273 Oct 41

Enclosing the transmitter. N. Lefor. il Radio N 26:33 Nov '41

Cast housings for radio. K. J. Eklund. il Mod Plastics 16:18 Oct '38

Decorative second award in plastics competition; Kadette clockette radio. il Mod Plastics 15:38 Nov '37

Detrola corporation wins award. il Mod Plastics 16:38 Nov '38

Let's look at radio cabinets. W. H. MacHale. il Mod Plastics 15:21 Feb '38

New plastic materials for radio cabinets. H. Chase. il Electronics 10:26 Nov '37

One-shot radio housing. D. Szantay. il Mod Plastics 18:44 Mar '41

On the air. il Mod Plastics 18:31, 86, 88 Sept '40  
Plastics competition; award to Kadette radio corp. il Mod Plastics 18:52, Oct '40

Plastics competition; award to Philco radio & television corp. il Mod Plastics 18:51 Oct '40

Radio plus lamp; molded of phenolic material. il Mod Plastics 18:40 Feb '41

Small radios—today and tomorrow; are plastic radio cabinets on the way out? il Mod Plastics 17:28 Mar '40

Sears Roebuck okays plastic radios. F. E. Brill. il Mod Plastics 13:32 July '36

Modern white radio cabinet from England. W. H. Gordon. il Mod Plastics 13:36 Oct '35

*See also*

Acoustics	Manufacturing, Radio
Receiver Design	Plastics

#### CAPACITANCE

Apparent inter-electrode capacitance of a planar diode. E. B. Moullin. Jour Inst Elec Eng 81:667 Nov '37; Discussion. 82:219 Feb '38

Calculation of aerial capacitance. G. W. O. Howe. Wireless Eng 20:157 Apr '43

Calculating charging time in RC circuits. Edison Williams. Electronic Indus 1:58 Dec '42



**CAPACITANCE**—Continued

- Capacitance effects in high ohmic resistances and the advantages of the radial spiral; abstract. A. Klemm. *Wireless Eng* 19:218 May '42
- Capacitance of a parallel plate capacitor by the Schwartz-Christoffel transformation. H. B. Palmer. *Trans A.I.E.E.* 56:363 Mar '37
- Capacity-operated relay. *il Electronics* 10:35 Apr '37
- Capacity-operated relay applied to furnace heat control. *il Electronics* 10:46 Nov '37
- Converting capacity changes into current or voltage changes. *il Electronics* 16:150 July '43
- Direct measurement of the loss conductance of condensers at high frequencies. M. Boella. *il diags Proc Inst Radio Eng* 26:421 Apr '38
- Dependence of interelectrode capacitance on shielding. L. T. Pockman. *diags Proc Inst Radio Eng* 32:91 Feb '44
- Determining gain in RC circuits. William Moulic. *Electronic Indus* 1:62 Nov '42
- Effect of stray capacities to ground in substitution measurements. M. Reed. *diags Wireless Eng* 13:248 May '36
- Effect of stray capacitance on coupling coefficient. G. W. O. Howe. *diags Wireless Eng* 21:357 Aug '44
- Electrical stability of condensers. H. A. Thomas. *diags Jour Inst Elec Eng* 79:297 Sept '36
- Measurement of the self-capacity of iron-cored coils. M. Reed. *Wireless Eng* 14:252 May '37
- Measurements of condenser characteristics; abstract. W. B. Buckingham. *Electronics* 10:13 June '37
- Method for determining the residual inductance and resistance of a variable air condenser at radio frequencies. R. F. Field and D. B. Sinclair. *bibliog diags Proc Inst Radio Eng* 21:255 Feb '36
- Methods, formulas and tables for the calculation of antenna capacity. F. W. Grover. *Bus Standards Sci Paper* 568
- Radio frequency high voltage phenomena. A. Alford and S. Pickles. *Trans A. I. E. E.* 59:129 Mar '40
- Six-place inductance-capacity product table; numerical and logarithmic values, and corresponding frequencies from 400 to 4450 kc, with conversions from 1 cycle to 100 megacycles. H. R. Hesse. *Electronics* 11:31 June '38
- Stray capacitances; their influence on the effective inductance of a coil in a metal container. L. I. Farren and R. S. Rivlin. *bibliog diags Wireless Eng* 18:313 Aug '41
- Temperature coefficient of capacitance; its measurement in small radio condensers. W. Schick. *bibliog il diags Wireless Eng* 21:65 Feb '44; Discussion. T. J. Rehfish. 21:175 Apr '44
- The Q meter and its theory. V. V. L. Rao. *Proc Inst Radio Eng* 30:502 Nov '42
- Values of Q for various component parts. *Electronics* 8:126 Apr '35

*See also*

Condensers  
Measurements

**CATHODE Modulation.** See Modulation

**CHARACTERISTIC Impedance.** See Transmission Lines

**CARRIER**

- Automatic syntraction of two broadcast carriers. V. V. Gunsolley. *Proc Inst Radio Eng* Mar '35
- Carrier envelope analysis with the wave analyzer. L. B. Arguimbau. *Gen Radio Exp* Vol 10 Feb '36
- Carrier in cable. A. B. Clark and B. W. Kendall. *Bell Sys Tech Jour* 12:251 July '33
- Elimination of broadcast-station carrier beats; proposal for standard carrier signal transmitted from government station. A. W. Friend. *Proc Inst Radio Eng* 26:786-7 June '38
- Frequency-modulated carrier telegraph system. F. B. Bramhall and J. E. Boughtwood. *il diags Elec Eng* 61:Trans 36 Jan '42; Abstract. *Electronics* 15:106 Apr '42
- Improved carrier interference eliminator. W. Baggally. *diags Wireless Eng* 12:647 Dec '35
- Production of a single sideband for transatlantic radio telephony. R. A. Heising. *Proc Inst Radio Eng* 13:291 June '25
- Single sideband radiotelephone system. A. A. Oswald. *Proc Inst Radio Eng* 26:1431 Dec '38
- Solution of unsymmetrical-sideband problems with the aid of the zero-frequency carrier. H. A. Wheeler. *Proc Inst Radio Eng* 29:246 Aug '41

**CARRIER-Current Communication**

- Advances in carrier telegraph transmission. A. L. Matte. *Bell System Tech Jour* 19:181 Apr '40
- Applying power line carrier principles. F. S. Beale. *Electronic Indus* 4:84 Jan '45
- Bristol-Plymouth 12-channel carrier system. *Elec Comm* 16:131 '37
- Carrier current system helps run "Pennsy" railroad. *Electronic Industries* 3:96 Apr '44
- Carrier systems for radio and wire lines. L. G. Erickson and F. W. Lynch. *Electronic Indus* 3:96 June '44
- Comparison of the amplitude-modulation, frequency-modulation, and single-sideband systems for power-line carrier transmission. R. C. Cheek. *Elec Eng* 64:Trans 215 May '45
- Induction control for experimenters; induction transmission becoming increasingly popular. W. T. Peterson. *diag Radio N* 28:20 July '42
- Induction radio. *Electronic Indus* 3:132 Nov '44
- Industry uses of carrier current. G. G. Landon. *Electronic Indus* 3:82 Jan '44
- Multichannel carrier-current facilities for a power line. P. N. Sandstrom and G. E. Foster. *diags Elec Eng* 61:Trans 75 Feb '42
- OCD carrier current tests. *Electronics* 15:59 Aug '42
- Power company uses of electronic equipment. W. B. Blankmeyer. *il Electronics* 16:134 Mar '43
- Railroad traffic control with carrier current. H. W. Richards. *Electronic Indus* 3:114 Feb '44
- Wartime developments in carrier current communication. George Abraham. *Electronics* 16:76 Jan '43

*See also*

Modulation  
Sidebands

**CATHODE-Ray Direction Finders.** See Direction Finders

**CATHODE Follower**

Cathode follower circuits for coupling high-impedance sources to low-impedance loads. W. Richter. bibliog diags Electronics 16:112 Nov '43

Cathode follower. F. Minor. il QST Vol 28 Dec '44

Cathode follower. G. D. Hendricks. diags Radio N 33:54 Feb '45

Cathode follower calculations. H. P. Pacini. il Electronics 17:137 Oct '44

Cathode follower circuit. W. Moulic. il Electronic Indus 3:90 Oct '44

Cathode follower circuits. H. M. Greenwood. il QST 29:11 June '45

Matching cathode follower to transmission line. L. R. Malling. il Electronics 17:250 Dec '44

Signal-to-noise ratio of cathode follower. D. A. Bell. Wireless Eng 9:360 Aug '42

*See also*

Impedance Matching

**CATHODE-Ray Photography**

Calibration of camera shutters with the cathode-ray oscillograph. T. H. Bullock. il Electronics 16:106 July '43

Cathode ray photography. T. A. Rogers and R. L. Robertson. il Electronics 12:19 July '39

Cathode ray screen photography. Electronics 11:37 Apr '38

Circuit for cathode ray photography. H. C. Roberts. il Electronics 15:59 Sept '42

Photography patterns on cathode-ray tubes. Rudolph Feldt. il Electronics 17:130 Feb '44

**CATHODE-Ray Tube**

After-acceleration and deflection. J. R. Pierce. Proc Inst Radio Eng 29:28 Jan '41

Advantages and disadvantages of various types of focusing and deflection methods used in television. B. J. Edwards. Radio N 28:42 Sept '42

Cathode phase inversion. O. H. Schmitt. diags Rev Sci Instr 12:548 Nov '41

Cathode-ray bunching. David L. Webster. Jour Applied Phys 10:501 July '39

Cathode-ray control of television, light valves. J. S. Donal, jr. il diags Proc Inst Radio Eng 31:195 May '43

Cathode-ray frequency modulation generator. R. E. Shelby. il Electronics 13:14 Feb '40

Cathode ray amplifier tubes. il Electronics 12:9 Apr '39

Cathode-ray photography. T. A. Rogers and R. L. Robertson. il Electronics 12:19 July '39

Cathode ray tube life testing. Emil A. Rudat. Electronic Indus 2:88 Nov '43

Cathode ray tube life tests. Leonard Chioma. Electronic Indus 4:107 Jan '45

Cathode ray form distortion at ultra-high frequencies. R. M. Bowie. il Electronics 11:18 Feb '38

Cathode ray null detector for Wien bridge. C. J. Markey. diags Electronics 18:125 Mar '45

Cathode ray tube terminology. T. B. Perkins. Proc Inst Radio Eng 23:1334 Nov '35

Cathode ray tube with post acceleration. J. de Gier. Phillips Tech Rev 5:245 Sept '40

Cathode-ray tuning indicator. F. Siemens. il Radio N18:18 July '36

Cathode rays for the ultra-high frequencies. L. L. Libby. diags Electronics 9:15 Sept '36

Characteristics of cathode-ray and television picture tubes. diags Electronics 15:88 Feb; 98 Mar; 110 Apr; 94 May '42

CRO delayed single sweep circuit. W. E. Gilson. diags Electronics 15:65 Mar '42

Deflection beam tube. E. M. Glass. il Electronic Indus 3:90 Aug '44

Deflection modulated cathode ray tube. il Electronic Indus 3:112 Nov '44

Design of television receivers. A. D. Sobel. il Radio N 33:35 Mar '45

Direct current from oscillator for supplying direct current to a cathode-ray tube; abstract. R. C. Hergenrother and R. L. Freeman. diags Electronics 18:286 Mar '45

Darstellung abklingender schwingungen als stehendes bild auf der kathodenstrahlrohre. J. Czech. il diags VDI 84:83 Feb '40

Discontinuous oscillographic sweep circuit. L. J. Haworth. diags Rev Sci Instr 12:478 Oct '41

Distortion of saw-tooth wave forms. M. von Ardenne. diags Electronics 10:36 Nov '37

Double beam cathode ray tube. Manfred von Ardenne. il Electronics 9:17 Mar '36

Effect of the space charge on the sharpness of television cathode-ray tubes; abstract. E. Schwartz. Wireless Eng 22:37 Jan '45

Elimination of distortion in cathode ray tubes. A. B. Du Mont. il Electronics 8:16 Jan 35

Equivalent electrostatic circuits for vacuum tubes. W. G. Dow. Proc Inst Radio Eng 28:548 Dec '40

Graphical analysis of saw tooth waves. V. R. Furst. diags Electronics 15:49 July '42

Implosion of cathode-ray tubes. C. N. Smyth. Elec Comm 18:'33 '39

Linear sweep generators used in oscilloscopes and television apparatus. A. Tatz. il diags Radio N 33:52 May '45

Luminescent materials for cathode-ray tubes. T. B. Perkins and H. W. Kaufmann. Proc Inst Radio Eng 23:1324 Nov '35

Luminous scale for cathode-ray tubes. H. E. Kallmann. il diags Electronics 14:54 Sept '41

Measuring rotational speeds with stroboscopic patterns. il Electronics 16:166 Apr '43

Negative-ion components in the cathode-ray beam. C. H. Bachman and C. W. Carnahan. Proc Inst Radio Eng 26:529 May '38

Operation of electron tubes at high frequencies. H. Rothe. Proc Inst Radio Eng 28:325 July '40

Photography of cathode-ray tube traces. H. F. Folkerts and P. A. Richards. il diags RCA Rev 6:234 Oct '41

Precision stroboscope frequency meter. E. L. Kent. il Electronics 16:120 Sept '43

Radio frequency operated high-voltage supplies for cathode-ray tubes. O. H. Schade. il diags Proc Inst Radio Eng 31:158 Apr. '43

Secondary emission; some effects on deflector plate characteristics of cathode-ray tubes. H. Moss. il diags Wireless Engg 18:309 Aug '41

Self-protecting cathode. E. F. Lowry. il Electronics 8:520 Dec '35

Signal synchronized sweep circuit for cathode ray oscillography. il Electronics Aug:158 May '35

Space-charge effects in electron beams. Andrew V. Haef. Proc Inst Radio Eng 27:586 Sept '39

**CATHODE-Ray Tube—Continued**

- Space-charge limitations on the focus of electron beams. B. J. Thompson and L. B. Headrick. Proc Inst Radio Eng 28:318 July '40
- Square wave harmonics. D. L. Herr. il Electronics 13:34 May '40
- Stabilized sweep-circuit oscillator. W. E. Kock. il Electronics 12:20 Apr '39
- Steady-state testing with saw-tooth waves. D. L. Waidelich. bibliog il Proc Inst Radio Eng 32:339 June '44
- Television. V. K. Zworykin and G. A. Morton. John Wiley & Sons, Inc., N. Y. '40
- Television pickup tubes with cathode-ray beam scanning. Harley Iams and Albert Rose. Proc Inst Radio Eng 25:1048 Aug '37
- Television pickup tubes using low-velocity electron-beam scanning. Albert Rose and Harley Iams. Proc Inst Radio Eng 27:547 Sept '39
- Television receiver. E. M. Noll. il diags Radio N 33:32 Apr; 40 May; 50 June '45
- Television receiver design. M. S. Kiver. il diag Radio N 33:40 Jan '45
- Theoretical and experimental investigations of electron motions in alternating fields with the aid of ballistic models. H. E. Hollmann. il diags Proc Inst Radio Eng 29:71 Feb '41
- Theoretical limitations of cathode-ray tubes. D. R. Langmuir. bibliog Proc Inst Radio Eng 25:977 Aug '37
- Theory on cathode luminescence. U. Fano. Phys Rev 58:544 Sept '40
- Time bases. il Electronics 15:70 July '42
- Transversely controlled cathode-ray tubes with transverse work field for generation and amplification of ultra-short waves; abstract. H. E. Hollmann. Wireless Eng 18:289 July '41
- Trapezium distortion in cathode ray tubes. B. C. Fleming-Williams. diags Wireless Eng 17:61 Feb '40
- See also*
- Electron Optics      Kinescope  
Iconoscope          Television Tubes
- Electron Gun**
- After acceleration and deflection. J. R. Pierce. Proc Inst Radio Eng 29:28 Jan '41
- Cathode-ray tube with post acceleration. J. de Gier. Phillips Tech Rev 5:245 Sept '40
- Design of electron guns. A. L. Samuel. bibliog il diags Proc Inst Radio Eng 33:233 Apr '45
- Electron optics in television. I. G. Maloff and D. W. Epstein. McGraw-Hill, New York '38
- Factors governing performance of electron guns in television cathode-ray tubes. R. R. Law. Proc Inst Radio Eng 30:103 Feb '42
- Fixed-focus electron gun for cathode-ray tubes. Harley Iams. Proc Inst Radio Eng 27:103 Feb '39
- High current electron gun for projection kinescopes. R. R. Law. Proc Inst Radio Eng 25:954 Aug '37
- Improved electron gun for cathode-ray tubes. L. E. Swedlund. diags Electronics 18:122 Mar '45
- X-ray tube using an electron gun. J. J. G. McGue. il diag Rev Sci Instr 14:339 Nov '43

*See also*

Electron Beams

**CATHODE-Ray Tube Applications**

- Applications of cathode ray tubes. Beverly Dudley. il Electronics 15:49 Oct '42
- Calibrated response curve tracer. G. L. Hamburger. il diags Wireless Eng 22:170 Apr '45
- Cathode ray alphabet machine. A. W. Friend. il Electronics 13:40 June '40
- Cathode ray compass. Samuel Ostrolenk. il Electronics 9:12 Aug '36
- Cathode-ray electro-cardiograph. Brookes-Smith, C.H.W. Elec Comm 13:235 Jan '35
- Cathode ray frequency modulation generator. R. E. Shelby. il Electronics 13:14 Feb '40
- Cathode ray impulse generator for testing high power tubes. J. H. D. Harries. il Electronics 16:136 Dec '43
- Cathode ray oscillograph in industry. Ralph R. Batcher. Electronic Indus 2:64 Apr '34
- Cathode-ray oscillographic investigations on atmospherics. H. Norinder. il diags Proc Radio Eng 34:237 Feb '36
- Cathode ray synchronism indicator for electric power systems. K. C. Cook. il Electronics 17:110 Feb '44
- Cathode ray triograph. H. E. Hollmann. il Electronics 11:28 Jan '38
- Cathode ray tests controls. il Electronics 16:182 Nov '43
- Cathode ray tube applications. Electronics 9:38 June '36
- Cathode ray tube applications. J. M. Stinchfield. il Electronics 8:153 May '35
- Cathode ray tube used as aircraft instrument indicator. il Electronics 13:36 Mar '40
- Chemical analysis with a cathode ray oscilloscope. il Electronics 16:154 Apr '43
- Electronic apparatus for recording and measuring electrical potentials in nerve and muscle. W. M. Rogers and H. O. Parrack. bibliog il diags Proc Inst Radio Eng 32:738 Dec '44
- Electronic engine-pressure indicator; quartz crystal unit, inserted in an engine head. J. W. Head. il diag Electronics 18:132 Jan '45
- Faults of three systems on a single oscillograph. G. Steeb. il diag Elec World 123:99 Apr 28 '45
- Industrial oscillograph for impulse testing. O. Ackerman. il diag Electronics 18:154 May '45
- New applications of cathode-ray oscillographs. H. F. Mayer. il diags Gen Elec Rev 40:203 Apr '37
- Oscillograph method of measuring positive-grid characteristics. O. W. Livingston. Proc Inst Radio Eng 28:267 June '40
- Oscillographic method for the photometry of photographic flash lamps. T. H. Projector and L. E. Barbrow. il diags Rev Sci Instr 16:51 Mar '45
- Oscilloscope for pulse studies. H. Atwood, jr. and R. P. Owen. il diags Electronics 17:110 Dec '44
- Resonoscope for tuning musical instruments. L. B. Holmes. il Electronics 10:17 July '37
- Salvaging and process control with the cyclograph; cathode ray device for non-destructive inspection. J. Albin. il Iron Age 155:62 May 17 '45
- Synchronized voltages for bioelectric research. Harold Goldberg. il Electronics 14:30 Aug '41
- Telechrome tube gives television in color. il Electronics 17:190 Oct '44

- Television. V. K. Zworykin and G. A. Morton. John Wiley & Sons, New York '40
- Tiles emerging from kilns sorted by cathode ray tubes and phototubes. L. L. Antes. *il Electronics* 17:114 June '44
- Tracing tube characteristics on a cathode ray oscilloscope. J. Millman and S. Moskowitz. *il Electronics* 14:36 Mar '41
- Versatile cathode ray oscilloscope. W. E. Gilson. *il Electronics* 14:22 Dec '41
- CATHODE-Ray Tube Manufacture**
- Characteristics of fluorescent materials. L. H. Stauffer. *il Electronics* 14:32 Oct '41
- Characteristics of phosphors for cathode ray tubes; reference sheet. *Electronics* 11:31 Dec '38
- Effect of thin oxide films on cathodes of cathode ray tubes. *Electronics* 17:248 July '44
- Electronic tube chemicals need clean air; phosphor preparation laboratory, North American Phillips co. I Krushel. *il Heating-Piping* 17:127 Mar '45
- Making cathode ray tubes. *il Electronics* 12:32 Apr '39
- Production of cathode ray tubes. *il Electronic Indus* 3:110 Aug '44
- See also*
- Vacuum Tube Manufacture
- CATHODE-Ray Voltmeters**
- Cathode ray tube voltmeter. *il Electronic Indus* 3:124 Jan '44
- Cathode ray tube voltmeter. *il Electronics* 17:234 Apr '44
- See also*
- Voltmeters, Vacuum-Tube
- CAVITY Resonators**
- Cavity resonators. W. Dellenbach. *Electronic Indus* 4:104 Apr '45
- Cavity resonators in decimetric-wave triode generators; abstract. P. L. Bargellini. *Wireless Eng* 21:187 Apr '44
- Cylindrical cavity resonators. C. F. Davidson and J. C. Simmonds. *diags Wireless Eng* 21:420 Sept '44
- Effect of cavity resonance on the frequency response characteristic of the condenser microphone. Stuart Ballantine. *Proc Inst Radio Eng* 18:1206 July '30
- Excitation of cavity resonators by saw-tooth oscillations; abstract. W. Ludenia. *Wireless Eng* 19:422 Sept '42
- Forced oscillations in cavity resonators. E. U. Condon. *Jour Applied Phys* 12:129 Feb '41
- Magnetic fundamental oscillation of the cylindrical cavity with circular cross section; abstract. F. Borgnis. *Wireless Eng* 20:344 July '43
- Natural oscillations of electrical cavity resonators. W. L. Barrow and W. W. Mleher. *Proc Inst Radio Eng* 28:184 Apr '40
- Network analyzer studies of electromagnetic cavity resonators; equivalent circuits for Maxwell field equations. J. R. Whinnery and others. *diags Proc Inst Radio Eng* 32:360 June '44
- New method for the calculation of cavity resonators. W. C. Hahn. *diags Jour Applied Phys* 12:62 Jan '41
- Notes on loudspeaker response measurements and some typical response curves. Benjamin Olney. *Proc Inst Radio Eng* 19:1113 July '31
- On resonators suitable for klystron oscillators. W. W. Hansen and R. D. Richtmyer. *Jour Applied Phys* 10:189 Mar '39
- Resonant frequency of closed concentric lines. W. W. Hansen. *Jour Applied Phys* 10:1 Jan '39
- Theory and application of u.h.f.; cavity resonators as tuning units of klystron and magnetron oscillators. M. S. Kiver. *diags Radio N* 32:56 Dec '44
- Transmission line theory applied to wave guides and cavity resonators. D. Middleton and R. King. *bibliog diags Jour Applied Phys* 15:524 July '44
- Type of electrical resonator. W. W. Hansen. *Jour Applied Phys* 9:654 Oct '38
- Ultra-high frequency oscillations of cylindrical cavity resonators containing two and three dielectric media. D. Middleton. *bibliog diag Phys Rev* 64:343 May 1 '43
- See also*
- Klystron
- Magnetron
- CERAMIC Insulators.** *See Insulation*
- CIRCUIT Breakers**
- Application of circuit breakers for low-voltage a. c. systems. C. P. West *Power Pl Eng* 44:58 May '40
- Circuit breaker for radio speech-control circuits; National broadcasting company studios in Radio City. R. W. Bauer and J. W. Seaman. *il Gen Elec Rev* 37:484, 495 Nov '34
- How to determine size of circuit breakers for secondary circuits; monogram and graph. J. V. McGuire. *Elec World* 123:118 May 26 '45
- Littelfuse switch breaker. *il Rev Sci Inst* 15:330 Nov '44
- Low-voltage circuit breakers, interrupting capacity. W. Deans. *Elec World* 123:118 Feb 3; 124 Feb 17; 110 Mar 3 '45
- Progress in engineering knowledge during 1944; protective devices. P. L. Alger and J. Stokeley. *diags Gen Elec Rev* 48:29 Feb '45
- Relay and circuit-breaker protection for d-c machines. H. Bany. *il Gen Elec Rev* 43:312 Aug '40
- See also*
- Time Delay Circuits
- CIRCUITS, Design of Electronic.** *See Design, Circuit*
- COAXIAL Filters**
- Coaxial filter for vestigial sideband transmission in television. H. Salinger. *Proc Inst Radio Eng* 29:115 Mar '41
- Concentric narrow band-elimination filter. Laurence M. Leeds. *Proc Inst Radio Eng* 26:576 May '38
- Single-sideband filter theory with television applications. John M. Hollywood. *Proc Inst Radio Eng* 27:457 July '39
- Use of coaxial and balanced transmission lines in filters and wide-band transformers for high radio frequencies. W. P. Mason and R. A. Sykes. *Bell Sys Tech Jour* July '37
- See also*
- Coaxial Lines
- Transmission Lines

**COAXIAL Lines**

- Coaxial and balanced transmission lines. M. Reed. diags *Wireless Eng* 15:414 Aug '38
- Coaxial cable attenuation measurements at 300 mc. H. H. Race and C. V. Larrick. il diags *Gen Elec Rev* 44:507 Sept '41
- Coaxial cable design. N. D. Kenney. il *Electronics* 18:124 May '45
- Coaxial cable installation. J. B. Epperson. il *Electronics* 12:30 July '39
- Coaxial cable system for television transmission. M. E. Strieby. *Bell Sys Tech Jour* 17:438 July '38
- Crosstalk between coaxial conductors in cable. R. P. Booth and T. M. Odarenko. *Bell Sys Tech Jour* 19:358 July '40
- Dielectric constants and power factors at centimeter wave-lengths; measurement by means of resonant lengths of coaxial transmission line. C. R. Englund. il *Bell Sys Tech Jour* 23:114 Jan '44
- Effect of electron activities on cables. P. Dunsheath. *Jour Inst Elec Eng* 80:21 Jan '37
- Electromagnetic shielding effect of an infinite plane conducting sheet placed between circular coaxial coils. S. Levy. bibliog diags *Proc Inst Radio Eng* 24:923 June '36
- Graph of impedance of eccentric conductor cable. W. J. Barclay and K. Spangenberg. *Electronics* 15:50 Feb '42
- Installation of coaxial transmission lines. J. B. Epperson. il *Electronics* 12:30 July '39
- Measurement of balanced and unbalanced impedances at frequencies near 500 Mc/s. and its application to the determination of the propagation constants of cables. L. Essen. diags *Jour Inst Elec Eng* 91 pt 3:84 June '44
- New coaxial transmission line at WTAM. W. S. Duttera. *Electronics* 12:30 Mar '39
- Selecting coax cable. Victor J. Andrew. *Electronic Indus* 4:84 June '45
- Television transmission. M. E. Strieby and C. L. Weis. *Proc Inst Radio Eng* 29:371 July '41
- Television transmission over wire lines; coaxial cable with repeaters. M. E. Strieby and J. F. Wentz. bibliog il diags *Bell Sys Tech Jour* 20:62 Jan '41
- Television transmission; signals transmitted over coaxial cable and other telephone facilities. M. E. Strieby and C. L. Weis. bibliog il diags *plan Proc Inst Radio Eng* 20:371 July '41
- Unicontrol radio receiver for ultra-high frequencies using concentric lines as interstage couplers. Francis W. Dunmore. *Proc Inst Radio Eng* 24:837 June '36
- See also*  
Transmission Lines
- COILS**
- Alternating-current resistance of rectangular conductors. S. J. Haefner. *Proc Inst Radio Eng* 25:434 Apr '37
- Bridged-T method of measuring the constants of a coil. diags *Wireless Eng* 18:135 Apr '41
- Coil design for short wave receivers. D. Grimes and W. Barden. *Electronics* 7:174 June '34
- Compressed powdered molybdenum permalloy for high quality inductance coils. V. E. Legg and F. J. Given. *Bell Sys Tech Jour* 19:385 July '40
- Design of standards of inductance, and the proposed use of model reactors in the design of air-core and iron-core reactors. H. B. Brooks. *Bur Stand Jour Res* 7:289 Aug '31
- DC saturable reactors for control purposes. Harry Holubow. *Electronic Indus* 4:76 Mar '45
- Dependence of frequency on the temperature—coefficient of inductance of coils. H. A. Thomas. *Jour Inst Elec Eng* 84:101 '39; also *Wireless sec Jour I. E. E.* 14:19 Mar '39
- Dielectric losses in single-layer coils at radio frequencies. W. Jackson. *Exp Wireless and Wireless Eng* 5:255 May '28
- Effect of spherical screen upon an inductor. C. F. Davidson and J. C. Simmonds. *Wireless Eng* 22:2 Jan '45
- Effective resistance of inductance coils at radio frequency. S. Butterworth. diags *Exp Wireless* 3:203, 309, 417, 483 Apr-May, July-Aug '26; P. K. Turner. 3:134 Mar '26
- Electrical stability of tubular inductance coils with deposited conductors. H. A. Thomas. *Jour Inst Elec Eng* 86:471 May '40
- Factor-of-merit of short-wave coils. P. C. Michel. il diags *Gen Elec Rev* 40:476 Oct '37
- Ferrocarril-coils; their application in high frequency technique. A. Schneider. il diags *Electrician* 113:770 Dec 14 '34
- Fluxgraph; machine for plotting the magnetic fields of coils. P. G. Weiller. il diags *Electronics* 15:52 May '42
- Frequency stability of tuned circuits; performance of coils tuned by air-dielectric capacitors, during variations in air density and humidity. G. V. Eltgroth. *Electronics* 17:118 Feb '44
- Harmonic production in ferromagnetic materials at low frequencies and low flux densities. Eugene Peterson. *Bell Sys Tech Jour* 7:762 Oct '28
- High frequency resistance of toroidal coils. S. Butterworth. *Exp Wireless and Wireless Eng* 6:13 Jan '29
- High-quality coils with dynamo sheet iron type IV; abstract. H. Wilde. *Wireless Eng* 21:231 May '44
- Hysteresis effects with varying superimposed magnetizing forces. W. Fondiller and W. H. Martin. *Trans A.I.E.E.* 40:553 '21
- Inductive tuning at ultra-high frequencies; continuously variable inductive coil. B. V. K. French. il *Electronics* 14:32 Apr '41
- Measurement of coil reactance in the 100-megacycle region. F. Hamburger, jr. and C. F. Miller. il diags *Proc Inst Radio Eng* 28:475 Oct '40
- Measurements of the high-frequency resistance of single-layer solenoids. W. Jackson. bibliog *Jour Inst Elec Eng* 80:440 Apr '37
- Measuring coil characteristics without an impedance bridge. H. D. Brailsford. il *Electronics* 16:86 May '43
- Metal cores for radio frequency coils. F. Siemens. il *Radio N* 17:465 Feb '36
- New instrument for testing coils. T. M. Dickinson. il diags *Gen Elec Rev* 41:199 Apr '38
- Phase modulation by easily saturated coil. *Electronic Indus* 2:160 Aug '43
- Radio engineering. F. E. Terman. 2d ed. p38 McGraw-Hill 1943

- Radio frequency resistance and inductance of coil used in radio reception. August Hand and H. B. DeGroat. Bur Stand Tech Paper 298 Oct '25
- Reactors in d-c service. R. Lee. diag Electronics 9:18 Sept '36
- Resistance of conductance of various types and sizes as windings of single-layer coils at 150 to 6000 kilocycles. E. L. Hall. Bur Stand Tech Paper 330 Oct '26
- Silicon steel with A-C and D-C excitation. R. F. Edgar. Trans A.I.E.E. 53:318 Feb '34
- Some possibilities for low loss coils. Frederick Emmons Terman. Proc Inst Radio Eng 23:1069 Sept '35
- Study of litz wire coils. D. Grimes and W. S. Barden. Electronics 6:303, 342 Nov-Dec '33
- Study of the high-frequency resistance of single layer coils. A. J. Palermo and F. W. Grover. Proc Inst Radio Eng 18:2041 Dec '30
- UHF oscillator frequency-stability considerations. S. W. Seeley and E. I. Anderson. RCA Rev 5:77 July '40
- Winding of the universal coil. A. W. Simon. diags Proc Inst Radio Eng 33:35 Jan '45
- Winding the universal coil. A. W. Simon. Electronics 9:22 Oct '36
- See also*
- Inductors
- Measurements
- Calculations
- Calculation of the self-inductance of plane polygonal circuits. P. L. Kalantaroff and V. I. Worobieff. Proc Inst Radio Eng 24:1585 Dec '36
- Formulas for the skin effect. Harold A. Wheeler. Proc Inst Radio Eng 30:412 Sept '42
- Nomogram for coil calculations. C. P. Nachod. chart Electronics 10:27 Jan '37
- Simplified inductance chart; reference sheets. E. S. Purington. Electronics 15:61 Sept '42
- Skin effect formulas. J. R. Whinnery. Electronics 15:44 Feb '42
- Solenoid inductance calculations; reference sheet. T. C. Blow. Electronics 15:63 May '42
- Design
- Design of inductances for frequencies between 4 and 25 megacycles. D. Pollack. bibliog diags Elec Eng 56:1169 Sept '37
- Design of radio-frequency choke coils. H. A. Wheeler. diags Proc Inst Radio Eng 24:850 June '36
- Design of the universal winding. L. M. Hershey. Proc Inst Radio Eng 29:442 Aug '41
- Optimum design of torroidal inductances. Grote Reber. Proc Inst Radio Eng 23:1056 Sept '35
- Theory and design of progressive universal coils. A. A. Joyner and V. D. Landon. Communications 18:5 Sept '38
- UHF coil design. il Electronic Indus 2:60 Aug '43
- COILS, Air-Cored**
- Eisenlose drosselspulen (air-core inductances). J. Hak. Verlag K. F. Koehler. Leipzig '38
- Inductance of a circuit consisting of two parallel wires. G. W. O. Howe. diags Wireless Eng 21:461 Oct '44
- Inductance of round (air-cored) coils; abstract. K. E. Muller. Wireless Eng 20:624 Dec '43
- Magnetic induction field of air-core coils; its application to high-frequency heating in valve manufacture. C. B. Kirkpatrick. diags Wireless Eng 20:372 Aug '43; Abstract. G. H. Brown. Electronics 17:234 June '44
- Temperature coefficient of air-cored self-inductances. A. Bloch. bibliog Wireless Eng 21:359 Aug '44
- COILS, Iron-Cored**
- Design of standards of inductance and the proposed use of model reactors in the design of air-core and iron-core reactors. H. B. Brooks. Bur Stand Jour Res 7:289 Aug '31
- Ferro-inductors and permeability tuning. W. J. Polydoroff. Proc Inst Radio Eng 21:690 May '33
- Iron-core components in pulse-amplifiers. R. Lee. diags Electronics 16:115 Aug '43
- Iron powder cores, their use in modern receiving sets. E. R. Friedlaender. Wireless Eng 15:473 Sept '38
- Magnet steels and permanent magnets; relationship among their magnetic properties. K. L. Scott. Bell System Tech Jour 11:383 July '32
- Magnetic properties of compressed powdered iron. B. Speed and G. W. Elmen. Trans A.I.E.E. 40:596 '21
- Measurement of iron cores at radio frequencies. D. E. Foster and A. E. Newlon. diags Proc Inst Radio Eng 29:266 May '41
- Measurement of low range iron core choke coils. S. Uchida and M. Yamamoto. diag Electronics 14:70 June '41
- Powder-cored coils. Electronic Indus 3:120 Feb '44
- Powdered iron cores. A. Crossley. il Jour Ap Phys 14:451 Sept '43
- Powdered iron cores. C. T. Martowicz. Electronic Indus 4:108 June '45
- Powdered iron cores used in radio. il Electronics 15:35 Feb '42
- Radio uses of powdered iron cores. bibliog il Electronics 15:35 Feb '42; Excerpts. Elec Eng 61:196 Apr '42
- Reactance amplifiers using iron core reactors saturated by d.c. from copper oxide rectifiers. il Electronics 10:28 Oct '37
- Some measurements on iron cored tuning coils. K. Kaschke. il diags Wireless Eng 13:14 Jan '36
- COILS, R-F Choke**
- Design of radio frequency choke coils. H. A. Wheeler. Proc Inst Radio Eng 24:850 June '36
- Multiband r-f choke coil design. H. P. Miller, jr. il Electronics 8:254 Aug '35
- New system of inductive tuning. P. Ware. Proc Inst Radio Eng 26:308 Mar '39
- Precise high-frequency inductometer. L. E. Herborn. Bell Lab Record 17:351 July '39
- Variable self and mutual inductor. H. B. Brooks and F. C. Weaver. Bur Standards Sci Paper 290
- COLOR Television.** See Television, Color
- COLPITTS Circuit.** See Oscillators, Colpitts

## COMMUNICATION

- Arctic networks; radio for Hudson's Bay company fur trade posts. S. G. L. Horner. *il* Radio N 30:17 Sept '43
- Bibliography of submarine communication. *Electronics* 15:116 Oct '42
- Binaural transmission on a single channel. A. V. Eastman and J. R. Woodward. *il* *Electronics* 14:34 Feb '41
- Civil air transport communication. A. D. Hodgson. *diags* plans maps *Jour Inst Elec Eng* 87:317 pl 1-2 Sept '40; Abstract. *Elec Rev (Lond)* 126:502 May 3 '40; Discussion. *Jour Inst Elec Eng* 87:344 Sept '40
- Communication equipment statistics, 1939. *Electronics* 13:74 Dec '40
- Diagram showing how the various lengths are used in radio communication, and their relation to radiation of other wave lengths. *Elec Eng* 54:1269 Nov '35
- Discontinuous phenomena in radio communication. B. van der Pol. *diags* *Jour Inst Elec Eng* 81:381 Sept '37
- Effects of solar activity on the ionosphere and radio communications. H. W. Wells. *bibliog* *il* maps *Jour Inst Elec Eng* 31:147 Apr '43
- Emergency radio communication for an electric power system. G. G. Langdon. *il* *Electronics* 14:40 Mar '41
- Frequency-shift radiotelegraph and teletype system. R. M. Sprague. *il* *Electronics* 17:126 Nov '44
- Frequency spectrum; radio broadcasting, television broadcasting, radio communications color chart. *Gen Elec Rev* 47:insert 16b June '44
- Great Lakes ship radio system. *il* *Electronics* 17:92 Oct '44
- High quality radio broadcast transmission and reception. S. Ballantine. *il* *diags* *Proc Inst Radio Eng* 22:564 May '34; discussion. 23:256 Mar '35
- How radio serves the great North. T. H. Inkster. *il* *Radio N* 20:25 Nov '38
- Inter-American radiotelegraph and radiotelephone services extended. *For Comm W* 16:32 Sept 23 '44
- International telecommunications. A. S. Angwin. *Engineering* 156:357 Oct 29 '43
- Micro-ray communications. W. L. McPherson and E. H. Ullrich. *diags* *Jour Inst Elec Eng* 78:630; Discussion. p. 656 June '36
- Multi-channel radio link between Norfolk and Cape Charles. A. C. Peterson, jr. *Electronics* 17:186 Sept '44
- New postwar outlook for communications companies. S. Devlin. *Mag of Wall St* 76:255 June 9 '45
- Panoramic radio. *il* *Electronics* 14:36 Dec '41
- Pathologist looks at radio communications. R. A. W. Watt. *Jour Inst Elec Eng* 78:13 Jan '36; Same abr. *Electrician* 115:715 Dec 6 '35
- Planning a V-H-F communications system; with details concerning the Massachusetts state police system. J. A. Doremus. *il* plan map *Electronics* 16:96 Sept '43
- Problems in wireless communication. W. F. Rawlinson. *Jour Inst Elec Eng* 82:84 Jan '38
- Radio communication reference data. *Electronics* 14:34 June '41
- Recent developments in communication engineering. T. T. Partridge. *Jour Inst Elec Eng* 80:79 Jan '37
- Review of radio communication in the mobile services. C. N. Anderson. *Proc Inst Radio Eng* 24:396 Mar '36
- Selective ringing on pipe line telegraph and telephone systems; Stanolind pipe line company. F. P. O'Connor. *il* *diags* *Pet Eng* 15:113 Mar '44
- Speech scrambling methods. W. W. Roberts. *il* *Electronics* 16:108 Oct '43
- Telecommunications; economics and regulation. J. M. Herring and G. C. Gross. 544p \$5 McGraw-Hill '36
- Telecommunications of the future; abstracts. W. G. Radley. *Engineer* 172:300 Oct 31 '41; *Engineering* 152:405 Nov 21 '41
- U. S. forest service communication facilities. *Electronics* 15:80 Jan '42
- Very-high frequency communications system. J. A. Doremus. *il* *Electronics* 16:96 Sept '43
- Wave guides in electrical communication. J. Kemp. *bibliog* (52 references) *diags* *Jour Inst Elec Eng* 90 pt3:90-114 Sept '43; Discussion. 91 pt3:145 Sept '44
- Wired radio; circuit designs. R. P. Turner. *diags* *Radio N* 31:29 Apr '44
- World-wide high frequency communication patterns. *QST* 26:38 Aug '42
- See also*
- Transmission
- Broadcasting  
Propagation of Waves

## COMMUNICATION, Carrier-Current

- Carriers accept 33 clear radio channels. *Ry Age* 118:455 Mar 10 '45; Same. *Ry Mech Eng* 119:173 Apr '45
- Carrier communications to crane cabs. M. L. Snedecker. *il* *Electronics* 17:112 Aug '44
- Carrier current telephony. B. Dueno. *il* *Electronics* 15:57 May '42
- Carrier current telegraph system. *Electronics* 15:106 Apr '42
- Carrier systems for radio and wire lines. L. G. Erickson and F. W. Lynch. *il* *Electronic Indus* 3:96 June '44
- Electronic switching simplifies powerline communications. J. D. Booth. *il* *Electronics* 15:44 Aug '42
- Frequency modulation carrier telephony for 250-kv lines. *il* *Electronics* 17:106 Dec '44
- How to operate and maintain carrier communication equipment. *Elec W* 118:1476 Oct 31 '42
- Industry uses of carrier current. G. G. Langdon. *il* *Electronic Indus* 3:82 Jan '44
- Phase-modulated communication system for Chicago surface lines. B. Dudley. *il* *Electronics* 17:102 Jan '44
- Portable audio-frequency standard; facilitates adjustment of carrier-current communication system circuits. W. Fayer. *il* *diag* *Electronics* 17:100 July '44
- Postwar fire radio service. *Electronic Indus* 3:98 Sept '44
- Radio for transit utilities. J. David. *il* *Radio N* 33:44 Feb '45
- Simple uni-directional carrier-current communication. J. L. Smith. *diags* *Electronics* 15:54 Feb '42

- Taxicabs routed by radio. Electronics 17:198 Oct '44
- Two-way frequency modulation units installed in freight yards. il Electronics 17:174 Aug '44
- Unidirectional carrier current communicator. J. L. Smith. il Electronics 15:54 Feb '42
- Versatile power-line-carrier system. H. W. Lensner and J. B. Singel. il diags Elec Eng 63:Trans 129 Mar '44
- Wartime developments in carrier current communication. George Abraham. Electronics 16:76 Jan '43
- See also*
- Transmission, Radiotelephone
- COMMUNICATION, International**
- Aeronautical and radio law; notes and papers. H. S. LeRoy. 141p pa \$3 Howard S. LeRoy, 413 Colorado bldg, Washington, D.C. '39
- Battle of the spectrum. H. Corey. Pub Util 34:476 Oct 12 '44
- CBS international broadcast facilities. A. B. Chamberlain. bibliog diags plan maps Proc Inst Radio Eng 30:118 Mar '42
- Consolidation of all international communications proposed. Pub Util 35:491 Apr 12 '45
- See also*
- Laws and Regulations, International
- COMMUNICATION, Military**
- Aircraft radio communication. H. K. Morgan. Aeronautical Eng Rev 1:19 Aug '42
- Air force radio communications. il Radio N 29:56 June '43
- Aircraft communication in World war I. W. R. Lansford. il Radio N 29:50 June '43
- Army airways communications system radio station. il Radio N 31:31 May '44
- Army airways communications system. il Electronics 17:98 Aug '44
- Army's SCR-299; mobile radio communications unit. O. Read. il map Radio N 30:17 Aug '43
- Coast Guard radio. il Radio N 29:158 June '43
- Carrier current coupling circuits for civilian defense networks. il Electronics 16:144 Aug '43
- Commander speaks upstairs; radio now permits fighting planes to be commanded in the air. A. B. Gillim. il Radio N 20:29 July '38
- Communications airborne; receiver-transmitter units used by our troops. E. J. Flynn. il Radio N 33:32 Mar '45
- Death-dealing radio warfare of the future. F. B. Fairchild. il Radio N 17:391 Jan '36
- Development of vehicular equipment; Signal corps development agencies. J. D. O'Connell. il Radio N 28:106 Nov '42
- Eavesdropping by the army; bearings taken to determine location of enemy transmitter. A. R. Boone. il Radio N 28:10 Sept '42
- Electronics in naval operations. Captain J. B. Dow. Electronic Indus 1:39 Nov '42
- Enemy airborne radio equipment. C. P. Edwards. il diags Jour Inst Elec Eng 91 pt 3:44; Discussion. 63 June '44
- Enemy army communications equipment. R. B. Colton. il Elec Eng 63:139 Apr '44
- French underground network during German occupation. K. R. Porter. il Radio N 33:72 Feb '45
- Great spiderweb; story of war-born Army airways communications system. H. D. Colson and R. C. Fleischman. il Radio N 32:37 Oct '44
- Invasion communications; jobs of the Signal corps are many and varied. R. L. Sigerson. il Sci Amer 169:53 Aug '43
- Military communications; comparison of methods employed by Allied and Axis powers. S. A. Clark. Radio N 32:76 Dec '44
- Military communications, their part in global war. C. J. McIntyre. il Electronics 16:100 Mar '43
- Multi-channel army communications set. Electronic Indus 4:91 June '45
- Navy department communications. il Electronics 16:104 June '43
- OWI reviews war communications. Electronics 16:242 Nov '43
- Progress of military radio; pictures assembled by Charles R. Leutz. Radio N 26:8 July '41
- Radio and electronics in the Navy. S. P. Sashoff. il Electronics 16:72 Apr '43
- Radio and radar at war; illustrations. Electronics 16:118 Aug '43
- Radio communications in the field. S. Gadler. il Radio N 32:42 Oct '44
- Radio in a theater of war. K. Porter. il Radio N 31:21 May '44
- Radio in naval tactics. W. B. Ammon. il Sci Amer 153:245 Nov '35
- Radio in this war. D. Sarnoff. il Radio N 28:48 Nov '42
- Radio, on a Flying Fortress; application of radio and the magnetic wire recorder in the actual bombing of a Nazi-held airdrome. K. R. Porter. il Radio N 31:21 Jan '44
- Radio standards go to war. H. P. Westman. Proc Inst Radio Eng 31:381 July '43
- Radio-telephones for military police, Scott Field, Ill. il Radio N 29:17 May '43
- Signal corps between two wars. R. E. Meeds. il Radio N 28:40 Nov '42
- Signal corps in Pacific. H. C. Ingles. Electronics 17:266 May '44
- Signal corps in World war I. M. B. Herr. il Radio N 28:34 Nov '42
- Sixth Corps area signal battalion. il Radio N 26:24 Oct '41
- Some fundamental considerations in military amplifier design. S. L. Chertok. il Soc Motion Picture Eng Jour 43:10 July '44
- U.S. army air communications; students receive complete training under expert government supervision. J. R. Johnston. il Radio N 26:24 Sept '41
- United States communications in the war. Elec Eng 62:521 Dec '43
- United States communications in the war. Elec Eng 65:521 Dec '43
- Walkie-talkie; portable two-way radios are a boon to the military. Fortune 28:62 Oct '43
- 3650-3950 kcs. requisition; amateur frequencies taken for military use; interference prevention. R. P. Turner. diag Radio N 26:33 Oct '41
- COMMUNICATION, Railroad**
- Burlington uses radio to direct switching. il Ry Age 117:883 Dec 9 '44



**COMMUNICATION, Railroad—Continued**

- Carrier current system helps run "Pennsy" R.R. il Electronic Indus 3:96 Apr '44
- Carrier current versus space radio for railroads. il diags Electronics 18:152 Feb '45
- Channels for train radio. Ry Age 118:191 Jan 20 '45; Same. Ry Mech Eng 119:84 Feb '45
- Communication facilities increased during 1940. J. H. Dunn. il Ry Age 110:112 Jan 4 '41
- Electronic communication for trains. W. S. Halstead. il Electronics 17:102 Aug '43
- Electronics in railroading; flaw detection in rails, materials testing, signal systems, and communications. J. Markus. il Sci Amer 172:156 Mar '45
- Inductive train communication; Middle and Pittsburgh divisions of Pennsylvania. L. O. Grondahl. Ry Age 117:687 Nov 4 '44
- Milwaukee tests train communication; inductive system gives good results. il Ry Age 118:152 Jan 13 '45
- Mobile radio stations part of railway communication set-up. Diesel Power 22:1191 Nov '44
- New Haven tests radio train communications. il Ry Age 118:707 Apr 21 '45; Same. Ry Mech Eng 119:223 May '45
- One year of train communication tests on the Rio Grande. W. W. Pulham. il Ry Age 118:828 May 12 '45
- Radio for railroads. E. A. Dahl. il Tech Rev 47:361 Apr '45
- Radio for railroads. W. S. Halstead. il Electronics 17:92 Apr '44
- Railroad 'phone permits communication by means of carrier currents. il Sci Amer 170:224 May '44
- Railroad traffic control with carrier current. H. W. Richards. il Electronic Indus 3:114 Feb '44
- Rock Island railroad radio tests. E. Dahl. il diag Electronics 18:96 May '45
- Rock Island tests facsimile and carrier telephone on moving train. il Ry Age 117:355 Aug 26 '44
- Senate studies radio train control. Electronic Indus 3:238 May '44
- Sixty clear channels for train communication. Ry Age 118:936 May 26 '45; Same. Ry Mech Eng 119:269 June '45
- Train communication on the Kansas City Southern; carrier telephone system. il map Ry Age 117:724 Nov 11 '44
- Train communication on Pennsylvania railroad. W. E. Triem. Ry Age 117:652 Oct 28 '44
- Train communication progress. il map Ry Mech Eng 119:38 Jan '45
- Train telephone communication system employed by the Pennsylvania. W. R. Triem. il map Ry Age 116:352 Feb 12 '44; Same. with diag. Ry Mech Eng 118:134 Mar '44
- VHF railroad radio. Electronic Indus 3:110 Sept '44
- See also*
- Transmission, Radiotelephone

**COMPANDERS.** See Volume Compressors and Expanders

**COMPASS, Radio.** See Direction Finders

**CONDENSERS**

- Capacitor discharge chart. Louis Hanopol. Electronics 13:41 June '40
- Capacitor impedance and resistance measurements. Engineering Dept. Aerovox Res W Jan '44
- Capacitor quality factors. Engineering Dept. Aerovox Res W 16:7 July '44
- Capacitors in control circuits. Engineering Dept. Aerovox Res W 14:8 Aug '42
- Ceramic condensers. il Electronics 16:303 Mar '43
- Condenser analyzer. M. J. Butkiewicz. il diag Radio N 25:11 Apr '41
- Condenser discharge chart for computing the charge or discharge of a condenser through a series resistor. J. B. Hoag. Electronics 10:20 Sept '37
- Condensers at radio frequency; why they have high impedance. P. M. Deeley. Electronics 16:209 Apr '43
- Connecting condensers in series. Engineering Dept. Aerovox Res W 7:6 June '35
- Contours of capacitor rotor plates. L. J. McDonald. Electronics 18:126 Mar '45
- Current and potential distribution in shorted-edge roll-type condensers (of special importance in interference-suppression); abstract. L. Leiterer. Wireless Eng 21:89 Feb '44
- Deflecting condenser. W. E. Benham. Wireless Eng 18:277 July '41
- Dictionary of capacitor applications and recommended types. Engineering Dept. Aerovox Res W 16:6 June '44
- Direct measurement of the loss conductance of condensers at high frequencies. M. Boella. Proc Inst Radio Eng 20:421 Apr '38
- Direct-reading condenser for substitution measurements. Gen Radio Exp Vol 10 Mar '36
- Fabricated plate capacitors. G. V. Peck. Electronics 11:60 Sept '38
- Fixed condensers in radio transmitters. Engineering Dept. Aerovox Res W 13:3 Mar '41
- Functions of C and R in AVC circuits. Engineering Dept. Aerovox Res W 7:10 Oct '35
- Gas-filled and vacuum capacitors. H. B. Michaelson. il Electronics 17:124 Sept '44
- High-frequency model of precision condenser. D. B. Sinclair. Gen Radio Exp Vol 12 Oct-Nov '39
- Law linearity of semi-circular plate variable condensers. W. H. F. Griffiths. diags Wireless Eng 22:107 Mar '45
- Life of impregnated paper condensers. J. Katzman. Electronics 11:54 June '38
- Method for determining the residual inductance and resistance of a variable air condenser at radio frequencies. R. F. Field and D. B. Sinclair. bibliog diags Proc Inst Radio Eng 24:255 Feb '36
- Methods of testing capacitors. Engineering Dept. Aerovox Res W 12:4 Apr '40
- Methods of testing low-voltage high-capacity condensers. Engineering Dept., Aerovox Res W 8:9 Sept '36
- Neon tube condenser tester. G. H. Browning. 8:22 Jan '35
- New high-frequency capacitor. W. M. Allison and N. E. Beverly. diags Elec Eng 63:Trans 915 Dec '41

- Paper capacitors as mica capacitor substitutes. Engineering Dept., Aerovox Res W 14:11 Nov '43
- Paper capacitors containing chlorinated impregnants; stabilization by anthraquinone. D. A. McLean and L. Egerton. *il diag Ind & Eng Chem* 37:73 Jan '45
- Paper capacitors under direct voltages. M. Brotherton. *il Proc Inst Radio Eng* 32:139 43 Mar '44
- Padding condenser. L. B. Sklar. *il Electronics* 10:40 May '37
- Power loss in deflecting condensers. D. Gabor. bibliog *Wireless Eng* 21:115 Mar '44; Discussion. 21:176, 207, 279 Apr-June '44
- Practical methods of testing condensers. Engineering Dept., Aerovox Res W 10:Nos1, 2, 3, 4, 5, 6 Jan to June '38
- Pressure capacitors. *Electronics*. 12:16 Apr '39
- Production tester for mica capacitors. *diag Electronics* 17:156 Aug '44
- Rating ceramic condensers. Francis X. Maida. *Electronic Indus* 2:80 July '43
- Regulating properties of wet electrolytic condensers. Engineering Dept. Aerovox Res W 8:8 Aug '36
- Resonance in mica capacitors. A. P. Green and C. T. McComb. *Electronics* 17:119 Mar '44
- Rounded-edge capacitor plates. S. Sabaroff. *il Electronics* 17:134 Oct '44
- Self-discharge and time constant of the high-voltage oiled-paper condenser; abstract. C. Brinkmann. *Wireless Eng* 20:449 Sept '43
- Shunt condenser aerial coupling. S. W. Amos. *diags Wireless Eng* 19:549 Dec '42
- Temperature coefficient of capacitance; its measurement in small radio condensers. W. Schick. bibliog *il diags Wireless Eng* 21:65 Apr '44; Discussion. T. J. Rehfish 21:175 Feb '44
- Temperature compensation of condensers. W. H. F. Griffiths. *il diags Wireless Eng* 19:101, 148 Mar-Apr '42; discussion, 19:199, 253 May-June '42
- Testing electrolytic motor-starting condensers. Engineering Dept. Aerovox Res W 7:9 Sept '35
- Thermal stability of condensers; ceramic dielectrics and their use at low temperatures. P. R. Coursey. *Wireless Eng* 15:247 May '38
- Testing ceramic capacitors. E. T. Sherwood. *il Electronics* 13:26 Sept '40
- Types of condensers and their applications. Engineering Dept., Aerovox Res W 8:4 Apr '36
- Suppressor unit capacity selector. H. W. West. *diag Radio N* 33:88 Apr '45
- Use of condensers in radio receivers. Aerovox Res W Apr-May '35
- Use of mica condensers in transmitters. Engineering Dept Aerovox Res W 8:10 Oct '36
- Use of the LC checker for r. f. measurements. Engineering Dept Aerovox Res W 12:6 June '40 June '40
- Vacuum capacitors. G. H. Floyd. *il diags Proc Inst Radio Eng* 32:463 Aug '44
- Variable air condenser with adjustable compensation for temperature. H. A. Thomas. *diag Jour Inst Elec Eng* 81:277 Aug '37
- Variable air condensers; determination of their residual parameters. R. F. Proctor. *diags Wireless Eng* 17:257 June '40
- Winding industrial capacitors. *il Electronic Indus* 3:113 Feb '44
- See also*  
Capacitance Measurements
- CONDENSERS, Electrolytic**
- Aqueous electrolytic condensers. *il Engineer* 162:528 Nov 13 '36
- Electrolytic capacitor testing in production. P. M. Deeley. *il Electronics* 8:216 July '35
- Electrolytic capacitors. P. M. Deeley. Cornell Dubilier Electric Corp. '38
- Electrolytic condensers. P. R. Coursey. 2d ed. Chapman and Hall '39
- Electrolytic condensers. S. N. Ray. *Jour Inst Elec Eng* 85:107 '39. Same. *Wireless sec I.E.E.* 14:203 Sept '39
- Electrolytic condenser leakage tester. J. D. Clement, jr. *diag Radio N* 25:38 Feb '41
- Etched foil for electrolytic condensers. Nathan Schmoll. *il Electronics* 10:30 May '37
- The electrolytic capacitor. Alexander M. Georgiev. 200 pp Murray Hill Books, New York '45 \$3
- COLORIMETERS.** *See* Photoelectric Cells
- COMPRESSORS.** *See* Volume Compressors
- COSMIC Rays**
- Apparatus for transmitting cosmic-ray data from the stratosphere. R. L. Doan. bibliog *il diag Rev Sci Instr* 7:400 Nov '36
- Atom-annihilation cosmic rays at Mexico City. D. T. Warren. *Phys Rev* 66:252 Nov '44
- Cosmic ray radiosonde. *il Electronics* 16:212 Dec '43
- Cosmic static. Grote Reber. *Proc Inst Radio Eng* 28:68 Feb '40; 30:367 Aug '42
- Energy spectrum of the primary cosmic radiation. S. Kusaka. *Phys Rev* 67:50 Jan 1 '45
- Exploration of cosmic rays. H. T. Stetson. *Electronic Indus* 3:94 Jan '44
- High altitude test of radio-equipped cosmic ray meter. C. D. Keen. bibliog *il diags map Jour Fr Inst* 223:355 Mar '37
- Hard and soft cosmic rays during magnetic storms; abstract. W. Kolhorster. *Wireless Eng* 22:20 Jan '45
- Measurements of the effect of paraffin and lead on the rate of production of very large cosmic-ray bursts. D. Heyworth and R. D. Bennett. bibliog *Phys Rev* 50:589 Oct 1 '36
- Neon tube coupled amplifier circuit for radio cosmic-ray receivers. S. A. Korff. *diag Rev Sci Instr* 9:256 Aug '38; Abstract. *Electronics* 11:69 Nov '38
- Note on the source of interstellar interference. Karl G. Jansky. *Proc Inst Radio Eng* 23:1158 Oct '35
- Particles of the cosmic rays. Karl K. Darrow. *Bell Sys Tech Jour* 18:190 Jan '39
- Study of time variations in the cosmic ray directional intensity distribution. M. L. Yeater. *il diags Phys Rev* 67:269 May 1 '45
- See also*  
Propagation of Waves

**COUPLED Circuits, Coupling**

- Aerial coupling systems for television. W. E. Benham. bibliog diags *Wireless Eng* 15:555 Oct '38
- Amplification loci of resistance-capacitance coupled amplifiers. A. C. Seletzky. diags *Elec Eng* 55:1364 Dec '36; Discussion. 56:877 July '37
- Aspects of coupled and resonant circuits. Jesse B. Sherman. *Proc Inst Radio Eng* 30:511 Nov '42
- Bandwidth factors for cascade tuned circuits. C. E. Dean. *Electronics* 14:41 July '41
- Circuit response to non-sinusoidal wave forms. P. T. Chin. bibliog *Electronics* 17:138 Oct '44
- Coupled circuits. G. W. O. Howe. diags *Wireless Eng* 21:53 Feb '44
- Coupled networks in radio-frequency circuits. A. Alford. i) diags *Proc Inst Radio Eng* 29:55 Feb '41
- Coupled resonant circuits for transmitters. N. I. Korman. *Proc Inst Radio Eng* 31:28 Jan '43
- Coupling circuits for high-frequency amplifiers; abstract. A. Jaumann. *Wireless Eng* 21:337 July '44
- Coupling coefficient of tuned circuits. diags G. W. O. Howe. *Wireless Eng* 22:1 Jan '45
- Crystal coupling for high quality i-f circuits. i) *Electronics* 8:256 Aug '35
- Generalized coupling theorem fo ultra-high-frequency circuits. Ronald King. *Proc Inst Radio Eng* 28:84 Feb '40
- High fidelity receivers with expanding selectors. H. A. Wheeler and J. Kelly Johnson. *Proc Inst Radio Eng* 23:594 June '35
- Interesting complex coupling. diag *Wireless Eng* 14:586 Nov '37
- Limitations of resistance coupled amplification. W. F. Curtis. diag *Proc Inst Radio Eng* 24:1230 Sept '36
- Natural and resonant frequencies of coupled circuits. diag *Wireless Eng* 18:221 June '41
- Performance of coupled and staggered circuits in wide band amplifiers. D. Weighton. bibliog diags *Wireless Eng* 21:468 Oct '44
- Pi networks as coupled tank circuits. F. D. Schottland. diags *Electronics* 17:140 Aug '44
- Radio frequency characteristics of the coupling circuits of single and multistage video amplifiers. H. L. Donley and D. W. Epstein. diag *RCA Rev* 6:416 Apr '42
- Reactance networks for coupling between unbalanced and balanced circuits. S. Frankel. diags *Proc Inst Radio Eng* 29:486 Sept '41
- Resistance-coupling design charts for determining the gain of resistance-capacitance coupled audio amplifiers. G. Koehler. *Electronics* 9:25 Aug '36
- Single-inductor coupling networks. C. T. McComb and A. P. Green. diags *Electronics* 17:132 Sept '44
- Some aspects of coupled and resonant circuits. J. B. Sherman. diags *Proc Inst Radio Eng* 30:505 Nov '42
- Some notes on coupled circuits. W. R. Ferris. diags *RCA Rev* 5:226 Oct '40
- Two-mesh tuned coupled circuit filters. C. B. Aiken. *Proc Inst Radio Eng* 25:230 June '37

- Undercoupling in tuned circuits to realize optimum gain and selectivity. J. J. Adams. *Proc Inst Radio Eng* 29:277 May '41
- Using cathode coupling. W. Muller. i) *Electronic Indus* 3:106 Aug '44

*See also*

**Resonant Circuits****CROSS Modulation**

- Cross-modulation requirements on multi-channel amplifiers below overload. W. R. Bennett. bibliog *Bell System Tech Jour* 19:587 Oct '40
- Cross modulation and input noise voltage; abstract. E. Hudac. *Wireless Eng* 21:88 Feb '44
- Crosstalk between coaxial conductors in cable. R. P. Booth and T. M. Odarenko. diags *Bell System Tech Jour* 19:358 July '40
- Crosstalk in coaxial cables; analysis based on short-circuited and open tertiaryes. K. E. Gould. *Bell System Tech Jour* 19:341 July '40
- Generation of spurious signals by nonlinearity of the transmission path. A. James Ebel. *Proc Inst Radio Eng* 30:81 Feb '42
- Harmonic production in ferromagnetic materials at low frequencies and low flux densities. E. Peterson. *Bell System Tech Jour* 7:762 Oct '28
- Interfering responses in superheterodynes. Howard K. Morgan. *Proc Inst Radio Eng* 23:1164 Oct '35
- New form of interference—external cross-modulation. D. E. Foster. *RCA Rev* 1:18 Apr '37
- Reduction of distortion and cross modulation in radio receivers by means of variable- $\mu$  tetrodes. S. Ballantine and H. A. Snow. *Proc Inst Radio Eng* 18:2102 Dec '30
- Simple method for checking cross modulation of pentode amplifiers. E. W. Herold. *Electronics* 13:82 Apr '40
- Some principles in aeronautical ground station design. P. C. Sandretto. *Proc Inst Radio Eng* 27:5 Jan '39
- Sources of spurious radiations in the field of two strong signals. A. J. Ebel. *Proc Inst Radio Eng* 30:81 Feb '42
- Two-signal cross modulation in a frequency-modulation receiver. H. A. Wheeler. diags *Proc Inst Radio Eng* 28:537 Dec '40

*See also*

**Interference**

**CRYSTAL, Quartz.** See Piezoelectric crystals

**D****DECIBEL**

- Decibels and their uses. Engineering Dept. *Aerovox Res W* 13:7 July '41
- Mean level determination; power ratio-decibel chart. G. H. Logan. *Electronics* 9:27 Aug '36
- Visual selectivity meter with a uniform decibel scale. K. R. Sturley and R. P. Shipway. i) diags *Jour Inst Elec Eng* 87:189 Aug '40
- Voltage/db conversion device; linear polar-coordinate graphs readily interpreted. E. Dyke. *Electronics* 17:146 Sept '44

*See also*

**Measurements  
Sound**

**DELLINGER Effect.** See Ionosphere

### DETECTION, Detectors

- Anode bend detection. M. J. O. Strutt. diags Proc Inst Radio Eng 23:945 Aug '35
- Application of the autosynchronized oscillator to frequency demodulation. J. R. Woodyard. diags Proc Inst Radio Eng 25:612 Mar '37
- Cathode-ray tube detector. diag Electronics 9:46 Mar '36
- Common-channel interference between two frequency-modulated signals. H. A. Wheeler. diags Proc Inst Radio Eng 30:34 Jan '42
- Demodulation of radio broadcast signals for use as sources of electric currents of high and constant frequency. L. G. Hector and H. L. Schultz. il diags Rev Sci Instr 7:139 Mar '36
- Design formulas for diode detectors. H. A. Wheeler. bibliog diags Proc Inst Radio Eng 26:745 June '38
- Detection at high signal voltages; plate rectification with the high vacuum triode. Stuart Ballantine. Proc Inst Radio Eng 17:1153 July '29
- Detection characteristics of three-element vacuum tubes. T. M. Googin. Proc Inst Radio Eng 17:149 Jan '29
- Detection of large inputs. W. F. Cope. diags Wireless Eng 12:437 Aug '35
- Detection by diodes and triodes at high frequencies. W. E. Benham. bibliog Wireless Eng 14:472 Sept '37
- Detection of frequency modulated waves. J. G. Chaffee. Proc Inst Radio Eng 23:517 May '35
- Diode detection analysis. C. E. Kilgour and J. M. Glessner. Proc Inst Radio Eng 21:930 July '33
- Detector input circuit. W. T. Cocking. diags Wireless Eng 12:595 Nov '35
- Diode operating conditions. K. R. Sturley. diags Wireless Eng 17:19 Jan '40
- Discussion on distortionless detection. Jour Inst Elec Eng 89 pt 3:175 Sept '42
- Effect of fluctuation voltages on the linear detector. John R. Ragazzini. Proc Inst Radio Eng 30:277 June '42
- Effect of the detector load on transformer design. F. M. Colebrook. diags Wireless Eng 12:415 Aug '35; Discussion. W. F. Cope. 12:478 Sept '35
- Electronics; the principle of de-modulation. Electrician 119:735 Dec 17 '37
- FM detector circuit of wide adaptability. J. Gelzer. Electronic Indus 3:92 July '44
- Generation and detection of frequency-modulated waves. S. W. Seeley. C. N. Kimball and A. A. Barco. diags RCA Rev 6:269 Jan '42
- Grid signal characteristics and other aids to the numerical solution of grid rectification problems. W. A. Barclay. Exp Wireless 4:459, 552 Aug-Sept '27
- Hard and soft detector tubes. R. Williams. Radio N 8:815 Jan '27
- Large signal diode detection. S. Bennon. Proc Inst Radio Eng 25:1565 Dec '37
- Linear detection of heterodyne signals. F. E. Terman. Electronics 1:386 Nov '30
- New police superheterodyne uses superregenerative second detector. Electronics 9:42 May '36

- New utilisation of a gaseous-discharge gap as a high-frequency demodulator; abstract. J. Himpan. Wireless Eng 19:76 Feb '42
- Radio-frequency device for detecting the passage of a bullet. C. I. Bradford. il diags Proc Inst Radio Eng 29:578 Nov '41
- Rectifying with metallic detectors. H. Pelabon. diags Radio N 9:244 Sept '27
- Some principles of grid-leak, grid condenser detection. F. E. Terman. Proc Inst Radio Eng 16:1384 Oct '28
- Some properties of grid-leak power detection. F. E. Terman and N. R. Morgan. Proc Inst Radio Eng 18:2160 Dec '30
- Straight line detection with diodes. E. Roberts. Jour Inst Elec Eng 75:379 '34
- Theory of diode rectification. J. Marique. diags Wireless Eng 12:17 Jan '35
- Transmission of radio waves; demodulation. diag Electrician 124:248 Mar 29 '40
- Vacuum tube alternating-current bridge detector. W. M. Breazeale. diag Rev Sci Instr 7:250 June '36

**DESIGN, Circuit.** See Amplifier Design

*See also*

- |                             |                    |
|-----------------------------|--------------------|
| Antenna Design              | Receiver Design    |
| Broadcasting Station Design | Transformer Design |
| Coil Design                 | Vacuum-Tube Design |
| Filter Design               |                    |

### DIATHERMY

- Design chart for r-f heat treatment generators for industrial and medical uses. E. Mittelman. chart Electronics 14:51 Sept '41
- Diathermy, including diathermotherapy and other forms of medical and surgical electrothermic treatment. E. P. Cumberbatch. 3rd ed 576p \$6 Wood '37
- Diathermy measurement technique. J. D. Kraus and R. W. Teed. il diags Electronics 13:39 Dec '40
- Diathermy problems. Electronic Indus 4:107 Mar '45
- Electron theory in medicine. T. Colson. 209p \$2.90 College of electronic medicine. 1200 Hyde st. San Francisco '41
- Electron tubes in diathermy. bibliog il diags Electronics 9:16 Nov '36
- Electronics in medical science. R. P. Turner. il diags Radio N 31:32 June '44
- Medical electronic practice and research. J. D. Goodell. bibliog il diags Electronics 17:96 Apr '44
- Medical science joins hands with electronics. W. E. Gilson. bibliog il Electronics 16:144 Mar '43
- Ultra-short wave diathermy. D. B. Mirk. Elec Comm 13:240 Jan '35
- Wide-range electronic generator; oscillator and amplifier for medical and other research. E. Mittelman, F. S. Grodins and A. C. Ivy. il diags Electronics 16:132 Dec '43

*See also*

Electrotherapeutics

**DIELECTRIC Heating.** See Electronic Applications—High-Frequency Heating

## DIELECTRICS

- Ceramic insulation for high frequency work. W. G. Robinson. Jour Inst Elec Eng 87:570 '40
- Ceramic insulating materials. Hans Thurnauer. Elec Eng 59:451 Nov '45
- Ceramic insulating materials; dielectric properties at centimetre wavelengths. W. Kusters. bibliog diags Wireless Eng 21:13 Jan '44
- Crystalline and glassy phases of steatite dielectrics. H. F. G. Ueltz. bibliog diag Amer Cer Soc J 27:33 Feb 1 '44
- Cylindrical cavity resonators containing several dielectric media. Jour Ap Phys 14:363 July '43
- Determination of dielectric properties at very-high frequencies. J. G. Chaffee. Proc Inst Radio Eng 22:1009 Aug '34
- Development of polythene as a high frequency dielectric. W. Jackson and J. S. A. Forsyth. bibliog Jour Inst Elec Eng pt 3:23 Mar '45
- Dielectric constants and power factors at centimeter wave lengths. Electronic Indus 3:140 June '44
- Dielectric constants and power factors at centimeter wave-lengths; measurement by means of resonant lengths of coaxial transmission line. C. R. Englund. il Bell System Tech Jour 23:114 Jan '44
- Dielectric constant of ionized air in a tube. Electronic Indus 3:140 July '44
- Dielectric igniters for mercury pool cathode tubes; use made of ability of glass to withstand increased potential gradients as thickness is decreased. H. Klemperer. bibliog diag Electronics 14:38 Nov '41
- Dielectric properties of insulating materials. E. J. Murphy and S. D. Morgan. Bell Sys Tech Jour 16:493 Oct '37; Same. 17:640 Oct '38; 18:502 July '39
- Dielectric strength and life of impregnated paper insulation. J. B. Whitehead and J. M. Kopper. bibliog Elec Eng 64:trans 171 Apr '45
- Effects of humidity on terminal strip design. L. L. George, jr. il diags Electronics 18:116 Mar '45
- Effective dielectric properties of concentric lines with discontinuous dielectric; abstract. E. Muller. Wireless Eng 21:238 May '44
- Electric breakdown and cumulative ionization. B. Davydov. Phys Rev 64:156 Sept 1 '43
- Electric strength of mica and its variation with temperature. W. Hackett and A. M. Thomas. bibliog diags Jour Inst Elec Eng 88 pt 1:295 Aug '41
- Electron tubes in petroleum research; dielectric constant apparatus. C. J. Penther and D. J. Pompeo. il diag Electronics 14:44 May '41
- Electronics in the measurement of dielectric constants. Electronics 15:116 Oct '42
- Experimental dielectrics. E. W. Jones. il diag Cornell Eng 5:8 May '40
- General properties of dielectric guides. J. Saphases. Elec Comm 16:346 '38
- Improved ceramic dielectric materials. M. D. Rigerink. Rev Sci Instruments 12:527 Nov '41
- Internal discharges in dielectrics; their observation and analysis. A. E. W. Austen and W. Hackett. bibliog il diags Jour Inst Elec Eng 91 pt 1:298 Aug '44; Abstract. Elec Rev (Lond) 134:306 Mar 3 '44
- Measurement of anomalous dispersion in opaque dielectrics. A. W. Lawson. diags Rev Sci Instr 14:38 Feb '43
- Measurement of dielectric losses in solids at ultra-high frequencies; abstract. M. Divilkovsky. Wireless Eng 20:565 Nov '43
- Molecular nature of a dielectric. E. B. Moullin. Jour Inst Elec Eng 86:113 Feb '40
- Possible use of ferruginous talcs in steatite dielectrics. L. E. Kane and H. G. Ueltz. Amer Cer Soc Jour 26:389 Nov '43
- Progress in engineering knowledge during 1940; dielectrics. P. L. Alger. bibliog Gen Elec Rev 44:89 Feb '41
- Properties of dielectrics at high frequencies. B. A. Sharpe and B. J. O'Kane. diags Engineering 140:403 Oct 11 '35
- Radio frequency high voltage phenomena. A. Alford and S. Pickles. Trans A.I.E.E. 59:129 Mar '40
- Radio-frequency spark-over in air. P. A. Eckstrand. diags Proc Inst Radio Eng 28:262 June '40
- Theoretical study of dielectric cables. L. Brillouin. Elec Comm 16:350 '38

See also

Insulation, Insulators

## Losses

- Dielectric constant and loss angle of dry and wet sand for centimetric waves; abstract. E. Lob. Wireless Eng 20:345 July '43
- Dielectric losses in radio circuits. A. G. Bogle. Wireless Eng 17:198 May '40
- How to test insulating materials; dielectric constant tests and loss factor. J. R. Freed. Elec World 120:227 Dec 25 '43
- Theory of dielectric loss. B. Gross. bibliog Phys Rev 59:748 May '41

## Measurements

- Dielectric constants and power factors at centimeter wavelengths; measurement by means of resonant lengths of coaxial transmission line. C. R. Englund. il Bell Sys Tech Jour 23:114 Jan '44
- Dielectric constant meter. F. C. Alexander, jr. bibliog il Electronics 18:116 Apr '45
- Dielectric meter; measurement of permittivity. J. H. Jupe. diag Electronics 16:220 Dec '43
- Dielectrometer; instrument for dielectric constant determination. J. H. Jupe. diag Elec Rev (Lond) 133:271 Aug 27 '43
- Electric strength of air at high frequencies. E. W. Seward. Jour Inst Elec Eng 84:288 '39; also Wireless sec I.E.E. 14:31 Mar '39
- Measurement of dielectric losses and permittivity at radio frequencies. R. M. Wilmotte. diags Exp Wireless 4:569 Sept '27
- Refresher for dielectric calculations. E. W. Greenfield. diags Elec Eng 62:445 Oct '43
- Resonant cavity method for measuring dielectric properties at ultra-high frequencies. C. N. Works. Proc Inst Radio Eng 32:245 Apr '45

See also

Measurements

**DIRECTION Finders**

- Automatic radio compass; abstract. W. L. Webb and G. O. Essex. *Aviation* 41:135 Mar '42
- Automatic radio compass and its applications to aerial navigation. H. Busignies. *Elec Comm* 15:157 '36
- Automatic radiogoniometers; method of measuring the time constants of oscillating circuits. J. Marique. *Wireless Eng* 16:121 Mar '39
- Calibration of four-aerial direction-finders. W. Ross. *Jour Inst Radio Eng* 85:192 '39
- CBS international broadcast facilities. A. B. Chamberlain. *Proc Inst Radio Eng* 30:126 Mar '42. Same. *Electronics* 14:33 July '41
- Compensated-loop direction finder. F. E. Terman and J. M. Pettit. *Proc Inst Radio Eng* 33:307 May '45
- Direction finding; improvement in the quality of observations by the use of non-linear amplifiers. W. Ross and R. E. Burgess. *Wireless Eng* 16:399 Aug '39
- Elevated transmitter for testing direction finders. R. H. Barfield. *il diags Wireless Eng* 15:495 Sept '38
- Ground station direction finder; United airlines experiments. P. C. Sandretto. *il Aviation* 40:42 Apr '41
- Horizontal-polar-pattern tracer for directional broadcast antennas. F. A. Everest and W. S. Pritchett. *Proc Inst Radio Eng* 30:227 May '42
- Improved medium-wave Adcock direction finder. R. H. Barfield and R. A. Fereday. *Jour Inst Elec Eng* 81:676 '37
- Increasing loop sensitivity; can be used as direction finder. C. Thoman. *diags Radio N* 23:37 June '40
- Installation of antennas for direction-finding. J. C. Franklin *Air Commerce Bul* 9:256 Apr '38
- Iron-cored direction finder loop. *il Wireless Eng* 19:350 Aug '42
- Limits to the usefulness of the Adcock direction finder with  $n$  masts; abstract. H. W. Breuning-er. *Wireless Eng* 19:480 Oct '42
- Loop direction finder for ultra-short waves. H. G. Hopkins. *Wireless Eng* 15:651 Dec '38
- Measurement of the lateral deviation of radio waves by means of a spaced-loop direction-finder. R. H. Barfield and W. Ross. *bibliog diags Jour Inst Elec Eng* 83:98, pl 1-2 July '38
- Mountain effects and the use of radio compasses and radio beacons for piloting aircraft. H. Busignies. *Elec Comm* 19:44 '41
- Performance and limitations of the compensated loop direction-finder. R. H. Barfield. *diags Jour Inst Elec Eng* 86:396 Apr '40
- Phase meter calibrator for directional antennas. D. Espy. *diags Electronics* 15:80 Oct '42
- Polarisation errors in direction finders. R. A. Watson-Watt. *Wireless Eng* 13:3 Jan '36
- Proposal for the reduction of polarization of errors in loop direction finders; abstract. F. E. Terman and J. M. Pettit. *Proc Inst Radio Eng* 28:285 June '40
- Radio compass; Dearing invention. *Science* 92:sup8 Aug 2 '40
- Radio direction-finding on wavelengths between 2 and 3 metres (100 to 150 Mc./s.). R. L. Smith-Rose and H. G. Hopkins. *Jour Inst Elec Eng* 87:154; Discussion. 159 Aug '40

- Radio direction finding on wavelengths between 6 and 10 metres (50 to 30 Mc./s.). *Jour Inst Elec Eng* 83:87 '38
- Resonant cavity method for measuring dielectric properties at ultra-high frequencies. C. N. Works and others. *Proc Inst Radio Eng* 33:245 Apr '45
- Screen loop aerial. R. E. Burgess. *Wireless Eng* 16:492 Oct '39
- Sense-finding device for use with spaced-aerial direction finders. R. A. Fereday. *Jour Inst Elec Eng* 84:96 '39
- Short-wave Adcock direction finder. R. H. Barfield and W. Ross. *Jour Inst Elec Eng* 81:683 '37
- Short-wave cathode ray direction finder receiver. Radio research station. *Wireless Eng* 15:432 Aug '38
- Some principles underlying the design of spaced-aerial direction finders. R. H. Barfield. *Jour Inst Elec Eng* 76:423 '35; Same. *Wireless Section I.E.E.* 10:55 June '35
- Tests of a cathode ray direction finder. C. A. Solt. *il Aero Digest* 29:18 Sept '36
- Ultra-high frequency superheterodyne receiver for direction finding. L. C. L. Yuan and C. E. Miller. *il diags Rev Sci Instr* 11:273 Sept '40; Abstract. *Electronics* 13:75 Oct '40
- Visual direction finders. D. S. Bond. *il Electronics* 16:140 Nov; 16:140 Dec '43; 17:144 Jan '44
- Wireless direction finding. R. Keen. *Iliffe and Sons, Ltd. London* '38

*See also*

Directional Reception and Transmission

**DIRECTION Finders, Aircraft**

- Azimuth indicator for flying fields. H. T. Budenbom. *Bell Lab Rec* 20:58 Nov '41
- Bendix accessory compass drive. *il Aviation* 39:62 Oct '40
- Braniff airways installs automatic direction finder. C. Walsh. *diags Aviation* 40:81 June '41
- Burgin range projector, aid in solving problems of radio navigation either in flying the radio ranges or in direction finding. *il Aero Digest* 32:56 Jan '38
- Design problems of directional loop antennas for aircraft; Abstract. G. F. Levy. *diags Aviation* 41:135 Mar '42
- Direction finders; tabulated descriptions. *il Aero Digest* 35:94 Sept '39
- Flying by radio; test flight in Canada using Lear radio direction finder. J. P. de Wet. *il Can Min Jour* 57:26 Jan '36
- Ground station direction finder; United air lines experiments. P. C. Sandretto. *il Aviation* 40:42 Apr '41
- Gyromatic navigation; Learmatic navigator; instrument combining indications of automatic radio direction finder and directional gyro. W. P. Lear. *il diag Aero Digest* 38:66, 71 Feb '41
- Harvey directional automatic radio control; makes directional flight operation entirely automatic. *il diags Aviation* 40:53 Apr '41

**DIRECTION Finders, Aircraft—Continued**

- Medium high frequency visual ground direction finder; azimuth-indicating radio system. D. S. Little. *il diags Aero Digest* 40:70 Jan '42
- Mountain effects and the use of radio compasses and radio beacons for piloting aircraft. H. Busignies. *Elec Comm Vol* 19, pt 3, p 44 '41
- New RCA aircraft radiocompass. A. M. Harned. *il diags Aero Digest* 29:38 Aug '36
- New visual radio direction finder. F. W. Dane. *il Aero Digest* 29:48 Nov '36
- Radio compass; description of apparatus and its operation. J. P. Gaty. *il diags Aviation* 35:24 May 15-18 June '36
- Reduction of night error in radio direction-finding equipment for aerodromes. H. Busignies. *Elec Comm* 16:213 '38
- Some design considerations in Adcock direction finders. H. W. Roberts. *diags Aero Digest* 32:52 May '38
- Sperry-RCA automatic direction finder. *il diag Aviation* 37:49 Nov '38
- Standard Adcock radio direction finding equipment at aerodromes reduces night error; Abstract. H. Busignies. *il Electronics* 11:60 Mar '38
- Stratosearch UHF direction finder. *il Aero Digest* 37:85 Dec '40
- Two needles are better than one; Sperry dual automatic direction finder. R. C. Shrader. *diags Instruments* 14:282 Oct '41
- Transmitting antenna and a directional loop for aircraft. *il Aviation* 41:281 Feb '42
- Ultra high frequency antennae in aviation radio. J. C. Hromada. *il diag Radio N* 27:14 May '42
- VHF homing device. *Electronic Indus* 4:104 Mar '45

*See also*

- Beacons  
Aircraft Blind Landing; Instrument Landing

**DIRECTION Finders, Marine**

- Directional radio as an aid to marine navigation. *Jour Fr Inst* 219:365 Mar '35
- Radio compasses for small boats. *il Electronics* 10:9 Apr '37
- Small vessel direction finders. H. B. Martin. *RCA Rev* 2:69 July '37
- Western Electric improved radio compass for marine service. *il Marine Rev* 65:29 Jan '35
- Western Electric new radio compass. *il Marine Eng* 45:65 Feb '40

*See also*

- Direction Finders  
Marine Radio

**DISTORTION**

- Amplitude distortion. J. H. O. Harries. *diags Wireless Eng* 14:63 Feb '37
- Analysis of distortion in class B audio amplifiers. T. McLean. *diags Proc Inst Radio Eng* 24:487 Mar '36
- Audible audio distortion. H. H. Scott. *bibliog diag Electronics* 18:126 Jan '45
- Bridge measurement of electromagnetic forces. A. C. Seletsky and G. L. Friday. *bibliog diags Elec Eng* 54:1149 Nov '35
- Brightness distortion in television. Donald G. Fink. *Proc Inst Radio Eng* 29:310 June '41
- Cathode ray wave form distortion at ultra high frequencies. R. M. Bowie. *diags Electronics* 11:18 Feb '38
- Distortion and noise meter. *Gen Radio Exp Vol* 12 Mar '39
- Distortion in compensated amplifiers. J. D. Trimmer and Y. J. Liu. *il Electronics* 13:22 July '40
- Distortion in loudspeakers caused by Doppler effect. *Electronics* 16:256 June '43
- Distortion in negative feedback amplifiers. R. W. Sloane. *Wireless Eng* 14:259 May '37
- Distortion in valves with resistive loads; graphical methods for its determination. A. Bloch. *Wireless Eng* 16:592 Dec '39
- Distortion limiter for radio receivers. M. L. Levy. *diags Electronics* 11:26 Mar '38
- Distortion produced by delayed diode automatic volume control. K. R. Sturley. *diags Wireless Eng* 14:15 Jan '37
- Distortion tests by the intermodulation method. J. K. Hilliard. *diags Proc Inst Radio Eng* 29:614 Dec '41
- Form of distortion known as the buzz effect. K. A. Macfadyen. *diags Wireless Eng* 15:310 June '38
- Frequency modulation distortion in loud speakers. G. L. Beers and H. Belar. *bibliog Soc Motion Picture Eng Jour* 40:207 Apr '43; Same. *Proc Inst Radio Eng* 31:132 Apr '43
- Graphical harmonic analysis for determining modulation distortion in amplifier tubes. W. R. Ferris. *Proc Inst Radio Eng* 23:510 May '35
- Harmonic distortion in audio-frequency transformers. N. Partridge. *diags Wireless Eng* 19:394, 451, 503 Sept-Nov '42
- Join-up distortion in class B amplifiers. F. R. W. Strafford. *Wireless Eng* 12:539 Oct '35
- Low distortion limiting amplifier. E. G. Cook. *il Electronics* 12:38 June '39
- Methods for checking RF distortion or cross-modulation of pentode amplifiers. E. W. Herold. *Electronics* 13:82 Apr '40
- Methods of obtaining low distortions at high modulation levels. C. A. Cady. *Gen Elec Exp Vol* 16 Apr '43
- New type of practical distortion meter; abstract. J. E. Hayes. *Electronics* 15:66 Aug '42
- Non-linear distortion in transmission systems. R. A. Brockbank and C. A. A. Wass. *Jour Inst Elec Eng* 92 pt 3:45 Mar '45
- Note on the fundamental suppression in harmonic measurements. H. M. Wagner. *Proc Inst Radio Eng* 23:85 Jan '35
- Phase distortion in television. R. G. Shiffenbauer. *bibliog il diags Wireless Eng* 13:21 Jan '36
- Phase distortion reduced by amplifier. *il Electronics* 10:26 June '37
- R-f distortion measurements with an a-f analyzer. L. B. Arguimbau. *Gen Radio Exp Vol* 14 Oct '39
- Side-band phase distortion. D. M. Johnstone and E. E. Wright. *Wireless Eng* 13:534; Discussion. 517 Oct '36
- Simple methods for checking radio frequency distortion or cross-modulation of pentode amplifier tubes. E. W. Herold. *Electronics* 13:82 Apr '40

- Some notes on linear and grid modulated radio frequency amplifier. F. E. Terman and R. R. Buss. Proc Inst Radio Eng 29:104 Mar '41
- Telecommunication; linear distortion. Electrician 116:97 Jan 24 '36
- Theoretical and experimental investigation of tuned-circuit distortion in frequency-modulation systems. D. L. Jaffe. bibliog diags Proc Inst Radio Eng 33:318 May '45
- Tracing tube characteristics on a cathode ray oscilloscope. J. Millman and S. Moskowitz. *il* Electronics 14:36 Mar '41

*See also*

- Hum                    Noise  
Interference        Vacuum Tube Noise

**DIVERSITY** Reception. *See* Receivers, Diversity

**DYNATRON**. *See* Oscillators, Dynatron

**E**

**EARTH**. *See* Propagation of Waves

**ECHOES**. *See* Propagation of Waves

**ECLIPSE**. *See* Propagation of Waves

**ELECTROLYTIC** Condensers. *See* Condensers, Electrolytic

**ELECTRON** Gun. *See* Cathode-Ray Tube

**ELECTROMETERS**

- Ballistic measurements with electrometer tube circuits. R. H. Varian and J. C. Clark. *diag* Rev Sci Instr 6:284 Sept '35
- Charge sensitivity of Compton electrometer. L. T. Pockman. *bibliog* Rev Sci Instr 7:238 June '36
- Degenerative electrometer tube amplifier. G. P. Harnwell and L. N. Ridenour. *diag* Rev Sci Instr 11:346 Oct '40
- Direct-current amplifier circuits for use with the electrometer tube. D. B. Penick. *diags* Rev Sci Instr 6:115 Apr '35
- Electrometer detects faulty insulators. A. Elgenberg. *il* *diags* Elec W 106:1060 Apr 11 '36
- Electrometer tube for laboratory and industrial use. L. Sutherland and R. H. Cherry. *il* *diags* Electrochem Soc Trans 78 (pre-print 26):351 Oct '40
- General theory of electrometer design. W. W. Hansen. *diags* Rev Sci Instr 7:182 Apr '36
- Radio frequency power measurements with the quadrant electrometer. C. I. Bradford. Proc Inst Radio Eng 23:945 Aug '35
- Storage battery eliminator for electrometer tubes. H. L. Anderson, A. W. Lawson and G. L. Well. *diags* Rev Sci Instr 12:511 Oct '41
- Universal pH meter and simplified vacuum tube electrometer. F. M. Goyan, C. L. Barnes and H. W. Hind. *diags* Ind & Eng Chem Anal ed 12:485 Aug 15 '40

*See also*

- Measurements  
Photoelectric Cells

**ELECTROSTATICS**

- Behaviour of electrostatic electron multipliers as a function of frequency. L. Malter. Proc Inst Radio Eng 29:587 Nov '41
- Determination of the axial potential distribution in axially symmetric electrostatic fields. S. Bertram. *diags* Proc Inst Radio Eng 28:418 Sept '40
- Electrostatic focusing at relativistic speeds. W. W. Hansen and D. L. Webster. *diags* Rev Sci Inst 7:17 Jan '36
- Electrostatic electron lenses with a minimum of spherical aberration. G. N. Plass. Jour App Phys 13:149 Jan '42
- Electrostatic-field analysis—a graphical method. M. G. Leonard. *diags* Elec Jour 31:471 Dec '34
- Equivalent electrostatic circuits for vacuum tubes. W. G. Dow. Proc Inst Radio Eng 28:548 Dec '40
- Grounding principles and practice; static electricity in industry. R. Beach. *bibliog* Elec Eng 64:184 May '45
- Pinch effect; an electrostatic phenomenon. G. W. O. Howe. Wireless Eng 22:105 Mar '45

*See also*

- Capacitance  
Electron Optics

**ELECTRON** Microscope

- Abbildung feinbearbeiteter technischer oberflächen im ubermikroskop. B. v. Borries and S. Janzen. *bibliog* *il* *diags* V D I 85:207 pl 1-2 Mar 1 '41
- Additional stabilization for the beam current in the RCA type B electron microscope. H. R. Crane. *diag* Rev Sci Instr 16:58 Mar '45
- Apertures of transmission type electron microscopes using magnetic lenses. L. Marton and R. G. E. Hutter. Phys Rev 65:161 Mar 1 '44
- Bibliography of electron microscopy. C. Marton and S. Sass. *comps* Jour Ap Phys 14:522, 15:575 Oct '43, Aug '44
- Crystal interference phenomena in electron microscope images. R. D. Heidenreich and L. Sturkey. *bibliog* *il* Jour Ap Phys 16:97 Feb '45
- Compact high resolving power electron microscope. V. K. Zworykin and J. Hillier. *il* *diags* Jour Ap Phys 14:658 Dec '43
- Cross-bow shoots quartz filaments for electron microscope. *il* Electronics 17:184 June '44
- Dark field illumination in electron microscopy. G. B. Levy. *il* Jour Ap Phys 15:623 Aug '44
- Demonstration of a low-voltage electron microscope using electrostatic focusing. W. E. Benham. *bibliog* *diags* Jour Inst Elec Eng 75:388 Sept '34; Discussion 76:111 Jan '35
- Der stand des ubermikroskopes. B. v. Borries and E. Ruska. *il* V D I 82:937 Aug 6 '38
- Diffraction adapter for the electron microscope. J. Hillier, R. F. Baker and V. K. Zworykin. *il* *diags* Jour Ap Phys 13:571 Sept '42
- Discussion of the fundamental limit of performance of an electron microscope. J. Hillier. Phys Rev 60:743 Nov 15 '41
- Early history of the electron microscope. R. Rudenberg. *diags* Jour Ap Phys 14:434 Aug '43
- Electron microscope. E. F. Burton and W. H. Kohl. 233p *bibliog* \$3.85 Reinhold pub. corp New York '42
- Electron microscope. W. Wilson. *il* *diags* Elec Rev (Lond) 134:218 Feb 18 '44
- Electron microscope tube. *il* Electronics 9:52 Dec '36



**ELECTRON Microscope—Continued**

- Electron microscope and its application to engineering problems. A. G. Quarrell. bibliog il Engineer 176:499, 526 Dec 24-31 '43
- Electron microscope; calibration and use at low magnifications. C. J. Burton, R. B. Barnes and T. G. Rochow. il diags Ind & Eng Chem 34:1429 Dec '42
- Electron microscope determination of surface elevations and orientations. R. D. Heidenreich and L. A. Matheson. bibliog il diags Jour Ap Phys 15:423 May '44
- Electron microscope for practical laboratory service. V. K. Zworykin, J. Hillier and A. W. Vance. il diags Elec Eng 60: Trans 157 Apr '41
- Electron microscope for filaments; emission and absorption by tungsten single crystals. R. P. Johnson and W. Shockley. bibliog il diags Phys Rev 49:436 Mar 15 '36
- Electron microscope for metals. R. G. Picard and P. C. Smith. bibliog il diag Metals Alloys 20:636 Sept '44
- Electron microscope for studying thermal and secondary electron emission. E. Meschter. il diags Rev Sci Instr 9:12 Jan '38
- Electron microscope in an X-ray diffraction laboratory; abstract. G. L. Clark and M. B. Baylor. Phys Rev 64:314 Nov 1 '43
- Electron microscope in metallurgical research. C. S. Barrett. bibliog il Jour Ap Phys 15:691 Oct '41
- Electron microscope manufactured by Radio corp. of America. il diags Machine Design 16:153 Nov '44
- Electron microscope, most recent research tool. V. K. Zworykin. il diags Electronics 16:146 Mar '43
- Electron microscope studies of thoriated tungsten. A. J. Ahearn and J. A. Becker. il diags Phys Rev 54:448 Sept 15 '38
- Electron microscope used as a diffraction camera; abstract. J. Hillier, R. F. Baker and V. K. Zworykin. Science 96:sup12 July 3 '42
- Electron microscope study of surface structure. R. D. Heidenreich and V. G. Peck. bibliog il Phys Rev 62:292 Sept 1 '42
- Electron microscopes for production, research and analysis; two new models. il Electronics 17: 184 June '44
- Electron microscopes; recent developments. P. C. Smith and R. G. Picard. il Radio N 32:41 Nov '44
- Electron microscopy. I. B. Bensen. bibliog il diags Gen Elec Rev 47:6 Dec '44
- Electron microscopy in chemistry. V. K. Zworykin. bibliog il diags Electronics 16:64 Jan '43; Same cond. Ind & Eng Chem 35:450 Apr '43
- Electron microscopy; new applications in bacteriology; abstract. V. K. Zworykin and J. Hillier. il Electronics 17:188 June '44
- Electronic self-portraits; electrons emitted from tungsten filaments create fluorescent images of themselves in a radial electron microscope. il Electronics 10:22 Mar '37
- Electrostatic electron microscopy. C. H. Bachman and S. Ramo. bibliog il diags Jour Ap Phys 14:3, 69, 155 Jan-Feb-Apr '43
- Extending microscope examination of metals. F. Keller and A. H. Geisler. bibliog il Jour Ap Phys 15:696 Oct '44
- Films of thickness tenth length of yellow light waves found best for showing metal details in electron microscope. Blast F & Steel P1 30:876 Aug '42
- Fine structure of metallic surfaces with the electron microscope; two-step replica process utilizes molded polystyrene and evaporated silica. R. D. Heidenreich and V. G. Peck. bibliog il diag Jour Ap Phys 14:23 Jan '43
- Future electron microscopy; abstracts of papers read at meeting of the Electron microscope society of America. Electronics 17:240 Mar '44
- General Electric simplified electron microscope. Chem Ind 54:84 Jan '44
- How to get the best results with electron microscopes; films five-hundred thousandth of an inch thick for revealing details of metal surfaces. Comp Air M 47:6822 Aug '42
- Industrial and medical radiology. B. J. Leggett. diag Jour Inst Elec Eng 91 pt 1:412 Nov '44
- La microscopie électronique et l'hyper-microscopie. Siemens. Genie Civil 113:292 Oct 1 '38
- Magnification calibration of the electron microscope. E. F. Fullam. il Jour Ap Phys 14:677 Dec '43
- Measurement of cathode emission by use of the electron microscope. G. W. Fox and F. M. Bailey. bibliog il diags Phys Rev 59:174 Jan 15 '41
- National research council's committee on the applications of the electron microscope. Science 95:348 Apr 3 '42
- New microtone and sectioning method for electron microscopy. H. C. O'Brien and G. M. McKinley. diag Science 98:455 Nov 19 '43
- Portable electron microscope widens its field of usefulness. V. K. Zworykin. Sci Amer 168:74 Feb '43
- Preliminary report on the development of a 300-kilovolt magnetic electron microscope. V. K. Zworykin, J. Hillier and A. W. Vance. il Jour Applied Phys 12:738 Oct '41
- Progress in engineering knowledge during 1943. P. L. Alger and J. Stokley. il Gen Elec Rev 47:12 Feb '44
- Quartz filaments used as gages in the electron microscopes. A. Langer. il Sci Amer 171:34 July '44
- RCA electron microscopes. P. C. Smith. Jour Eng Educ 35:382 Mar '45
- Recent developments in the electron microscope. J. Hillier and A. W. Vance. bibliog il diags Proc Inst Radio Eng 29:167 Apr '41
- Scanning electron microscope. V. K. Zworykin. Proc Inst Radio Eng 30:255 May '42
- Simplified electron microscope. C. H. Bachman and S. Ramo. il Phys Rec 62:494 Nov '42
- Simplified electron microscopy. C. H. Bachman. il diags Electronics 16:78 Feb '43
- Stable power supplies for electron microscopes. A. W. Vance. diags RCA Rev 5:293 Jan '41
- Stereoscopic views now possible with electron microscope. V. K. Zworykin and J. Hillier. Sci Amer 166:170 Apr '42
- Studies with the electron microscope diffraction adapter. R. G. Picard. bibliog il diag Jour Ap Phys 15:678 Sept '44

- Surface studies with electron microscope. V. K. Zworykin and E. G. Ramberg. bibliog il Jour Applied Phys 12:692 Sept '41
- Techniques in applied electron microscopy. R. D. Heidenreich. bibliog il Jour Amer Opt Soc 35: 139 Feb '45
- Thickness of electron microscopic objects. R. C. Williams and R. W. G. Wyckoff. bibliog il diag Jour Ap Phys 15:712 Oct '44
- Transmission type of electron microscope and its optics. L. Marton and R. G. E. Hutter. bibliog diags Proc Inst Radio Eng 32:3 Jan '44
- Ultimate resolving power of the electron microscope. L. I. Schiff. Phys Rev 61:721 Jan 1 '42
- Zur entwicklung des elektronen-ubermikroskops mit elektrostatichen linsen. E. Bruche. il diags V D I 85:221-8, pl 3-4 Mar 8 '41
- 100-kv electron microscope. L. Marton. bibliog il diags Jour Applied Phys 16:131 Mar '45
- 300-kilovolt electron microscope; abstract. V. K. Zworykin, J. Hillier and A. W. Vance. diag Electronics 14:33 Dec '41
- See also*  
Electron Optics
- ELECTRON Bunching.** See Klystron
- ELECTRON-Coupled Oscillator.** See Oscillators
- ELECTRON Oscillations.** See Oscillators, Barkhausen-Kurz
- ELECTRON Multipliers**
- Amplification by secondary-electron emission in static multipliers; abstract. H. Schnitger. Wireless Eng 19:269 June '42
- Behavior of electrostatic electron multipliers as a function of frequency. L. Malter. diags Proc Inst Radio Eng 29:587 Nov '41
- Calculations on the use of static secondary-electron multipliers; abstract. G. Maurer. Wireless Eng 20:507 Oct '43
- Comparison between a Geiger-Mueller counter, a secondary electron multiplier tube, and photographic film for detecting weak X-rays. A. Eisenstein and N. S. Gingrich. bibliog Rev Sci Instr 12:582 Dec '41
- Electron multipliers. E. Weiss and others. il diag Electronics 9:60 Sept '36
- Electronic method of measuring molecular lifetimes. R. D. Rawcliffe. il Rev Sci Inst 13:413 Oct '42
- Electrostatic electron multiplier. V. K. Zworykin and J. A. Rajchman. bibliog Proc Inst Radio Eng 27:558 Sept '39
- Farnsworth electron multiplier phototube. diags Electronics 13:54 May '40
- Orbital beam secondary-electron multiplier for ultra-high-frequency amplification. H. M. Wagner and W. R. Ferris. il diags Proc Inst Radio Eng 29:598 Nov '41
- Rival of the vacuum tube; electron multiplier. V. K. Zworykin. il diag Sci Amer 154:68 Feb '36
- Secondary electron radiation; survey of American, British and other information of use in designing electron multipliers, dynatrons, beam tetrodes, pentodes and other tubes. J. H. O. Harries. bibliog(89 references) diags Electronics 17:100 Sept '44
- Some simple bases of calculation for the design of multi-stage electron-multipliers; abstract. H. Schnitger. Wireless Eng 19:79 Feb '42
- Theory of noise for electron multipliers. W. Shockley and J. R. Pierce. Proc Inst Radio Eng 26:321 Mar '38
- Voltage-controlled electron multipliers. B. J. Thompson. bibliog diags Proc Inst Radio Eng 29:583 Nov '41
- See also*  
Photoelectric Cells  
Vacuum Tubes
- ELECTRON Optics**
- Angewandte elektronenoptik. B. v. Borries and E. Ruska. diags Zeit Ver Deutsch Ing 80:989, 1075 Aug 15, 29 '36
- Applied electron optics. V. K. Zworykin and G. A. Morton. bibliog il diags Opt Soc Am Jour 26:181 Apr '36
- Aufgaben der theoretischen elektronenoptik; abstract. O. Scherzer. Angew Chemie 49:849 Nov 21 '36
- Calibrating stop values of lenses. il Electronics 16:186 July '43
- Comparitive performance of gas-focused and electron-lens-focused oscillographs at very high frequencies. L. S. Piggott. diags Inst Elec Eng Jour 79:20, Discussion. 25 July '36
- Conversion of optical images from one region of the spectrum to another by the formation of electron-optical images of photo-cathodes; review of paper by M. von Ardenne. il diag Wireless Eng 13:536 Oct '36
- Der elektronenoptische bildwandler; abstract. W. Schaffernicht. Angew Chemie 49:850 Nov 21 '36
- Effect of a phase-focusing of higher order on the Fourier components of the ray-current density; abstract. F. Borgnis and E. Ledinegg. Wireless Eng 20:395 Aug '43
- Electro optical properties of colloids. H. Mueller and B. W. Sakmann. bibliog diag Jour Amer Opt Soc 32:309; 35:66 June, Jan '45
- Electron lens type of beta-ray spectrometer. C. M. Witcher. bibliog diags Phys Rev 60:32 July 1 '41
- Electron lenses; their fundamental mechanism. W. Wilson. il diags Elec Rev (Lond) 136:557 Apr 20 '45
- Electron lenses. il Electronic Indus 3:124 Aug '44
- Electron optical system of two cylinders as applied to cathode-ray tubes. D. W. Epstein. diags Inst Radio Eng Proc 24:1095 Aug '36
- Electron optical systems and their applications. V. K. Zworykin. diags Inst jour Elec Eng 79:1 July '36
- Electron-optical voltmeter developed; abstract. L. Jacob. diags Elec World 122:134 Nov 11 '44
- Electron optics, theoretical and practical. L. M. Myers. London: Chapman & Hall, Ltd. 1939
- Electron optics, Collins refractionometer. il Electrician 118:295 Feb 26 '37
- Electron optics in television; with theory and application of television cathode-ray tubes. I. G. Maloff and D. W. Epstein. 299p \$3.50 McGraw-Hill '38
- Electron optics of cylindrical electric and magnetic fields. Albert Rose. Proc Inst Radio Eng 28:30 Jan '40

**ELECTRON Optics—Continued**

- Electro-optical properties of colloids. H. Mueller and B. K. Sakmann. bibliog diag Amer Opt Soc Jour 32:309 June '42; 35:66 Jan '45
- Electron optics. Electrician 120-553 Apr 29 '38
- Electron telescope. il diags Electronics 9:10 Jan '36
- Elektronenoptische systeme und ihre anwendung. V. K. Zworykin. Angew Chemie 49:297 May 9 '36
- Electrostatic electron lenses with a minimum of spherical aberration. G. N. Plass. diags Jour Ap Phys 13:49 Jan '42; Correction. 13:524 Aug '42
- Electrostatic focusing at relativistic speeds. W. W. Hansen and D. L. Webster. diags R Sci Instr 7:17 Jan '36
- Historical background of electron optics. C. J. Calbick. bibliog il diags Jour Ap Phys 15:685 Oct '44
- Ion optics of equal coaxial cylinders. P. Kirkpatrick and J. G. Beckerley. diags Rev Sci Instr 7:24 Jan '36
- Measured characteristics of some electrostatic electron lenses. Lester M. Field. Elec Comm 21:1194 '43
- Mechanical theory of electron-image formation. K. Schlesinger. bibliog diags Proc Inst Radio Eng 32:483 Aug '44
- Minimizing aberration of electron lenses; abstract. H. Poritsky. Proc Inst Radio Eng 30:252 May '42
- New type of electron-optical voltmeter. L. Jacob. il diags Jour Inst Elec Eng 91 pt 2:512; Discussion. p515 Dec '44
- Optical constants of a magnetic-type electron microscope. L. Marton and R. G. E. Hutter. bibliog diags Proc Inst Radio Eng 32:546 Sept '44
- Reflective optics in projection television; aspherical correcting lenses from clear plastics for home receivers. I. G. Maloff and D. W. Epstein. bibliog il diags Electronics 17:98 Dec '44; Abstract. Sci Amer 172:41 Jan '45
- Refractive index in electron optics. I. Opatowski. bibliog Phys R 65:54 Jan 1 '44
- Seeing in the dark made possible by the electron lens. V. K. Zworykin. il diags Sci Amer 154:250 May '36
- Some factors affecting the choice of lenses for television cameras. H. B. DeVore and H. Iams. Proc Inst Radio Eng 28:369 Aug '40
- Some simplified methods of determining the optical characteristics of electron lenses. Karl Spangenberg and Lester M. Field. Proc Inst Radio Eng 30:138 Mar '42
- Speed meter for camera shutters. C. J. Penther. il Electronics 17:164 May '44
- System of large-screen television reception based on certain electron phenomena in crystals; possibility of color television by use of alkali halide crystals. A. H. Rosenthal. bibliog Proc Inst Radio Eng 28:203 May '40
- Television lens; new RCA receiver plastic lens. il diag Bsns W p19 Nov 25 '44
- Theory, design and applications of a short magnetic lens electron spectrometer. M. Deutsch and others. bibliog diags Rev Sci Instr 15:178 July '44
- Transmission type of electron microscope and its optics. L. Marton and R. G. E. Hutter. bibliog diags Proc Inst Radio Eng 32:3 Jan '44
- Ubersicht uber die experimentelle elektronenoptik und ihre anwendung; abstract. E. Bruche. Angew Chemie 49:849 Nov 21 '36
- Ultra-high frequency oscillography; electron-optical spectral analysis. H. E. Hollmann. bibliog il diags Proc Inst Radio Eng 28:213 May '40
- Variation of the axial aberrations of electron lenses with lens strength. E. G. Ramberg. bibliog Jour Ap Phys 13:582 Sept '42
- Velocity modulation; results of further considerations. R. Kompfner. bibliog diags Wireless Eng 17:478 Nov '40

**ELECTRON Physics**

- Contemporary advances in modern physics. Karl K. Darrow. Bell Sys Tech Jour. The nucleus; pt 4 14:285 Apr '35. Theory of magnetism; 15:224 Apr '36. Spinning atoms and spinning electrons; 16:319 July '37. Particles of the cosmic rays; 18:190 Jan '39. Forces and atoms, the world of the physicist; 20:340 July '41. Nuclear fission; 19:267 Apr '40. Analysis of the ionosphere; 19:455 July '40. Radioactivity, artificial and natural; 17:292 Apr '38
- Cyclotron-atomic research instrument. il Electronic Indus 3:86 Oct '44
- Ehrenhaft's magnetic current. Electronic Indus 3:232 Apr '44
- Electron and nuclear physics. J. B. Hoag. 2d ed 502p \$4 Van Nostrand '38
- Electro-physics; review of progress, 1936-1939. N. Campbell. diags Jour Inst Elec Eng 86:212 Feb '40
- Exploration of cosmic rays. H. T. Stetson. Electronic Indus 3:94 Jan '44
- Exploring the atomic nucleus. S. Dushman. il Elec Eng 55:760 July '36
- Mass-energy relation in modern physics; electron mass dependent on velocity; mass and energy interchangeable. S. Dushman. bibliog Gen Elec Rev 47:6 Oct '44
- Modern ideas concerning the nucleus of the atom. L. I. Schiff. Gen Elec Rev 40:504 Nov '37
- New facts about the nucleus of the atom. C. D. Anderson. il Gen Elec Rev 37:534 Dec '34
- Newly discovered elementary particles. K. K. Darrow. Elec Eng 54:808 Aug '35
- Paths of ions and electrons in non-uniform magnetic fields. N. D. Coggeshall and M. Muskat. diags Phys Rev 66:187 Oct 1 '44
- Physics and engineering industry. R. S. Silver. Engineering 159:284 Apr 13 '45
- Physics in 1944. T. H. Osgood. bibliog Jour Applied Phys 16:61 Feb '45
- Quantum physics of solids; the energies of electrons in crystals. W. Shockley. il diags Bell System Tech Jour 18:645 Oct '39
- Radiation field of the electron. F. Bloch and A. Nordsieck. bibliog Phys Rev 52:54 July 15 '37
- Similar electromagnetic fields in tubes. Electronic Indus 3:123 Jan '44
- Tables of Planck's radiation functions, and electronic functions. Franklin Inst Jour 236:196 Aug '43

## ELECTRONIC Applications—Control Systems

- Application of electronic devices in the rubber industry. L. R. Harness. *Il diags Rubber Age* 36:175 Jan '35
- Electrical measuring instruments; secondary-emission multipliers. G. A. Whipple. *Jour* 80:199 *Inst Elec Eng* Feb '37
- Electron tubes as elements of control. Ralph R. Batcher. *Electronic Indus* 2:65 Aug '43
- Electron tubes in recorders and controllers. C. O. Fairchild. *Metal Prog* 34:406 Oct '38
- Electronic applications. C. J. Dorr and L. N. Galton. *Electronic Indus* 2:76 Apr '43
- Electronic circuit design. S. B. Ingram. *Il Electronics* 17:92 May '44
- Electronic methods in shipbuilding. Gilbert Sonbergh. *Electronic Indus* 2:48 Feb '43
- Electronic motor controls should meet six basic requirements. D. B. Clark. *Steel* 114:94 Mar 27 '44
- Electronic uses in industry. W. C. White. *Il Electronic Indus* 4:102 Feb '45
- Electronics in industry. W. C. White. *Proc Inst Radio Eng* 33:75 Feb '45
- Electronics in railroading; flaw detection in rails, materials testing, signal systems, and communications. J. Markus. *Il Sci Amer* 172:156 Mar '45
- Fundamentals of industrial electronics. G. M. Chute. *Il diags Steel* 114:112 Apr 3; 100 Apr 10; 108 Apr 17; 100 Apr 24; 120 May 1; 126 May 8; 121 May 15; 97 May 22 '44
- How to maintain electronic control; troubleshooting chart. W. D. Cockrell. *Elec World* 122:1886 Nov 27 '43
- Industrial applications of electronic devices. Engineering Dept., Aerovox Res W. Vol 13-Nos. 8 to 12. Aug '41-Jan '42
- Industrial controls. S. J. Murcek. *Il Electronic Indus* 2:100 Dec '43
- Industrial electronics; progress report. R. A. Povers. *Il diags Electronics* 14:17 July; 336 Aug '41
- Is industrial electronic technique different? W. D. Cockrell. *bibliog Il Proc Inst Radio Eng* 33:217 Apr '45; *Abstract. Electronics* 18:340 Mar '45
- Maintenance of electronic controls. W. D. Cockrell. *Gen Elec Rev* 46:489 Sept '42
- Paper and electronics. A. J. Germain and R. R. Baker. *Paper Tr J* 118:32 June 8 '44
- Power company uses of electronic equipment. W. H. Blankmeyer. *Il Electronics* 16:134 Mar '34
- Process control methods for industrial uses. Ralph R. Batcher. *Electronic Indus* 3:110, 118, 94, 112 Feb, Mar, Apr, May '44
- Public utility uses of electronic devices. Gilbert Sonbergh. *Electronic Indus* 2:68 Dec '43
- Standards for industrial control equipment. *Electronics* 17:150 Dec '44
- Theory and design of electronic-control apparatus. W. D. Cockrell. *Il diags A S M E Trans* 66:249 May '44; *Abstract. Machine Design* 16:140 Jan '44
- Thirty electronic applications in industry. G. A. Van Brunt. *Il Factory Management* 103:151 May '45

*See also*

Photoelectric Cell Control

## Lighting Control

- Electrical control for varying lighting intensities. S. R. McCandless and F. M. Wolff. *Il Illum Eng Soc Trans* 31:41; *Discussion. p59* Jan '36
- Electronic control for constant illumination. J. K. Hilliard. *Il diag Electronics* 17:180 Mar '44
- High speed synchronizing motor control for air conditioning compressors insures minimum lighting disturbance. R. C. Allen. *Il diags Heating-Piping* 8:370 July '36
- Theater lighting control; Hysteresis device; Center theater, Rockefeller Center. D. M. Rollins and B. S. Burke. *Il diags Elec Jour* 32:477 Nov '35
- Thyratron reactor lighting control. E. D. Schneider. *bibliog Il diags Elec Eng* 57:Trans 328 June '38

*See also*

Photoelectric-Cell Lighting Control

## Motor-Generator Control

- Differential electronic stabilizer for alternating voltages, and some applications. A. Glynn. *bibliog diags Jour Inst Elec Eng* 90 pt 2:101 Apr '43; *Discussion. 90 pt 2:110, 367* Apr, Oct '43
- Electronic regulator for d-c generators. F. H. Gulliksen. *Il diags Elec Eng* 55:573 Aug '36
- Electronic control of d-c motors. E. E. Moyer. *Il diags Electronics* 16:98 May; 119 June; 118 July; 133 Sept; 128 Oct '43
- Electronic exciter for a-c generators; combination voltage regulator and exciter. A. Benson and R. Heidbrak. *diags Electronics* 16:112 Aug '43
- Electronic motor control has excellent characteristics for new machine-tool drive. S. D. Fendley. *Il diags Steel* 112:100 May 24 '43
- Electronic regulators for a-c generators. A. Benson. *diags Electronics* 16:104 Apr '43
- Electronic voltage regulator for lamp testing. R. R. Brady and C. P. Bernhardt. *Il diag Electronics* 9:36 Sept '36
- Tube control of a-c motors. J. D. Ryder. *diags Electronics* 9:31 Apr '36
- Voltage regulators. *Il diags Engineer* 165:526 May 13 '38
- Tube-controlled motor. P. B. King, jr. *Il diags Electronics* 9:14 Jan '36
- Ward Leonard electronic voltage regulator. *Il Power Pl Eng* 40:664 Nov '36

*See also*

Photoelectric-Cell Control

## Speed Control

- All-electric versus electronic speed control systems. J. W. Picking. *Il diags Product Eng* 15:586 Sept '44
- Burning machine has electronic control. D. A. Miller. *Il Electronics* 17:164 Apr '44
- Constant speed by electronic regulator; Downingtown paper company. *Il Paper Tr Jour* 106:23 Jan 27 '38
- Electronic controls for industrial machines. A. E. Bailey, jr. *Il diags Product Eng* 14:760 Dec '43

### ELECTRONIC Applications—Control Systems— Continued

- Electronic speed control of motors. E. F. W. Alexanderson, M. A. Edwards and C. H. Willis. *il* diags *Elec Eng* 57:Trans 343; Discussion. *Trans* 352 June '38
- Electronic speed regulator. H. W. Cope. *il* *Elec Jour* 33:55 Jan '36
- Four microsecond flash unit. *il* *Electronics* 16:144 Oct '44
- Industry uses of carrier current. G. G. Langdon. *Electronic Indus* 3:28 Jan '44
- Machine tool load control. *il* *Electronic Indus* 3:110 Oct '44
- Mot-O-Trol electronic adjustable-speed drive. *il* *Amer Mach* 87:124 Apr 29 '43
- New electronic variable speed drive; thy-mo-trol. S. D. Fendley. *il* diags *Power Pl Eng* 47:64 Feb '43; Same. *Gen Elec Rev* 46:225 Apr '43; Abstract. *Electronics* 16:138 Mar '43
- Stepless speed control governed electronically; new Westinghouse drive. *diag* *Product Eng* 14:412 July '43
- Synchronizer for motors. *il* *Electronic Indus* 3:121 Feb '44
- Variable-speed control; use of magnetic coupling for recovering power used on engine test beds. *diag* *Elec Rev (Lond)* 133:337 Sept 10 '43
- Winding industrial capacitors. *il* *Electronic Indus* 3:113 Feb '44

*See also*

#### Photoelectric-Cell Control

#### Temperature Control

- Automatic temperature-recording control system developed by the Douglas aircraft company. M. E. Moore. *il* diags *A S M E Trans* 65:809 Nov '43
- Electronic thermometer. P. G. Keiller and I. H. Blatz. *il* *diag* *Electronics* 17:138 July '44
- Flame-failure control of industrial furnaces. *il* *Electronics* 17:152 Sept '44
- Flame-failure protection; electronic safeguards for furnaces fired by pulverized coal, oil or gas. *diags* *Power* 88:234 Apr '44
- Flame failure safeguard; photoelectric system applicable to oil, gas or pulverized coal burners. *il* *diag* *Steel* 113:152 Nov 15 '43
- Laboratory oven temperature control. W. B. R. Agnew. *il* *Electronics* 17:108 Oct '44
- New electronic instrument for the refrigeration industry; for measuring temperatures from -350° to +3200° F. D. W. Choate. *diag* *Refrig Eng* 46:418 Dec '43
- Notes on the design of temperature control units. J. K. Clapp. *Gen Radio Exp* Vol 18 Aug '44
- Opportunities for electronics in industrial temperature instrumentation. M. F. Behar. *Electronics* 15:72 Dec '42
- Photo-cell control governs temperature. C. E. Weinland. *diag* *Elec W* 105:3034 Dec 21 '35
- Precision temperature control for electric furnaces. *il* *Electronics* 16:202 July '43
- Temperature control in aircraft. *il* *diag* *Electronics* 18:146 Feb '45
- Temperature compensation; temperature error in variable-frequency tank circuits employing

ceramic capacitors. H. Sherman. *Electronics* 17:125 Apr '44

Temperature measurement and control by electronics. Craig Walsh. *il* *Electronics* 15:56 Oct '42

Thermostatic control system. J. G. Roof. *il* *Electronics* 16:166 Oct '43

*See also*

#### Photoelectric-Cell Temperature Control

#### Time Control

- Chronoscope; electronic interval timer originally developed to test the velocity of rifle bullets. C. I. Bradford. *il* diags *Electronics* 13:28 Nov '40
- Cold cathode timing devices. Asa H. Myles. *il* *Electronics Indus* 3:98 July '44
- Cramer electronic timers and reset timers. *il* *Electronics* 16:298 Mar '43
- Dual time signal at WQXR; method of broadcasting hourly signal and synchronizing transmitter clock with studio clock. R. D. Valentine. *il* diags *Electronics* 17:108 Nov '44
- Elaborate horse-race timer uses five photo tubes. *il* *Electronics* 10:34, 35 Apr '37
- Electronic circuits for the measurement of time and speed. H. J. Reich and H. Toomin. *bibliog* diags *Rev Sci Instr* 8:502 Dec '37
- Electronic operation of a standard stopwatch. R. J. Wey and J. H. Jupe. diags *Electronics* 17:202 Oct '44
- Electronic time control for color photography, enlarging and other light exposures. E. A. Milligan. *diag* *Electronics* 13:50 Jan '40
- Electronic timer for microsecond intervals. P. B. Weisz. *il* *Electronics* 17:108 Apr '44
- Electronic timers for flying shears. G. A. Caldwell. *il* *Elec Jour* 33:407 Sept '36
- Electronic welding timers. P. G. Weiller. *il* *Electronics* 9:26 May '36
- General Electric vacuum-tube timer for machines. *il* *Gen Elec Rev* 41:297 June '38
- Rapid timing switch. *il* *Electronic Indus* 3:184 Mar '44
- Time by telephone; new British post office speaking clock. *il* diags *Elec Rev (Lond)* 118:531 Apr 10 '36; *Electronics* 9:36 Apr '36
- See also*
- Photoelectric-Cell Control
- Welding Control
- AC resistance welding control. Gilbert Sonbergh. *Electronic Indus* 2:52 May '43
- Automatic voltage compensator for resistance welding control. E. M. Callender and R. S. Phair. *il* diags *Elec Eng* 62:Trans 701 Nov '43
- Better welds through regulated welding current. B. Cooper. *il* diags *Welding Jour* 23:5 Jan '44; Same cond. *Electronics* 17:150 Apr '44
- Capacitor-discharge welding systems. H. Klempner. diags *Electronics* 17:118 May '44
- Dual pressure resistance welding. S. M. Humphrey. *il* *Electronic Indus* 3:98 Jan '44
- Electronic arc-length monitor. W. Richter. *il* *diag* *Elec Eng* 57:Trans 115 Mar '38; Abstract. *Electronics* 11:48 Apr '38; Discussion. *Elec Eng* 57:Trans 226 Apr '38
- Electronic welding cords. Ralph R. Bachter. *Electronic Indus* 2:105 Nov '43
- Electronic welding fume remover. *il* *Electronics* 16:148 Oct '43

Electronics now permits balanced 3-phase resistance welding. G. W. Birdsall. *il diags Steel* 115:126 Oct 9 '44

Helium-shielded arc welding control. *il Electronics* 16:146 Oct '43

Instrument signals spot weld consistency. H. J. Hague. *il Iron Age* 153:77 May 11 '44

Interrupted spot welding uses electron tube control. R. S. Pelton. *il Metal Prog* 32:59 July '37

New developments in ignitron welding control. J. W. Dawson, *bibliog il diags Elec Eng* 55:1371 Dec '36

Resistance welding speeded, improved by tube control. G. W. Garman. *il diags Electronics* 16:116 Mar '43

Resistance welding widened by tube control. E. H. Vedder and J. W. Dawson. *il diags Iron Age* 140:28 Nov 4; 44-9 Nov 18 '37

Sealed-off ignitrons for welding control. D. Parkard and J. H. Hutchings. *Elec Eng. Same; Gen Elec Rev* 40:93 Jan '37

Surge meter for welding measurement. *diag Electronics* 10:43 May '37

Variable waveform unit for testing aluminum welding. J. W. Dawson and H. Klemperer. *il diags Electronics* 16:62 Feb '43

*See also*

Photoelectric-Cell Control

#### ELECTRONIC Applications—Industry Uses

*See also*

Photoelectric Cells, Manufacturing Uses of

##### Automotive Industry

Application of electronic control. E. H. Vedder. *il diags A S M E Trans* 66:259 May '44; *Excerpts. Elec West* 92:63 Apr '44

Electron devices used in the spark plug industry. *diags Electronics* 9:44 May '36

Electronic octane tester. A. Crossley. *diags Electronics* 17:168 Mar '44

Electronic paint-thickness gauge. R. A. Powers. *il diag Electronics* 10:54 May '37

Electronic tire repairs. *Electronic Indus* 3:118 Aug '44

Electronic torque control prevents drill breakage; Pratt & Whitney engine plant of Ford motor co. *il Iron Age* 153:66 Apr 13 '44

Gasket pressure meter. George H. Pfefferle. *Electronic Indus* 4:102 Mar '45

Inspecting push rods automatically; machine at Ford's Rouge plant. *il Amer Mach* 81:833 Sept 22 '37; *Sci Amer* 157:290 Nov '37

Magnetic comparator checks hardness of axle shafts. *il Electronics* 16:214 June '43

Measurement of static and dynamic pressures. H. F. Schultz, C. E. Grinstead, R. N. Frawley, F. W. Chapman. *il Electronic Indus* 3:84 Aug; 104 Sept '44

Tubes help make automobiles. R. A. Powers. *il diag Electronics* 9:22 June '36

Tubes in metallurgy. E. V. Potter. *il Electronic Indus* pt 1 3:112 Apr pt 2 p115 May '44

Tubes measure protecting finishes in automobile manufacture. L. A. Danse. *Electronics* 9:44 Dec '36

##### Aviation Industry

Application of electronics to aircraft flight control. W. H. Gille and R. J. Kutzler. *il diags Elec Eng* 63:Trans 849-53 Nov '44

Electronic aviation. V. Zeluff. *il diag Sci Amer* 170:256 June '44

Electronic control for de-icer system. *il Automotive & Aviation Ind* 89:37 Nov 1 '43

Electronic control of de-icing equipment. W. Kliever. *il Aero Digest* 41:197 Nov '42

Electronic devices and X-ray speed aircraft production. *Electronic Indus* 2:45 Jan '43

Electronic flight recorder. T. B. Thomson and W. C. North. *il diags Radio N* 33:25 Feb 45

Electronic pilot; Minneapolis-Honeywell's automatic stabilizer for high-altitude bombers can be used on firm's own postwar products. *Business Week* p68 Sept 25 '43

Electronic recorder aids flight research. T. A. Dickinson. *il diags Aero Digest* 49:76 Apr 15 '45

Electronic tachometer. *Electronic Indus* 4:80 Mar '45

Fabricating wood aircraft "skins." J. P. Taylor. *il Electronics* 17:102 Apr '44

New electronic compass for aircraft. D. W. Moore, jr. *diag Electronics* 17:214 Dec '44

Operating experience with HF heating. H. C. Gillespie. *Electronic Indus* 3:80 Feb '44

Precision leveling. Paul Bennett. *il Electronic Indus* 3:92 Oct '44

Radio-frequency heating of aircraft parts. John P. Taylor. *Electronic Indus* 2:50 Jan '43

Torture chambers. *Electronic Indus* 3:105 Dec '44

##### Chemical Industry

Chemical research. C. Eddison. *Electronic Indus* 3:98 Nov '44

Electronics and the chemical industry. J. A. Hutcheson. *il diags Chem & Eng N* 22:2170 Dec 25 '44; *Same. Can Chem & Process Ind* 29:153 Mar '45

Electronic system concentrates penicillin; E. R. Squibb plant. *Steel* 116:174 Mar 12 '45

Electronic tools in chemical research. Robert H. Osborn and Lewis W. Beck. *il Electronic Indus* 4:82 Feb '45

Metallurgical analysis. *Electronic Indus* 2:86 Nov '43

Tubes in metallurgical research. E. V. Potter. *Electronics Indus* 3:112 Apr '44

Tubes on the job. *il Electronic Indus* 3:101 Dec '44

##### Food Industry

Electronic cooking and sterilization of foods. V. W. Sherman. *il Electronics* 17:150 July '44

Electronic dehydration of foods. V. W. Sherman. *il Electronics* 17:94 Feb '44

Electronics in the food plant. *il diags Food Ind* 15:76 Dec '43

Food thawing with high frequency heat; abstract. W. Cathcart. *Elec World* 123:128 May 26 '45

##### Petroleum Industry

Electronics in petroleum plants. F. P. Hochgang and C. H. Schlesman. *il Electronics* 17:116 Sept '44

Electronics; its application to petroleum technology. F. R. Staley. *bibliog il diags Oil & Gas Jour* 43:82 May 5; 44:123 May 26; 120 June 16 '45

Electron tubes in petroleum research; photoelectric pressure indicator. C. J. Penther and D. J. Pompeo. *diags Electronics* 14:43 May '41

**ELECTRONIC Applications—Industry Uses—  
Continued**

- Gamma-ray measurements in oil wells. L. G. Howell. *il Electronics* 17:130 Mar '44
- Geophysics—scientific exploration for oil. D. M. Gardner. *il Electronics* 16:136 Mar '43
- Oil refining plant uses electronic indicator. *il Electronics* 17:144 Nov '44
- Phillips petroleum company experience in use of Pearson electronic coating inspector. L. A. Hugo. *il Pet Eng* 15:170 Sept '44
- Steel Industry**
- Electric aids to precision rolling of steel. H. A. Winne. *il Iron Age* 135:14 Apr 11 '35
- Electronic control for resistance furnaces. H. J. Hague. *il diags Steel* 115:106 Aug 14 '44
- Electronic control in steel making. *Electronic Indus* 1:73 Nov '42
- Electronic pin-hole detection in sheet steel. G. E. Stoltz. *il diag Mach* 47:117 June '41
- Electronics; its steel plant uses. J. H. Hopper. *il diags Steel* 115:106 July 10 '44
- Electronics in steel plants. E. C. Swanson. *Blast F & Steel Pl* 33:381 Mar '45
- Electronics in the production and fabrication of steel. E. H. Vedder. *il diags Elec Jour* 35:339 Sept '38
- Flame-failure control of industrial furnaces. *diags Electronics* 17:152 Sept '44
- Instrument measures temperature of steel billets while in motion. *il Steel* 100:53 Jan 11 '37
- Metal tester; the Cyclograph. *il Electronics* 16:156 Dec '43
- Radiovisor industrial smoke indicator. *Engineering* 144:312 pl 21 Sept 17 '37
- Steel making receivers electronic science with open arms. O. H. Caldwell. *Sci Amer* 168:60 Feb '43
- Surface hardening of metals. H. G. Gillespie. *il Electronics* 17:102 July '44
- 10,000-kw electronic converters in steel plant. *il Electronics* 17:154 Nov '44

**ELECTRONIC Applications—High-Frequency  
Heating**

- Automatic tuning system for preheating plastics. R. W. Gilbert. *il diag Electronics* 17:115 Dec '44
- Case studies of typical electronic heating jobs. *Electronic Indus* 4:86 May '45. Same condition. 3:110 May '44
- Chicago conference on induction and dielectric heating. *diags Electronics* 18:148 Mar '45
- Continuous heat treating. *Electronic Indus* 3:111 Oct '44
- Coupling methods for induction heating. W. M. Roberds. *Electronic Indus* 3:80 July '44
- Defrosting frozen food for bakeries. *il Electronics* 18:154 June '45
- Design of electronic heaters for induction heating. J. P. Jordan. *il diags Proc Inst Radio Eng* 32:449 Aug '44; Discussion. 33:267 Apr '45
- Design of electronic heating generators. *Electronic Indus* 4:108 May '45
- Dielectric heating in woodworking industry. *Electronics* 18:180 Apr '45
- Dielectric heating of tire cord sets twist. *il Electronics* 17:148 Sept '44
- Efficiency of induction heating coils. G. H. Brown. *il Electronics* 17:124 Aug '44
- Electronic generators extend induction heating field. H. C. Humphrey. *il Electronics* 16:56 Jan '43
- Electronic heating design chart. C. V. Fields. *Electronics* 17:143 Apr '44
- Electronic heating principles. J. P. Jordan. 2:80 Dec '43
- Electronic inspection of magnetic materials. *Electronics* 18:164 Feb '45
- Electronic welding of glass. E. M. Guyer. *il Electronics* 18:92 June '45
- Fields of air core coils and applications to high frequency heating. *il Electronics* 16:216 Nov '43
- Heating wood with radio-frequency power. J. P. Taylor. *bibliog il diags A S M E Trans* 65:201 Apr '43
- Heatronic molding. *Electronic Indus* 2:92 Aug '43
- HF heating is non-uniform. *Electronic Indus* 2:146 May '43
- HF heating speeds penicillin. *Electronic Indus* 3:118 Aug '44
- HF induction heating for thin cases. *Electronic Indus* 3:112 Oct '44
- HF heating oscillators. W. C. Rudd. *il Electronic Indus* 3:96 July '44
- High frequency bug eliminator. *Electronic Indus* 3:122 Mar '44
- High frequency dielectric heating. A. E. L. Jarvis. *bibliog diags Electrician* 133:577 Dec 29 '44
- High-frequency heating. *il Electronics* 16:108 Apr '43. Same. *Electronic Indus* 2:79 Oct '43
- High-frequency heating in plywood manufacture. *Engineering* 156:116 Aug 6 '43
- High-frequency heating of conductors and non-conductors. R. M. Baker and C. J. Madsen. *bibliog diag Elec Eng* 64:50 Feb '45
- Induction heating comes of age. G. W. Penny and J. A. Hutcheson. *il diags Electronics* 16:123 Mar '43
- Induction heating equipment; motor generator and electronic units. J. P. Jordan. *il Metals and Alloys* 19:1153 May '44
- Induction heating; history of its development. F. T. Chesnut. *il Iron Age* 155:46 Mar '45
- Induction heating speeds tin-plate output. *Electronic Indus* 1:46 Dec '42
- Induction heating with electron tubes. D. B. Clark. *il Steel* 108:84, 87 May 12 '41
- Limitations of dielectric heating. C. J. Madsen. *Aero Digest* 49:112 June 1 '45
- Load rematching in electronic heating. E. Mittelmann. *il diags Electronics* 18:110 Feb '45
- Maintaining electronic heat equipment. *il Electronic Indus* 3:154 May '33
- Molding with radio frequency. W. M. Witty. *il diags Mod Plastics* 20:83 May '43
- New laboratory to explore and engineer electric induction heating; Tocco division of the Ohio crankshaft co. *il Steel* 115:116 Dec 4 '44
- Operating experience with HF heating. H. C. Gillespie. *Electronic Indus* 3:80 Feb '44
- Radio-frequency heating applied to wood gluing. R. A. Bierwirth and C. N. Hoyler. *diags Proc Inst Radio Eng* 31:529 Oct '43

- Radio frequency heating speeds plastic molding. J. P. Taylor. *il Electronics* 16:102 Sept '43
- Radio tubes for heat treating by high-frequency induction; electrolytic tin plate. H. C. Humphrey. *il diags Steel* 112:111 Feb 1 '43
- R-f heating of plastics. *Electronics* 16:194 June '43
- R-F heating speeds plastic molding. J. P. Taylor. bibliog *il diags Electronics* 16:102 Sept '43
- R-F heating of plastics; symposium. *il Electronics* 16:194 June '43
- Shielding of dielectric heating installations. G. W. Klingaman and G. H. Williams. *il diags Electronics* 18:106 May '45
- Shells annealed by radio frequency induction heating machine. *il Electronics* 16:110 Jan '43
- Spark gap circuits used in induction heating units. *il Electronics* 16:126 June '43
- Study electronic heat. *il Electronic Ind* 4:110 Mar '45
- Survey of dielectric heating. M. J. Maiers. *Elec Eng* 64:210 June '45
- Thermal insulation for electrostatic heating. *il Electronics* 16:180 Nov '43
- Tool brazing speeded by electronic induction heating; new grinding system. *il diags Steel* 112:90 May 31 '43
- Unusual methods of applying electronic heat. E. D. Tillson. *diags Electronics* 18:150 Apr '45
- Use of radio frequencies to obtain high-power concentrations for industrial-heating applications. W. M. Roberds. *diags Proc Inst Radio Eng* 33:9 Jan '45
- Vacuum casting of electronic parts. K. Rose. *il diag Metals & Alloys* 21:1324 May '45
- Work coils for high-frequency heating. *il Electronics* 16:112 Oct '43
- ELECTRONIC Applications—Measurements, Testing, and Test Processes**
- Chemical analysis by electron microscopy. *Electronic Indus* 3:110 Apr '44
- Cross-beam reflectometer for surface comparisons. *diag Electronics* 10:30 June '37
- Electrical micrometer; abstract. R. Gunn. *diag Automotive Ind* 82:16 Jan 1 '40
- Electronic indicator for use in making accurate measurements. R. G. Minarik. *diag Mach* 46:133 Mar '40
- Electronic measurement, analysis, and inspection. H. L. Horton. *il diag Mach* 51:157 June '45
- Electronic measurements; resume of circuits and devices. C. E. Jackson. *il diags Radio N* 30:28 Aug '43
- Electronic micrometer and its use in mechanical measurements. *diag Electronics* 13:72 Sept '40
- Electronics applied to heat transfer tests; circuits employ Wheatstone bridge and photoelectric relay; units applicable to other measurement and control problems. R. V. Brown. *il diags Electronics* 16:113 July '43
- G-E light cell reflectometer. *Illum Eng Soc Trans* 32:470-1 May '37; Same abr. *il Sci Amer* 157:310 Nov '37
- General Electric develops gage for indicating width of moving steel strip. *il Blast F & Steel P I* 28:1098 N '40; Same. *Iron Age* 146:47 Dec 19 '40
- General Electric spherical reflectometer for light transmission and reflection measurements. *il Electronics* 10:46 Oct '37
- Helps measure reflection factors. L. V. Ross. *il diags Elec W* 115:172 Jan 11 '41
- Instrumentation in brightness grading. M. N. Davis. *diag Paper Tr Jour* 101:36 July 4 '35
- Instrument for formation measurement. M. N. Davis, W. W. Roehr and H. E. Malmstrom. *diag Paper Tr Jour* 101:31 July 25 '35
- Magic eye ionization gauge. L. N. Ridenour. *diag Rev Sci Instr* 12:134-6 Mar '41; Abstract. *Electronics* 14:86 May '41
- Magnetic inspection of bolts and castings. *il Electronics* 17:150 Sept '44
- Measurement of ignition delay in oil-engines. E. Glaister. *il diags Engineering* 141:469 May 1 '36
- Measurement of the brightness of luminous paint with the blocking-layer photo-cell used as photo-conductor. W. H. Byler. bibliog *Rev Sci Instr* 8:16 Jan '37
- Measuring induction-motor slip. M. M. Flanders. *diags Elec Jour* 33:90 Feb '36
- Measuring instruments; a survey of recent developments. C. L. Lipman. *il diags Electrician* 115:494 Oct 25 '35
- Measuring millionths of an inch; electric micrometer for testing creep of alloys. R. W. Carson. *il Elec Jour* 33:106 Feb '36
- Measuring the fineness of portland cement; proposed revised tentative method of test for fineness of portland cement by means of the turbidimeter (C 115-38 T). *diags Concrete (mill sec)* 49:233 Sept '41
- Millisecond measurements; electronic timer. *Gen Elec Rev* 39:73 Jan '36
- Multiple-unit recorder capable of 600 measurements per hour. T. T. Woodson. *il diags Gen Elec R* 43:512 Dec '40
- Opacity measurements. O. Maass. *Pulp & Pa of Can* 37:689 Nov '36
- Remote measurement and control with vibrating wire instrument. *il Electronics* 18:160 June '45
- Spindle vibrometer. W. W. Egee. *il Textile World* 90:67 June '40
- Wire footage counter. *il Electronic Indus* 4:81 Apr '45
- See also*  
Electron Microscopes  
Photoelectric-Cell Meters
- ELECTRONIC Applications—Manufacturing Processes**
- Automatic frequency control for mechanical vibrators. *il Electronics* 16:194 Nov '43
- Balancing 50-ton marine gears. *il Electronics* 16:132 July '43
- Concentricity tester for enamel film on wire. *il Electronics* 16:170 Apr '43
- Control circuit for production forming of electrolytic capacitors. Sidney Fishberg. *il Electronic Indus* 16:186 Dec '43
- Electronic applications find wide use in metal-working. R. M. Serota. *il Amer Mach* 89:102 Mar 1 '45
- Electronic applications in industry; survey covering 796 manufacturing and service plants in 11 major industries. *Electronics* 18:92 May '45
- Electronic control and its relation to machine tool operating cycles. E. H. Vedder. *Steel* 100:64 May 24 '37



**ELECTRONIC Applications—Manufacturing Processes—Continued**

- Electronic control on drill press. *il Electronics* 16:154 Aug '43
- Electronic machine balances rotating parts. *il Electronics* 16:101 Jan '43
- Electronic power sources for industrial heating. *Electronic Indus* 1:56 Nov '42
- Electrostatic precipitators remove all mist in machine shops. *Electronics* 16:141 July '43
- Electronic processing of products and materials; use of radio-wave components, supersonic waves, X-rays, ultra-violet rays, and infra-red rays. J. Markus. *il diag Sci Amer* 170: 106 Mar '44
- Flaw detector for metal tubing. *il Electronics* 16:188 Dec '43
- Gas-cutting machines automatically controlled. *il Electronics* 16:172 Dec '43
- Grinding machines use electronic control. *il Electronics* 17:146 Nov '44
- Milling machine control cuts finishing time. *il Electronics* 17:146 Oct '44
- Milling machine electronically controlled. *Electronics* 16:110 Feb '43
- More jobs for electron tubes. L. R. Harness. *il Factory Management* 93:476 Nov '35
- Novel control on belt conveyor; National enamel & stamping co. *diag Rock Prod* 38:30 Jan '35
- Packaging machines controlled by phototubes. W. D. Cockrell. *il Electronics* 16:94 Oct '43
- Post-war applications of electronics in the handling of materials. B. G. Higgins. *il Mech Handling* 32:176 Apr '45
- Production controls aid the war program. R. A. Powers. *il Electronics* 16:126 Mar '43
- Power feed with electronic control developed for Reed-Prentice machine. *il Mach* 50:204 Oct '43
- RCA and industrial electronics. F. W. Wentker. *Jour Eng Education* 35:390 Mar. '45
- Relays in industrial tube circuits. V. R. Furst. *il Electronics* 17:134 Dec '44; 18:136 Jan; 133 Feb '45
- Side shifts of paper corrected in roll-winding machine *il Electronics* 16:144 Apr '43
- Sorting small parts. *il Electronics* 17:148 Oct '44
- Stop motion mechanism for textile machines. A. P. Mansfield. *il Electronics* 16:161 Dec '43
- Unit sews thermoplastic sheets. *il Electronics* 16:208 June '43
- Use of electric eye in industrial process control. R. A. Powers. *il diag Steel* 98:40 Mar 2 '36
- Vibration protection of rotating machinery; electronic system; abstract. R. L. Webb and C. S. Murray. *diag Power* 88:372 June '44
- What electron tubes are doing. R. H. Rogers. *diag Factory Management* 93:174 Apr '35
- See also*  
Manufacturing, Radio  
Photoelectric Cells, Manufacturing Uses of
- ELECTRONIC Switch**
- An electronic switch and square-wave generator. J. R. Cosby and C. W. Lampson. *Rev Sci Instr* 12:187 Apr '41
- Angle switching of synchronous motors. C. W. Drake. *il diag Elec Jour* 33:213 May '36
- Combination vacuum tube switch for double-trace cathode-ray oscillograph, audio-amplifier and mixer. H. K. Hughes and R. F. Koch. *bibliog diags Rev. Sci Instr* 12:183 Apr '41
- Deionization considerations in a harmonic generator employing a gas-tube switch. W. G. Shepherd. *diags Proc Inst Radio Eng* 31:66 Feb '43
- Electronic switching simplifies powerline communications. J. D. Booth. *il Electronics* 15:44 Aug '42
- Electronic switch for the simultaneous observation of two waves with the cathode-ray oscillograph. H. J. Reich. *diags Rev Sci Instr* 12:191 Apr '41
- Electronic switch; two signal voltages may be observed on a single oscilloscope. R. P. Turner. *il diags Radio N* 30:28 Dec '43
- Electronic switch for fluorescent lamps. R. F. Hays. *il diag Electronics* 13:14 May '40
- Electronic switch and square wave oscillator. J. R. Cosby and C. W. Lampson. *diags Rev Sci Instr* 12:187 Apr '41
- Four circuit electronic switch for observing four independent electrical phenomena on a cathode-ray tube screen. E. Moen. *diag Electronics* 14:50 May '41
- Some electronic switching circuits. C. C. Shumard. *diags Elec Eng* 57:209 May '38
- See also*  
Oscillograph, Cathode-Ray
- ELECTRONICS**
- Advances in electronics; abstract. W. Wilson. *Elec Rev (Lond)* 135:418 Sept 22 '44
- Circuit symbols standardized. *diags Electronics* 17:92 July '44
- Decade of electronics. *Electronics* 13:18 Apr '40
- Electronic aids in chemistry. C. E. Jackson. *diags Radio N* 30:24 Nov '43
- Electronic research opens new frontiers. R. R. Beal. *Proc Inst Radio Eng* 33:5 Jan '45
- Electronic uses in industry. (Bibliography.) W. C. White. *Electronic Indus* 2:72 June '43
- Electronics. J. Millman and S. Seely. 721p 85 McGraw-Hill, New York '41
- Electronics: a lever on industry; rocketing \$4 billion war business toward a postwar industrial revolution. *il Fortune* 28:132 July '43
- Electronics; an industry comes of age. D. D. Knowles. *il Elec Eng* 64:106 Mar '45
- Electronics at work on quality control. V. B. Baker. *il diags Mod Packaging* 17:91 Nov '43
- Electrical developments of 1944; radio and electronics. G. Bartlett. *il Gen Elec Rev* 48:50 Jan '45
- Electronic method for determining distribution curves. L. A. Ware. *diags Electronics* 13:36 Oct '40
- Electronics in AIEE; abstracts of papers on electronic subjects at summer technical meeting. *Electronics* 17:265 Sept '44
- Electronics in industry. S. R. Winters. *il Radio N* 28:26 Aug '42
- Electronics; its start from the Edison effect sixty years ago. W. C. White. *il diags Gen Elec Rev* 46:537 Oct '43
- Electronics, past and future. W. Wilson. *diags Engineer* 178:210 Sept 15 '44; Same cond. *Engineering* 158:284 Oct 13 '44; Excerpt. *Electrician* 133:235 Sept 15 '44

- Electronics, promise of tomorrow. W. C. White. il Electronics 16:152 Mar '43
- Electronics; science of today. L. W. Chubb. il diags Electronics 16:84 Mar '43
- Engineering electronics. D. G. Fink. 358p \$3.50 McGraw-Hill '38
- Flying electronics. V. Zeluff. il Sci Amer 172:348 June '45
- Fundamentals of engineering electronics. W. G. Dow. 604p \$5 Wiley '37
- Future of radio and electronics; abstract. R. R. Beal. Proc Inst Radio Eng 32:sup46 Oct '44
- Future possibilities of wireless; abstracts. R. L. Smith-Rose. Electrician 132:409 May 12 '44; Elec Rev (Lond) 134:663 May 12 '44; Jour Inst Elec Eng 91 pt3:104 Sept '44
- How will electronics affect industrial marketing? J. S. Smith. il Ind Marketing 28:19 Aug 46, 44 Sept '43
- Industrial electronics; conference. Schenectady, N.Y., Sept 14. Mech Eng 65:819 Nov '43
- Industrial electronics; progress report. R. A. Powers. il diags Electronics 14:17 July; 33 Aug '41
- Industrial science looks ahead. D. Sarnoff. Science 98:437 Nov 19 '43
- Milestones towards the electronic era. Electronic Indus 2:108 May '43
- Museum of electronic apparatus. R. McV. Weston. Elec Comm 17:133 '38
- National electronics conference, Chicago, Oct 5-7. Elec Eng 63:418 Nov '44
- National electronics conference; abstracts of technical papers at Chicago. il diags Electronics 17:190 Nov '44
- National electronics conference; organization. Electronics 17:272 June '44
- Navy electronics program and some of its past, present, and future problems; proposal for radar patents pool. J. B. Dow. Inst Radio Eng Proc 33:29 Mar '45; Excerpt (How the navy uses standards in its electronics program). Ind Stand 16:97 May '45
- New world of electronics; special section. L. W. Chubb and others. il diags maps Electronics 16:83 Mar '43
- Now is the time to standardize symbols. Electronics 16:94 Dec '43
- Observations of postwar radio-electronics. R. B. Frank. Radio N 32:92 July '44
- Place of electronics in power generation. J. D. Ryder. Heating-Piping 16:264 May '44; Excerpts. Chem & Met Eng 51:176 July '44
- Planning for future electronic markets. Millard H. Newton. Electronic Indus 2:85 June '43
- Planning tomorrow's electronic highways. W. R. G. Baker. chart Gen Elec Rev 47:15 June '44
- Plastics in the electronics field; with directory of trade names and suppliers. J. Sasso. il Electronics 15:26 July '42
- Post-war planning problems; electronics industries. W. MacDonald. Electronics 16:72 May '43
- Radio-and-electronic field; abstract. C. J. Madson. Proc Inst Radio Eng 31:644 Nov '43
- Radio progress during 1944; electronics. bibliog Proc Inst Radio Eng 33:146 Mar '45
- Scientific exploration for oil; electronics plays an important part. D. H. Gardner. il Electronics 16:136 Mar '43
- Scientific farming; advent of radionic device has made possible increases in quantity and quality of food production. S. R. Winters. il Radio N 30:30 Aug '43
- Signal corps view of electronic needs; abstract. W. H. Harrison. Electronics 17:280 Feb '44
- Sixty years of electronics, 1883-1943; electron tubes for industry and communications; charts. Electronics 16:112 July '43
- Some comments on postwar electronics. P. S. Billings. Proc Inst Radio Eng 31:592 Nov '43
- Some general relations of vacuum tube electronics. W. E. Benham, bibliog diags Wireless Eng 13:406 Aug '36
- Standards on electronics, 1938. 59p bibliog Inst of radio engineers, 330 W. 42d st, New York '38
- Survey of electronics in laboratory and industrial instrumentation; abstract. H. D. Middel. Electronics 17:232 Nov '44
- Television; the electronics of image transmission. V. K. Zworykin and G. A. Morton. 646p \$6 Wiley '40
- Theory of gaseous conduction and electronics. F. A. Maxfield and R. R. Benedict. 483p \$4.50 McGraw-Hill '41
- Thermistors in electronic circuits. Ralph R. Batcher. Electronic Indus 4:76 Jan '45
- Wartime progress in electronics. R. Eichberg. il diags Radio N 28:20 70-3 Dec '42
- What is electronics? J. D. Ryder. Radio N 32:23 Aug '44
- See also*
- Electronic Applications  
Photoelectric Cells
- ELECTRONS**
- An electronic potentiometer. M. A. Honnell. Proc Inst Radio Eng 30:433 Oct '42
- Behavior of electrostatic electron multipliers as a function of frequency. L. Malter. diags Proc Inst Radio Eng 29:587 Nov '41
- Current induced in an external circuit by electrons moving between two plane electrodes. R. Kompfner. Wireless Eng 19:52 Feb '42
- Drift of ions and electrons in a magnetic field. L. Tonks. Phys Rev 51:744 May 1 '37
- Effect of electron activities on cables. P. Dunsheath. pl diags Jour Inst Elec Eng 80:21 Jan '37; Abstracts. Electrician 117:629 Nov 20 '36; Elec Rev (Lond) 119:674 Nov 13 '36
- Electron beams and their applications in low voltage devices. H. C. Thompson. il diags Proc Inst Radio Eng 24:1276 Oct '36
- Electron emission and absorption phenomena. J. H. de Boer. 398p \$5.50 Macmillan '35
- Electron diffraction camera. L. H. Germer. il diags Rev Sci Instr 6:138 May '35
- Electron multipliers. G. Weiss and others. il diag Electronics 9:60 Sept '36
- Electron optical systems and their applications. V. K. Zworykin. diags Jour Inst Elec Eng 79:5 Pt 1 July '36
- Electron polarization. C. G. Shull, C. T. Chase and F. E. Myers. bibliog diag Phys R 63:29 Jan 1 '43

**ELECTRONS—Continued**

- Electron pump effect at high frequencies, phenomenon of electron current flow to anode of triode under certain conditions. M. R. Gavin. *Wireless Eng* 15:81 Feb '38
- Electron transit time; effects in cathode-ray tubes and diodes. W. E. Benham. *Wireless Eng* 16:598 Dec '39
- Energy and permittivity of electron space charges. W. E. Benham. *Wireless Eng* 21:320 July '44
- Excess-energy electrons and electron motion in high-vacuum tubes. E. G. Linder. *bibliog diags Proc Inst Radio Eng* 26:346 Mar '38
- Farnsworth electron multiplier phototube. *diags Electronics* 13:54 May '40
- Focusing of electrons in an X-ray tube. N. C. Beese. *bibliog diags Rev Sci Instr* 8:258 July '37
- Functional analysis of radio and electronic theory; effective method of teaching. N. B. Cook. *diags Radio N* 31:46 June '44
- Microanalysis by means of electrons. J. Hillier and R. F. Baker. *bibliog il diags Jour Ap Phys* 15:663 Sept '44
- On the induced current and energy balance in electronics. C. K. Jen. *Proc Inst Radio Eng* 29:345 June '41
- Orbital-beam secondary-electron multiplier for ultra-high-frequency amplification. H. M. Wagner and W. R. Ferris. *il diags Proc Inst Radio Eng* 29:598 Nov '41
- Reclamation of the motional energy of the electrons in amplifier valves; abstract. G. Pasqual. *Wireless Eng* 21:393 Aug '44
- Space-charge limitations on the focus of electron beams. B. J. Thompson and L. B. Headrick. *Proc Inst Radio Eng* 28:318 July '40
- Stroboscopic depiction of electron motion on transmission lines. J. F. Kline. *diags Electronics* 18:258 June '45
- Theoretical and experimental investigations of electron motions in alternating fields with the aid of ballistic models. H. E. Hollman. *bibliog il diags Proc Inst Radio Eng* 29:70 Feb '41
- Theory of noise for electron multipliers. W. Shockley and J. R. Pierce. *Proc Inst Radio Eng* 26:321 Mar '38
- Time of flight of electrons in a cylindrical diode. C. L. Fortescue. *Wireless Eng* 12:310 June '35; Discussion. E. B. Moullin. 12:371 July '35
- Tracing electron paths in electric fields. H. Saling. *Electronics* 10:50 Oct '37
- Ultra-short and decimetre-wave valves; deflection of a focussed beam of electrons as a possible basis for construction. F. M. Colebrook. *diags Wireless Eng* 15:198 Apr '38
- Using electrons for microanalysis. V. K Zworykin. *Science* 99:334 Apr '44
- Vacuum tube electronics at ultra-high frequencies. F. B. Llewellyn. *diags Proc Inst Radio Eng* 23:112 Feb '35
- See also*
- Electron Optics  
Electron Physics
- Electronic beam control. S. R. Winters. *il diags Radio N* 29:18 Jan '43
- Electrostatic focusing of high speed ion and electron beams. J. D. Craggs. *il diags Jour Ap Phys* 13:772 Dec '42
- Limiting stable current in electron beams in the presence of ions. J. R. Pierce. *bibliog Jour Ap Phys* 15:721 Oct '44
- Magnetically focused radial beam vacuum tube. A. M. Skellett. *il diag Bell System Tech Jour* 23:190 Apr '44; Same *abr. Jour Ap Phys Jour* 15:704 Oct '44; Abstract. *Electronics* 17:214 Aug '44
- New uses for detected electron beams. Ralph R. Batcher. *Electronic Indus* 2:65 Sept '43
- Space charge limitations on the focus of electron beams. B. J. Thompson and L. B. Headrick. *Proc Inst Radio Eng* 28:318 July '40
- Velocity-modulated beams; the electron density distribution. D. M. Tombs. *diags Wireless Eng* 17:54 Feb '40; Discussion. 17:110 11, 202, 262 Mar, May-June '40
- Wave energy and transconductance of velocity-modulated electron beams. W. C. Hahn. *diags Gen Elec Rev* 42:497 Nov '39
- See also*
- Cathode-Ray Tube—Electron Gun

**Bombardment**

- Electron bombardment in television tubes. I. G. Maloff. *il diags Electronics* 17:108 Jan '44
- Preparation of high melting alloys with the aid of electron bombardment. R. Hultgren and M. H. Pakkala. *il diags Jour Ap Phys* 11:643 Oct '40
- Simple power limiting device for use when heating by electron bombardment. R. P. Winch and H. E. Fransworth. *diag Rev Sci Instr* 11:344 Oct '40

**Bunching**

(See Velocity Modulation)

**Diffraction**

- An interesting application of electron diffraction. L. H. Germer and K. H. Storks. *Bell Sys Tech Jour* 19:152 Jan '40
- Diffraction of electrons. C. J. Phillips. *il Electronics* 8:290 Aug '35
- Diffraction measurements at ultra-high frequencies. H. Selvidge. *il diags map Proc Inst Radio Eng* 29:10 Jan '41
- Diffraction measurements at ultra-high frequencies. H. Selvidge. *il diags map Inst Radio Eng Proc* 29:10 Jan '41
- New apparatus for demonstrating diffraction of electrons. J. J. Trillat. *Elec Comm* 16:103 '37
- Theory and practice of electron diffraction. G. P. Thomson and W. Cochrane. 334p \$6 Macmillan '39
- See also*

Propagation of Waves—Diffraction

**Emission**

- Deflected electron beams. J. H. O. Harries. *bibliog Wireless Eng* 21:267 June '44; Discussion. D. Gabor. 21:327 July '44
- Deflection and impedance of electron beams at high frequencies in the presence of a magnetic field. L. Malter. *diags RCA Rev* 5:439 Apr '41
- Cathode design. O. W. Pike. *Communications* 21:4 Oct '41
- Electron emission. S. Duchman. *Elec Eng* 53:1054 July '34
- Emission of electricity from hot bodies. O. W. Richardson. Longmans, New York 1921

- Measurement of secondary emission in valves. L. R. G. Treolar. *Wireless Eng* 15:535 Oct '38
- Theory of secondary emission. D. E. Wooldridge. *Phys Rev Ser 2* 56:562 Sept 15 '39
- Thermionic electron emission. J. A. Becker. *Bell Sys Tech Jour* 14:413 July '35

*See also*

#### Filaments

##### Motion

- Currents induced by electron motion. Simon Ramo. *Proc Inst Radio Eng* 27:584 Sept '39
- Some dynamic measurements of electronic motion in multigrig tubes. M. J. O. Strutt and A. van der Ziel. *Proc Inst Radio Eng* 27:218 Mar '39
- Theoretical and experimental investigations of electron motions in alternating fields with the aid of ballistic models. H. E. Hollmann. *Proc Inst Radio Eng* 29:70 Feb '41

##### Velocity

- Acceleration of electrons by magnetic induction. D. W. Kerst. *bibliog il diags Phys Rev* 60:47 July 1 '41
- Electronic microanalyzer identifies elements. J. Hillier. *il Electronics* 17:236 Feb '44
- Electronic orbits in the induction accelerator. D. W. Kerst and R. Serber. *Phys Rev* 60:53 July 1 '41
- Microanalysis by electrons. J. Hillier. *Phys Rev* 64:318 Nov 1 '43
- Effect of space charge and transit time on the shot noise in diodes. A. J. Rack. *bibliog Bell System Tech Jour* 17:613 Oct '38
- Space charge and field waves in an electron beam. S. Ramo. *Phys Rev* 56:276 Aug 1 '39
- Velocity modulated tubes; method of analyzing the operation of vacuum tubes at ultra-high frequencies. W. C. Hahn and E. F. Metcalf. *Proc Inst Radio Eng* 27:106 Feb '39

*See also*

#### Velocity Modulation

### ELECTROTHERAPEUTICS

- Applications of electronics to physiology. W. E. Gilson. *bibliog diags Electronics* 16:86 Jan '43
- Army-Navy electronic medical aids. *Electronic Indus* 2:78 July '43
- British electrocardiograph uses smoked glass discs. *Electronics* 16:264 June '43
- Capacitance manometer checks arterial blood pressure. *Electronics* 16:252 June '43
- Electronic aids in biological sciences. Ralph R. Batcher. *Electronic Indus* 2:62 July '43
- Electronic cardiometer. J. W. Horton. *il Electronics* 11:14 Aug '38
- Electronic equipment measures nerve activity. W. S. McCulloch. *Electronics* 17:198 July '44
- Electronics in the study of head injuries. C. Sheer and J. G. Lynn. *il diags Electronics* 17:112 Jan '44
- Electrical amplifying stethoscope and phonoelectrocardiograph. G. E. Donovan. *bibliog il diags Jour Inst Elec Eng* 90 pt 3:38-49 June '43
- Electroencephalograph design. P. Traugott. *il diag Electronics* 16:132 Aug '43
- Encephalophone converts brain potentials into sounds. *diag Electronics* 16:144 May '43
- Hearing aid technic. C. J. LeBel. *Electronic Indus* 4:104 Jan '45

- Neon-counter for medical research. O. C. Gruner. *il Electronics* 17:284 Dec '44
- Pathologist looks at radio communications. R. A. W. Watt. *Jour Inst Elec Eng* 78:13 Jan '36; Same abr. *Electrician* 115:715 Dec 6 '35
- Photo tube for biological recording. *il Electronics* 17:230 Apr '44
- Surgical applications for electronic metal locator. *diag Electronics* 16:114 May '43
- Use of the photoelectric cell in physiological experiments. A. S. Marazzi. *il Science* 82:254 Sept 13 '35

*See also*

#### Diathermy

### ENGINEERING

- Coordination of the work of the physics, mathematics, and electrical engineering staffs in the formulation of communications and electronic curricula, including ultra-high frequency techniques. E. A. Guillemin. *Jour Eng Educ* 35:237 Nov '44
- Engineering at the National broadcasting company. *il Electronics* 9:41 Nov '36
- Engineering factors involved in relocating WEAFA. R. F. Guy. *il maps RCA Rev* 5:455 Apr '41
- Engineering requirements for program transmission circuits. F. A. Cowan, R. G. McCurdy and I. E. Lattimer. *bibliog il map Elec Eng* 60:Trans 142 Apr '41; Same. *Bell System Tech Jour* 20:235 Apr '41
- Engineering science, and management defense training. Beverly Dudley. *il Electronics* 15:36 Mar '42
- Engineering work of the Federal communications commission; international point-to-point allocation problems. P. F. Siling. *Proc Inst Radio Eng* 32:326 June '44
- Half century of engineering progress; story of Westinghouse. H. W. Cope. *il Elec Jour* 33:14 Jan '36
- Organization of the engineering profession. W. Kidd. *Jour Inst Elec Eng* 92 pt 1:85 Feb '45
- Phoenix; a challenge to engineering education. W. L. Everitt. *Proc Inst Radio Eng* 32:507 Sept '44
- Post-war engineering prospects. K. C. Appleyard. *Engineering* 159:36 Jan 12 '45
- Progress in engineering knowledge during 1944. P. L. Alger and J. Stokley. *il Gen Elec Rev* 48:31 bibliog (p57) Feb '45
- Progress in engineering knowledge during 1944; amplidyne controls. *il Gen Elec Rev* 48:43 Feb '45. (Annual reviews in February issues of preceding years).
- Radio engineering in the war effort. A. Van Dyck. *Proc Inst Radio Eng* 30:482 Oct '42
- Radio research and production given great impetus by war; with illustrations of manufacture of Westinghouse transmitting tubes. *Steel* 111:78 July 6 '42
- Some recent developments in engineering materials. A. Black. *Mech Eng* May '45
- Wartime engineering. A. N. Goldsmith. *RCA Rev* 6:395 Apr '42; Same. *Proc Inst Radio Eng* 30:319 July '42

*See also*

#### Laboratories Postwar Planning

#### Research

**ENGINEERS**

- British radio engineer. George Lewis. *Electronic Indus* 2:72 Mar '43
- Contribution of the engineer to aeronautics. R. C. Grazley. *Air Commerce Bul* 9:301 June '38
- Engineer and his future. C. A. Powell. *Elec Eng* 64:14 Jan '45; excerpt. *Proc Inst Radio Eng* 33:284 May '45
- Engineer and his responsibilities. H. Railing. *Engineering* 158:296. Oct 13-20 '44; Same. *Jour Inst Elec Eng* 92 pt 1:19 Jan '45
- Engineer as executive. L. M. Clement. *Electronic Indus* 3:119 Jan '44. Same: H. Kettering 3:103. Feb '44. Same: J. M. Kaar 3:123 June '44. Same: A. B. Wilmotte 3:116 Aug '44
- Engineer's place in distribution. *Electronics* 18:139 Jan '45
- Engineer's place in the modern world. I. S. Coggeshall. *Proc Inst Radio Eng* 33:283 May '45
- Engineer's place in the scheme of things; based on forum and round-table discussion by R. H. Herrick and others. *Proc Inst Radio Eng* 33:286 May '45
- Engineers talk shop. *Electronic Indus* 3:91 Nov '44
- Outlook for the engineer. F. T. Letchfield. *il Elec West* 94:55 Mar '45
- Radio engineer in psychological warfare. R. C. Corderman. *Proc Inst Radio Eng* 31:510 Sept '43
- Radio engineer in the navy. C. F. Holden. *Proc Inst Radio Eng* 31:517 Sept '43
- Radio engineer's responsibilities of tomorrow. H. Pratt. *Proc Inst Radio Eng* 31:316 July '43
- What is a radio engineer? A. F. Strong. *il Radio N* 23:16 Mar '40
- Technical development; many developments perfected by engineers of the CAA. J. Easton. *il Radio N* 29:118 June '43

*See also*

**Engineering****EQUALIZERS**

- Attenuation and phase-shift equalizers; semi-graphical method of designing equalizing networks. W. Saraga. *diags Wireless Eng* 20:163 Apr '43
- Distortion correction in electrical circuits with constant resistance recurrent networks. Otto J. Zobel. *Bell System Tech Jour* 7:438 Apr '28
- Equalizer design; attenuation and phase functions of frequency-transmission characteristics in circle diagrams. M. J. DiToro. *diags Electronics* 17:118 Apr '44
- Line equalization by predistortion. Walter J. Creamer. *Proc Inst Radio Eng* 27:22 Jan '39
- Network theory. filters, and equalizers. F. E. Terman. *bibliog diags Proc Inst Radio Eng* 31:164, 233, 288 Apr-June '43
- Universal equalizer provided audio frequency amplifier design data. *Electronics* 16:120 Aug '43
- Variable equalizer amplifier. Henry Rahmel. *il Electronics* 14:26 July '41
- Variable equalizers. H. W. Bode. *Bell Sys Tech Jour* 17:229 Apr '38

*See also*

**Attenuators  
Filters****Networks**

**EXPANDERS.** See Volume Expanders

**F****FACSIMILE**

- Demonstrating broadcast facsimile at the New York world's fair. A. J. Baracket. *il RCA Rev* 5:3 July '40
- Duplex transmission of frequency-modulated sound and facsimile. M. Artzt and D. E. Foster. *diags RCA Rev* 6:88 July '41
- Facsimile and its future uses. J. V. L. Hogan. *Ann Amer Acad* 213:162 Jan '41
- Facsimile broadcasting enters the communications picture. *Pub Util* 21:622 May 12 '38
- Facsimile design chart. R. R. Haugh. *Electronics* 14:45 Apr '41
- Facsimile equipment communication units. Roland C. Davies and Peter Lesser. *il Electronic Indus* 4:96 Feb '45
- Facsimile; old in principle, new in practice. J. H. Hackenberg. *diag map Electronics* 16:106 Mar '43
- Facsimile speeds air reconnaissance; illustrations. *Electronics* 14:30 May '41
- Facsimile telephotographs. *Electronics* 9:32 July '36
- Facsimile tests; Finch telecommunications laboratory testing radio facsimile transmissions from ground to plane. *Aviation* 37:48 Oct '38
- Facsimile transmission in the United States. G. Herrick. *il diags Elec Rev (Lond)* 126:67-8 Jan 19 '40
- Facsimile transmitter and receiver. *il Radio N* 33:43 Mar '45
- Future of communications; television, radio facsimile and FM broadcasting will compete with established media. J. V. Sherman. *il Barron's* 20:20 July 22 '40
- Handling of telegrams in facsimile. R. J. Wise and I. S. Coggeshall. *il diags Proc Inst Radio Eng* 29:237 May '41
- Home facsimile recording. S. Ostrolenk. *il Electronics* 11:26 Jan '38
- Home newspapers by radio; automatic facsimile reproduction. *il diags Sci Amer* 158:334 June '38
- La transmission radioelectrique des journaux a domicile. M. Adam. *il diag Genie Civil* 113:80 July 23 '38
- Military facsimile; illustrations. *Electronics* 16:108 Sept '43
- New facsimile system assigned to RCA by John W. Cox, R. Eichberg. *diags Radio N* 29:73 Jan '43
- Newspapers by radio. *Science* 100:sup10 Dec 1 '44
- Planes radio photos; Finch facsimile equipment uses FM. *il map Business Week* p22 Oct 12 '40
- R. C. A. radio facsimile. *Radio N* 20:51 Dec '38
- Radio progress during 1944. *bibliog Proc Inst Radio Eng* 33:149 Mar '45
- Rock Island tests facsimile and carrier telephone on moving train. *il Ry Age* 117:355 Aug 26 '44
- Sending train orders by facsimile telegraphy. *il diag Electronics* 16:148 Sept '43
- Standards on facsimile; definitions of terms. *Proc Inst Radio Eng* 30:1 July '42
- Television and tomorrow's newspaper. M. Pew. *Pulp & Pa of Can* 37:438 July '36
- Three-meter facsimile. *il Electronics* 9:11 July '36
- Train orders by facsimile telegraphy. G. H. Ridings. *Elec Comm* 21:95 '43

Transmission of color pictures by facsimile. *Electronics* 18:236 Apr '45

*See also*

Television

**FADER.** *See* Broadcasting Station Control Equipment

### FADING

Abnormal ionization in the E region of the ionosphere. J. A. Pierce. *Proc Inst Radio Eng* 26:892 July '38

Atmospheric-electric disturbances accompanying the bright auroras of March 25, 1940, and Sept 18, 1941, H. T. Stetson. *Science* 94:574 Dec 19 '41

Confirmation of cosmic phenomenon. J. H. Dellinger. *Science* 82:548 Dec 6 '35

Control of phase-fading in long-distance radio communication. A. L. Green and O. O. Pulley. *Jour Inst Elec Eng* 80:623; Discussion. 633 June '37

Control of wireless signal variations. A. L. Green and G. Builder. *diags Jour Inst Elec Eng* 80:610; Discussion. 633 June '37

Correlation of radio transmission with solar phenomena. A. M. Skellett, charts *Proc Inst Radio Eng* 23:1361 Nov '35; Abstract. *Bell System Tech Jour* 15:157 Jan '36

Effects of solar activity on the ionosphere and radio communications. H. W. Wells. bibliog il maps *Proc Inst Radio Eng* 31:147 Apr '43

Effect of the sun's eruptions on radio transmission. *Science* 82:sup8-9 Nov 29 '35

Experiments with directivity steering for fading reduction. A. Bruce and A. C. Beck. *Bell Sys Tech Jour* 14:195 Apr '35

Fading characteristics of the top-loaded WCAU antenna. G. H. Brown and J. G. Leitch. il diags map *Proc Inst Radio Eng Proc* 25:583 May '37; Discussion. 26:115 Jan '38

Fading effects at high frequencies. J. B. Moore. bibliog il diags *Electronics* 17:100 Oct '44

Hydrogen outburst on the sun and radio fading. *Science* 83:sup6 Jan 10 '36

Inclined rhombic antenna for reducing the effect of fading. C. W. Harrison, jr. *Proc Inst Radio Eng* 30:241 May '42

Indirect ray measurements on the Droitwich transmitter. C. H. Smith. *Wireless Eng* 14:537 Oct '37

Long-wave radio transmission phenomena associated with a cessation of the sun's rays. A. Bailey and A. E. Harper. maps *Bel System Tech Jour* 15:1 bibliog (p16-17) Jan '36

Low-frequency transmission over transatlantic paths. H. H. Beverage and G. W. Kendrick. il *Proc Inst Radio Eng* 24:472 Mar '36

Measuring the reflecting regions in the troposphere. A. W. Friend and R. C. Colwell. il diags *Proc Inst Radio Eng* 25:1531 Dec '37

New solar radio disturbance affecting high frequency transmission every 54 days, approximately. J. H. Dellinger. *Electronics* 9:25 Jan '36

Notes on the random fading of 50-megacycle signals over nonoptical paths. K. G. MacLean and G. S. Wickizer. *Proc Inst Radio Eng* 27:501 Aug '39

Radio field-intensity and distance characteristics of a high, vertical broadcast antenna. S. S. Kirby. diags pls map *Jour of Research Nat*

*Bur Stand* 16:289 Apr '36; Same. *Proc Inst Radio Eng* 24:859-71 Jour '36

Relation between radio-transmission path and magnetic-storm effects. G. W. Kenrick, A. M. Braaten and J. General. bibliog il maps *Proc Inst Radio Eng* 26:831 July '38

Role of the ionosphere in radio-wave propagation. J. H. Dellinger. *Trans A.I.E.E. Sup* 58:803 '39

Short-wave radio transmission and geo-magnetism. H. E. Hallborg. *RCA Rev* 5:305 Apr '41

Stability of two-meter waves. C. R. Burrows, A. Decino and L. E. Hunt. bibliog il *Proc Inst Radio Eng* 26:516 May '38

Solar eruption and simultaneous disturbances at Huancayo magnetic observatory. O. W. Torresson, W. E. Scott and H. E. Stanton. *Science* 83:463 May 15 '36

Study of propagation over the ultra-short-wave radio link between Guernsey and England on wavelengths of 5 and 8 meters (60 and 37.5 mc/s). R. L. Smith-Rose and A. C. Stickland. bibliog *Jour Inst Elec Eng* 90 pt 3:12-19; Discussion. 20 Mar '43

Sudden disturbances of the ionosphere. J. H. Dellinger. *J Research Nat Bur Stand* 19:111 bibliog (p140-1) Aug '37; Same. *Proc Inst Radio Eng* 25:1253 Oct '37

Transmission of radio waves; interference and fading. *Electrician* 123:539 Dec 22 '39

*See also*

Propagation of Waves

### FEEDBACK

Analysis of feedback and prevention of oscillations in h-f amplifiers. T. Chew. diags *Radio N* 27:14 June '42

Application of negative feedback to frequency-modulation systems. J. G. Chaffee. *Proc Inst Radio Eng* 27:317 May '39

Application of feedback to wide-band output amplifiers. F. Alton Everest and Herbert R. Johnston. *Proc Inst Radio Eng* 28:71 Feb '40

Balanced feedback amplifiers. Edward L. Ginzton. *Proc Inst Radio Eng* 26:1367 Nov '38

Circuit for neutralizing low frequency regeneration and power supply hum. W. Y. Pan. *Proc Inst Radio Eng* 30:411 Sept '42

Compression with feedback. H. H. Stewart and H. S. Pollock. *diag Electronics* 13:19 Feb '40

Control of the effective internal impedance of amplifiers by means of feedback. H. F. Mayer. *Proc Inst Radio Eng* 27:213 Mar '39

Corrective networks for feedback circuits. V. Learned. diags *Proc Inst Radio Eng* 32:403 July '44

Determining feedback characteristics graphically. il *Electronics* 14:87 Oct '41

Diminution of variations of amplification by negative feedback, referred to the same amplification factor; abstract. J. Peters. *Wireless Eng* 19:473 Oct '42

Distortion-free amplifier. P. O. Pederson. *Proc Inst Radio Eng* 28:59 Feb '40

Distortion in negative feedback amplifiers. Robert W. Sloane. *Wireless Eng* 14:259 May '37; 369 July '37

Effect of impedance on feedback. R. B. Blackman. *Bell Sys Tech Jour* 22:269 July '43

**FEEDBACK—Continued**

- Equivalent characteristics of vacuum tubes operating in feedback circuits. J. H. Pratt. diags RCA Rev 6:102 July '41; Abstract. Electronics 14:87 Oct '41
- Equivalent circuits for the feedback amplifier. A. Fairweather. diags Wireless Eng 18:151 Apr '41
- Features of inverse feedback amplifiers. P. C. Erhorn. il Electronic Indus 3:86 Feb '44
- Feedback. E. K. Sandeman. diags Wireless Eng 17:342 Aug '40
- Feedback amplifier design. F. E. Terman. il Electronics 10:12 Jan '37
- Feedback amplifiers for radio receivers, transmitters, and carrier telephone. diag Electronics 9:30 July '36
- Feedback amplifiers; signal-to-noise ratio. F. S. Macklem. Electronics 16:211 Apr '43; Discussion. J. T. Pratt. 16:336 June '43
- Feedback d-c meter. J. M. Brumbaugh and A. W. Vance. diags Electronics 11:16 Sept '38
- Feedback voltmeter. Electronics 15:54 July '42
- Frequency discrimination by inverse feedback. G. H. Fritzing. bibliog diags Proc Inst Radio Eng 26:207 Feb '38
- Frequency modulation; theory of the feedback receiving circuit. John R. Carson. Bell Sys Tech Jour 18:395 July '39
- Frequency response characteristic of amplifiers employing negative feedback. F. E. Terman and W. Y. Pan. il Communications 19:5 Mar '39
- Grid bias scheme eliminates feed back trouble. diag Electronics 9:42 Mar '36
- Influence of feedback on source impedance. R. W. Crane. diags Electronics 17:122 Sept '44; Discussions. 18:382 Jan '45
- Inverse feedback; its application to receivers and amplifiers. B. D. H. Tellegen and V. C. Henriquez. diags Wireless Eng 14:409 Aug '37
- Inverse feedback; its benefits and its limitations. Engineering Dept. Aerovox Res W 9:4 Apr '37
- Low distortion volume expansion using negative feedback. B. J. Stevens. diags Wireless Eng 15:143 Mar '38
- Method of neutralizing hum and feedback caused by variations in the plate supply. K. B. Gonser. Proc Inst Radio Eng 26:442 Apr '38
- Necessary conditions for instability (or self-oscillation) of electrical circuits. D. G. Reid. Wireless Eng 14:588 Nov '37
- Negative feedback. A. C. Bartlett. Wireless Eng 15:70 Feb '38
- Negative feedback applied to oscillators. S. Sabaroff. bibliog diags Electronics 13:32 May '40
- New type of selective circuit and some applications; use of the inverse feedback principle. H. H. Scott. il diags Proc Inst Radio Eng 26:226 Feb '38
- Note on negative feedback. A. C. Bartlett. Wireless Eng 15:90 Feb '38
- Phase inverters and feedback. M. T. Putnam. diags Radio N 27:20 Apr '42
- Practical feedback amplifiers. J. R. Day and J. B. Russell. il Electronics 10:16 Apr '37
- Proportioning of shielded circuits for minimum high-frequency attenuation. E. I. Green, F. A. Leibe and H. E. Curtis. Bell Sys Tech Jour 15:248 Apr '36
- Relations between attenuation and phase in feedback amplifier design. H. W. Bode. Bell Sys Tech Jour 19:421 July '40
- Some applications of negative feedback with particular reference to laboratory equipment. F. E. Terman, R. R. Buss, W. R. Hewlett, and F. C. Cahill. Proc Inst Radio Eng 27:649 Oct '39
- Stability factor of negative feedback in amplifiers. S. Becker. bibliog Proc Inst Radio Eng 32:351 June '44
- Stabilized feedback oscillators. G. H. Stevenson. Bell Sys Tech Jour 17:458 July '38
- Theory of the discriminator circuit for automatic frequency control. H. Roder. bibliog diags Proc Inst Radio Eng 26:590 May '38
- Use of feedback to compensate for vacuum-tube input-capacitance variations with grid bias. R. L. Freeman. Proc Inst Radio Eng 26:1360 Nov '38

*See also*

Amplifiers, Feedback	Oscillators
Neutralization	Regeneration

**FERROMAGNETIC Materials**

- Eddy currents in composite laminations. E. Peterson and L. R. Wrathall. Proc Inst Radio Eng 24:275 Feb '36
- Experimental investigation of the theory of eddy currents in laminated cores of rectangular cross section. M. Reed. Jour Inst Elec Eng 80:567 '37
- Design of audio-frequency input and intervalve transformers. J. A. Story. Wireless Eng 15:69 Feb '38
- Ferromagnetic distortion of a two-frequency wave. Robert M. Kalb and William R. Bennett. Bell Sys Tech Jour 14:322 Apr '35
- Losses in ferromagnetic laminae at radio frequencies. M. Reed. bibliog Wireless Eng 15:263 May '38
- Magnetic alloys of iron, nickel and cobalt. G. W. Elmen. Elec Eng 54:1292 Dec '35
- Magnetic measurements at low flux densities using the alternating current bridge. V. E. Legg. Bell Sys Tech Jour 15:39 Jan '36
- Measurement of iron cores at radio frequencies. D. E. Foster and A. E. Newlon. Proc Inst Radio Eng 29:266 May '4-
- Permanent magnet materials. C. S. Williams. Elec Eng 55:19 Jan '36
- Physical basis of ferromagnetism. R. M. Bozorth. Bell Sys Tech Jour 19:1 Jan '40
- Present status of the ferromagnetic theory. R. M. Bozorth. Bell Sys Tech Jour 15:63 Jan '36
- Silicon steel in communication equipment. C. H. Crawford and E. J. Thomas. Elec Eng 54:1348 Dec '35
- Survey of magnetic materials and applications in the telephone systems. V. E. Legg. Bell Sys Tech Jour 18:438 July '39
- Survey of magnetic materials in relation to structure. W. C. Ellis and E. E. Schumacher. Bell Sys Tech Jour 14:8
- Vicalloy. Bell Lab Rec 19:36 Sept '40
- Variation in the high-frequency resistance and permeability of ferromagnetic materials due to a superimposed magnetic field. J. S. Webb. diags Proc Inst Radio Eng 26:433 41 Apr '38

*See also*

Electromagnetism
Transformers

**FIDELITY.** See Receiver Fidelity

**FIELD Intensity**

- Analysis of continuous records of field intensity at broadcast frequencies. K. A. Norton, S. S. Kirby and G. H. Lester. Proc Inst Radio Eng 23:1183 Oct '35
- Antenna design for field-strength gain. H. W. Kohler. Proc Inst Radio Eng 32:611 Oct '44
- Arrangement for simultaneously registering the field-intensities of three transmitters. J. J. Vormer. diags Wireless Eng 14:113 Mar '37
- Calculation of ground-wave field intensity over a finitely conducting spherical earth. K. A. Norton. 623 correction (Apr '42 p205) Proc Inst Radio Eng 29:623 Dec '41
- Correlation of long-wave radio field intensity with passage of storms. I. J. Wymore-Shield. 19:1675 Sept '31
- Design and construction of a short-wave field-strength measuring set. F. M. Colebrook and A. C. Gordon-Smith. Jour Inst Elec Eng 84:388 '39
- Design of ultra-short-wave field-strength measuring equipment. F. M. Colebrook and A. C. Gordon-Smith. diags Jour Inst Elec Eng 90 pt 3:28 Mar '43
- Directional array field strengths. A. R. Rumble. Electronics 10:16 Aug '37
- Field strength measurements. H. M. Smith. il Electronics 9:20 Aug '36
- Field strength measuring equipment at 500 megacycles. RCA Rev 5:69 July '40
- Field strength observations of transatlantic signals, 40 to 45 megacycles. H. O. Peterson and D. R. Goddard. Proc Inst Radio Eng 25:1291 Oct '37
- Field strength of Delhi 3 and Delhi 4 at Calcutta during the solar eclipse of Sept 21 '41. S. P. Chakravarti. Proc Inst Radio Eng 31:269 June '43
- Field strength survey, 52.75 megacycles from Empire State building. G. S. Wickizer. il maps Proc Inst Radio Eng 28:291 July '40
- Ground and ionospheric rays; a computation of the relative intensities on various wave-lengths from existing data; estimating probable useful working ranges of loop direction-finders. W. Ross. bibliog Wireless Eng 14:306 June '37
- Method of calibrating a field strength measuring set. F. M. Colebrook and A. C. Gordon-Smith. Jour Inst Elec Eng 88:15 Mar '41
- Method of using horizontally polarized waves for the calibration of short wave field strength measuring sets by radiation. J. S. McPetrie and B. G. Pressey. Jour Inst Elec Eng 83:210 '38
- New field intensity recorder. H. W. Kline. il diag Electronics 15:50 Jan '42
- Radio field intensity and distance characteristics of a high vertical broadcast antenna. Samuel S. Kirby. Proc Inst Radio Eng 24:859 June '36
- Relation of the carrying car to the accuracy of portable field-intensity-measuring equipment. John H. DeWitt jr. and Arthur C. Omberg. Proc Inst Radio Eng 27:1 Jan '39
- Relative field strength meter for locating interference and to discover the best u. h. f. antenna location. T. Chew. il diag Radio N 25:19 May '41
- Study of the electromagnetic field in the vicinity of a radiator. F. R. Stansel. bibliog diag Proc Inst Radio Eng 24:802 May '36

Theory and experimental confirmation of calibration of field strength measuring sets by radiation. J. S. McPetrie and J. A. Saxton. Jour Inst Elec Eng 88 pt 3:11 Mar '41

Urban field strength survey at thirty and one hundred megacycles. R. S. Holmes and A. H. Turner. diags maps Proc Inst Radio Eng 24:755 May '36

*See also*

Broadcasting Service Area  
Measurements, Field Intensity

**FILAMENTS**

- Calculation of the inductance of circular filaments in any desired positions. F. W. Grover. bibliog diags Proc Inst Radio Eng 32:620 Oct '44
- Contact potential measurements on tungsten filaments. D. B. Langmuir. bibliog diags Phys Rev 49:428 Mar 15 '36
- Effect of space charge and transit time on the shot noise in diodes. A. J. Rack. Bell Sys Tech Jour 17:592 Oct '38
- Effects of space charge in grid-anode region of vacuum tubes. B. Salzberg and A. V. Haeff. RCA Rev 2:336 Jan '38.
- Electron microscope for filaments; emission and absorption by tungsten single crystals. R. P. Johnson and W. Shockley. bibliog Phys Rev 49:436 Mar 15 '36
- Electron microscope studies of thoriated tungsten. A. J. Ahearn and J. A. Becker. il Phys Rev 54:448 Sept 15 '38
- Filament and heater characteristics; mathematical analysis of volt-ampere characteristics of various filament metals. C. E. Haller. bibliog Electronics 17:126 July '44
- Filament currents of direct current valves; method of eliminating variations. il Electrician 121:438 Oct 14 '38
- Filament design for high-power transmitting valves. J. J. Vormer. Proc Inst Radio Eng 20:1399 Nov '38
- Measurement of secondary emission in valves. L. R. G. Treolar. Wireless Eng 15:535 Oct '38
- On the theory of space charge between parallel plane electrodes. C. E. Fay, A. L. Samuel, and W. Shockley. Bell Sys Tech Jour 17:49 Jan '38
- Quartz filaments used as gages in the electron microscope. A. Langer. il Sci Amer 171:34 July '44
- Standby filament saver for police transmitters. J. E. Wagenseller. diag Electronics 15:65 May '42
- Theory of secondary emission. D. E. Woollridge. Phys Rev Ser 2 56:562 Sept 15 '39

*See also*

Electron Emission  
Vacuum Tubes

**FILTERS**

- Anomalous transmission in filters. J. G. Brainerd. Proc Inst Radio Eng 23:781 July '35
- Approximate method for the calculation of building-up processes in filter circuits; abstract. J. Gensel. Wireless Eng 20:447 Sept '43
- Chart for determining square root of a complex number; transmission line and filter calculations; reference sheet. R. G. Nisle. Electronics 16:127 Aug '43



### FILTERS—Continued

- Coaxial filter for vestigial-sideband transmission in television. H. Salinger. *il diags Proc Inst Radio Eng* 29:115 Mar '41
- Concentric narrow-band-elimination filter. L. M. Leeds. *il diag Proc Inst Radio Eng* 26:576 May '38
- Concentric transmission line as harmonic filter. R. E. Snoddy. *Electronics* 15:68 May '42
- Conjugate impedances and separating filters; abstract. H. Piloty. *Wireless Eng* 20:446 Sept '43
- Constant resistance networks with applications to filter groups. E. L. Norton. *Bell System Tech Jour* 16:178 Apr '37
- Coupled circuit filters; generalised selectivity, phase shift, and trough and peak transfer impedance curves. K. R. Sturley. *diags Wireless Eng* 20:425, 473-87 Sept-Oct '43
- Deriving the parameters of filters. C. R. Burrows. *bibliog diag Elec Eng* 62:516 Nov '43
- Dynamotor filtering. H. Goldberg. *il diags Radio N* 29:13 Mar '43
- Electromagnetic filters; study of the problems of filter action inside wave-guides with conducting walls; abstract. H. Gutton and J. Ortusi. *Wireless Eng* 21:486 Oct '44
- Filter choke measurement. L. R. Malling. *il Electronics* 17:184 May '44
- Filter networks for VHF amplifiers. G. Reber. *Electronic Indus* 3:86 Apr '44
- Filter packs. J. Gamache. *il Radio N* 20:35 Dec '38
- Filters with a minimum number of elements; abstract. G. Cocci. *Wireless Eng* 20:446 Sept '43
- General theory of electric wave filters. H. W. Bode. *Bell System Tech Jour* 14:211 Apr '35
- Ideal wave filters. H. W. Bode and R. L. Dietzold. *Bell System Tech Jour* 14:215 Apr '35
- Improved carrier interference eliminator. W. Bagally. *Wireless Eng and Wireless Exp* 12:647 Dec '35
- Insertion loss in filters; reference sheet. J. Kritz and E. L. Gruenberg. *Electronics* 14:45 Mar '41
- Insertion loss of filters. D. G. Tucker. *diags Wireless Eng* 22:62 Feb '45
- Lattice attenuating networks. Guy C. Omer. jr. *Proc Inst Radio Eng* 25:620 May '37
- Multi-circuit filter networks with smoothed resonance curve; abstract. A. Linnebach. *Wireless Eng* 21:592 Dec '44
- Network theory, filters, and equalizers. F. Terman. *bibliog diags Proc Inst Radio Eng* 31:164-233-302 Apr-June '43
- Oscillographic response-curve examination; an equipment for the visual delineation of the response curves of r.f. filters. R. F. Proctor and M. O. Horgan. *il diags Wireless Eng* 12:363, 421 July-Aug '35
- Radio frequency matching sections. A. C. Omberg. *il Electronics* 14:43 Jan '41
- Radio-noise filters applied to aircraft. C. W. Frick and S. W. Zimmerman. *il diags Elec Eng* 62:Trans 590 Sept '43
- Reactive filter and its application to waveform analysis. R. M. Barnard. *Elec Comm* 15:158 '37
- Resonant filter reduces noise. C. S. Young. *diag Elec World* 123:119 May 12 '45
- Single-section m-derived filters; an analysis of low-pass and high-pass types. C. W. Miller. *diags Wireless Eng* 21:4 Jan '44
- Single-sideband filter theory with television applications. John M. Hollywood. *Proc Inst Radio Eng* 27:457 July '39
- Theory of ideal filters; the relation of transient response to an ideally-limited frequency. D. A. Bell. *Wireless Eng* 20:323 July '43; Discussion. 21:57 Feb '44
- Time constants for automatic volume control filter circuits. K. R. Sturley. *diags Wireless Eng* 15:480 Sept '38
- Time constants for automatic volume control filter circuits. K. R. Sturley. *diags Wireless Eng* 15:480 Sept '38
- Transversal filters. H. E. Kallmann. *diags Proc Inst Radio Eng* 28:302 July '40
- Two-mesh tuned coupled circuit filters. C. B. Aiken. *Proc Inst Radio Eng* 25:230 Feb '37. Correction (June '37, p672)
- Use of coaxial and balanced transmission lines in filters and wide-band transformers for high radio frequencies. W. P. Mason and R. A. Sykes. *diags Bell System Tech Jour* 16:275 July '37
- Vestigial side-band filter for use with a television transmitter. G. H. Brown. *il diags RCA Rev* 5:301 Jan '41

See also

Networks  
Wave Filters

### FILTERS, Band-Pass

- Adjustable band pass filter with flat top; abstract. H. Fruhauf. *Electronics* 9:44 Mar '36
- Band-pass effect; its nature in electric wave-filters terminated in negative impedance. S. P. Chakravarti. *diags Wireless Eng* 18:103 Mar '41
- Band-pass filter characteristics; use of charts. H. W. Jaderholm. *Electronics* 9:33 July '36
- Band-pass filter design. C. J. Merchant. *charts Electronics* 18:146 Mar '45
- Band-pass—low-pass analogy. V. D. Landon. *diags Proc Inst Radio Eng* 24:1582 Dec '36
- Band-pass wave filter units. E. S. Purington. *diags Electronics* 16:126 Sept '43
- Coupling circuits as band pass filters. E. K. Sandeman. *diags Wireless Eng* 18:361, 406, 450, 492 Sept-Dec '41
- High and low-pass filter design. C. J. Merchant. *diags Electronics* 18:144 Feb '45
- Impedance transformations in band-pass filters. A. S. Gladwin. *diags Wireless Eng* 30:540 Nov '43
- Input admittance of a two-circuit high-frequency band-filter with damping reduction of the secondary circuit; abstract. J. Muhlner. *Wireless Eng* 18:373 Sept '41
- Narrow band-pass filter performance; design charts. H. Holubow. *Electronics* 16:104 May '43
- Non-linear distortion by band pass filters. R. Feldtkeller. *diag Electronics* 9:48 Feb '36
- Notes on band-pass and band rejection filters. H. Holubow. *il Electronics* 15:54 Aug '42
- Optimum decrement of band-pass filters for the reception of telephony. D. A. Bell. *Wireless Eng* 12:491 Sept '35
- Simple treatment of band-pass filters. J. Greig. *diag Wireless Eng* 17:110 Mar '40

**FILTERS, Crystal**

Application and use of quartz crystals in telecommunications. C. F. Booth. bibliog diags Jour Inst Elec Eng 88 pt 3:97; Discussion. 128 Jan '41

Calculation and construction of a quartz bridge filter, and various circuits for quartz bridge filters; abstract. E. Hudec. Wireless Eng 19:419 Sept '42

Crystal channel filters for the cable carrier system. C. E. Lane. Bell Sys Tech Jour 17:125 Jan '38

Design of broad-band crystal filters. W. W. Waltz. bibliog diags Radio N 16:734; 17:56 89, 168 June-Sept '35

Investigations on crystal band-pass filters, particularly for carrier-current telephony; abstract. W. Pohlmann. Wireless Eng 19:572 Dec '42

Manufacture of quartz crystal filters. G. K. Burns. il diags Bell System Tech Jour 19:516 Oct '40

Quartz band-filters up to 10 Mc/s; abstract. W. Herzog. Wireless Eng 21:234 May '44

Quartz bridge filters with very narrow pass band; abstract. E. Hudec. Wireless Eng 20:393 Aug '43

Quartz crystal applications. W. P. Mason; W. L. Bond. il diags Bell System Tech Jour 22:178 July '43

Resistance compensated band-pass crystal filters for use in unbalanced circuits. W. P. Mason. Bell Sys Tech Jour 16:423 Oct '37

Simple quartz-crystal filters of variable bandwidth. G. Builder and J. E. Benson. bibliog diags Wireless Eng 20:183 Apr '43; Discussion. J. Robinson. 20:435 Sept '43

*See also*

Prizoelectric Crystals

**FILTERS, Decoupling**

Coupled circuit filters; generalized selectivity, phase shift, and trough and peak transfer impedance curves. K. R. Sturley. diags Wireless Eng 20:426, 473 Sept '43

Decoupling filter for plate isolation. H. Jacobowitz. Electronic Indus 2:84 Apr '43

Design of coupling filters in broadcast receivers. bibliog diags Wireless Eng 14:289, 347 June-July '37

R-C filter circuits. G. J. Thiessen. diags Jour Amer Acoustical Soc 16:275 Apr '45

Two-mesh tuned coupled circuit filters. C. B. Aiken. bibliog diags Proc Inst Radio Eng 25:230 Feb '37; Correction. 26:672 June '37

*See also*

Coupled Circuits

**FILTERS, Design of**

Aids in filter designing. Engineering Dept., Aerovox Corporation. 12:3 Mar '40

Analysis of full wave rectifier with choke input. L. C. Tillotson and C. M. Wallis. diags Electronics 16:94 Apr '43

Application of filter theory to the design of reactance networks. A. V. Eastman. diags Proc Inst Radio Eng 32:538 Sept '44

Artificial delay-line design. J. B. Trevor, jr. diags Electronics 18:135 June '45

B-H curve tracer for lamination samples; magnetic material used in transformers and chokes. R. Adler. il diags Electronics 16:128 Nov '43

Design data for constant-k band-suppression filters. Engineering Dept., Aerovox Corporation. 16:2 Feb to pt5 Aug '44

Design data for m-derived type filters. Engineering Dept., Aerovox Corporation. pt 1 to 9, issued monthly, Vol 14 beginning Sept '42

Design of broad-band crystal filters. W. W. Waltz. bibliog diags Radio N 16:734, 17:56 July-Sept '35

Design of coupling filters in broadcast receivers. bibliog diags Wireless Eng 14:289, 347 June-July '37

Design of L-C phase-shift networks. R. W. Woods. il Electronics 18:144 Apr '45

Design of radio-frequency choke coils. H. A. Wheeler. Proc Inst Radio Eng 24:850 June '36

Designing audio frequency filters. Harry Holubow. Electronic Indus 2:72 Oct '43

Designing filters for specific jobs. Arthur H. Halloran. il Electronic Indus 4:76, 102 Apr-June '45

Filter design charts. J. Borst. il diags Electronics 13:35 Aug 39; Oct 41; Nov '40

Filters designed to reduce radio trouble. Elec West 76:55 Jan '36

Measurement of filter chokes. L. R. Malling. diags Electronics 17:184 May '44

Multiband r-f choke coil design. H. P. Miller, jr. il Electronics 8:254 Aug '35

Power supply filter design. H. S. Renne. il Radio N 33:38 Feb '45

Rectifier filter design. H. J. Scott. diags Electronics 11:28 June '38

Single-section m-derived filters; an analysis of low-pass and high-pass types. C. W. Miller. diags Wireless Eng 21:4 Jan '44

Swinging filter choke. R. M. Hanson. il Electronics 16:112 June '43

*See also*

Power Supply System  
Rectification, Rectifier

**FILTERS, High- and Low-Pass**

Analysis of constant-K low- and high-pass filters. O. S. Meixell. diags RCA Rev 5:337 Jan '41

High and low-pass filter design. C. J. Merchant. diags Electronics 18:144 Feb '45

Low- and high-pass wave filter units. E. S. Purington. diags Electronics 16:106 June '43

Transients of resistance-terminated dissipative low-pass and high-pass electric wave filters. W. Chu and C. Chang. il diags Proc Inst Radio Eng 26:1266 Oct '38

**FILTERS, Power-Supply**

Analysis of rectifier filter circuits. M. B. Stout. Elec Eng 54:977 Sept '35

Characteristics of thermionic rectifiers. W. H. Aldous. Wireless Eng 13:576 Nov '36

**FILTERS, Power-Supply—Continued**

Circuit for neutralizing low-frequency regeneration and power-supply hum. W. Pan. diags Proc Inst Radio Eng 30:411 Sept '42

Critical inductance and control rectifiers. W. P. Overbeck. Proc Inst Elec Eng 10:655 Oct '39

Diode as half-wave, full-wave and voltage-doubling rectifiers. N. H. Roberts. Wireless Eng 13:351 July '36

Dynamotor filtering. H. Goldberg. il diags Radio N 29:13 Mar '43

External characteristic of a diode rectifier. E. B. Moullin. Jour Inst Elec Eng 80:553 '37. Same. Wireless Sec I.E.E. 12:156 June '37

Filter curves for power supply. W. W. Waltz. Electronics 8:523 Dec '35

Filter packs. L. J. Gamache. il diags Radio N 20:35 Dec '38

Half-wave rectifier circuits. C. M. Wallis. Electronics 11:12 Oct '38

Limiting value of capacitors when used as radio filters on portable appliances. diags Edison Elec Inst Bul 6:421 Sept '38

Method of neutralizing hum and feedback caused by variations in the plate supply. K. B. Gonser. diags Proc Inst Radio Eng 26:442 Apr '38

Power supply filter design. H. S. Renne. il diags Radio N 33:38 Feb '45

Radio engineering. F. E. Terman. 2d ed. pp 492-498. McGraw-Hill N. Y. '37

Radio engineers' handbook. F. E. Terman. 1st ed pp 589-616 McGraw-Hill N. Y. '43

Radio-noise filters applied to aircraft. C. W. Frick and S. W. Zimmerman. il diags Elec Eng 62:Trans 590 Sept '43

Rectifier filter design. H. J. Scott. diags Electronics 11:28 Jan '38

Simple improvements in R-C power supply filters. H. H. Scott. Electronics 12:42 Aug '39

Some considerations in the design of hot-cathode mercury-vapor rectifier circuits. C. R. Dunham. Wireless sec I.E.E. 10:108 June '35

Solving a rectifier problem. Reuben Lee. Electronics 2:39 Apr '38

Swinging filter choke. R. M. Hanson. diags Electronics 16:112 June '43

Swinging filter choke. R. M. Hanson. diags Electronics 16:112 June '43

*See also*

Power Supply Systems  
Rectification, Rectifiers

**FILTER, Wave.** See Wave Filters

**FOURIER, Analysis**

Analysis of systems with known transmission-frequency characteristics by Fourier integrals. W. L. Sullivan. bibliog Elec Eng 61:248 May '42

Effect of a phase-focusing of higher order on the Fourier components of the ray-current density; abstract. F. Borgnis and E. Ledinegg. Wireless Eng 20:395 Aug '43

Fourier analysis by geometrical methods. H. P. Williams. Wireless Eng 21:108 Mar '44

More symmetrical Fourier analysis applied to transmission problems. R. V. L. Hartley. bibliog Proc Inst Radio Eng 30:144 Mar '42

Photoelectric Fourier analysis; abstract. R. Furth and R. W. Pringle. il diag Electronics 18:254 Apr '45

Some analysis of wave shapes used in harmonic producers. F. R. Stansel. il Bell System Tech Jour 20:331 July '41

Television; the scanning process. P. Mertz. bibliog il diag Proc Inst Radio Eng 29:529 Oct '41

Use of Fourier series in the solution of beam problems. B. F. Ruffner. Oregon State College Eng Exp Sta (Covallis) Bul no 18:1 Apr '44 (paper 50c)

*See also*

Harmonic Analysis      Waveform Analysis  
Transients

**FREQUENCY**

Behavior of electrostatic electron multipliers as a function of frequency. L. Malter. Proc Inst Radio Eng 29:587 Nov '41

Breakdown strength of air; influence of electrode surface effects at continuous sinusoidal radio frequencies. E. W. Seward. il diag Electrician 117:783 Dec 25 '36

Calibration of equipment in the low and medium radio-frequency ranges in small steps of frequency. J. K. Clapp. Gen Radio Exp Vol 18 Oct '43

Drift analysis of the Crosby frequency-modulated transmitter circuit. E. S. Winlund. diags Proc Inst Radio Eng 29:390 July '41

Extraneous frequencies generated in air carrying intense sound waves. A. L. Thuras, P. T. Jenkins, and H. T. O'Neil. Bell Sys Tech Jour 14:159 Jan '35

Frequency and phase distortion; note on compensation by a so-called negative impedance method. M. Marinesco. il diags Wireless Eng 12:375 July '35

Frequency behavior of reactances. H. Salinger. diags Proc Inst Radio Eng 26:107 Jan '38

Frequency characteristics of decade condensers. R. F. Field. il Gen Radio Exp Vol 16 Oct '42

Frequency characteristics of electromagnetic wave propagation undergo continuous changes and call for broader concepts. S. Ramo. diags Gen Elec Rev 45:557 Oct '42

Frequency range extension. il Electronic Indus 3:117 Aug '44

Frequency range of radio receivers; abstract. L. V. C. Henriques. diags Electronics 14:81 Feb '41

Frequency spectrum, showing representative electronic tubes and devices that operate at the various frequencies; color chart. Gen Elec Rev 47:insert 16a June '44

Frequency stability of tuned circuits; performance of coils tuned by air-dielectric capacitors during variations in air density and humidity. G. V. Eltgroth. Electronics 17:118 Feb '44

Frequency synthesizer. H. J. Finden. diags Jour Inst Elec Eng 90 pt 3:165; Discussion. 177 Dec '43

High frequency compensation for amplifiers. Arnold Peterson. il Gen Radio Exp Vol 19 Mar '45

Losses in ferromagnetic laminae at radio frequencies. M. Reed. bibliog Wireless Eng 15:263 May '38

Maximum usable frequencies for radio sky-wave transmission, 1933 to 1937. T. R. Gilliland and others. bibliog Jour Research Nat Bur Stand

- 20:627 May '38; Same. Proc Inst Radio Eng 26:1347 Nov '38
- Note on the frequency behavior of reactances. Hans Salinger. Proc Inst Radio Eng 26:107 Jan '38
- Oscillations in an electromechanical system. L. W. Hussey and L. R. Wrathall. Bell Sys Tech Jour 15:441 July '36
- Oscillations in systems with non-linear reactance. R. V. L. Hartley. Bell Sys Tech Jour 15:424 July '36
- Radio-frequency high-voltage phenomena. A. Alford and S. Pickles. diags Elec Eng 59:Trans 129:36; Discussions. Trans 136 Mar '40
- Some experiments at radio frequencies on superconductors. F. B. Silsbee, F. G. Brickwedde and R. B. Scott. diag Jour Research Nat Bur Stand 20:109 Feb '38
- Use of frequency-conversion diagrams. H. Stockman. diags Proc Inst Radio Eng 32:679 Nov '44
- Variable frequency electric circuit theory with application to the theory of frequency modulation. J. R. Carson and T. C. Fry. bibliog Bell Sys Tech Jour 16:513 Oct '37; abstract. Electronics 11:58 Feb '38
- Wide-band transmission over balanced circuits. A. B. Clark. Bell Sys Tech Jour 14:1 Jan '35  
*See also*
- Oscillation, Oscillators
- FREQUENCY Allocation.** See Allocation, Frequency
- FREQUENCY Bridges**
- Antenna measurements with the radio-frequency bridge. Gen Radio Exp Vol 16 June '42
- Bridged-T and parallel-T null circuits for measurements at radio frequencies. W. N. Tuttle. bibliog diags Proc Inst Radio Eng 28:23 Jan '40
- Bridged-T measurement of high resistances at radio frequencies. P. M. Honnell. il diags Proc Inst Radio Eng 28:88 Feb '40
- Charts for simplifying high-impedance measurements with the radio-frequency bridge. R. L. Nielsen. bibliog diags Proc Inst Radio Eng 31:372 July '43
- Measuring balanced impedances with the R-F bridge. D. B. Sinclair. Vol 16 Sept '42
- New R-F bridge for use at frequencies up to 60 mc. D. B. Sinclair. Gen Radio Exp Vol 16 Aug '42
- Radio-frequency capacitometer; cathode-ray-tube instrument for precise radio-frequency measurement of capacitance and inductance. F. J. Moles. il diags Gen Elec Rev 46:457 Aug '43
- Resonance bridge for frequencies up to 10 megacycles per second. C. L. Fortescue and G. Mole. diags Jour Inst Elec Eng 82:687 June '38
- Radio-frequency bridge for impedance measurements from 400 kilocycles to 60 megacycles. D. B. Sinclair. bibliog il diags Proc Inst Radio Eng 28:497 Nov '40
- Radio-frequency bridges. H. L. Kirke. Electrician 133:349 Oct 20 '40
- Radio-frequency measurements by bridge and resonance methods. L. Hartshorn. 265p bibliog(p254-5) \$4.50 Wiley '41
- Redesign of the vacuum tube bridge. W. N. Tuttle. Gen Radio Exp Vol 16 Nov '41
- Resonance bridge for use at frequencies up to 10 megacycles per second. C. L. Fortescue and G. Mole. diags Jour Inst Elec Eng 82:687; Discussion. p. 692 June '38
- Sensitive measurement of impedance, reactance, frequency and phase relationships with an electronic phase bridge. R. H. Brown. bibliog diags Rev Sci Instr 13:277 July '42; Abstract. Electronics 15:96 Nov '42
- Wien bridge as a frequency meter. W. J. Creamer. diag Radio N 19:218 Oct '37  
*See also*
- Bridges  
Frequency Measurement
- FREQUENCY Control**
- Frequency control and measurement of radio waves. N. C. Rolfe. Electrician 119:644 Nov 26 '37
- Frequency control by low power factor line circuits. C. W. Hansell and P. S. Carter. il diags Proc Inst Radio Eng 24:597 Apr '36
- Frequency control; cutting and grinding crystals. F. Kirby. il Radio N 20:25 July '38
- Oscillator for remote frequency control. H. C. Lawrence. diags Electronics 15:42 Sept. '42
- Resonant lines for frequency control. C. W. Hansell. bibliog il diags Elec Eng 54:852 Aug '35  
*See also*
- Piezoelectric Crystals
- FREQUENCY Control, Automatic**
- Automatic frequency control. Engineering Dept., Aerovox Res W 9:2 Feb '37
- Automatic frequency control. C. Travis. diags Proc Inst Eng 23:1125 Oct '35
- Automatic frequency control design considerations. S. Y. White. il diags Electronics 9:28 Sept '36
- Automatic frequency control, tuning circuit for superheterodynes. diag Electronics 9:48 Mar '36
- Automatic frequency-controlled oscillator and amplifier for driving mechanical vibrators. E. V. Potter. diags U S Bur Mines Rep of Invest 3702:1 Oct '43
- Improvements in automatic frequency control circuits. R. L. Freeman. diags Electronics 9:20 Nov '36
- Theory of the discriminator circuit for automatic frequency control. H. Roder. bibliog diags Proc Inst Radio Eng May '38  
*See also*
- Frequency Discriminators
- FREQUENCY Control, Crystal**
- Control of wireless signal variations. A. L. Green and G. Builder. diags Jour Inst Elec Eng 80:610-22; Discussion. 633 June '37
- Frequency control and measurement of radio waves. N. C. Rolfe. Electrician 119:664 Nov 26 '37
- General Electric crystal calibrator for radio frequency measurements. il Electrician 126: Feb 14 '41
- RCA crystal attachment to provide crystal control of receiver frequency. Aero Digest 30:58 Jan '37; il Aviation 35:39 Dec '36
- Simplified circuit for frequency standards employing a new type of low-frequency zero-temperature-coefficient quartz crystal. S. C. Hight and G. W. Willard. diags Proc Inst Radio Eng 25:549 May '37  
*See also*
- Piezoelectric Crystals

**FREQUENCY Converters**

- Application of superheterodyne frequency conversion systems to multirange receivers. W. A. Harris. Proc Inst Radio Eng 23:279 Apr '35
- Audio mixer design. R. W. Crane. diags Electronics 18:120 June '45
- Converting capacity changes into current or voltage changes. il Electronics 16:150 July '43
- Diode as a frequency-changer. F. M. Colebrook and G. H. Aston. Wireless Eng 20:5 Jan '43
- Diodes as frequency changers. Electronics 16:168 Apr '43
- Diode as rectifier and frequency-changer. D. A. Bell. diags Wireless Eng 18:395 Oct '41
- Diode frequency changers. E. G. James and J. E. Houldin. Wireless Eng 20:15 Jan '43
- Frequency analysis of the heterodyne envelope. F. M. Colebrook. Wireless Eng 9:195 Apr '32
- Frequency changers; characteristics, applications, and economics. S. B. Cray and R. M. Easley. bibliog il diags Elec Eng 64:Trans 351 June '45
- Frequency changers in all-wave receivers. M. J. O. Strutt. il Wireless Eng 14:184 bibliog (57 titles, p191) Apr '37; Discussion. E. W. Herold. 14:488 Sept '37; Reply. 14:606 Nov '37
- Frequency-conversion for decimetric waves with the help of diodes; abstract. M. J. O. Strutt and A. van der Ziel. Wireless Eng 20:451 Sept '43
- Frequency converters and mixers for superheterodyne reception. E. W. Herold. Proc Inst Radio Eng 30:8 Feb '42
- Linear detection of heterodyne signals. F. E. Terman. Electronics 1:386 Nov '30
- Mercury arc frequency changers for induction heating; abstract. F. R. Durand. il diag Electronics 18:149 Mar '45
- Mercury arc heating frequency converter. S. R. Durand. Electronic Indus 4:74 June '45
- Mixing valves. M. J. O. Strutt. diags Wireless Eng 12:59-64 (bibliog p64) Feb '35; Discussion. R. J. Wey. 12:201 Apr '35; Reply. 12:258 May '35
- Network coupling by means of static electronic frequency changers. O. K. Marti. bibliog diags Elec Eng 59:Trans 495 Sept '40
- New converter tube for all-wave receivers. E. W. Herold, W. A. Davis, and T. J. Henry. RCA Rev 3:67 July '38
- New FM frequency converter. il diag Radio N 33:35 June '45
- New tube for use in superheterodyne frequency conversion systems. C. F. Nessler, E. W. Herold, and W. A. Harris. Proc Inst Radio Eng 24:207 Feb '36
- Operation of frequency converters and mixers for superheterodyne reception. E. W. Herold. Proc Inst Radio Eng 30:84 Feb '42
- Static thermionic tube frequency changer. A. Schmidt jr. and R. C. Griffith. il diags Elec Eng 54:1063 Oct '35; Abstract. Power Pl Eng 39:677 Dec '35
- Superheterodyne converter system considerations in television receivers. E. W. Herold. RCA Rev 4:324 Jan '40
- Superheterodyne converter terminology. H. Stockman. diags Electronics 16:144 Nov '43
- Suppression of interlocking in first detector circuits. Paul W. Klipsch. Proc Inst Radio Eng 22:699 June '34

Uhf converter analysis. H. Stockman. bibliog diag Electronics 18:140 Feb '45

- Use of frequency-conversion diagrams. H. Stockman. diags Proc Inst Radio Eng 32:679 Nov '44
- 10-meter converter. R. P. Adams. il diags Radio N 18:666 May '37

*See also*

- Detection Receivers  
Oscillators, Beat-Frequency Superheterodyne

**FREQUENCY Discriminators**

- Discriminator linearity. L. B. Arguimbau. diags Electronics 18:142 Mar '45
- Frequency discrimination by inverse feedback. George H. Fritzing. Proc Inst Radio Eng 26:207 Feb '38
- Theory of the discriminator circuit for automatic frequency control. Hans Roder. Proc Inst Radio Eng 26:590 May '38
- Zero-beat method of frequency discrimination. C. F. Sheaffer. Proc Inst Radio Eng 30:365 Aug '42

*See also*

- Frequency Control, Automatic  
Frequency Modulation

**FREQUENCY Division**

- Fractional-frequency generators utilizing regenerative modulation. R. L. Miller. Proc Inst Radio Eng 27:438 27:446 July '39
- Frequency multiplication and division; generator circuits synchronizing devices in telecommunication techniques. H. Sterky. bibliog diags Proc Inst Radio Eng 25:1153 Sept '37
- New and stable frequency divider; abstract. F. R. Stansel. diag Electronics 16:126 Feb '43
- Secondary frequency standard using regenerative frequency-dividing circuits. F. R. Stansel. Proc Inst Radio Eng 30:157 Apr '42
- Stabilized frequency divider. Geoffrey Builder. Proc Inst Radio Eng 29:177 Apr '41

*See also*

- Multivibrator

**FREQUENCY Measurement**

- Beat-frequency oscillator for wide-range frequency measurements. D. B. Sinclair. Vol 13 Jan '39
- Cathode-ray oscilloscope for frequency comparisons. diags Electronics 15:94 Apr '42
- Device for the precise measurement of high frequencies. F. A. Polkinghorn and A. A. Roetken. Proc Inst Radio Eng 19:937 July '39
- Direct reading of the frequency of resonant circuits. W. H. F. Griffiths. il diags Wireless Eng 20:524 595 Nov-Dec '43
- Effect of humidity on electrical measurements. Robert F. Field. il Gen Radio Exp Vol 19 Apr '44
- Electrical measurements at ultra-high frequencies. R. King. il diags Proc Inst Radio Eng 23:885 Aug '35
- Electrical measurements at wave lengths less than two meters. L. S. Nergaard. bibliog il diags Proc Inst Radio Eng 24:1207 Sept '36
- Frequency control and measurement of radio waves. N. C. Rolfe. Electrician 119:664 Nov 26 '37

- Frequency deviation measurements of f-m transmitters. L. N. Holland and L. J. Giacometto. *Electronics* 14:51 Oct '41
- Frequency measurement, a new equipment for the range 1-70 Mc/s. H. A. Thomas. *il diags Wireless Eng* 14:299 June '37
- HF frequency measurements. Engineering Dept., Aerovox Res W 15:pt 1 to 6 Apr-Aug '43
- High-frequency wattmeter and matching-error meter with direct indication; abstract. W. Buschbeck. *Wireless Eng* 20:622 Dec '43
- Impedance measurements at high frequencies with standard parts. D. B. Sinclair. *Gen Radio Exp Vol* 14 Sept '39
- Measurements at radio frequencies. H. R. Meahl and others. *bibliog il diags Elec Eng* 59:Trans 654 Dec '40
- Measurements in frequency modulation transmitters. H. P. Thomas. *il Electronics* pt 1 14:23 May '41; pt 2 14:36 July '41
- Methods of measuring radio frequencies. R. P. Turner. *il diags Radio N* 29:6 Jan '43
- Multi-frequency distortion measurements on the broadcast transmitter. A. E. Thiessen. *Gen Radio Exp Vol* 13 Mar '39
- New method of frequency measurement. H. L. Clark and J. E. Hancock. *il diag Instruments* 16:60 Feb '43; *Abstract. Electronics* 16:148 May '43
- New null instrument for measuring high-frequencies. D. B. Sinclair. *Gen Radio Exp Vol* 15 Jan '41
- Precision frequency comparisons. L. A. Meacham. *diags Electronics* 15:92 Apr '42
- Precision wavemeter and frequency-deviation measuring apparatus for frequency modulation investigations; abstract. A. Weissflock. *Wireless Eng* 20:567 Nov '43
- Radio frequency measurements with the cathode-ray oscillograph. F. J. Rasmussen. *Trans A. I. E. E.* 45:1256 '36
- Radio transmission; phase modulation system; abstract. M. G. Crosby. *Science* 88:sup8 July '38
- Technique of frequency measurement, and its application to telecommunications. J. E. Thwaites and F. J. M. Laver. *bibliog diags Jour Inst Elec Eng* 89 pt 3:139 Sept '42; *Discussion.* 89 pt 3:165; 90 pt 3:373 Sept '42, June '43
- FREQUENCY Meters**
- Automatic calibrator for frequency meters; device combined with adding machines records, interplates and prints. D. Sunstein and J. Tellier. *il diags Electronics* 17:98 May '44
- Cathode-ray oscillograph for frequency comparisons. *il Electronics* 15:94 Apr '42
- Direct-reading audio frequency meter; abstract. S. A. Lott. *diag Electronics* 18:264 Jan '45
- Direct-reading frequency meter. W. R. Strauss. *il diag Jour Soc Motion Picture Eng* 44:257 Apr '45. *Same: Electronics* 18:150 May '45
- Direct reading frequency meter. R. P. Hickok, Jr. *il Electronic Indus* 3:120 Aug '44
- Direct-reading frequency meter suitable for high speed recording. F. V. Hunt. *diags Rev Sci Instr* 6:43 Feb '35
- Direct reading of the frequency of resonant circuits. W. H. F. Griffiths. *il diags Wireless Eng* 20:524,595 Nov-Dec '43
- Frequency meter for use with Geiger-Muller counter. L. F. Curtiss and B. W. Brown. *Jour Nat Bur Stand Res* 34:53 Jan '45
- Gas-relay operated frequency meter. E. J. B. Willey. *diag Wireless Eng* 14:443 Aug '37
- Large-scale frequency meter calibrated by Lissajou's figures on oscilloscope against broadcast frequencies. J. E. Allen. *il diags Elec World* 123:54 Jan '45
- Meter substitutes. R. P. Turner. *il diags Radio N* 30:38 Oct '43
- New reed material minimizes errors. *il Elec World* 123:104 May 26 '45
- Precision stroboscopic frequency meter. E. L. Kent. *il diags Electronics* 16:120 Sept '43
- Precision wavemeter and frequency-deviation measuring apparatus for frequency-modulation investigations; abstract. A. Weissflock. *Wireless Eng* 20:567 Nov '43
- Sensitive frequency meter for the 30 to 340 megacycle range. E. L. Hall. *Electronics* 14:37 May '41
- Supersensitive frequency meter. W. H. Janssen and H. L. Clark. *il diag Gen Elec Rev* 45:443 Aug '42
- See also*  
Instruments, Instrumentation
- FREQUENCY Modulation**
- Analysis of probable post-war growth of frequency modulation. J. E. Brown. *il Electronics* 17:94 June '44
- Armstrong's frequency modulator. D. L. Jaffe. *bibliog Proc Inst Radio Eng* 26:475 Apr
- Audio and video on a single carrier. H. E. Kallmann. *il Electronics* 14:39 May '41
- Communication by phase modulation. M. G. Crosby. *Proc Inst Radio Eng* 27:126 Feb '39
- Emergency FM-AM systems. L. Winner. *il Radio N* 28:6 Sept '42
- Engineers discuss FM. *Electronics Indus* 3:110 Mar '44
- Equivalent modulator circuits. E. Peterson and L. W. Hussey. *Bell Sys Tech Jour* 18:32 Jan '39
- Evolution of frequency modulation. E. H. Armstrong. *il Elec Eng* 59:485 Dec '40
- FM; an introduction to frequency modulation. J. F. Rider. 136p *bibliog*(p135-6) \$1 J. F. Rider, inc, 404 4th tv, New York '40
- FM carrier telephony for 230-kv lines; Pacific gas and electric line. *bibliog il map Electronics* 17:106 Dec '44
- FM in world war II. W. S. Marks, Jr. *il Radio N* 31:243 Feb '44
- FM; what it is and what it may mean in aviation radio. D. Fink. *il Aviation* 39:46 June; 48 July '40
- Frequency modulator. C. F. Sheaffer. *diags Proc Inst Radio Eng* 28:66 Feb '40
- Frequency modulation. R. E. Dynes. *il diags Cornell Eng* 5:10 Mar '40
- Frequency modulation. A. E. Thiessen. *Gen Radio Exp Vol* 16 Oct '41
- Frequency modulation and its future uses. E. H. Armstrong. *Ann Amer Acad* 213:153 Jan '41
- Frequency modulation and its post-war future. J. E. Brown. *il map Electronics* 17:94 June '44
- Frequency modulation, a revolution in broadcasting? *Electronics* 13:10 Jan '40

**FREQUENCY Modulation—Continued**

- Frequency modulation gets its day in court; hearing before Federal communications commission. *il Electronics* 13:14 Apr '40
- Frequency modulation in television. C. W. Carnahan; A. V. Loughren. *diags Electronics* 13:26 Feb '40
- Frequency-modulation terminology. H. Stockman and G. Hok. *Proc Inst Radio Eng* 32:181 Mar '44
- Frequency modulation; theory of the feedback receiving circuit. John R. Carson. *Bell Sys Tech Jour* 18:395 July '39
- Frequency modulation carrier current telephony. B. Dueno. *il Electronics* 15:57 May '42
- Failure of communications; television, radio facsimile and FM broadcasting will compete with established media. J. V. Sherman. *il Barron's* 20:20 July 22 '40
- Generation and detection of frequency-modulated waves. S. W. Seeley, C. N. Kimball and A. A. Barco. *diags RCA Rev* 6:269 Jan '42
- Inductively coupled frequency modulator. B. E. Montgomery. *diags Proc Inst Radio Eng* 29:559 Oct '41; *Abstract. Electronics* 15:80 Jan '42
- Interspersed frequency modulation and amplitude modulation in a television signal. A. V. Loughren. *il Electronics* 13:27 Feb '40
- Method of reducing disturbances in radio signaling by a system of frequency modulation. Edwin H. Armstrong. *Proc Inst Radio Eng* 24:689 May '36
- Mobile FM costs and limits; *Abstract*. D. L. Chesnut. *Elec World* 121:2374 June 24 '44
- Modulation relations. August Hund. *il Electronics* 15:48 Sept '42
- New FM frequency converter. *il Radio N* 33:35 June '45
- Phonograph pick-up having frequency modulation characteristics. B. F. Meissner. *il Electronics* 17:132 Nov '44
- Pioneer west coast FM network. *il Electronic Indus* 3:116 June '44
- Post-war FM and television. B. Dudley. *il Electronics* 16:94 Nov '43
- Principles of FM applied to carrier current telegraph. *il Electronics* 15:106 Apr '42
- Radio progress during 1944; frequency modulation. *bibliog Proc Inst Radio Eng* 33:144 Mar '45
- Radio technical planning board report on frequency modulation. *Electronics* 17:125 Nov '44
- Reactance-valve frequency modulator. E. Wil-Crosby. *diags RCA Rev* 5:89 July '40
- Reactance tubes in frequency modulation applications. August Hund. *il Electronics* 15:68 Oct '42
- Review of frequency modulation. *Electronics* 13:10 Jan '40
- Reactance-valve frequency modulator. E. Williams. *diags Wireless Eng* 20:369 Aug '43; *Discussion*. F. Butler. 20:539 Nov '43
- Signal generator for frequency modulation; for receiver testing. A. W. Barber, C. J. Franks and A. G. Richardson. *il diags Electronics* 14:36 Apr '41
- Should FM sets be rated? *Electronic Indus* 3:97 Oct '44
- Stabilized frequency-modulation system. Roger J. Pieracci. *Proc Inst Radio Eng* 30:76 Feb '42
- System of radiocommunication by modulation of the phase of the carrier wave; *abstract*. E. Severini. *Wireless Eng* 19:527 Nov '42
- Television and FM plans of receiver manufacturers. *Electronic Indus* 3:90 Sept '44
- Tests of FM for aircraft communication. I. R. Weir. *Electronics* 13:34 Nov '40
- Use of subcarrier frequency modulation in communication systems. W. H. Bliss. *il diags Proc Inst Radio Eng* 31:419 Aug '43
- What is FM? William H. Capon. *Elec Comm* 19:99 '41. *Same: Electronics* 14:76 July '41
- See also*
- |               |              |
|---------------|--------------|
| Broadcasting  | Reception    |
| Communication | Transmission |
- FREQUENCY-Modulation Antennas**
- Antennas for f-m reception. J. G. Aceves. *diags Electronics* 14:42 Sept '41
- FM circular antenna. M. W. Schledorf. *il diags Gen Elec Rev* 46:163 Mar '43
- Mast support for v.h.f. and u.h.f. antennas; suitable for FM and television. H. Cohen. *il diags Radio N* 31:30 June '44
- Square loop FM antenna at WBRL. J. P. Taylor. *il diags Electronics* 18:96 Mar '45
- FM transmitting antenna is iced at Alpine, N. J. *il Electronics* 13:17 Sept '40
- 112 mc mobile coaxial antenna; car-mounted transmitting and receiving equipment. S. G. Taylor. *il diags Radio N* 27:20 June '42
- See also*
- Antennas
- FREQUENCY-Modulation Broadcasting**
- Better coverage; amplitude modulation compared with frequency modulation. *diags Gen Elec Rev* 43:425 Oct '40
- Columbia's 330-mc FM emergency system. *il Electronic Indus* 2:62 Sept '43
- Commercial 50-kw FM broadcasting transmitting station. H. P. Thomas and R. H. Williamson. *il diags may Proc Inst Radio Eng* 29:537 Oct '41
- Costs for fm stations. W. J. Damm. *Electronics* 17:280 July '44
- FM field survey techniques; securing data for plotting coverage and contours of WMFM; equipping, calibrating and using field car. P. B. Laeser. *bibliog il maps Electronics* 18:110 May '45
- FM, 105 hours per week; W2XOR, the frequency-modulated outlet of WOR. *il diag Electronics* 13:17 Sept '40
- FM station WWZR. R. Utter. *il Radio N* 31:21 June '44
- Frequency modulation propagation characteristics. Murray G. Crosby. *Proc Inst Radio Eng* 24:898 June '36
- NBC frequency-modulation field test. R. F. Guy and R. M. Morris. *il diags map RCA Rev* 5:190 Oct '40
- NBC's new FM transmitter (W2XWG). *il Electronic Indus* 2:60 June '43
- Planning an F-M station. P. B. Laeser. *il plans Electronics* 18:92 Feb '45
- WAYH on the air! short wave FM radio installation provides mobile emergency supervision and repair service for Chicago surface lines. *il map Transit J* 86:236 July '42; *Excerpts. Electronics* 15:63 Sept '42

- W47NV Nashville first f-m station to operate on a commercial basis; illustrations. *Electronics* 14:43 Oct '41
- 50-kw FM transmitter at WMFM. P. B. Laeser. *il diags Electronics* 18:100 Apr '45
- 118-mc. FM proves successful. W. G. McNulty. *il Radio N* 33:52 Apr '45
- 337-Mc fm studio-station link. P. Dillon. *il Electronics* 17:104 Mar '44
- See also*  
Broadcasting
- FREQUENCY-Modulation Circuit Analysis**
- Amplitude, frequency and phase-angle modulation. bibliog *Wireless Eng* 17:339 Aug '40
- Armstrong system of frequency modulation. A. Hazeltine. *Proc Inst Radio Eng* 24:140 Feb '36
- Artificial lighting used to test frequency modulation performance. *il Electronics* 13: May '40
- Carrier and side frequency relations with multitone frequency or phase modulation. Murray G. Crosby. *RCA Rev* 3:103 July '38
- Cathode-ray frequency modulation generator. Robert E. Shelby. *il Electronics* 13:14 Feb '40
- Communication by phase modulation. Murray G. Crosby. *Proc Inst Radio Eng* 27:126 Feb '39
- Direction or polarization modulation. *il Electronic Indus* 3:132 Feb '44
- Discriminator linearity. L. B. Arguimbau. *diags Electronics* 18:142 Mar '45
- Duplex transmission of frequency-modulated sound and facsimile. M. Artzt and D. E. Foster. *diags RCA Rev* 6:88 July '41
- Effects of tuned circuits upon a frequency modulated signal. H. Roder. bibliog *diags Proc Inst Radio Eng* 25:1617 Dec '37
- Factors encountered in frequency-modulated-sideband limitation; abstract. H. J. Scott and L. J. Black. *Proc Inst Radio Eng* 29:359 June '41
- FM "bursts" should diminish. H. T. Stetson. *il Electronic Indus* 3:83 Nov '44
- FM communications highly successful during landings. *il Electronic Indus* 3:160 May '44
- Frequency and phase modulation. A. Hund. *Proc Inst Radio Eng* 32:572 Sept '44
- Frequency discrimination by inverse feedback. George H. Fritzinger. *Proc Inst Radio Eng* 26:207 Feb '38
- Frequency-modulated resistance-capitance oscillator. C. K. Chang. *diags Proc Inst Radio Eng* 31:22 Jan '43
- Frequency modulation. W. L. Everitt. bibliog *diags Elec Eng* 59; *Trans* 613 Nov '40. Same: *Trans A. I. E. E.* 59:613 Nov '40
- Frequency modulation. D. I. Lawson. *Wireless Eng* 17:388 Sept '40
- Frequency modulation. S. W. Seeley. *diags RCA Rev* 5:468 bibliog(p478-80) Apr '41
- Frequency modulation. Engineering Dept., Aero-vox Res W 12:2 Feb '40
- Frequency modulation; abstracts of I.R.E. papers. *Electronics* 14:84 Feb '41
- Frequency modulation communication system; interference and propagation characteristics. D. A. Bell. bibliog *Wireless Eng* 20:233 May '43
- Frequency modulation distortion in loud speakers. G. L. Beers and H. Belar. bibliog *Soc Motion Picture Eng Jour* 40:207 Apr '43; Same. *Proc Inst Radio Eng* 31:132 Apr '43
- Frequency modulation for emergency communication. H. Devlin, Jr. *Electronics* 13:79 Oct '40
- Frequency modulation of quartz crystals by means of variable resistance devices. I. Koga. *diag Electronics* 14:98 Apr '41
- Frequency modulation; its production by phase shifting the side bands of an amplitude modulated wave. D. I. Lawson. *Wireless Eng* 17:388 Sept. '40
- Frequency modulation of resistance-capitance oscillators. M. Artzt. *diags Proc Inst Radio Eng* 32:409 July '44
- Frequency modulation on ultra short waves; Armstrong's invention for the reduction of radio disturbances. D. Pollack. *il diags Radio N* 17:458, 524 Feb-Mar '36
- Frequency modulation propagation characteristics. Murray G. Crosby. *Proc Inst Radio Eng* 24:898 June '36
- Measuring FM wave characteristics. *il Electronic Indus* 3:118 Sept '44
- Measurement of the characteristic values of frequency-modulated oscillations; abstract. W. Stablein. *Wireless Eng* 21:86 Feb '44
- Method of reducing disturbances in radio signaling by a system of frequency modulation. Edwin H. Armstrong. *Proc Inst Radio Eng* 24:689 May '36
- Modulation limits in F-M. L. J. Black and H. J. Scott. *Electronics* 13:30 Sept '40
- Modulator bridge; design and applications. R. K. Hellmann. *diags Electronics* 11:28 Mar '38
- Note on frequency modulation; with particular reference to standard-signal generators. F. M. Colebrook. *Wireless Eng* 21:112 Mar '44; Discussion. K. R. Sturley. 21:278 June '44
- Observations of frequency-modulation propagation on 26 megacycles. Murray G. Crosby. *Proc Inst Radio Eng* 29:398
- Phase modulation by easily saturated coil. *Electronic Indus* 2:160 Aug '43
- Precision wavemeter and frequency-deviation measuring apparatus for frequency-modulation investigations; abstract. A. Weissfloch. *Wireless Eng* 20:567 Nov '43
- Reactance-valve frequency modulation. E. Williams. *diags Wireless Eng* 20:369 Aug '43; Discussion. F. Butler. 20:539 Nov '43
- Recording FM bursts for observation. O. Read. *il Radio N* 32:31 Nov '44
- Sideband and swinging-vector theory of frequency modulation; abstract. O. Zinke. *Wireless Eng* 21:85 Feb '44
- Sidebands in frequency modulation. E. D. Scott and J. R. Woodyard. *il diags Washington U Eng Exp Sta Bul* 68:5 '33
- Simple FM converters. *Electronic Indus* 4:82 May '45
- Solution of unsymmetrical-sideband problems with the aid of the zero-frequency carrier. H. A. Wheeler. bibliog *diags Proc Inst Radio Eng* 29:446 Aug '41



**FREQUENCY Modulation Circuit Analysis—Cont'd**

Spectra and non-linear-distortion factors of frequency and amplitude-modulated oscillations; abstract. M. Kuly. *Wireless Eng* 16:33 Jan '43

Stabilized frequency-modulation system. R. J. Pieracci. *il diags Proc Inst Radio Eng* 30:76 151 Feb-Mar '42; Abstract. *Electronics* 15:34 Feb '42

Stabilized narrow-band frequency-modulation system for duplex working. E. E. Suckling. *Proc Inst Radio Eng* 33:33 Jan '45

System of phase and frequency modulation. Samuel Sabaroff. *Communications* 20:11 Oct '40

Transient response in FM systems. *Electronic Indus* 3:112 Oct '44

Transients in frequency modulation. H. Salinger. *Proc Inst Radio Eng* 30:378 Aug '42

Transmission of radio waves; frequency modulation. *Electrician* 124:188, 209, 226 Mar 8-22 '40

Use of subcarrier frequency modulation in communication systems. W. H. Bliss. *il diags Proc Inst Radio Eng* 31:419 Aug '43

Variable frequency electric circuit theory with application to the theory of frequency-modulation. J. R. Carson and T. C. Fry. *bibliog Bell System Tech Jour* 16:513 Oct '37

Zero-beat method of frequency discrimination. C. F. Schaeffer. *Proc Inst Radio Eng* 30:365 Aug '42

*See also*

Detection

**FREQUENCY-Modulation Detectors**

Application of the autosynchronized oscillator to frequency demodulation. J. R. Woodyard. *Proc Inst Radio Eng* 25:612 May '37

Detection of frequency modulated waves. J. G. Chaffee. *Proc Inst Radio Eng* 23:517 May '35

FM detector circuit of wide adaptability. J. Gelzer. *Electronic Indus* 3:92 July '44

Generation and detection of frequency-modulated waves. S. W. Seeley, C. N. Kimball and A. A. Barco. *diags RCA Rev* 6:269 Jan '42

**FREQUENCY-Modulation Noise Characteristics**

F-M noise and interference. S. Goldman. *diags Electronics* 14:37 Aug '41

Frequency modulation communication systems; interference and propagation characteristics. D. A. Bell. *bibliog Wireless Eng* 20:233 May '43

Frequency modulation noise characteristics. M. G. Crosby. *il diags Proc Inst Radio Eng* 25:472 Apr '37

Frequency modulation on ultra short waves; Armstrong's invention for the reduction of radio disturbances. D. Pollack. *il diags Radio Nov* 17:458, 524-5 Feb-Mar '36

Impulse noise in frequency-modulation reception. V. D. Landon. *il diags Electronics* 14:26 Feb '41

Interference effects in FM without limiting. *Electronic Indus* 4:100 May '45

Interference in relation to amplitude, phase and frequency modulated systems. O. E. Keall. *diags*

*Wireless Eng* 18:6, 56:63 Jan-Feb '41; Summary. *Electronics* 14:68 Mar '41

Meteors and F-M bursts. W. O. Roberts. *Electronics* 17:390 Dec '44

Method of reducing disturbances in radio signaling by a system of frequency modulation. E. H. Armstrong. *bibliog il diags Proc Inst Radio Eng* 24:689 May '36

Noise in frequency modulation. H. Roder. *diags Electronics* 10:22 May '37

Noise and interference in FM. Stanford Goldman. *il Electronics* 14:37 Aug '41

Radio interference from a-c conductor corona. *Elec West* 74:21 May '35

Response of reactive networks to frequency-modulated signals. J. D. Weston. *Wireless Eng* 19:251 June '42

*See also*

Interference

**FREQUENCY-Modulation Police Radio Systems**

AM vs. FM in two-way radio as applied to police communications. S. Freedman. *il diags Radio N* 30:42 Dec '43

Frequency-modulation station monitor. H. R. Summerhayes, Jr. *il diags Proc Inst Radio Eng* 30:399 Sept '42

Michigan's FM state police system. C. J. Scavarda. *il Electronic Indus* 3:90 Feb '44

Police satellite system; FM signals automatically relayed to central point by two mountain-top stations; design of 60-degree corner reflector receiving antennas. E. S. Naschke. *il diags Electronics* 17:94 May '44

Postwar two-way radio systems. S. Freedman. *il plan Radio N* 31:24, 54 Mar '44

State-wide frequency-modulation police network; state police of Connecticut. D. E. Noble. *il diags Electronics* 13:19 Nov '40

*See also*

Police Communication Systems

**FREQUENCY-Modulation Utility Uses**

Chicago utility sets up an anti-sabotage frequency modulation system. *Electronics* 16:112 Jan '43

Combination of amplitude and frequency modulation for communication in seismograph exploration for petroleum reservoirs. E. M. Shook and others. *il diags Proc Inst Radio Eng* 32:583 Oct '44

F-M carrier telephone applied on 230-kv. line; Pacific gas & electric co. E. W. Kenefake. *il diag Elec World* 122:74 Dec 23 '44

Frequency modulated metal-treasure locator. G. M. Beattis. *il diags Radio N* 28:22 Oct '42

Frequency modulation for power-line carrier current. E. W. Kenefake. *bibliog diags Elec Eng* 62:Trans 616 Oct '43

Pennsylvania turnpike u-h-f traffic control system. *il diags plans Electronics* 15:34 May '42

Talking trains; FM radio test. *Bsns W* p66 Apr 29 '44

Two-way F-M units installed in freight yards of the Rock Island lines in Chicago. *il Electronics* 17:174 Aug '44

Utility FM; Indianapolis power & light company. *Gen Elec Rev* 43:426 Oct '40

Utility uses two-way FM dispatching; instantaneous communication with field crews by Department of water & power system, Los Angeles. *il Elec West* 91:64 Sept '43

*See also*

Communication, Carrier-Current

#### FREQUENCY-Modulation Receivers, Reception

Design and performance of frequency modulation receivers. Marvin Hobbs. *il Electronics* 13:22 Aug '40

Design notes on a frequency modulation receptor. F. W. Walter. *il diag Radio N* 23:10 May '40

Development of a frequency-modulated police receiver for ultra-high-frequency use. H. E. Thomas. *diags RCA Rev* 6:222 Oct '41

Factory alignment equipment for frequency-modulation receivers. H. E. Rice. *il diags Proc Inst Radio Eng* 29:551 Oct '41

Intermediate-frequency values for frequency-modulated-wave receivers. D. E. Foster and J. A. Rankin. *Proc Inst Radio Eng* 29:546 Oct '41

Low-power transmitter for demonstrating f-m receivers. M. Hobbs. *il diag Electronics* 14:20 Jan '41

Narrow band vs. wide band in F-M reception. M. L. Levy. *diag Electronics* 13:26 June '40

RCA super FM uses locked-in oscillator. G. L. Beers. *il Electronic Indus* 3:76 Nov '44

Reduction of band width in FM receivers. D. A. Bell. *Wireless Eng* 19:497 Nov '42

Serviceing frequency modulation receivers. W. Moody. *il diag Radio N* 25:13 Feb '41

Tuning indicators and circuits for frequency-modulation receivers. J. A. Rodgers. *diags Proc Inst Radio Eng* 31:89 Mar '43

Two-signal cross modulation in a frequency-modulation receiver. H. A. Wheeler. *diags Proc Inst Radio Eng* 28:537 Dec '40

Two-signal cross modulation in a frequency-modulation receiver. H. A. Wheeler. *diags Proc Inst Radio Eng* 28:537 Dec '40

#### FREQUENCY-Modulation Transmitters

Binaural transmission on a single channel; system employs amplitude and frequency modulated signals simultaneously. A. V. Eastman and J. R. Woodward. *diags Electronics* 14:34 Feb '41

Commercial 50-kilowatt frequency-modulation broadcasting transmitting station. H. P. Thomas and R. H. Williamson. *il diags map Proc Inst Radio Eng* 29:537 Oct '41

Drift analysis of the Crosby frequency-modulated transmitter circuit. E. S. Winlund. *Proc Inst Radio Eng* 29:390 July '41

Experimental crystal-controlled amateur FM transmitter. K. A. Kopetzky. *il diag Radio N* 25:17 Apr '41

F-M carrier current telephony. B. Dueno. *il diags Electronics* 15:57 May '42

Frequency deviation measurement of f-m transmitters. L. N. Holland and L. J. Giacoletto. *Electronics* 14:51 Oct '41

Frequency modulated transmitter. R. J. Newman. *il diags Radio N* 33:38 June '45

Frequency modulation carrier current telephony. B. Dueno. *il Electronics* 15:57 May '42

Frequency-modulation transmitter and receiver for studio-to-transmitter relay system. W. F.

Goetter. *il diags Proc Inst Radio Eng* 31:600 Nov '43

High power frequency modulation; 40-kilowatt frequency-modulated transmitter. *il Electronics* 9:25 May '36

Low-power transmitter for demonstrating F-M receivers. M. Hobbs. *il diag Electronics* 14:20 Jan '41

Measurements in F-M transmitters. H. P. Thomas. *il diags map Electronics* 14:23 May-July '41

Michigan's FM state police system. Capt. C. J. Scavarda. *il Electronic Indus* 3:90 Feb '44

Modern 10-kw frequency modulation transmitter. E. S. Winlund and C. S. Perry. *il Electronics* 15:40 Mar '42

New broadcast-transmitter circuit design for frequency modulation. J. F. Morrison. *bibliog diag Proc Inst Radio Eng* 28:444 Oct '40

New frequency-modulation broadcasting transmitter. A. A. Skene and N. C. Olmstead. *Proc Inst Radio Eng* 30:330 July '42

Postwar priority; General Electric offers to reserve f-m transmitters for customers willing to put up war bond deposits. *Bsns W* p91 Nov 13 '43

Transmitter for frequency-modulated broadcast service using a new ultra-high-frequency tetrode. A. K. Wing and J. E. Young. *il diags RCA Rev* 5:327 Jan '41

50-kw f-m transmitter at WMFM. P. B. Laeser. *il diags Electronics* 18:100 Apr '45

*See also*

Transmitters, Frequency-Modulation

#### FREQUENCY Monitors

Automatic monitoring circuit; monitoring programs to intercept air raid warnings; any type of receiver with automatic volume control will operate device. F. Marx. *il diag Electronics* 15:39 Mar '42

Broadcast frequency monitor for the 20-cycle rule. J. K. Clapp. *Gen Radio Exp* Vol 14 Jan '40

Crystal monitor for checkig police radio. L. E. Kulberg. *il diag Electronics* 11:38 Feb '38

FCC monitoring set-up. J. L. Fly. *Radio N* 27:71 Jan '42

FM station monitor. H. R. Summerhayes, Jr. *il diags Proc Inst Radio Eng* 30:399 Sept '42

Frequency monitor for police service. *il Gen Elec Rev* 41:211 Apr '38

Frequency-modulation monitoring system. R. J. Pieracci. *il diag Proc Inst Radio Eng* 28:374 Aug '40

Frequency-modulation station monitor. H. R. Summerhayes, Jr. *Proc Inst Radio Eng* 30:399 Sept '42

Frequency monitor stroboscope for frequency checks at KVOE. W. S. Wiggins and S. G. Guenther. *il diag Electronics* 18:138 May

Measurement of modulation depth. H. D. M. Ellis. *diags Wireless Eng* 18:99 Mar '41

Method of stabilizing the frequency of a radio transmitter by means of an automatic monitor. H. A. Thomas. *diags Jour Inst Elec Eng* June '36

Mikes, mixers and monitors. T. Read. *il Radio N* 20:40 Aug '38

Modernization of broadcast frequency monitors. H. H. Dawes. *Gen Radio Exp* Vol 14 Feb '40

Modulation monitoring. E. Divoire. *diags Electronics* 9:70 Sept '36

**FREQUENCY Monitors—Continued**

- Monitoring the standard radio-frequency emissions. E. G. Lapham. pl diag Jour of Research Nat Bur Stand 14:227-38 Mar. '35; Same. Proc Radio Eng 23:719 July '35
- Peak-reading power level indicator for monitoring broadcast and sound recording circuits. A. E. Thiessen. Gen Radio Exp Vol 12 Oct '37
- Percentage modulation meter. S. T. Carter. diags Electronics 14:50 Jan '41
- Precision wavemeter and frequency-deviation measuring apparatus for frequency-modulation investigations; abstract. A. Weissfloch. Wireless Eng 20:567 Nov '43
- Radio frequency amplifier for frequency monitor for North Carolina state highway patrol. C. M. Smith, Jr. diag Electronics 12:32 Dec '39
- Remote monitor for directional broadcasting. M. A. Bradovick. il Electronics 17:131 Sept '44
- Replacement quartz plates for frequency monitors. Gen Radio Exp Vol 11 Nov '36
- RF amplified for frequency monitor. C. M. Smith, Jr. il Electronics 12:32 Dec '39
- Using phone line for remote indication of over-modulation. A. Leeman. diags Electronics 16:144 July '43
- Visual-type frequency monitors. H. H. Dawes. Gen Radio Exp Vol 13 Dec '38
- 260- to 350-megacycle converter unit for General Electric frequency-modulation station monitor. H. R. Summerhayes, Jr. il diags Proc Inst Radio Eng 31:249 June

*See also*

Broadcasting Station Control Equipment

**FREQUENCY Multipliers**

- Behavior of electrostatic electron multipliers as a function of frequency. L. Malter. diags Proc Inst Radio Eng 29:587 Nov '41
- Frequency multiplication and division; generator circuits synchronizing devices in telecommunication techniques. H. Sterky. bibliog diags Proc Inst Radio Eng 25:1153 Sept '37
- Power tube performance in class C amplifiers and frequency multipliers as influenced by harmonic voltage. R. I. Sarbacher. il diags Proc Inst Radio Eng 31:607 Nov '43
- Ultra high frequency technique; frequency multiplication. D. L. Jaffe. bibliog diags Electronics 15:60 Apr '42
- Wide band amplifiers and frequency multiplication. D. L. Jaffe. il Electronics 15:56 Apr '42

*See also*

Amplifiers, Class C. Harmonic Generators Transmitters, Radiotelegraph

**FREQUENCY Stability**

- Discussion on frequency stability of tuned circuits. Jour Inst Elec Eng 89 pt 3:173 Sept '42
- Frequency characteristics of piezo-electric oscillators. J. E. Anderson. diags Electronics 11:22 Aug '38
- Frequency stability of self-excited oscillators; abstract. Antseliovich. Electronics 10:48 Apr '37
- Frequency stability of tuned circuits. J. H. Piddington. bibliog diags Wireless Eng 13:302 June '36

- Frequency stability of tuned circuits; performance of coils tuned by air-dielectric capacitors, during variations in air density and humidity. G. V. Eltgroth. Electronics 17:118 Feb '44
- Frequency stability of valve oscillators; the influence of grid current. D. A. Bell. bibliog diags Wireless Eng 13:539 Oct '36
- Frequency stability problems with particular reference to commercial radio-receiver development; abstract. C. W. Eggleton. Electracian 129:554 Nov 20 '42
- Stability in high-frequency oscillators. R. A. Heising. diags Proc Inst Radio Eng 31:595 Nov '43
- Stability of inductance coils for radio frequencies. H. A. Thomas. diags Jour Inst Elec Eng 77:702 Nov '35
- Variable-frequency bridge-type frequency-stabilized oscillators. W. G. Shepherd and R. O. Wise. bibliog diags Proc Inst Radio Eng 31:256-68 June '43

*See also*

Oscillators, Frequency Stability of

**FREQUENCY Standards**

- Broadcast stations as frequency standards. G. Dexter. il Radio N. 31:32 Mar '44
- Current standard for high frequency. H. R. Meahl. il Elec W 109:1562 May 7 '38
- Distribution of standard frequencies. J. K. Clapp. Gen Radio Exp Vol 19 Nov '44
- Frequency standardising equipment. H. J. Finden. diags Wireless Eng 14:117 Mar '37
- Harmonic method of intercomparing the oscillators of the national standard of radio frequency. E. G. Lapham. diags Jour of Research Nat Bur Stand 17:491 Oct '36; Same. Proc Inst Radio Eng 24:1495 Nov '36
- High frequencies; status of standards and measurements. H. R. Meahl. il Gen Elec Rev 45:617 Nov' 42
- International radio frequency proposals. Electronics 17:92 Nov '44
- Laboratory frequency standard. G. P. Harnwell and J. B. H. Kuper. il diags Rev Sci Instr 8:83 Mar '37
- Monitoring the standard radio-frequency emissions. E. G. Lapham. pl diag Jour of Research Nat Bur Stand 14:227 Mar '35; Same. Proc Inst Radio Eng 23:719 July '35
- National physical laboratory, electricity department; frequency standards and high-frequency measurements. il Engineering 142:576 Nov 27 '36
- National primary standard of radio frequency. E. L. Hall, V. E. Heaton and E. G. Lapham. bibliog il diags pls Jour of Research Nat Bur Stand 14:85 Feb '35
- Necessity for uniform measurement standards and reference levels. J. M. Borst. diag Radio N 18:535 Mar '37
- Portable audio-frequency standard; facilities adjustment of carrier-current communication system circuits. W. Fayer. il diag Electronics 17:100 July '44
- Revised standard frequency broadcasts. Franklin. Inst Jour 233:271 Mar 42
- Secondary frequency standard using regenerative frequency-dividing circuits. F. R. Stansel. diag Proc Inst Radio Eng Proc 30:157 Apr '42
- Simplified circuit for frequency substandards employing a new type of low-frequency zero-tem-

perature-coefficient quartz crystal. S. C. Hight and G. W. Williard. diags Proc Inst Radio-Eng 25:549 May '37

Some data concerning the coverage of the five-megacycle standard frequency transmission. E. L. Hall. Proc Inst Radio Eng 23:448 May '35

Standard frequencies for the musician. Gen Radio Exp Aug-Sept '37

Standard frequency radio broadcasting service. Jour Fr Inst 220:657 Nov '35

Standard frequency broadcasts. Gen Radio Exp Vol 19 Aug '44

Standard frequency broadcasts of National bureau of standards. Electronics 16:228 Sept '43; Same. Elec Eng 62:424 Sept '43; Same. Proc Inst Radio Eng 31:642 Nov '43; Same. Franklin Inst 236:392 Oct '43; Same cond. Elec West 120:1008 Sept 18 '43

Standard frequency radio emissions. Jour Fr Inst 219:237 Feb '35

Standard frequency source. H. L. Clarke and H. Johnson. il diags Gen Elec Rev 47:42 May '44

*See also*

Standards

## G

### GALVANOMETERS

Amplification of galvanometer deflections. A. H. Taylor. diags Rev Sci Instr 8:124 Apr '37; abstract. Electronics 10:46 June '37

Amplifier for d-c galvanometers. A. W. Sear. il Electronics 13:28 Jan '40

Cambridge versatile galvanometer, with some attachments for use in the wireless laboratory. C. R. Cosens. il diags Wireless Eng 11:587 Nov '34

Chronoscope; electronic time interval timer originally developed to test the velocity of rifle bullets. C. L. Bradford. il Electronics 13:28 Nov '40

Compact galvanometer scale unit. il Engineer 171:135 Feb 21 '41

New method of determining voltage and phase relations in an a-c bridge network. J. R. Barnhart. diags Instruments 14:89 Apr '41; abstract. Electronics 14:126 June '41

Optical devices used by, or of interest to, the meter and measuring instrument engineer. F. E. J. Ockenden. Jour Inst Elec Eng 86:452 pl 1 May '40

Photoelectric galvanometer amplifier. G. Asset. il diags Electronics 18:126 Feb '45

Sensitivity and resolution of moving coil galvanometers. C. H. Cartwright. Rev Sci Instr 11:25 Jan '40

*See also*

Ammeters

Instruments, Instrumentation

**GENERATOR, Harmonic.** See Harmonic Generator

**GENERATOR, Signal.** See Signal Generators

**GENERATOR, Square-Wavc.** See Multivibrator

**GETTERS.** See Vacuum Tube Manufacture

**GONIOMETER.** See Antennas, Directional

### GRIDS

Effects of space charge on grid impedance. D. O. North. Proc Inst Radio Eng 24:108 Jan '36

End-of-life meter; circuits for measuring forward drop peak voltages of grid-controlled rectifiers. H. W. Lord and O. W. Livingston. diags Electronics 9:26 Sept '36

Equivalent networks of negative grid vacuum tubes at ultra-high frequencies. F. B. Llewellyn. Bell Sys Tech Jour 15:575 Oct '36

Fluctuations induced in vacuum tube grids at high frequencies. Dwight O. North and W. Robert Ferris. Proc Inst Radio Eng 29:49 Feb '41

Grid-current characteristics of typical tubes. L. W. Zabel. il Electronics 17:236 Oct '44

Grid-current flow as a factor in the design of vacuum-tube power amplifiers. W. L. Everitt and Karl Spangenberg. Proc Inst Radio Eng 26:612 May '38

Grid temperature as a limiting factor in vacuum tube operation. I. E. Mouromtseff and H. N. Kazanowski. Proc Inst Radio Eng 24:447 Mar '36

Influence of grid focusing effect on plate dissipation limit of a vacuum tube. I. E. Mouromtseff. Communications 18:9 Dec '38

Oscillographic method of measuring positive-grid characteristics. O. W. Livingston. diags Proc Inst Radio Eng 28:267 June '40

Positive-grid and retarding field oscillator. W. Alexander. bibliog Wireless Eng 19:143 Apr '43

Positive-grid oscillators. L. F. Dryt. Electronic Indus 2:76 Oct '43

Review of u-h-f vacuum tube problems. B. J. Thompson. RCA Rev 3:146 Oct '38

Theory of tubes with two control grids. A. H. Wing. bibliog Proc Inst Radio Eng 29:121 Mar '41

Triodes with square mesh grids; calculating the amplification factor. C. C. Eaglesfield. diags Wireless Eng; Discussion (Equivalence of parallel wire and square mesh grids). G. W. O. Howe. 443 Oct '42

Velocity modulating grids. Rudolph Kompfner. Wireless Eng 19:158 Apr '42

*See also*

Vacuum Tube Design

**GRID-Leak Detector.** See Detection

## H

### HARMONIC Analysis

Analysis and design of harmonic generators. F. E. Terman. diags Elec Eng 57:Trans 640 Nov '38

Concentric transmission line as harmonic filter. R. E. Snoddy. Electronics 15:68 May '42; Discussion. S. Cutler. 15:156 Nov '42

Fundamental suppression type harmonic analyzer. J. H. Peddington. Proc Inst Radio Eng 24:594 Apr '36

Graphical harmonic analysis. J. A. Hutcheson. Electronics 9:16 Jan '36

Graphical harmonic analysis for determining modulation distortion in amplifier tubes. W. R. Ferris. Proc Inst Radio Eng 23:510 May '35

**HARMONIC Analysis—Continued**

- Harmonic analysis of overbiased amplifiers. U. R. Furst. *il Electronics* 17:143 Mar '44
- Harmonic wave analyzer. R. F. Thompson. *Electronics* 15:61 Dec '42
- Method of predicting audio frequency harmonic distortion. *Electronics* 16:164 Apr '43
- New type of selective circuit and some applications. H. H. Scott. *Proc Inst Radio Eng* 26:226 Feb '38
- Square wave harmonics. D. L. Herr. *diag Electronics* 13:34 May '40
- Theory of wave analyzers. R. P. Turner. *il diags Radio N* 32:44 Oct '44
- 36 and 72 ordinate schedules for general harmonic analysis. R. P. G. Denman. *Electronics* 15:44 Sept '42

*See also*

- Fourier Analysis                      Transients  
Measurements, Wave Form Waveform Analysis  
and Phase

**HARMONIC Generators**

- Analysis and design of harmonic generators. F. E. Terman. *Trans A.I.E.E.* 57:640 Nov '38
- Calculation of class C amplifier and harmonic generator performance of screen-grid and similar tubes. F. E. Terman and J. H. Fern. *Proc Inst Radio Eng* 22:359 Mar '34
- Deionization considerations in an harmonic generator employing a gas-tube switch. W. G. Shepherd. *diags Proc Inst Radio Eng* 31:66 Feb '43
- Harmonic generation. H. J. Scott and L. J. Black. *diags Proc Inst Radio Eng* 26:449 Aug '38
- Harmonic generation by means of grid circuit distortion. F. E. Terman, D. E. Chambers and E. H. Fisher. *Trans A.I.E.E.* 50:811 June '31
- Harmonic generator for frequencies above 100 mc/s. W. M. Colles. *il diag Wireless Eng* 20:300 June '43
- Harmonic mode of oscillation in Barkhausen-Kurz tubes. W. D. Hershberger. *bibliog il Proc Inst Radio Eng* 25:564 May '37
- Some analyses of the wave shapes used in harmonic producers. F. R. Stansel. *Bell Sys Tech Jour* 20:331 July '41
- Wide band square wave generator. E. H. B. Bartelink. *Trans A.I.E.E.* 60:371 '41
- See also*
- Frequency Multipliers    Oscillators  
Multivibrators

**HARMONICS**

- Distribution factors and pitch factors of the harmonics of a fractional-slot winding. M. M. Liwschitz. *Elec Eng* 62:Trans 664 Oct '43
- Harmonic method of intercomparing the oscillators of the national standard of radio frequency. E. G. Lapham. *diags Jour of Research Nat Bur Stand* 17:491 Oct '36; Same. *Proc Inst Radio Eng* 24:1495 Nov '36
- Harmonics and load balance of multiphase rectifiers; considerations in the selection of the number of rectifier phases. R. D. Evans. *bibliog Elec Eng* 62:Trans 182 Apr '43
- High harmonics of quartz crystals control vhf oscillator circuits; abstract. I. E. Fair. *diags Electronics* 16:176 Aug '43

Note on the fundamental suppression in harmonic measurements. H. M. Wagner. *Proc Inst Radio Eng* 23:85 Jan '35

- Parasites and instability in radio transmitters. G. W. Fyler. *Proc Inst Radio Eng* 23:985 Sept '35; Discussion
- Power-tube performance in class C amplifiers and frequency multipliers as influenced by harmonic voltage. R. I. Sarbacher. *il diags Proc Inst Radio Eng* 31:607 Nov '43
- Practical radio course; harmonic and frequency distortion produced by power pentode tubes. A. A. Ghirardi. *diags Radio N* 30:55 Nov '43
- Rectifier circuit power factors, harmonics and wave shapes. R. D. Evans. *diag Elec W* 120:1345 Oct 16 '43

- Square wave harmonics; tabular compilation of relative amplitudes of particular interest in television. D. L. Herr. *Electronics* 13:34 May '40
- Sustained subharmonic response in non-linear series circuits. C. F. Spitzer. *Jour Applied Phys* 16:105 Feb '45

*See also*

- Harmonic Analysis  
Measurements, Wave Form and Phase

**HARTLEY Circuit.** *See* Oscillators, Tuned-Circuit

**HEATING, High-Frequency.** *See* Electronic Applications

**HETERODYNE.** *See* Frequency Converters

**HIGH-Frequency Heating.** *See* Electronic Control Systems

**HISTORY of Radio**

- Broadcasting 30 years ago; attempt to establish radio telephone communication between Fort Hancock and Fort Wood. A. C. Lescarbours. *il Radio N* 20:33 Aug '38
- Developments in the electrical industry during 1937; radio equipment. G. Bartlett. *il Gen Elec Rev* 41:53 Jan '38
- Electric communications, the past and present illuminate the future. L. Espenschied. *Proc Inst Radio Eng* 31:395 Aug '43
- Electrical developments of 1944; radio and electronics. G. Bartlett. *il Gen Elec Rev* 48:50 Jan '45 (Annual review)
- Electrical engineering in 1934. *il Engineer* 159:50 Jan 11 '35
- Future of radio and electronics; abstract. R. R. Beal. *Proc Inst Radio Eng* 32:sup46a Oct '44
- History of electrical communication; valve circuits. *Electrician* 119:216 Aug 20 '37
- Marconi, the man and his wireless. O. E. Dunlap, jr. rev ed 362p \$3.50 Macmillan '38
- Old wires and new waves; the history of the telegraph, telephone, and wireless. A. F. Harlow. 548p bibliog(p527-38) \$5 Appleton-Century '36
- Origin and development of radiotelephony. L. Espenschied. *il diag Proc Inst Radio Eng* Sept 25:1101 bibliog(45 titles, p1121) Sept '37
- Radio between two wars. J. G. Harberd. *il Radio N* 32:39 July '44
- Radio developments, 1910-1935. O. Lodge. *Engineering* 139: (special jubilee sec) 44 May 3 '35

- Radio goes to war; the fourth front. C. J. Rolo. 293p \$2.75 Putnam '42
- Radio progress during 1944. bibliog Proc Inst Radio Eng 33:143 Mar '45 (Annual review)
- Radio in wartime. C. Stepmann. 32p pa 10c Oxford '42
- Radio silver jubilee; abstract. T. E. Goldup. Elec Rev (Lond) 133:544 Oct 22 '43
- Radio; the story of the capture and use of radio waves. J. Langdon-Davies. 278p \$2.50 Dodd '35
- Review of radio communication in the fixed services for the year 1934. Proc Inst Radio Eng 23:415 May '35
- Review of technical developments in broadcasting. H. Bishop. Jour Inst Elec Eng 89 pt 1:49 Jan '42
- Story of radio. O. E. Dunlap, jr. rev ed 326p \$2.75 Dial press, New York '35
- Television; history, principles of operation, and present status reviewed. G. R. Town. II diags Elec Eng 59:313 Aug '40
- See also*
- Communication, History of
- HORN** Antennas. *See* Antennas, Horn Radiator
- HUM**
- Analysis and reduction of output disturbances resulting from the alternating current operation of the heaters of indirectly heated cathode triodes. J. O. McNulty. Proc Inst Radio Eng 20:1263 Aug '32
- Cause and prevention of hum in receiving tubes employing alternating current direct on the filament. W. J. Kimmel. Proc Inst Radio Eng 16:1089 Aug '28
- Cause of residual hum in rectifier-filter systems. F. E. Terman and S. B. Pickles. diags Proc Inst Radio Eng 22:1040 Aug '34
- Circuit for neutralizing low-frequency regeneration and power-supply hum. W. Pan. diags Proc Inst Radio Eng 30:411 Sept '42
- Effect of fluctuation voltages on the linear detector. J. R. Ragazzini. diags Proc Inst Radio Eng 30:277 June '42
- Effect of radio frequencies of a power system on radio-receiving systems. C. V. Aggers, W. E. Pakala and W. A. Stickel. Elec Eng 62:Trans 169 Apr '43
- Fluctuation noise in radio receivers. Stuart Ballantine. Proc Inst Radio Eng 19:416 Mar '31
- Heater-cathode leakage as a source of hum. II Electronics 13:48 Feb '40
- Hints on hum. W. Moody. Radio N 26:47 Aug '41
- Low noise vacuum tubes. II Electronics 4:169 May '32
- Measurements pertaining to the co-ordination of radio reception with power apparatus and systems. C. M. Foust and C. W. Frick. bibliog diags Elec Eng 62:Trans 284 June '43
- Method of measuring noise levels on short-wave radiotelegraph circuits. H. O. Peterson. Proc Inst Radio Eng 23:128 Feb '35
- Method of neutralizing hum and feedback caused by variations in the plate supply. K. B. Gonser. diags Proc Inst Radio Eng 26:442 Apr '38
- Minimum noise levels obtained on short-wave radio receiving systems; effect of diathermy machines. K. G. Jansky. bibliog II Proc Inst Radio Eng 25:1517 Dec '37; Correction. 26:400 Apr '38
- Notes on audio-frequency measurements. J. K. Hilliard. II Electronics 2:506 Feb '31
- Radio interference, hum modulation. O. W. Hurd and A. O. Mangold. bibliog diags Elec West 80:149 June '38
- Rapid method for estimating the signal-to-noise ratio of a high-gain receiver. F. B. Llewellyn. Proc Inst Radio Eng 18:1377 Aug '30
- Standards on radio receivers; reprint. Institute of Radio Engineers, N. Y. C. \$0.20
- Suppressor unit capacity selector. H. W. West. diag Radio N 33:88 Apr '45
- See also*
- Distortion Vacuum Tube Noise Interference Noise
- HUMIDITY.** *See* Apparatus, Effect of Humidity on
- I
- ICONOSCOPE**
- Cathode-ray scanner for televising film. M. von Ardenne. II Electronics 9:46 July '36
- Film scanner for use in television transmission tests. A. G. Jensen. Proc Inst Radio Eng 29:243 May '41
- Fluctuations in space-charge-limited currents at moderately high frequencies; television camera pick-up tube. B. J. Thompson, D. O. North and W. A. Harris, diags RCA Rev 6:114 July '41
- Focusing view-finder problem in television cameras. G. L. Beers. diags Proc Inst Radio Eng 31:100 Mar '43; Same. Soc Motion Picture Eng 40:181 Mar '43
- High-voltage cathode-ray tube for high-definition film scanning. M. von Ardenne. II Wireless Eng 13:483 Sept '36
- Iconoscope; modern version of the electric eye. V. K. Zworykin. Proc Inst Radio Eng 22:16 Jan '34
- Image dissector. C. C. Larson and B. C. Gardner. II Electronics 12:240 Oct '39
- Image iconoscope. Harley Iams, G. A. Morton, and V. K. Zworykin. Proc Inst Radio Eng 27:511 Sept '39
- Orthicon portable television equipment. M. A. Trainer. II diag Proc Inst Radio Eng 30:15 Jan '42
- Philco shows 441-line television. II Electronics 10:8 Mar '37
- Recent improvements in the design and characteristics of the iconoscope. R. B. Janes and W. H. Hickock. Proc Inst Radio Eng 27:535 Sept '39
- Relative sensitivities of television pickup tubes, photographic film, and the human eye. A. Rose. bibliog Proc Inst Radio Eng 30:293 June '42
- Scanning sequence and repetition rate of television images. R. D. Kell, A. V. Bedford, and M. A. Trainer. Proc Inst Radio Eng 24:559 Apr '36
- Simplified television system for the radio amateur and experimenter; new iconoscope. L. C. Waller and P. A. Richards. II diags RCA Rev 6:245 Oct '41
- Television pickup tubes using low-velocity electron-beam scanning. Albert Rose and Harvey Iams. Proc Inst Radio Eng 27:547 Sept '39
- Television; the scanning process. Pierre Mertz. Proc Inst Radio Eng 29:529 Oct '41

**ICONOSCOPE—Continued**

- Television pickup tubes with cathode-ray beam scanning. H. Iams and A. Rose. *il diags Proc Inst Radio Eng* 25:1048 Aug '37
- Television without scanning. *il Electronic Indus* 3:122 Jan '44
- The image iconoscope. Harley Iams, G. A. Morton and V. K. Zworykin. *Proc Inst Radio Eng* 27:541 Sept '39
- Theory and performance of the iconoscope. V. K. Zworykin, G. A. Morton and L. E. Flory. *il diag Proc Inst Radio Eng* 25:1071 Aug '37; *Abstract. Electronics* 10:9 June '37

*See also*

Kinescope  
Television Scanning

**IMPEDANCE**

- Analysis of the effects of space charge on grid impedance. D. O. North. *bibliog Proc Inst Radio Eng* 24:108 Jan '36
- Band-pass effect; its nature in electric wave-filters terminated in negative impedance. S. P. Chakravarti. *diags Wireless Eng* 18:103 Mar '41
- Cathode follower circuits for coupling high impedance sources to low impedance loads. W. Richter. *bibliog diags Electronics* 16:112 Nov '43
- Cathode-ray oscilloscope impedance comparator. Vincent Salmon. *il Electronics* 15:54 Feb '42
- Characteristic impedance of grounded and ungrounded open-wire transmission lines. R. D. Duncan, jr. *Communications* 18:10 June '38
- Characteristic impedance of parallel wires in rectangular troughs. S. Frankel. *bibliog Proc Inst Radio Eng* 30:182 Apr '42
- Characteristic impedance of transmission lines. C. C. Eaglesfield. *diags Wireless Eng* 21:222 May '44
- Condensers at radio frequency; why they have high impedance. P. M. Deeley. *Electronics* 16:209 Apr '43
- Conjugate impedances and separating filters; abstract. H. Piloty. *Wireless Eng* 20:446 Sept '43
- Control of the effective internal impedance of amplifiers by means of feedback. H. F. Mayer. *Proc Inst Radio Eng* 27:213 Mar '39
- Effect of feedback on impedance. R. B. Blackman. *diags Bell System Tech Jour* 22:269 Oct '43
- Equivalent series and parallel impedances. R. L. Peek, jr. *diag Electronics* 18:254 June '45
- Graph of impedance of eccentric conductor cable; reference sheet. W. J. Barclay and K. Spangenberg. *Electronics* 15:50 Feb '42
- Graphical solution of voltage and current distribution and impedance of transmission lines. R. C. Paine. *bibliog diags Proc Inst Radio Eng* 32:686 Nov '44
- Hyperbolic chart; transmission-line impedance calculations; reference sheet. P. H. Ware. *Electronics* 18:148 Apr '45
- Impedance-combining chart. G. Muffly. *diags Electronics* 17:134 Mar '44
- Impedance concept in wave guides. *il Electronic Indus* 3:124 Aug '44
- Impedance determinations of eccentric lines; reference sheet. G. H. Brown. *Electronics* 15:49 Feb '42
- Impedance losses; effect of temperature variation in transformers. M. Nicholson-Steng. *Elec Rev (Lond)* 129:671 Dec 12 '41
- Impedance magnitude and phase angle charts; reference sheet. T. C. Blow. *Electronics* 16:94 Jan '43
- Impedance magnitude and phase shift curves; two-terminal three-element linear networks; reference sheet. V. L. Edutis. *Electronics* 15:76 Nov '42
- Impedance of a vertical half-wave antenna above an earth of finite conductivity. W. L. Barrow. *Proc Inst Radio Eng* 23:150 (*bibliog p166*) Feb '35
- Impedance of some simple electrical circuits; reference sheet. B. Dudley. *diags Electronics* 15:75 Dec '42
- Influence of feedback on source impedance. R. W. Crane. *diags Electronics* 17:122 Sept '44. *Discussion.* 18:382 Jan '45
- L-type impedance transforming circuits. P. H. Smith. *diags Electronics* 15:48 Mar '42
- Propagation constant and characteristic impedance of high loss lines; reference sheet. Karl Spangenberg. *Electronics* 15:57 Aug '42
- Radiation impedance. B. B. Bauer. *diags Acoustical Soc Amer Jour* 15:223 Apr '44
- Representation of impedance functions in terms of resonant frequencies. S. A. Schelkunoff. *diags Proc Inst Radio Eng* 32:83 Feb '44
- Resonant impedance of transmission lines. L. S. Nergaard and Bernard Salzberg. *Proc Inst Radio Eng* 27:579 Sept '39
- Self-impedance of a symmetrical antenna. R. King and F. G. Blake, jr. *charts Proc Inst Radio Eng* 30:335 July '42
- Should one speak of the characteristic impedance of a plane wave or a tubular line? abstract. W. Dallenbach. *Wireless Eng* 21:130 Mar '44
- Solution of transmission-line problems by use of the circle diagram of impedance. W. Jackson and L. G. H. Huxley. *diags Jour Inst Elec Eng* 91 pt 3:105 Sept '44
- Theory of electrical artificial lines and filters. A. C. Bartlett. pp 53-58. John Wiley & Sons, N. Y. '31
- Transmission line equation in terms of impedance. J. R. Pierce. *diag Bell System Tech Jour* 22:263 July '43
- Use of vacuum tubes as variable impedance elements. Herbert J. Reich. *Proc Inst Radio Eng* 30:288 June '42
- Using series tubes as control impedance. W. Moullic. *il Electronic Indus* 3:88 Jan '44
- Vector-type impedance analyzer. S. Godet and H. R. Meahl. *il diags Gen Elec Rev* 42:548 Dec '39
- Wide range adjustable acoustic impedance. W. F. Meeker and F. H. Slaymaker. *diags bibliog Acoustical Soc Amer Jour* 16:214 Jan '45

*See also*

Transmission Line Impedance

**IMPEDANCE Matching**

Coupling networks. *Communications.* 18:12 Sept '38

- High-frequency transmission line networks. A. Alford. Elec Comm 17:301 Jan '39
- Impedance chart for radio frequency lines; reference sheet. A. E. Teachman. Electronics 9:35 Dec '36
- Impedance measurements at high frequencies with special reference to impedance matching. P. J. Kibler. diags Proc Inst Radio Eng 32:354 June '44
- Impedance matching on a sound basis. B. E. Philippsen. diags Radio N 27:18 Apr '42
- Output networks for radio-frequency power amplifiers. W. L. Everitti. Proc Inst Radio Eng 19:725 May '31
- Resonant lines in radio circuits. F. E. Terman. Elec Eng 53:1046 July '34
- R-f impedance matching. M. D. Post, diags Radio N 32:51 Aug '44
- R-f impedance-matching networks; data for the design of pi-section networks used in matching transmitters to antennas and in similar problems. R. P. Glover. chart Electronics 9:28 Jan '36
- R-f transition losses due to impedance mismatching may be evaluated by graphical method. H. A. Wheeler. chart Electronics 9:26 Jan '36
- Single- and double-stub impedance matching. A. H. Wing and J. Eisenstein. diags Jour Ap Phys 15:615 Aug '44
- Terminating concentric lines. Carl G. Dietsch. Electronics 9:16 Dec '36
- Theory and practice for correct impedance match. C. A. Johnson. Radio N 17:88, 151, 213, 336, 470, 538 Aug-Oct '35; Feb, Mar '36
- Transmission lines for short-wave radio systems. E. J. Sterba and C. B. Feldman. Proc Inst Radio Eng 20:1163 July '32
- U-H-F impedance measurements. N. Marchand and R. Chapman. il diags Electronics 18:97 June '45
- Voice-coil impedance matching table. Radio N 33:92 Jan '45
- See also*  
Networks, Impedance-Matching Transformers  
Transmission Lines
- IMPEDANCE Measurements**
- Capacitor, impedance, and resistance measurements. Engineering Dept., Aerovox Res W. 15:12 Dec '43
- Cathode-ray oscilloscope impedance comparator. Vincent Salmon. il Electronics 15:54 Feb '42
- Determination, by means of the impedance transformation, of the voltage or current phase difference between input and output of a four-terminal network; abstract. A. Weissflock. Wireless Eng 21:442 Sept '44
- Impedance bridge for L-C-R measurements. R. P. Turner. il diags Radio N 33:42 June '45
- Impedance bridges. diags Electronics 14:66 Aug '41
- Impedance-measuring instrument. C. E. Smith. diags Proc Inst Radio Eng 30:362 Aug '42
- Impedance measurements with square waves. F. Rockett. diags Electronics 17:138 Sept '44
- Measurement of balanced and unbalanced impedances at frequencies near 500 mc and its application to the determination of the propagation constants of cables. L. Essen. Jour Inst Elec Eng 91 pt 3:84 June '44
- Measurement of radio frequency impedance with networks simulating lines. W. L. Barrow. Proc Inst Radio Eng 23:807 July '35
- Radio frequency bridge for impedance measurements from 400 kc to 600 mc. D. B. Sinclair. bibliog il diags Proc Inst Radio Eng 28:497 Nov '40
- Single- and double-stub impedance matching. A. H. Wing and J. Eisenstein. diags Jour Ap Phys 15:615 Aug '44
- Twin-T; new type of null instrument for measuring impedance at frequencies up to 30 megacycles. D. B. Sinclair. il diags Proc Inst Radio Eng 28:310 July '40
- See also*  
Measurements
- INDUCTANCE**
- Calculation of the mutual inductance of circular filaments in any desired positions. F. W. Grover. bibliog diags Proc Inst Radio Eng 32:620 Oct '44
- Calculation of the self-inductance of plane polygonal circuits. P. L. Kalantaroff and V. I. Worobieff. diags Proc Inst Radio Eng 24:1585 Dec '36
- Inductance bridge for communications circuits. Eugene Mittlemann. il Electronics 17:138 Feb '44
- Inductance chart. E. S. Purington. Electronics 15:61 Sept '42
- Inductive tuning at ultra-high frequencies; continuously variable inductance coil. B. V. K. French. il Electronics 14:32 Apr '41
- Measurement of incremental inductance. H. D. Short. diags Electronics 13:32 Jan '40
- Measurement of inductance. Engineering Dept., Aerovox Res W 10:7 July to Oct '38
- Measurement of minute changes of capacitance and inductance; device suitable for measuring effect of temperature changes on radio components. S. C. Leonard. bibliog il diags Electronics 11:18 Mar '38
- Measuring coils. Electronics 16:266 June '43
- Method for determining the residual inductance and resistance of a variable air condenser at radio frequencies. R. F. Field and D. B. Sinclair. bibliog diags Proc Inst Radio Eng 24:255 Feb '36
- Mutual inductance calculations. Dale Pollack. Electronics 10:31 July '37
- Nomogram for coil calculations. C. P. Nachod. (chart) il Electronics 10:27 Jan '37
- Optimum design of toroidal inductances. G. Reber. diags Proc Inst Radio Eng 23:1056 Sept '35
- Q-jig for rapid measurement of inductance, capacity, and Q. S. W. Edwards. diags Radio N 31:35 Jan '44
- Recent improvements in air-cored inductances. W. H. F. Griffiths. il diags Wireless Eng 19:8 Jan-Feb '42
- Short wave inductance chart. F. C. Everett. Electronics 13:33 Mar '40
- Single-inductor coupling networks. C. T. McComb and A. P. Green. il Electronics 17:132 Sept '44
- Solenoid inductance calculation; reference sheet. T. C. Blow. Electronics 14:63 May '42



**INDUCTANCE**—Continued

Some series formulas for mutual inductance of solenoids. H. B. Dwight and F. W. Grover. *Elec Eng* 56:347 Mar '37

Stability of inductance coils for radio frequencies. H. A. Thomas. *Jour Inst Elec Eng* 77:702 '35; also *Wireless sec Jour L.E.E.* 11:44 Mar '36

Stray capacitances; their influence on the effective inductance of a coil in a metal container. L. I. Farren and R. S. Rivlin. *bibliog diags Wireless Eng* 18:313 Aug '41

Temperature coefficient of inductance. J. Groszkowski. *diags Proc Inst Radio Eng* 25:448 Apr '37

Temperature coefficient of inductances for use in a valve generator. E. B. Moullin. *Proc Inst Radio Eng* 26:1385 Nov '38

Variable inductors. G. Dexter. *il diags Radio N* 30:43 Aug '43

*See also*

Bridges

Q Measurements

Measurements

**INSERTION Loss.** See Networks**INSTRUMENTS, Instrumentation**

Degenerative amplifier applications; three instruments developed by General radio company. *Proc Inst Radio Eng* 27:sup 4 Mar '39

Cathode-ray mill indicator for Wien bridge. C. J. Markey. *diags Electronics* 18:125 Mar '45

Civil Aeronautics Administration's part in instrumentation. *Electronics* 15:89 Jan '42

Electrical developments in 1944; testing and measuring equipment and methods: G. Bartlett. *il Gen Elec Rev* 48:44 Jan '45 (Annual reviews in January issues of preceding years)

Electron tubes; their principles and their instrumentation application. A. W. Kramer. *diags Instruments* 16:408, 410, 480 July-Aug '43

Electronic and electrical inspection, 1944. K. Rose. *Metals and alloys* 21:137 Jan '45

Electronics in instrumentation. H. D. Middel. *il diags Pet Refiner* 24:113 Jan '45

Flightray multiple instrument indicator. P. R. Bassett and J. Lyman. *Jour Aero Sci* 7:199 Mar '40

Instrument amplifier. G. Kelley. *il diag Radio N* 18:424 Jan '37

Instrument errors; effect of temperature changes; abstract. G. F. Tagg. *Elec Rev (Lond)* 36:421 Mar 23 '45

Instrument landing of aircraft. *Elec Eng* 59:495 Dec '41

Instrumentation, 1941 and current trend. M. J. Bradley. *Metals & alloys* 15:94 Jan '42

Jewels in time pieces and instruments. P. Grodzinski. *Engineering* 152:518 Dec 26 '41

Optical devices used by, or of interest to, the meter and measuring instrument engineer. F. E. J. Ockenden. *Jour Inst Elec Eng* 86:452 pl 1 May '40

Radio measuring instruments. E. H. W. Banner. *il diags Elec Rev (Lond)* 110:769 May 27 '32

Temperature compensation of instruments. J. R. Pattee. *il Electronics* 16:102 Aug '43

Temperature compensation of indicating and recording instruments. G. F. Tagg. *Engineering* 159:252 Mar 30 '45

**INSULATION, Insulators**

Cable insulation; discussion at the Institution of electrical engineers. *Elec Rev (Lond)* 136:535 Apr 13 '45; *Electrician* 134:354 Apr 20 '45

Ceramic capacitor dielectric; Mycalex series K. *Chem & Met Eng* 52:137 Mar '45

Ceramic insulating materials. Hans Thurnauer. *Elec Eng* 59:451 Nov '45

Ceramic insulating materials; dielectric properties at centimetre wavelengths. W. Kusters. *bibliog diags Wireless Eng* 21:13 Jan '44

Ceramic insulator specifications. *Electronic Indus* 2:56 May '43

Ceramics as insulators. *il Electronics* 10:7 Feb '37

Consideration of the radio frequency voltages encountered by the insulating material of broadcast tower antennas. George H. Brown. *Proc Inst Radio Eng* 27:566 Sept '39

Crystalline and glassy phases of steatite dielectrics. H. F. G. Weltz. *bibliog diag Amer Cer Soc Jour* 27:33 Feb 1 '44

Development of polythene as a high frequency dielectric. W. Jackson and J. S. A. Forsyth. *bibliog Jour Inst Elec Eng pt* 3:23 Mar '45

Dielectric properties of insulating materials. E. J. Murphy and S. O. Morgan. *Bell Sys Tech Jour* 16:493 Oct '37; 17:640 Oct '38; 18:502 July '39

Dielectric strength and life of impregnated paper insulation. J. B. Whitehead and J. M. Kopper. *bibliog diag Elec Eng* 64:Trans 171 Apr '45

Differential amplifier with oscillograph as detector of discharges in insulation. *il diag Eng* 169:320 Apr 5 '40

Direct-reading aircraft insulation tester. W. N. Lambert. *diag Electronics* 15:84 Apr '42

Effect of corona on solid insulating materials. A. M. Thomas. *bibliog il diags Jour Inst Elec Eng* 91 pt 2:549 Dec '44

Electric properties of ceramic materials. *Electronic Indus* 3:114 Oct '44

Electrical glass. E. M. Guyer. *bibliog Proc Inst Radio Eng* 32:743 Dec '44

Escapon used in cable manufacture, U.S.S.R. *For Comm W* 18:35 Feb 10 '45

Evaluating insulating varnishes. K. N. Mathes. *Gen Elec Rev* 48:20 May '45

Flame-resistant laminate for the navy; glass fabric melamine laminates. L. C. Chesley and P. C. Fuller. *il Mod Plastics* 22:136 June '45

Heater-cathode insulation performance. H. Klemperer. *bibliog diags Elec Eng* 55:981 Sept '36

High frequency insulation; zircon porcelain. *Rev Sci Instr* 16:134 May '45

Improved ceramic dielectric materials. M. D. Rigterink. *Rev Sci Instruments* 12:527 Nov '41

Install glass ties on stator windings. P. W. Meinhardt. *diags Elec World* 123:107 June 9 '45

Insulation-resistance meter; electronic instrument. R. N. Bushman. *il diag Gen Elec Rev* 46:403 July '43

Keramische isolierstoffe fur hochfrequenz. H. Handrek. *il diags Zeit Ver Deutsch Ing* 78:1441 Dec 15 '34

Laminated phenolic for radio insulation. A. H. Haroldson. *il Mod Plastics* 13:20 Jan '36

Low-loss plastic; Bakelite corp. *Electronics* 18:374 June '45

- Metallizing non-conductors. S. Wein. bibliog Metal Finishing 42:534, 610, 669, 736; 43:10 Sept '44 Jan '45
- New heat-resisting plastic for radio parts; Cerex. *il* Electronics 17:322 July '44
- On organic insulators. Electronic Indus 3:120 Feb '44
- Plastics used in radio and electronic apparatus. H. Chase. *il* Electronics 9:10 Mar '36
- Polystyrene replicas. Electronic Indus 2:74 Oct '43
- Polythene; its application in the electrical industry. Electrician 134:150 Feb 16 '45
- Polythene used as coaxial insulation. Elec World 123:136 Apr 14 '45
- Possible use of ferruginous talcs in steatite dielectrics. L. E. Kane and H. G. Veltz. Amer Cer Soc J 26:389 Nov 1 '43
- Power factor in Indian mica. Electronic Indus 3:121 Mar '44
- Processing of glass for tubes. Electronic Indus 3:120 Apr '44
- Radio frequency spark-over in air. P. A. Ekstrand. Proc Inst Radio Eng 28:262 June '40
- Some insulator designs require special features to insure radio quietness. C. J. Miller, jr. diags Elec Eng 60:Trans 62 Feb '41
- Survey of the suitability of domestic talcs for high-frequency insulators. T. A. Klinefelter and others. U S Bur Mines Rep of Invest 3804:1 '45
- Switchgear socket insulators; use of the discharge bridge detector. A. T. Starr and A. N. Arman. diags Electrician 120:537 Apr 29 '38
- Tight-spot cellophane proves useful in electrical insulation. Sci Amer 172:236 Apr '45
- Triple alliance in electrical insulation; review of progress achieved by physicists, chemists, and electrical engineers. L. J. Berberich. bibliog Elec Eng 59:23 Jan '40
- Type designation of German plastics with special reference to insulating materials; abstract. Jour Roy Aeronautical Soc 49:40 Jan '45
- See also*  
Dielectrics
- INSTRUMENT Landing.** *See* Aircraft Instrument Landing
- INTERFERENCE**
- Aircraft-precipitation-static radio interference. E. C. Starr. Trans A.I.E.E. Sup 60:363 '41
- Appliances and radio interference. E. L. E. Pawley. Electrician 132:475 June 2 '44
- Armstrong system of frequency modulation. A. Hazeltine. Proc Inst Radio Eng 24:140 Feb '36
- Bibliography on radio interference; reference sheet. L. F. Roehmann. Electronics 11:32 Oct '38
- Common-channel interference between two frequency-modulated signals. Harold A. Wheeler. Proc Inst Radio Eng 30:34 Jan '42
- Control of potential over insulator surfaces; to reduce radio interference caused by corona from pin insulators. E. Bennett and G. Fredendall. diags Elec Eng 54:1084 Oct '35
- Cross modulation and input noise voltage; abstract. E. Hudac. Wireless Eng 21:88 Feb '44
- Electrical interference. G. W. Ingram. diags Elec Rev (Lond) 123:9 July 1 '38
- Electrical interference with broadcasting. Jour Inst Elec Eng 79:206 bibliog(p211) Aug '36; Same cond. Electrician 117:109 July 24 '36; Excerpts. Engineer 162:89 July 24 '36; Abstract. Elec Rev (Lond) 119:117 July 24 '36
- Electrical interference with radio reception. A. G. Gill and S. Whitehead. diags Jour Inst Elec Eng 83:345 Sept '38
- Elimination of interstation interference. J. Robinson. Wireless Eng 12:179 Apr '35
- Eliminating radio interference. C. V. Aggers. *il* diags Elec Jour 34:331 Aug '37
- Field strength of motorcar ignition between 40 and 450 megacycles. R. W. George. Proc Inst Radio Eng 28:409 Sept '40
- Fields caused by remote thunderstorms. K. E. Gould. bibliog *il* diag maps Elec Eng 55:575 June '36
- Generation of spurious signals by nonlinearity of the transmission path. A. V. Eastman and L. C. F. Horle. Proc Inst Radio Eng 28:438 Oct '40
- Image and intermediate-frequency interference. Sci Am 156:258 Apr '37
- Image suppression in superheterodyne receivers. H. A. Wheeler. diags Proc Inst Radio Eng 23:569; Discussion. J. C. Smith. 576 June '35
- Insulators salvaged by cadmium plating; reduction of radio interference. J. B. Bowen. *il* Elec W 106:2835 Sept 12 '36
- Interaction of radio waves. V. A. Bailey and D. F. Martyn. Wireless Eng 12:122 Mar '35
- Interference effects in FM without limiting. Electronic Indus 4:100 May '45
- Interference in relation to amplitude, phase and frequency modulated systems. O. E. Keall. diags Wireless Eng 18:6, 56-63 Jan-Feb '41; Summary. Electronics 14:68 Mar '41
- Interference problems. Electronic Indus John H. Bose. 4:91 Apr '45
- Interfering responses in superheterodynes. H. K. Morgan. Proc Inst Radio Eng 23:1164 Oct '35
- Measurement of interference at ultra-high frequencies. L. H. Daniel and G. Mole. diag Jour Inst Elec Eng 38 pt 3:41 Mar '41
- Multipole nature of elementary sources of radiation; wide-angle interference. S. Freed and S. I. Weissman. *il* diag Phys Rev 60:440 Sept 15 '41
- New form of interference—external cross-modulation. D. E. Foster. RCA Rev 1:18 Apr '37
- New solar radio disturbance affecting high frequency transmission every 54 days, approximately. J. H. Dellinger. Electronics 9:25 Jan '36
- Note on the sources of spurious radiations in the field of two strong signals. A. James Ebel. Proc Inst Radio Eng 30:81 Feb '42
- Observations of Doppler effect in short-wave reception field; effects of motion of an aeroplane in neighbourhood of receiving aerial; abstract. J. Grosskopf and K. Vogt. Wireless Eng 18:458 Nov '41
- Precipitation static interference on aircraft and at ground stations. H. M. Hucke. Proc Inst Radio Eng 27:301 May '39
- Precipitation-static radio interference phenomena originating on aircraft. E. C. Starr. *il* diags Oregon State Coll Eng Exp Sta Bul 10:1 '39
- Radio and sun-caused disturbances; abstract. H. T. Stetson. Science 91:sup II Apr 26 '40

**INTERFERENCE—Continued**

- Radio interference from discharges on high-voltage line insulators. J. L. Langton and E. Bradshaw. bibliog diags Jour Inst Elec Eng 75:643 Nov '34
- Radio interference from telephone equipment. A. B. Smith. diags W Soc E J 40:131 Aug '35
- Radio interference from street railway systems. L. M. Howe. Proc Inst Radio Eng 25:708 June '37
- Radio interference—investigation, suppression, and control. H. O. Merriman and F. G. Nixon. Proc Inst Radio Eng 27:16 Jan '39
- Radio interference is problem of new ASA coordination committee. Ind Stand 6:293 Nov '35
- Radio interference measuring instrument. F. O. McMillan and H. G. Barnett. bibliog il diags Elec Eng 54:857 Aug '35
- Radio interference occurring in the underground working of coal mines; abstract. R. Burgholz. Wireless Eng 22:244 May '45
- Radio interference from h.v. lines. W. Furkert. Elec Rev (Lond) 116:689 May 10 '35
- Radiomen in Iceland; transmission difficulties caused by northern light. O. Aguero. il Radio N 31:36 May '44
- Receiver for the investigation of short-wave interference radiated by ignition systems. il diags Engineer 161:42 Jan 10 '36
- Receiver interference chart. J. J. Adams. Electronics 14:43 Feb '41
- Receiver with automatic selectivity control responsive to interference. John F. Farrington. Proc Inst Radio Eng 27:239 Apr '39
- Review of radio interference investigation. F. E. Sanford and W. Weise. il Elec Eng 56:1248 Oct '37
- Review of radio interference investigation. F. E. Sanford and W. Weise. il Elec Eng 56:1248 Oct '37; Discussion. 57:Trans 107 Feb '38
- Some principles in aeronautical ground station design. P. C. Sandretto. Proc Inst Radio Eng 27:5 Jan '39
- Source of interstellar interference when antenna system is directed towards some part of the Milky way. K. G. Jansky. Proc Inst Radio Eng 23:1158 Oct '35
- Sources of spurious radiations in the field of two strong signals. A. J. Ebel. diag Proc Inst Radio Eng 30:81 Feb '42
- Studies of electrical interference to radio reception; abstract. S. C. Majumdar, S. M. Sen and S. R. Khastgir. Wireless Eng 21:538 Nov '44
- Tentative statistical study of domestic interference. S. Whitehead. bibliog Jour Inst Elec Eng 90 pt 3:181 Dec '43
- Two-signal cross modulation in a frequency-modulation receiver. H. A. Wheeler. diags Proc Inst Radio Eng 28:537 Dec '40
- Very-high-frequency and ultra-high-frequency signal ranges as limited by noise and co-channel interference; abstract. E. W. Allen, jr. and K. A. Norton. Electronics 18:198 Mar '45

See also

Distortion                      Noise  
Hum**INTERFERENCE Elimination**

- An improved carrier interference eliminator. W. Baggally. Wireless Eng and Exp Wireless 12:647 Dec '35
- Aspects of interference suppression under post-war conditions; discussion. Jour Inst Elec Eng 92 pt 3:21 Mar '45; Abstract. Elec Rev (Lond) 135:847 Dec 15 '44
- Asphalt emulsion treatment prevents radio interference. F. O. McMillan. bibliog il Elec West 74:16 Jan '35; Discussion. 74:19, 126 Jan, June '35
- Auto radio makes good test receiver for noise location work; abstract. T. S. Bailey. diags Elec W 115:1328 Apr 19 '41
- Broadcast interference; post office investigations; methods of suppression at the source and at receivers' premises. J. Neale. diags Electrician 114:151, 179 Feb 1-8 '35; Discussion. Elec Rev (Lond) 116:161 Feb 1 '35; Electrician 114:181 Feb 8 '35
- Cutting interference from fluorescents; abstract. A. C. Hoyle. Elec W 115:1344 Apr 19 '41
- Eliminating traffic signal noise in radio receiving sets. J. R. Steen. diags Radio N 17:536 Mar '36
- Elimination of interstation interference. J. Robinson. Wireless Eng 12:179 Apr '35
- Elimination of broadcast-station carrier beats. A. W. Friend. Proc Inst Radio Eng 20:786 June '38
- Elimination of interference. Engineering Dept., Aerovox Res W. 7:6 June '35
- Field strength of motorcar ignition between 40 and 450 megacycles. R. W. George. Proc Radio Eng 28:409 Sept '40
- Image suppression in superheterodyne receivers. Harold A. Wheeler. Proc Inst Radio Eng 23:569 June '35
- Improved carrier interference eliminator. W. Baggally. diags Wireless Eng 12:647 Dec '35
- Improved hardware cuts radio interference. J. S. Crooks. H. A. Baldwin and L. E. Bates il Elec W 116:66 July 12 '41
- Insulators salvaged by cadmium plating; reduction of radio interference J. B. Bowen. il Elec W 106:2835 Sept 12 '36
- Interference elimination. Engineering Dept., Aerovox Res W. 9:1 Jan '37
- Interference source discovered; proves to be short-wave therapeutic apparatus. il Electronics 9:19 Feb '36
- La lutte contre les perturbations radiophoniques. A. Mestre. Genie Civil 107:18 July 6 '35
- Les progres techniques des mesures et dispositifs de protection radioelectrique. M. Adam. diags Genie Civil 109:159, 182 Aug 22 '36
- Method of reducing disturbances in radio signaling by a system of frequency modulation. E. H. Armstrong. bibliog il diags Proc Inst Radio Eng 24:689 May '36
- Measurement of interference at ultra-high frequencies. L. H. Daniel and G. Mole. diag Jour Inst Elec Eng 88 pt 3:41 Mar '41
- Minimizing radio disturbances on airplanes. J. Delmonte. diags Aero Digest 26:28 Jan '35
- Modern equipment aids location of radio interference. O. W. Hurd. il Elec West 75:47 Sept '35

- New method for eliminating static caused by trolley and electric cars; carbon sliding bow. E. W. Schumacher. Proc Inst Radio Eng 23:779 July '35
- Portable trouble finder saves time locating interference. O. W. Hurd. il Elec West 77:35 Oct '36
- Radio interference; condensers for suppression on short wave lengths. Electrician 116:378 Mar 20 '36
- Radio interference; suppression methods for water heating plants. Electrician 116:96 Jan 24 '36
- Radio interference; suppression experiments with trolley buses. Electrician 115:798 Dec 27 '35
- Radio interference; suppression on private house lighting plants; abstract. Electrician 116:579 May 1 '36
- Radio-noise elimination in military aircraft. G. Weinstein and others. Elec Eng 63:Trans 793 Nov '44
- Receiver with automatic selectivity control responsive to interference. John F. Farrington. Proc Inst Radio Eng 27:239 Apr '39
- Radio interference with CAA systems. J. M. Wissenbach. diag Elec West 89:45 Aug '42
- Reconditioning high-tension bushings. A. E. Frey. Elec West 80:42 May '38
- Reducing short wave interference. E. S. Darlington. diag Radio N 18:473 Feb '37
- Relative field strength meter, for locating interference and to discover the best u.h.f. antenna location. T. Chew. il diag Radio N 25:19 May '41
- Resonant filter reduces noise. C. S. Young. Elec World 123:119 May 12 '45
- Servicing hints on auto radio interferences. M. S. Kay. il diag Radio N 33:48 Apr '45
- Treating insulators to reduce radio interference. G. M. Whisler. il Elec West 77:42 Nov '36
- Trolley buses; methods of suppressing radio interference. Electrician 116:482 Apr 10 '36
- Vodas; voice-operated switching devices to suppress echoes and singing in telephone-radio-telephone connections. S. B. Wright. bibliog il diags Elec Eng 56:1012 Aug '37; Same. Bell System Tech Jour 16:456 Oct '37
- Whistling meteors and alternative causes of the Delhi whistles; abstract. S. R. Khastgir. Wireless Eng 21:533 Nov '44
- Wiring methods; television and radio interference elimination. Electrician 131:9 July 2 '43
- 3700 sleuths; citizens' unique effort to ferret out source of radio-destroying noise. F. H. Ham. map Electronics 9:11 Oct '36
- See also*
- Filters  
Noise
- Servicing, Radio
- INDUCTION** Heating. See Electronic Applications—High-Frequency Heating
- INVERSE** Feedback. See Feedback
- IONOSPHERE**
- A test of the existence of the conducting layer. G. Breit and M. Trive. Phys Rev 28:554 Sept '26
- Accurate measurements of the Luxcumburg effect. Wireless Eng 15:187 Apr '38
- Abnormal ionization of the E-region of the ionosphere. J. A. Pierce. Proc Inst Radio Eng 26:892 July '38
- Analysis of the ionosphere. K. K. Darrow. il diags Bell System Tech Jour 19:455 July '40; Same abr. Elec Eng 59:272 July '40
- Application of vertical-incidence ionosphere measurements to oblique-incidence radio transmission. N. Smith. Jour Research Nat Bur Stand 20:683 May '38
- Characteristics of the ionosphere and their application to radio transmission. T. R. Gilliland, S. S. Kirby, N. Smith and S. E. Reymer. Proc Inst Radio Eng 25:823 July '37
- Characteristics of the ionosphere at Washington, D. C., November, 1937. T. R. Gilliland and others. Proc Inst Radio Eng 25:112 Jan '38
- Characteristics of the ionosphere at Washington, D. C., November, 1939, with predictions for February, 1940. T. R. Gilliland, S. S. Kirby and N. Smith. Proc Inst Radio Eng 28:40 Jan '40
- Comparison of data on the ionosphere, sunspots and terrestrial magnetism. E. B. Judson. Jour of Research Nat Bur Stand 17:323 Sept '36
- Cooperation committee program for 1930-1931. Proc Inst Radio Eng 19:1171 July '31
- Correlation of long-wave radio field intensity with passage of storms. I. J. Wymore-Shield. Proc Inst Radio Eng 19:1675 Sept '31
- Cyclones and the Kennelly-Heaviside layer. Robert C. Colwell. Proc Inst Radio Eng 21:721 May '33
- Diurnal and seasonal variations in the ionosphere during the years 1933 and 1934. J. P. Schafer and W. M. Goodall. diags Proc Inst Radio Eng 23:670 June '35
- Eclipse effects in the ionosphere. J. P. Schafer and W. M. Goodall. bibliog Proc Inst Radio Eng 23:1356 Nov '35; Same. Bell System Tech Jour 15:162 Jan '36
- Effects of solar activity on the ionosphere and radio communications. H. W. Wells. bibliog il maps Proc Inst Radio Eng 31:147 Apr '43
- Emission of special radio signals for the study of the ionosphere. H. A. Thomas. Jour Inst Elec Eng 75:240 Aug '34
- Experimental investigations with very long waves reflected from the ionosphere. J. D. Best, J. A. Ratcliffe and M. V. Wilkes. Proc Roy Soc (Lond) 156:614 Sept '36
- Field equipment for ionosphere measurements. T. R. Gilliland and A. S. Taylor. Jour Res Nat Bur Stand. Vol 26 May '41
- Further evidence for a lunar effect on the ionosphere from radio measurements. H. T. Stetson. Science 83:595 June 19 '36
- Further observations of radio transmission and the height of the Kennelly-Heaviside Layer. G. W. Kenrick and C. K. Jen. Proc Inst Radio Eng 17:2034 Nov '29
- Further studies of the Kennelly-Heaviside layer by the echo-method. L. R. Hafstad and M. A. Tuve. Proc Inst Radio Eng 17:1508 Sept '29
- General theory on the propagation of radio waves in the ionized layer of the upper atmosphere. Shogo Namba. Proc Inst Radio Eng 21:238 Feb '33

## IONOSPHERE—Continued

- Ground and ionospheric rays; a computation of the relative intensities on various wave-lengths from existing data; estimating probable useful working ranges of loop direction-finders. W. Ross. bibliog *Wireless Eng* 14:306 June '37
- High angle radiation of short electric waves. S. Ada. *Proc Inst Radio Eng* 15:377 May '27
- Investigation of Kennelly-Heaviside layer heights for frequencies between 1600 and 8650 kilocycles per second. T. R. Gilliland, G. W. Kenrick and K. A. Norton. *Proc Inst Radio Eng* 20:286 Feb '32
- Ionospheric investigation. T. R. Gilliland. *Nature* 134:379 Sept '34
- Ionospheric investigations at Huancayo magnetic observatory (Peru) with applications to wave transmission theory; abstract. H. W. Wells. *Electronics* 15:33 Feb '42
- Ionosphere storms and radio transmission between North America and Europe. *Franklin Inst Jour* Sept '40
- Ionization of the F-2 region. W. M. Goodall. *Proc Inst Radio Eng* 25:1414 Nov '37
- Ionosphere, skip distance of radio waves, and the propagation of micro-waves. E. O. Hulburt. bibliog *Proc Inst Radio Eng* 23:1492 Dec '35
- Kennelly-Heaviside layer and radio-wave propagation. E. O. Hulburt. *diags Jour Fr Inst* 201:597 May '26
- Kennelly-Heaviside layer height observations for 4,045 and 8,650 kc. T. R. Gilliland. *pl U. S. Bur Stand Jour Research* 5:1057 Nov '30; Same. *Proc Inst Radio Eng* 19:114 Jan '31; Discussion. F. K. Vreeland. 19:1500 Aug '31
- Kennelly-Heaviside layer studies. A. D. de Mars, T. R. Gilliland and G. W. Kenrick. *il Proc Inst Radio Eng* 19:105 Jan '31
- Kennelly-Heaviside layer studies employing a rapid method of virtual-height determination. J. P. Schafer and W. M. Goodall. *diags Proc Inst Radio Eng* 20:1131 July '32
- Lower ionosphere. R. C. Colwell and A. W. Friend. bibliog *il diags Phys Rev* 50:632 Oct 1 '36
- Measurements of the height of the Kennelly-Heaviside layer. A. W. Kendrick and C. K. Jen. *Proc Inst Radio Eng* 17:75 Apr '29
- Multifrequency automatic recorder of ionosphere heights. T. R. Gilliland. *Proc Inst Radio Eng* 22:236 Feb '34
- Multi-frequency ionosphere recording and its significance. T. R. Gilliland. *Proc Inst Radio Eng* 23:1076 Sept '35
- National physical laboratory; propagation of waves; structure of the ionosphere. *il diag Engineering* 140:585 Nov 29 '35
- Note on a multi-frequency automatic recorder of ionosphere heights. T. R. Gilliland. *Proc Inst Radio Eng* 22:236 Feb '34
- Note on the determination of the ionization of the upper atmosphere. J. C. Schelleng. *Proc Inst Radio Eng* 16:1471 Nov '28
- Observations in transmission during the solar eclipse of Aug. 31, 1932. J. R. Martin and S. W. McCluskey. *il diag map Proc Inst Radio Eng* 21:567 Apr '33
- Observations of the effective height of the Kennelly-Heaviside layer and field intensity during the solar eclipse of August 31, 1932. G. W. Kenrick and G. W. Pickard. *il Proc Inst Radio Eng* 21:546 Apr '33
- Observations of Kennelly-Heaviside layer heights during the Leonid meteor shower of November, 1931. J. P. Schafer and W. M. Goodall. *Proc Inst Radio Eng* 20:1941 Dec '32
- Phase and group velocity in the ionosphere. G. W. O. Howe. *Wireless Eng* 20:577 Dec '43
- Physics of the ionosphere. H., R. Mimmo. bibliog (309 titles) *il diags Rs Mod Phys* 9:1 Jan '37
- Preliminary note on an automatic recorder giving a continuous height record of the Kennelly-Heaviside layer. T. R. Gilliland and G. W. Kenrick. *Proc Inst Radio Eng* 20:540 Mar '30
- Propagation of low power short waves in the 1000 kilometer range. K. Kruger and L. Plendl. *Proc Inst Radio Eng* 17:1296 Aug '29
- Propagation of medium radio waves in the ionosphere; abstract. D. F. Martyn. *Electrician* 113:609 Nov 9 '34
- Radio observations at the Bureau of Standards during the solar eclipse of Aug. 31, 1932. L. V. Berkner and T. R. Gilliland. *Proc Inst Radio Eng* 22:247 Feb '34
- Radio transmission studies of the upper atmosphere. J. P. Schafer and W. M. Goodall. *Proc Inst Radio Eng* 19:1434 Aug '31
- Reflection of an electromagnetic impulse from the Heaviside layer (and the resulting deformation); abstract. V. L. Ginsburg. *Wireless Eng* 20:441 Sept '43
- Recent studies of the ionosphere. S. S. Kirby and E. B. Judson. bibliog *J of Research Nat Bur Stand* 14:469 Apr '35; Same. *Proc Inst Radio Eng* 23:733 July '35
- Relation between actual and virtual ionospheric height. H. G. Booker and S. L. Seaton. bibliog *il Phys Rev* 57:87 Jan 15 '40
- Relation of meteor showers and radio reception. G. W. Pickard. *Proc Inst Radio Eng* 19:1166 July '31
- Report of ionosphere investigations at the Huancayo magnetic observatory (Peru) during 1933. L. V. Berkner and H. W. Wells. bibliog *il Proc Inst Radio Eng* 22:1102 Sept '34
- Report on the present state of our knowledge of the ionosphere (booklet). S. K. Mitra. *Univ. of Calcutta, India* 1935
- Role of the ionosphere in radio wave propagation. J. H. Dellinger. bibliog *Trans. A. I. E. E. sup* 58:803 '39
- Short-wave commercial long-distance communication. H. E. Hallborg, L. A. Briggs and C. W. Hansell. *Proc Inst Radio Eng* 15:467 June '27
- Simplified automatic recorder for ionospheric height measurement. R. C. Colwell, N. I. Hall and L. R. Hill. *il diags Science* 84:515 Dec 4 '36
- Skip distance effects on superfrequencies. A. H. Taylor. *Proc Inst Radio Eng* 19:103 Jan '31
- Some correlations of radio reception with atmospheric temperature and pressure. Greenleaf W. Pickard. *Proc Inst Radio Eng* 16:765 June '28
- Some long distance transmission phenomena of low frequency waves. E. Yohoyama and I. Tanimura. *Proc Inst Radio Eng* 21:263 Feb '33
- Some observations of short period radio fading. T. Parkinson. *Proc Inst Radio Eng* 17:1042 June '29

- Some observations of the behavior of earth currents and their correlation with magnetic disturbances and radio transmission. Isabel S. Bemis. Proc Inst Radio Eng 19:1931 Nov '31
- Some observations on skip distance and ultra-high frequencies. T. A. Marshall. Radio N 12:406 Nov '30
- Studies of the ionosphere and their application to radio transmission. S. S. Kirby, L. V. Berkner and D. M. Stuart. bibliog U. S. Bur Stand Jour Research 12:15 Jan '34; Same. Proc Inst Radio Eng 22:481 Apr '34
- Study of the ionosphere at Harvard university. Science 87:sup10 June 10 '38
- Summary of progress in the study of radio wave propagation phenomena. G. W. Pickard. Proc Inst Radio Eng 18:649 Apr '30
- Transmission of ultra-short waves through ionospheric action; abstract. E. Fendler. Wireless Eng 18:19 Jan '41
- Wireless apparatus for the study of the ionosphere. G. Boulder. bibliog diags Jour Inst Elec Eng 73:419 pl 1-2 Oct '33
- Wireless studies of the ionosphere. E. V. Appleton. Jour Inst Elec Eng 71:642 (bibliog p649) Oct '32; Abstract. Wireless Eng 9:513 Sept '32
- Wireless telegraphy and magnetic storms. H. B. Maris and E. O. Hulburt. Proc Inst Radio Eng 17:494 Mar '29
- Wireless telegraphy and the ionization in the upper atmosphere. E. O. Hulburt. Proc Inst Radio Eng 18:1231 July '30
- See also*
- Propagation of Waves

## K

### KEYING, Radiotelegraph

- An electronic keyer. Haskins. QST 28:52 Oct '44
- Keying monitor for continuous wave transmitters. H. Perozzo. diags Electronics 10:44 Dec '37
- Keying monitors. H. Mix. QST 25:15 Jan '41
- Monitoring the operation of short wave transmitters. Hans Mogel. Proc Inst Radio Eng 19:214 Feb '31
- Motor-driven semi-automatic key. QST 26:35 Mar '42
- Multivibrator electronic key. QST 28:17 Mar '44
- New electronic-key circuits. B. Gardner. QST 28:15 Mar '44
- Radiotelegraph keying transients. Reuben Lee. Proc Inst Radio Eng 22:213 Feb '34

*See also*

### Transmitters, Radiotelegraph

### KINESCOPE

- Big-screen television pictures: Law kinescope cathode-ray system. il Radio N 19:143 Sept '37
- Circuit for studying kinescope resolution. C. E. Burnett. Proc Inst Radio Eng 25:992 Aug '37
- Contrast in kinescopes. R. R. Law. Proc Inst Radio Eng 27:511 Aug '39
- Development of the projection kinescope. V. K. Zworykin and W. H. Palnter. Proc Inst Radio Eng 25:937 Aug '37

- Effect of the space charge on the sharpness of television cathode-ray tubes; abstract. E. Schwartz. Wireless Eng 22:37 Jan '45
- Electronic color television. il Electronic Indus 3:101 Nov '44
- Fine structure of television images. Harold A. Wheeler and Arthur V. Loughren. Proc Inst Radio Eng 26:540 May '38
- High current electron gun for projection kinescopes. R. R. Law. il diag Proc Inst Radio Eng 29:954 Aug '37; abstract. Electronics 10:8 June '37
- Home television in colour; Baird system. Electrician 125:333 Dec 27 '40
- New television development; use of colour technique and stereoscopic relief. J. L. Baird. diags Electrician 127:359 Dec 26 '41
- Quality in television pictures. P. C. Goldmark and J. N. Dyer. il diags Proc Inst Radio Eng 28:343 Aug '40
- Radio receiving and television tubes. J. A. Moyer and J. F. Wostrel. 3d ed 635p \$4 McGraw-Hill '36
- Subjective sharpness of simulated television images. M. W. Baldwin, jr. bibliog il diags Bell System Tech Jour 19:563 Oct '40; Same. Proc Inst Radio Eng 28:458 Oct '40
- Television; scophony receiving system. diag Electrician 120:515 Apr 22 '38
- Theoretical considerations on a new method of large-screen television projection; abstract. F. Fischer and H. Thiemann. Wireless Eng 18:469 Nov '41
- Three-dimension color television. J. L. Baird. diags Electronics 15:76 May '42

*See also*

### Television

### KLYSTRON

- Cathode-ray amplifier tubes; beam group principle and its several applications. diags Electrons 12:9 Apr '39
- Electronic generation of electromagnetic oscillation. E. V. Condon. diag Jour App Phys 11:502 July '40
- Graphical methods for analysis of velocity-modulation bunching. A. E. Harrison. bibliog diags Proc Inst Radio Eng 33:20 Jan '45
- Klystron as a generator of very short waves, abstract. W. W. Hansen and others. Proc Inst Radio Eng 27:412 June '39
- Klystron characteristics; abstract. C. Dodd. diags. Electronic 18:250 Mar '45
- Kylstron equipment. Jesse B. Sherman. il Electronic Indus 4:88 Jan '45
- Klystrons in operation at Stanford University. il Electronic 13:25 Jan '40
- New power for ultra highs; klystron generator. diag Aviation 38:62 Mar '39
- Theoretical and experimental investigations of electron motions in alternating fields with the aid of ballistic models. H. E. Hollmann. Proc Inst Radio Eng 29:77 Feb '44
- Theory and application of ultra high frequencies; cavity resonators as tuning units of Klystron and magnetron oscillators. M. S. Kiver. diags Radio V 32:56 Dec '44
- See also*
- Velocity Modulation

## L

## LABORATORIES

- Acoustic laboratory in the new RCA laboratories. H. F. Olson. *il plans Jour Amer Acoustical Soc* 15:96 Oct '43
- Aircraft radio labs. responsible for research, development, engineering, and inspection for equipment required by Army air corps. J. H. Gardner. *il Radio N* 27:8 Feb '42
- Aviation radio; aircraft radio laboratory, Wright field. H. R. Yeager. *il Radio N* 28:124 Nov '42
- Dedicated to war and peace; RCA laboratories building, Princeton, New Jersey. *il diags Arch Rec* 93:57 Mar '43
- Development laboratories. Wright field. R. E. Williams, jr. *il Radio N* 29:76 June '43
- Engineering laboratory. *il Electronic Indus* 3:112 Jan '44
- Laboratories to develop final victory; Signal Corps general development laboratories. F. F. Uhrhane. *il Radio N* 28:112 Nov '42
- Microwave plumbing; laboratory instruction u-h-f equipment used at Harvard. D. D. King. *il diags Electronics* 16:116 Sept 118:21 Oct '43
- Modern development laboratory technic. *Elec Indus* 4:98 June '45
- Modern laboratory setup. *il Electronic Indus* 4:86 Apr '45
- New laboratory techniques expedite training in electronics. *il diags Electronics* 16:90 June '43.
- RCA laboratories. *il Factory Management* 101:B61-B62 Apr '43
- RCA research laboratories has two air conditioning systems and three separate ventilating systems. F. W. Buck. *il diags plans Heat & Ven* 40:51 July '43
- Signal Corps radio laboratory. R. V. D. Corput. *il Radio N* 27:24 Jan 42
- Television laboratory; Edison Swan electric co. *il Electrician* 117:715 Dec 4 '36; *Elec Rev. (Lond)* 119:781 Dec 4 '36

*See also*

Engineering Research  
Engineers

## LAWS AND REGULATIONS

- Air law. H. S. Le Roy. 120p (bibliog p87-108) Howard Sanderson Le Roy, Washington, D.C. '35
- Authorization required for itinerant aircraft radio stations. *Air Commerce Bul* 9:59 Sept '37
- Commission releases chain broadcasting report; regulations adopted to foster competition in network field and encourage growth of new networks. *Comm & Fin Chr* 152:3112 May 17 '41
- Communications by wire and radio. T. Berry. 462p Callaghan '37
- Court decisions affecting broadcasting. L. T. Parker. *Electronics* 16:117 June '43
- Decret-loi du 21 septembre 1935, relatif a la declaration des postes-recepteurs de T.S.F. et au recouvrement de la redevance. J. Cazals de Febel. *Genie Civil* 107:403 Oct 26 '35
- FCC gets tough; hidden ownership results in refusal to renew license of WOKO. *Bsns W* p100 Apr 7 '45
- FCC tightens up; agency cracks down on program time ratios, holds up unconditional license renewal for six radio stations. *Bsns W* p90 Apr 21 '45
- Federal communications commission; radio regulation. *maps Fortune* 17:60 May '38
- Government and radio. M. Ethridge. *Ann Amer Acad* 213:109 Jan '41
- Needed regulations in aircraft radio. H. W. Roberts. *Aero Digest* 33:81 Sept '38
- New station approval setup. *Electronics* 17:268. Mar '44
- Paley suggests network licenses. *Ptr Ink* 195:76 June 20 '41
- Political broadcasting rules. *Ptr Ink* 184:20 July 7 '38
- Radio chains lost; FCC rules regulating dealings of networks with affiliated stations upheld by U.S. Supreme court. *Business Week* p90 May 15 '43
- Radio laws and regulations with which prospective radio operators must be familiar to pass FCC exams. C. E. Winter. *Radio N* 32:70 '44
- Radio laws of the United States [June, 1910-June, 1936]. E. A. Lewis, comp. 101p pa 10c Supt of doc '36
- Radio regulation challenge. J. M. Herring. *Pub Util* 16:303 Sept 12 '35
- Radio station reminders. *il Aero Digest* 49:121 May 15 '45
- Radio—the fifth estate; broadcasting in the United States and other countries compared; advertising, censorship, laws. *Pub Util* 16:501 Oct 10 '35
- Regulation of broadcasting in the United States. H. Gary. *Ann Amer Acad* 177:15 Jan '35
- Regulation of radio broadcasting in the public interest. J. L. Fly. *Ann Amer Acad* 213:102 Jan '41
- Self-regulation in American radio. N. Miller. *Ann Amer Acad* 213:93 Jan '41
- Should the government operate radio broadcasting? debate. B. Bliven; E. H. Harris. *Pub Util* 14:747 Dec 6 '34
- Supreme court upholds FCC radio rules. *Ptr Ink* 203:19 May 14 '43
- Telecommunication; convention, general radio regulations, and final radio protocol between the United States of America and other powers signed at International radio-telegraph conference, Madrid, 1932. 324p U.S. Govt pig office, Washington '34

*See also*

Allocation, Frequency

LECHER Wires. See Transmission Lines

LENSES, Electron. See Electron Optics

LINEs, Transmission. See Transmission Lines

LOCALIZER. See Aircraft Instrument Landing

LOCATORS, Radio

British electronic target locators. K. R. Porter. *il Radio N* 33:28 May '45

Build your own treasure hunter; M-Scope for detecting metals underground. C. E. Chapel. *il diags Radio N* 20:22 Sept '38

Electronic locator for salvaging trolley rails. J. G. Clarke and C. F. Spitzer. *diags Electronics* 17:129 Jan '44







- Effect of thin oxide films on cathodes of cathode ray tubes. *Electronics* 17:248 July '44
- Electric heat in a factory; Boston radio factory of Messrs. Ferranti. *W. Easton. il Elec Rev (Lond)* 118:115 Jan '24
- Electrical supply equipment at a wireless works. *il Engineer* 169:482 May 24 '40
- Electrolytic capacitor testing in production. P. M. Deeley. *il Electronics* 8:216 July '35
- Electronic controls speed production. *il Machine Design* 13:sup54 Apr '41
- Electronic tube chemicals need clean air; phosphor preparation laboratory, North American Philips Co. I. Krushel. *il Heating-Piping* 17:137-8 Mar '45
- Eleven factory short cuts. *Electronic Indus* 2:64 May '43
- Factory alignment equipment for frequency-modulation receivers. H. E. Rice. *il diags Proc Inst Radio Eng* 29:551 Oct '41
- Factory short cuts. *Electronic Indus* 4:98 Jan '45
- Final report on shrinkage control of steatite porcelain for radio and radar equipment; abstract. R. L. Stone. *Amer Cer Soc Bul* 23 (Cer A 23): 171 Oct 15 '44
- German set production; Siemens and Halske plant, Berlin; illustrations. *Electronics* 9:11 Apr '36
- Introduction of Bendix radio products. *il Aero Digest* 30:29 Mar '37
- Learadio; its factory and facilities. W. P. Lear. *il Aero Digest* 36:81 June '40
- Les nouveautes dans la construction radio-electrique en France. M. Adam. *diags Genie Civil* 116:216 Mar 30 '40
- Making cathode ray tubes. *il Electronics* 12:32 Apr '39
- Manufacture of quartz crystal filters. G. K. Burns. *il diags Bell System Tech Jour* 19:516 Oct '40
- Manufacture of quartz crystals. *Electronic Indus* 2:58 May '43
- Manufacturing and assembling radio instruments; General radio company. F. A. Westbrook. *il Metal Ind* 35:97 Mar '37
- Manufacturing tests. *Electronic Indus* 1:42 Dec '42
- Metals and metal finishing in the radio industry; abstracts. G. L. Sutherland. *Electrician* 132:370 Apr 28 '44; *Elec Rev (Lond)* 134:598 Apr 28 '44
- Metals in radio. Herbert Chase. *il Electronics* 10:13 Oct '37
- Model shop links design and production; RCA manufacturing company. F. L. Creager. *il Amer Mach* 82:689 July 27 '38
- Modern radio plant practice; Stromberg-Carlson telephone manufacturing company. H. Chase. *il plans Electronics* 12:9 Dec '39
- Nickel in the radio industry. E. M. Wise. *bibliog (55 titles) il Proc Inst Radio Eng* 25:714 June '37
- Nine production line shortcuts. *Electronic Indus* 4:102 Apr '45
- Plant procedure for expediting war production; Alden products company. *diags Electronics* 16:60 Jan '43
- Plastics in radio production; discussion. *Jour Inst Elec Eng Jour* 90 pt 3:26 Mar '43
- Plastics in the electronics field; with directory of trade names and suppliers. J. Sasso. *il Electronics* 15:26 July '42
- Precision receiver, precision made; Hammarlund Super-Pro; illustrations. *Electronics* 11:22 Jan '38
- Precision laminating and fabricating for radio. E. W. Beeman and I. J. Kaar. *il Mod Plastics* 13:40 June '36
- Process control of production plating; Bridgeport works. General electric company. W. R. Meyer. *il Amer Mach* 81:906 Oct 6 '37
- Production of cathode ray tubes. *il Electronic Indus* 3:110 Aug '44
- Production shortcuts. *il Electronic Indus* 4:104 May '45
- Production side of Jack & Heintz. J. Geschelin. *Automotive & Aviation Ind* 92:22 June 1 '45
- Production tester for transmitting tubes. P. M. Thompson. *il diags Electronics* 17:142 Jan '44
- Production tester for mica capacitors. *il Electronics* 17:156 Aug '44
- Quality control in tube manufacture. E. Goddess. *il diags Electronics* 17:134, 138 Nov, Dec '44
- Quality engineering in tube manufacture. E. Goddess. *il diags Electronics* 17:134 Nov '44
- Quartz, from raw stock to finished crystal; laboratory of the General electric company; illustrations. *Electronics* 13:26 Nov '40
- Radars in production. *il Electronic Indus* 2:59 July '43
- Radio and electronics in the Navy. S. P. Sashoff. *il Electronics* 16:72 Apr '43
- Radio and the victory program; effect on production of receivers and on associated components for civilian use. L. Winner. *il Radio N* 27:9 Mar '42
- Radio, refrigerators, and radar; Philco has always made a virtue of moving in late. *il map Fortune* 30:114 Nov '44
- Recent advancements in aircraft radio production. W. D. Van Dyke. *il diags Aero Digest* 38:69 Mar '41
- Recent die castings for radio receivers; illustrations. *Electronics* 11:17 May '38
- Record production of broadcast receivers, 1941. *Electronics* 15:100 Jan '42
- Replacing rubber with synthetic resin at the plants of RCA manufacturing co.; resistoflex PVA. E. S. Peierls. *il Rubber Age* 52:315 Jan '43 z
- Replacements developed in the radio manufacturing field. *Sci Amer* 166:14 Jan '42
- Soldering signal corps equipment. M. Salant. *il Amer Mach* 88:114 May 25 '44
- Sound reproducer for FM. W. A. Stocklin. *il Radio N* 32:36 Dec '44
- Specially equipped comparator speeds inspection of aircraft radio part. *il Mach* 49:141 June '43
- Standards for replacement parts for civilian radio in war time. O. H. Caldwell. *il Ind Stand* 13:312 Dec '42
- Studies in lighting of intricate production, assembly and inspection processes. *il diags Illum Eng Soc Trans* 32:1019; Discussion. 1050 Dec '37.
- Sub-contracting six billions of electronic purchases. Roland C. Davies. *Electronic Indus* 2:50 May '43
- Substitutions make engineers resort to common substances in manufacture of radio apparatus. *Sci Amer* 170:131 Mar '44
- Transmitter production test. *il Electronics* 15:94 Aug '42

**MANUFACTURING, Radio—Continued**

Use effective production planning and control; case of E. H. Scott radio laboratories. *il* Factory Management 102:113 Aug '44

War contributions of radio manufacturing. P. V. Galvin. *Inst Radio Eng* 30:479 Oct '42

War facts and post-war fancies; prospects for home radio. FM and television are bright; industrial electronics is the enigma. *il* Electronics 17:92 Feb '44

War model standards assure replacement parts for home radios. *il* Ind Stand 14:77 Mar '43

Wartime production of radio equipment. P. Glanzer. *il* Radio N 32:66 Sept '44

Westinghouse Electric & Mfg. Co. air conditions its radio and television assembly and research plant. F. J. Rice. *il* plan Heat & Ven 38:37 Sept '41

Where plastic replaces rubber; fifteen widely varied applications at RCA. *il* Factory Management 100:106 Sept '42

Winding the universal coil. A. W. Simon. *diags Electronics* 9:22 Oct '36; Correction. 9:52 Nov '36

X-rays in vacuum tube manufacture. W. T. Gibson and A. Rabuteau. *Elec Comm* 15:224 '37

1941 radio receiver production; comparison with 1940; tabulation. *Electronics* 15:96 May '42

1,250,000 out of 4,200,000 U. S. radios sold last year bore the Philco trademark. *il* Fortune 11:74 Feb '35

*See also*

Plastics                      Receiver Manufacture  
Postwar Planning        Transmitters—Manufacture

**MARINE Radio**

Communications, as applied to the merchant marine. S. C. Hooper. *Marine R* 64:15, 38 Aug; 19 Sept '34; Discussion. G. J. Frank 64:23 Dec '34; Reply. 65:25 Feb '35

Development of wireless telegraphy in the navy; abstracts. C. E. Kennedy-Purvis. *Engineering* 157:374 May 12 '44; *Jour Inst Elec Eng* 91 pt3:102 Sept '44

Engineering work of the Federal communications commission; police, aviation, and maritime services. W. N. Krebs. *Proc Inst Radio Eng* 32:324 June '44

FM for ships at sea. S. Summers. *il* Radio N 28:23 Aug '42

Maintenance of foreign marine radio. C. Coleman and J. T. Donnelly. *il* *diags Radio N* 29:36 Mar '43

Marine radio communication and equipment; abstract and discussion. I. F. Byrnes. *Marine Eng* 45:85 Dec '40

Noise suppression on small boats. H. B. Davis. *il* *diags Radio N* 32:47 Oct '44

Packaged marine radio. Elmer F. Lewis. *Electronic Indus* 2:88 Oct '43

Radio equipment for motor lifeboats. *il* *Marine Eng* 40:520 Dec '35

Radio equipment for the Queen Mary. S. Kaufman. *il* *Radio N* 17:655 May '36

Radio in the navy. L. Noyes. *il* *Radio N* 27:50 Jan '42

Radio on the high seas. R. R. French. *il* *Radio N* 19:73 June '38

Review of radio communications in the mobile services. I. F. Byrnes. *Proc Inst Radio Eng* 23:422 May '35

Ship-to-shore communication. R. H. Riddle. *bibliog il diags Electronics* Sept '37

Short wave radio receivers used for keeping in touch with the world on board ship. B. Breedlove. *il* *Marine Eng* 42:67 Feb '37

Survey of marine radio progress, with special reference to R.M.S. Queen Mary. F. G. Loring, W. L. McPherson and W. H. McAllister. *il* *diags plans Jour Inst Elec Eng* 81:183 Aug '37; Abstracts. *Elec Rev (Lond)* 120:360 Mar 5 '37; *Elec Eng* 56:593 Hay '37; Discussion. *Jour Inst Elec Eng* 81:218 Aug '37

**Automatic Alarms**

Automatic radio alarms for overseas or inter-coastal vessels. C. H. Callaghan. *Weekly Underw* 136:498 Feb 27 '37

Automatic radio distress alarm developed. *Marine Eng* 42:185 Apr '37

Automatic SOS alarms. *il* *diag Electronics* 10:20 Apr '37

Mackay radio auto-alarm. *il* *Marine Eng* 42:270 May '37

Robot receiver for cargo vessels, tunes for SOS signals. M. S. Cummings. *il* *Radio N* 19:85 Aug '37

*See also*

Receivers

**Beacons**

Buoy radiobeacons for inshore navigation. W. W. MacDonald. *il* *diags Electronics* 16:88 July '43

Radiobeacons in navigation; recommended practices. *Marine Rev* 65:64 Apr '35

*See also*

Beacons

**Direction Finders**

Directional radio as an aid to marine navigation. *Jour Fr Inst* 219:365 Mar '35

Radio compasses for small boats. *il* *Electronics* 10:9 Apr '37

Small vessel direction finders. H. B. Martin. *RCA Rev* 2:69 July '37

Western Electric improved radio compass for marine service. *il* *Marine Rev* 65:29 Jan '35

Western Electric new radio compass. *il* *Marine Eng* 45:65 Feb '40

*See also*

Direction Finders

**Navigational Aids**

Chatham radio guards the sea. J. N. Meissner. *il* *Radio N* 20:14 Aug '38

Coast guard ship safety service; weather forecasts, storm warnings and emergency service. *il* *Radio N* 20:22 Oct '38

Coast guard stands by; use of radio in ice patrol and other services. S. R. Winters. *il* *Radio N* 20:10 July '38

Commercial marine transmitter-receiver. R. J. Higgins and R. E. Samuelson. *il* *diag Radio N* 20:20 Dec '38

Duo-tone fog horns and radio save ships. *il* *Radio N* 19:47 May '38

Ingenious navigation aid in form of radio weather map would minimize damage to vessels. S. D. Livingston. *Weekly Underw* 133:900 Nov 9 '35

- Observer's book on radio navigation. W. J. D. Alan. 106p \$1.50 Chemical pub co '41
- Latest safety devices and aids to navigation. S. D. Livingston. Weekly Underw 134:20 Jan 4 '36
- Radio aids to marine navigation. I. L. Gill and L. M. Harding. Engineer 170:350 Nov 29 '40
- Radio in the coast guard. J. F. Farley. il Radio N 27:43 Jan '42
- SOS and the radio operator. J. M. Goldby. il Radio N 17:199 Oct '35
- S O S to the rescue. K. Baarslag. 310p \$2.50 Oxford '35
- Standardized marine radio unit. il Electronics 15:36 Jan '42
- Testing out an obstacle detector for marine use. P. M. Jones. il Radio N 19:543 Mar '38
- 1942 radio navigational aids; including details of direction-finder stations, radio-beacons, navigational warnings, time signals, etc.; corrected to Feb 25 '42. 354p pa 90c U S Navigation bur Hydrographic office Washington '42
- Ship Stations**
- Great Lakes ship radio system; Lorain County radio corporation's automatic service. il map diags Electraics 17:92 Oct '44
- L'installation radioelectrique du paquebot Normandie. M. Adam. il Genie Civil 106:257 Mar 16 '35
- Mauretania's radio equipment. il Electronics 12:18 Oct '39
- Normandie; wireless equipment. il Electrician 114:667 May 24 '35
- Radio equipment of the Normandie. J. Ledoux. il Radio N 17:141 Sept '35
- Radiophone service for small ships. B. Dudley. il Electronics 12:11 Mar '39
- Radio record of the Queen Mary. Marine Eng 41:404 July '36
- Short-wave marine radio aboard the motor yacht Norsaga. F. Siemens. il Radio N 16:420 Jan '35
- SS America radio installation. I. F. Byrnes. il RCA Rev 5:176 Oct '40
- See also*
- Transmitters, Radiotelegraph
- Ship-to-Shore Telephony**
- Automatic, ship-to-shore radio telephone saves lives. J. Strong. il Radio N 19:77 Aug '37
- Marine radio telephone service for Boston harbor. F. A. Gifford and R. B. Meader. il Bell System Tech Jour 14:702 Oct '35
- Modifying radio equipment for military applications; marine radio telephone as example. C. T. Read. il diags Electronics 17:98 Feb '44
- Radio now brings telephone service to harbor craft. il Radio N 18:331 Dec '36
- Ship sets for harbor ship-to-shore service. H. N. Willets. il Bell System Tech Jour 14:713 Oct '35
- Ship-to-shore radio telephone. Jour Fr Inst 223:442 Apr '37
- Ship to shore radiophone on Great Lakes. G. R. Reiss. il Radio N. 20:27 Sept '38
- Two-way radio marine telephone service in New York harbor. Marine Eng 41:506 Sept '36; Sci. Amer 155:294 Nov '36
- See also*
- Transmission, Radiotelephone  
Transmitters, Radiotelephone
- MARINE Receivers.** See Receivers, Marine
- MARINE Transmitters.** See Transmitters
- MARKERS.** See Radio Range
- MEASUREMENTS**
- Bridge measurement of electromagnetic forces. A. C. Seletzky and G. L. Priday. bibliog diags Elec Eng 54:1149 Nov '35
- Electronic device for measuring magnetic fields. A. Rose. il diag Electronics 11:21 July '38
- High frequencies; status of standards and measurements. H. R. Meahl. il Gen Elec Rev 45:617 Nov '42
- Improved indicator for measuring static and dynamic pressures. C. E. Grinstead and others. bibliog il diags S A E Jour 52:534 Nov '44
- Inverted triodes for industrial measurements. il Electronics 17:176 Dec '44
- Measuring cloud heights. Laurence W. Foskett and B. Lyle Hansen. Electronic Indus 2:90 Sept '43
- Measuring distance with reflected waves. E. Norrman. diags Electronics 17:198 July '44
- Measuring magnetic fields. Electronic Indus 2:103 Oct '43
- Measuring projectile velocity. Electronic Indus 2:66 Oct '43
- Measurement—basis of all science. Gordon Thompson. il Electronics 16:140 Mar '43
- Measurement of electrical conductivity for stratified ground; abstract. J. Grosskopf and K. Vogt. Wireless Eng 19:71 F '42; Discussion. W. Pfister 19:521 Nov '42
- Measurement of high vacuum. H. H. Zielinski. il Electronics 17:112 July '44
- Measurements in f-m transmitters. H. P. Thomas. il diags Electronics 14:23 May 36-9 July '41
- Measurements in radio engineering. F. E. Terman. 400p \$4 McGraw-Hill '35
- Measurements of the delay and direction of arrival of echoes from near-by short-wave transmitters. C. F. Edwards and K. G. Jansky. diags maps Proc Inst Radio Eng 29:322 June '41
- Measuring magnetic fields. Electronics Indus 2:103 Oct '43
- New type of selective circuit and some applications. H. H. Scott. Proc Inst Radio Eng 26:226 Feb '38
- Precise measurements of electromagnetic fields. H. G. Smith. il diags Proc Inst Radio Eng 26:45 Jan '38
- Progress in the development of instruments for measuring radio noise. C. M. Burrill. bibliog il diag Proc Inst Radio Eng 29:433 Aug '41
- Recent developments in the measurement of telegraph transmission. R. B. Shanck, F. A. Cowan and S. I. Cory. Bell Sys Tech Jour 18:143 Jan '39
- Reference data for measurements. il Electronics 14:61 June '41
- Several instruments in one, for several testing and measuring applications. N. Lee. il diag Radio N 19:472 Feb '38
- Some practical comparison tests made between several acoustic measurement methods. E. T. Dickey. bibliog Proc Inst Radio Eng 25:1136 Sept '37

**MEASUREMENTS—Continued**

- Amplification at Audio and Video Frequencies**  
An electronic switch and square-wave generator. J. R. Cosby and C. W. Lampson. *Rev Sci Instr* 12:187 Apr '41
- Amplifier testing by means of square waves. W. R. Hewlett. *Communications* 19:22 Feb '39
- Audio-frequency curve tracer using a cathode-ray tube. RCA Mfg. Co. Application note 76 June '37
- Audio-frequency-response curve tester. Jesse B. Sherman. *Proc Inst Radio Eng* 26:700 June '38
- Decibels and their uses. Engineering Dept. Aerovox Res W 13:7 July '41
- Distortion tests by the intermodulation method. J. K. Hilliard. *Proc Inst Radio Eng* 29:64 Dec '41
- Frequency response curve tracer. S. F. Carlisle, jr. and A. B. Mundell. *Electronics* 14:22 Aug '41
- Recording system for transmission measurements. P. F. Jones. *Bell Lab Rec* 15:289 Apr '38
- Visual selectivity meter with a uniform decibel scale. K. R. Sturley and R. P. Shipway. *il diags Jour Inst Elec Eng* 87:189 Aug '40
- Voltage/db conversion device; linear polar-coordinate graphs readily interpreted. E. Dyke. *Electronics* 17:146 Sept '44

*See also*

Amplification, Amplifiers

**Circuit Constants at Low Frequencies**

- Alternating current impedance of chokes and transformers; measuring instrument. T. J. Rehfish and H. T. Bissmire. *diags Wireless Eng* 18:266 July '41
- Apparatus for accurate measurements of audio-frequencies. R. B. Ewell, W. E. Roseveare and K. Schaaf. *diags Rev Sci Instr* 11:39 Jan '40
- Amplifier measuring technique. E. F. Kiernan. *diags Electronics* 10:18 July '37
- Direct current amplifier with a standard tube to measure ionization currents. H. Tatel, H. S. Moncton and O. Luhd. *diag Rev Sci Instr* 9:229 July '38
- Direct-current amplifier and its application to industrial measurements and control. D. C. Gall. *il diags Jour Inst Elec Eng* 89 pt2:434 Oct '42
- Direct-reading capacity meter. R. P. Turner. *il diags Radio N* 32:40 Sept '41
- Direct-reading impedance comparator. F. M. Leyden and W. R. Baker. *diags Electronics* 15:88 Nov '42
- Heterodyne capacity measuring set. W. C. Lister. *il diag Wireless Eng* 11:425 Aug '34
- Impedance bridge for L-C-R measurements. R. P. Turner. *il Radio N* 33:42 June '45
- Inexpensive portable capacity bridge. H. L. Poling. *il diags Radio N* 29:26 Feb '43
- Magnetic field measuring tube. Albert Rose. *il Electronics* 11:21 July '38
- Measurement of minute changes of capacitance and inductance; device suitable for measuring effect of temperature changes on radio components. S. C. Leonard. *bibliog 1 diags Electronics* 11:18 Mar '38
- Measurement of audio frequencies. R. P. Turner. *il diags Radio N* 28:17 Dec '42

- Measurement of incremental inductance. H. D. Short. *diags Electronics* 13:32 Jan '40
- Measurement of minute changes of capacitance and inductance. S. C. Leonard. *il Electronics* 11:18 Mar '38
- Measurement of motor-starting capacitors. Engineering Dept, Aerovox Res W. Mar '39
- New conductivity meter; abstract. J. Grosskopf, W. Pfitzer and K. Vogt. *Wireless Eng* 19:471 Oct '42
- Permanent magnet measurements. E. M. Underhill. *il Electronics* 17:135 Apr '44
- Portable sound measurements; General radio noise meter. C. A. Anderson. *il diags Electronics* 9:26 Apr '36
- Radio resistor measurement. E. R. Schwartz. *diags Electronics* 10:37 May '37
- Simple methods of measuring resistance. Engineering Dept., Aerovox Res W. 7:7 July '35
- Transformer noise level measured. *il Electronics* 16:134 July '43
- Vacuum tube circuit to measure the logarithm of a direct current. R. E. Meagher and E. P. Bentley. *bibliog diags Rev Sci Instr* 10:336 Nov '39
- Vacuum tube methods of measuring insulation resistance of condensers. Engineering Dept., Aerovox Corporation. 8:5 May '36

*See also*

Bridges	Inductance
Capacitance	Wheatstone Bridges

**Circuit Constants at Radio Frequency**

- Bridged-T and parallel-T null circuits for measurements at radio frequencies. W. N. Tuttle. *bibliog diags Proc Inst Radio Eng* 28:23 Jan '40
- Bridged-T measurement of high resistances at radio frequencies. P. M. Honnell. *il diags Proc Inst Radio Eng* 28:88 Feb '40
- Capacitor impedance and resistance measurements. Engineering Dept., Aerovox Res W. 16:1 Jan '44
- Charts for simplifying high-impedance measurements with the radio-frequency bridge. R. L. Nielsen. *bibliog diags Proc Inst Radio Eng* 31:372 July '43
- Continuous-reading electron-tube conductance meter. R. L. Garman. *diags Ind & Eng hem Anal ed* 8:146 Mar '36
- Decibel meter. W. B. Girkin. *diag Radio N* 18:592 Apr '37
- Determination of dielectric properties at very high frequencies. J. A. Chaffee. *Proc Inst Radio Eng* 22:1009 Aug '34
- Dielectric constants and power factors at centimeter wave-lengths; measurement by means of resonant length of coaxial transmission line. C. R. Englund. *il Bell System Tech Jour* 23:114 Jan '44
- Direct reading of the frequency of resonant circuits. W. H. F. Griffiths. *il diags Wireless Eng* 20:521, 595 Nov-Dec '43
- Electrode effects in the measurement of power factor and dielectric constant of sheet insulating materials. E. T. Hoch. *Bell Sys Tech Jour* 5:555 Oct '26
- Electronic device for measuring magnetic fields. A. Rose. *il diag Electronics* 11:31 July '38

- Impedance measurements at high frequencies with standard parts. D. B. Sinclair. Gen Radio Exp Vol 14, No. 4 Sept '39.
- Improved circuits for measuring negative resistance. F. E. Terman. Electronics 6:340 Dec '33
- Improved inter-electrode capacitance meter. A. A. Barco. il diag RC A Rev 6:434 Apr '42
- Measurements of admittances at ultra-high frequencies. J. M. Miller and B. Saltzberg. RCA Rev. 3:486 Apr '39
- Measurement of high-frequency lines. il Electronics 11:26 Apr '38
- Measurement of iron cores at radio frequencies. D. E. Foster and A. E. Newlon. Proc Inst Radio Eng 29:266 May '41
- Measurement of direct interelectrode capacitance of vacuum tubes. A. V. Loughren and H. W. Parker. Proc Inst Radio Eng 17:957 June '29
- Measurement of radio frequency impedance with networks simulating lines. W. L. Barrow. Proc Inst Radio Eng 23:807 July '35
- Measurement of the permittivity and power factor of dielectrics at frequencies from 104 to 108 c. p. s. L. Hartshorn and W. H. Ward. Jour Inst Elec Eng 79:597 '36; also Wireless Section I. E. E. 12:6 Mar '37
- Measuring characteristic impedance of twister parts. A. Alford. Electronics 13:48 Aug '40
- Measuring coil characteristics without an impedance bridge. H. D. Brailsford. diags Electronics 16:86 May '43
- Measuring small capacities with a signal generator. Hygrade Sylvania News Letter 56 Oct '39
- Measuring four-pole networks; reference sheets. J. L. Clarke. diags Electronics 11:31 July '38
- Method for determining the residual inductance and resistance of a variable air conditioner at radio frequencies. R. F. Field and D. B. Sinclair. Proc Inst Radio Eng 24:255 Feb '36
- Method of measuring high resistance at high frequency. Paul B. Taylor. Proc Inst Radio Eng 20:1802 Nov '32
- Method of measuring the radio-frequency resistance of an oscillatory circuit. H. Iinuma. Proc Inst Radio Eng 18:537 Mar '30
- Modifications in the new impedance measuring set. A. T. Starr. diags Wireless Eng 10:609 Nov '33
- New instrument and a new circuit for coil and condenser checking. W. N. Tuttle. Gen Radio Exp Vol 12 Aug-Sept '37
- Oscilloscope patterns of damped vibrations of quartz plates and Q measurements with damped vibrations. T. A. Brown. il diags Proc Inst Radio Eng 29:195 Apr '41
- Parallel-resonance methods for precise measurements of high impedances at radio frequencies and a comparison with the ordinary series-resonance methods. D. B. Sinclair. Proc Inst Radio Eng 26:1466 Dec '38
- Precise measurements of electromagnetic fields. H. G. Smith. il diags Proc Radio Eng 26:45 Jan 38
- Q for unloaded concentric transmission lines; alignment chart makes possible rapid determining of Q and sending-end impedance. R. C. Miedke. Electronics 16:139 Sept '43
- Q meter and its theory. V. V. L. Rao. diags Proc Radio Eng 30:502 Feb '42; Discussion. H. Stockman. diags 31:85 Feb '42
- Q meter, type 170-A. Rev Sci Instr 12:231 Apr '41
- Radio-frequency bridge for impedance and power-factor measurements. D. W. Dye and T. I. Jones. bibliog diags Jour Inst Elec Eng 72:169 Feb '33
- Radio-frequency bridges. H. L. Kirke. il Jour Inst Elec Eng 92 pt 3:39 Jan; 92 pt 3:2 Mar '45; Excepts. Electrician 133:50 Oct '44
- Radio-frequency electrical measurements; a guide for radio engineering laboratory instruction. H. A. Brown. 2d ed 384p \$4 McGraw-Hill '38
- Radio frequency inductance measurements using beat frequency test equipment; abstract. H. R. Heese. diag Electronics 13:75 Aug '40
- Radio frequency measurement of resistance, reactance and impedance. T. C. Macnamara. diags Wireless Eng 12:471 Sept '35
- Receiver input connections for u-h-f measurements. J. A. Rankin. diags RCA Rev 6:473 Apr '42
- Resonance bridge for use at frequencies up to 10 megacycles per second. C. L. Fortescue and G. Mole. Jour Inst Elec Eng 82:687 '38
- Resonant cavity method for measuring dielectric properties at ultra-high frequencies. C. N. Works and others. bibliog Proc Inst Radio Eng 33:245 Apr '45
- Resonant impedance and effective series resistance of short-wave parallel resonant circuits. H. Iinuma. Proc Inst Radio Eng 19:467 Mar '31
- Stabilized amplifier for measurement purposes; network analyzer. H. A. Thompson. il diags Elec Eng 57Trans379; Discussion. Trans383 July '38
- Twin-T; new type of null instrument for measuring impedance at frequencies up to 30 megacycles. D. B. Sinclair. il diags Proc Inst Radio Eng 28:310 July '40
- U-H-F impedance measurements. N. Marchand and R. Chapman. il diags Electronics 18:97 June '45
- Use of the LC checker for r-f measurements. Engineering Dept., Aerovox Res W. 12:6 June '40
- Valve ammeter for the measurement of small alternating currents of radio frequency. H. E. M. Barlow. diags Jour Inst Elec Eng 77:612; Discussion. 623 Nov '35
- Values of Q for various component parts. Electronics 8:126 Apr '35
- Variable air condensers. R. Faraday Proctor. Wireless Eng 17:257 June '40
- Versatile Q meter. F. E. Planer. il Electronics 16:190 Sept '43

*See also*

Bridges	Impedance
Capacitance	Q Measurements
Dielectric Measurements	Transmission Lines

#### Field Strength of Radio Waves

- Accuracy of radio field intensity measurements at broadcast frequencies. H. Diamond, K. A. Norton, and E. G. Lapham. Research Paper R p1156, Nat Bur Stand 21, p795 Dec '38
- Auroral occurrences and ionospheric disturbances from field-strength measurements. 1930-1940; abstract. H. T. Stetson. Proc Inst Radio Eng 28:141 Mar '40

LIBRARY

**MEASUREMENTS—Continued**

- Compact radio field strength meter. P. R. Taylor. il diags Proc Inst Radio Eng 22:191 Feb '34
- Design of ultra-short-wave field-strength measuring equipment. F. M. Colebrook and A. C. Gordon-Smith. diags Jour Inst Elec Eng 90 pt 3:28 Mar '43
- Field-strength measuring equipment at 500 megacycles. R. W. George. il diags RCA Rev 5:69 July '40
- Field strength measurements. H. M. Smith. li Electronics 9:20 Aug '36
- Field strength meter for induction control. M. T. Putnam and S. F. Bushman. il diag Radio N 28:14 Aug '42
- Field strength observations of transatlantic signals, 40 to 45 megacycles. H. O. Peterson and D. R. Goddard. il diag Proc Inst Radio Eng 25:1291 Oct '37
- Field strength of Delhi 3 and Delhi 4 at Calcutta during the solar eclipse of September 21, 1941. S. P. Chakravarti. Proc Inst Radio Eng 31:269 June '43
- Field-strength survey, 52.75 megacycles from Empire State building. G. S. Wickizer. il maps Proc Inst Radio Eng 28:291 July '40
- Free space propagation measurements at 75 megacycles. G. L. Haller. il diags Franklin Inst Jour 229:165 Feb '40
- Method of calibrating a field-strength measuring set. F. M. Colebrook and A. C. Gordon-Smith. diag Jour Inst Elec Eng 88 pt 3:15 Mar '41
- Polarization measurements in the field of a horizontal transmitting dipole; abstract. J. Grosskopf and K. Vogt. Wireless Eng 21:437 Sept '44
- Radio field strength measuring system for frequencies up to 40 megacycles. H. T. Friis and E. Bruce. Proc Inst Radio Eng 14:507 Aug '26
- Radio transmission survey of Ohio. R. C. Higgy and E. D. Shipley. Ohio State U Eng Exp Sta Bul 92:1 '36 (p25c)
- Recording field strength; equipment used by the British broadcasting corp. for automatic measurement. C. H. Smith. il diag Wireless Eng 10:14 Jan '33
- Relative field strength meter, for locating interference and to discover the best u.h.f. antenna location. T. Chew. il diag Radio N 25:19 May '41
- Standards on radio wave propagation; measuring methods. 16p Institute of Radio Engineers, New York '42
- Theory and experimental confirmation of calibration of field-strength measuring sets by radiation. J. S. McPetrie and J. A. Saxton. Jour Inst Elec Eng 88 pt 3:11 Mar '41
- Urban field strength survey at thirty and one hundred megacycles. R. S. Holmes and A. H. Turner. diags maps Proc Inst Radio Eng 24:755 May '36
- Use of field-intensity measurements for commercial-coverage evaluation. E. H. Felix. map Proc Inst Radio Eng 32:381 July '44
- See also*  
Field Intensity  
Propagation of Radio Waves
- Frequency**
- Capacitive potential divider for high frequency measurements. K. Schlesinger. il diags Wireless Eng 8:532 Oct '31
- Coaxial cable attenuation measurements at 300 mc. H. H. Race and C. V. Larrick. il diags Gen Elec Rev 44:507 Sept '41
- Correction factor for the parallel wire system used in absolute radio-frequency standardization. August Hund. Proc Inst Radio Eng 12:817 Dec '24
- Device for the precise measurement of high frequencies. F. A. Polkinghorn and A. A. Roetken. il diags Proc Inst Radio Eng 19:937 June '31
- Direct-reading frequency meter. F. Guarnaschelli and F. Vecchiacchi. Proc Inst Radio Eng 19:659 Apr '31
- Direct-reading frequency meter suitable for high speed recording. F. V. Hunt. Rev Sci Instr 6:43 Feb '35
- Direct reading of the frequency of resonant circuits. W. H. F. Griffiths. il diags Wireless Eng 20:524, 595 Nov-Dec '43
- Direct-reading wavemeter for ultra-high frequencies. E. Karplus. Gen Radio Exp 15:1 Aug '40
- Drift analysis of the Crosby frequency-modulated transmitter circuit. E. S. Winlund. Proc Inst Radio Eng 29:390 July '41
- Electrical measurements at ultra-high frequencies. R. King. il diags Proc Inst Radio Eng 23:885 Aug '35
- Ellipse diagram of a Lecher wire system. A. Hikosaburo. Proc Inst Radio Eng 21:303 Feb '33
- Frequency measurement, a new equipment for the range 1-70 Mc/s. H. A. Thomas. diags Wireless Eng 14:303 June '37
- Frequency measurements with the cathode-ray oscillograph. F. J. Rasmussen. Trans A. I. E. E. 45:1256 '36
- Frequency measuring and calibrating installations for decimetric waves; abstract. L. Rohde and H. M. Schmidt. Wireless Eng 21:397 Aug '44
- Frequency measurement in electrical communication. J. W. Horton, N. H. Ricker, and W. A. Marrison. Trans A. I. E. E. 42:730 '23
- Frequency monitor stroboscope for frequency checks at KVOE. W. S. Wiggins and S. G. Guenther. il diag Electronics 18:138 May '45
- Harmonic method of intercomparing the oscillators of the national standard of radio frequency. E. G. Lapham. Proc Inst Radio Eng 24:1495 Nov '36
- Interpolation methods for use with harmonic frequency standards. J. K. Clapp. Proc Inst Radio Eng 18:1575 Sept '30
- Measurement of balanced and unbalanced impedances at frequencies near 500 Mc/s, and its application to the determination of the propagation constants of cables. L. Essen. diags Jour Inst Elec Eng 91 pt 3:84 June '44
- Measurements of the angle of arrival in the short-wave band of European stations; particularly at times of layer dissolution; abstract. J. Grosskopf and K. Vogt. Wireless Eng 19:213 May '42
- Measurement of frequency of ultra-radio waves. J. Barton Hoag. Proc Inst Radio Eng 21:29 Jan '33
- Measurements on dipoles in the decimetric-wave region; abstract. P. Lange. Wireless Eng 18:465 Nov '41

- Measurement of the characteristics of concentric cables at frequencies between 1 and 100 megacycles per second. T. L. Jones. Jour Inst Elec 89 pt 3:21-20 Dec '42
- Method of measuring frequency deviation. M. G. Crosby. RCA Rev 4:473 Apr '40
- Method of measuring frequency drift. QST 20:54 Oct '36
- Method of measuring very short radio wavelengths and their use in frequency standardization. F. W. Dunmore and F. A. Engel. Proc Inst Radio Eng 11:467 Oct '23
- Monitoring the standard frequency emissions. E. A. Lapham. Proc Inst Radio Eng 23:719 July '35
- Polarisation measurements in the short-wave range; abstract. J. Grosskopf and K. Vogt. Wireless Eng 18:328 Aug '41
- Precise and rapid method of measuring frequencies from 5 to 500 c. p. s. N. P. Case. Proc Inst Radio Eng 18:1586 Sept '30
- Precision tuning fork frequency standard. E. Norrman. Proc Inst Radio Eng 20:1715 Nov '32
- Precision wavemeter and frequency-deviation measuring apparatus for frequency-modulation investigations; abstract. A. Weissfloch. Wireless Eng 20:567 Nov '43
- Quartz crystal frequency measurement. K. M. Laing. Radio N 33:46 May '45
- Sensitive frequency meter for the 30 to 340 megacycle range. E. L. Hall. bibliog il diag Electronics 14:37 May '41
- Survey of ultra-high-frequency measurements. L. S. Nergaard. RCA Rev 3:156 Oct '38
- Technique of frequency measurement, and its application to telecommunications. J. E. Thwaites and F. J. M. Laver. bibliog diags Jour Inst Elec Eng 89 pt 3:139; Discussion. 165 Sept '42
- Thermal method for measuring efficiencies at ultra-high frequencies applied to the magnetron oscillator. H. W. Kohler. il diag Proc Inst Radio Eng 25:1381 Nov '37
- Time service of the U. S. Naval observatory. J. F. Hellweg. Trans A. I. E. E. 51:538 June '32
- Ultra high frequency technique; measurements in the u-h-f spectrum. R. F. Lewis. bibliog diags Electronics 15:63 Apr '42
- Wave-length measurements of decimetric, centimetric and millimetric waves. A. G. Clavier. Elec Comm 20:295 '41
- Wide-band amplifiers for measuring purposes, for very large frequency ranges; abstract. R. Wunderlich. Wireless Eng 22:85 Feb '45
- See also*
- Ultra-high-frequencies—Measurements
- Modulation**
- Amplitude modulation measurements. G. Dexter. il diags Radio N 32:60 July '44
- Amplitude frequency, and phase modulation relations. A. Hund. Electronics 15:48 Sept '42; Correction. 15:142 Oct '42
- Cathode-ray modulation indicator. H. Burgess. il diag Radio N 20:51 Aug '38
- Control of phase-fading in long-distance communication. A. L. Green and O. O. Pulley. Jour Inst Elec Eng 8:623; Discussion. 633-5 Jan '37
- Differential modulation meter. V. V. Gunsolley. il diags Electronics 13:18 Jan '40
- Direct-reading modulation meter. J. Strong. il Radio N 19:349 Dec '37
- Frequency modulation monitoring system. Roger J. Pieracci. Proc Inst Radio Eng 28:374 Aug '40
- Graphical harmonic analysis for determining modulation distortion in amplifier tubes. W. R. Ferris. Proc Inst Radio Eng 23:510 May '35
- Measurement of modulation depth. H. D. M. Ellis. diags Wireless Eng 18:99 Mar '41
- Method of measuring frequency deviation. M. G. Crosby. RCA Rev 4:473 Apr '40
- Modulator bridge; design and applications. R. K. Hellmann. diags Electronics 11:28 Mar '38
- Modulation bridge; design and applications. R. K. Hellmann. diags Electronics 11:28 Mar '38
- Modulation measurements by cathode-ray tube. il Electronics 8:23 Jan '35
- Modulation meter. il diag Radio N 18:601 Apr '37
- Modulation measurement; use of diode rectifier followed by a linear d-c amplifier. C. G. Seright. diags Electronics 9:23 Aug '36
- Modulation monitoring. E. Divoire. diags Electronics 9:70 Sept '36
- New modulation meter. F. C. Williams and A. E. Chester. bibliog diags Wireless Eng 15:257 May '38
- Note on modulation. J. G. Brainerd. Proc Inst Radio Eng 28:136 Mar '40
- Notes on the practical measurement of the degree of modulation. L. F. Gaudermack. Proc Inst Radio Eng 22:819 July '34
- Percentage modulation meter. S. T. Carter. diags Electronics 14:50 Jan '41
- Response of modulators at high audio-frequencies. D. A. Bell. Wireless Eng 535 Oct '35
- Using phone line for remote indication of over-modulation. A. Leeman. diags Electronics 16:144 July '43
- Vacuum tube modulation meter. P. M. Honnell. il diags Electronics 10:18 Jan '37
- See also*
- Carrier Modulation
- Frequency Modulation
- Radio Receiver**
- Acoustic testing of high-fidelity receivers. H. A. Wheeler and V. E. Whitman. Proc Inst Radio Eng 23:160 June '35
- Analysis of signal-to-noise ratio of ultra-high-frequency receivers. E. W. Herold. RCA Rev 6:332 Jan '42
- Design and testing of multirange receivers. D. E. Harnett and N. P. Case. Proc Inst Radio Eng 23:578 June '35
- High quality radio broadcast transmission and reception. Stuart Ballantine. Proc Inst Radio Eng 23:618 June '35
- I-F selectivity in receivers for commercial radio services. J. B. Moore and H. A. Moore. RCA 4:319 Jan '40
- Measurement of loop antenna receivers. W. O. Swingard. Proc Inst Radio Eng 29:382 July '41
- Method of measuring noise levels on short-wave radiotelegraph circuits. H. O. Peterson. Proc Inst Radio Eng 23:128 Feb '35
- Minimum noise levels obtained on short-wave radio receiving systems. K. G. Jansky. Proc Inst Radio Eng 25:1517 Dec '37



**MEASUREMENTS—Continued**

Rapid method for estimating the signal-to-noise ratio of high-gain receiver. F. B. Llewellyn. Proc Inst Radio Eng 19:416 Mar '31

Receiver characteristics of special significance to broadcasters. D. E. Foster. Communications 19:9 May '39

R. M. A. specification for testing and expressing the overall performance of radio receivers. Jour Inst Elec Eng 81:104 '37; also Wireless Sec 12:179 Sept '37

Scott high-fidelity receivers. E. H. Scott. Proc Inst Radio Eng 29:25 June '41

Sensitivity calibration of receivers; radiation method for wave-lengths below 10 meters. J. S. McPetrie. il Wireless Eng 22:6 Jan '45

Some considerations on the design of radio-frequency signal generators. J. R. Bird. Proc Inst Radio Eng 19:438 Mar '38

Standards on radio receivers. 16p Institute of Radio Engineers, New York, '38 \$0.50

*See also*

**Receivers****Voltage, Current, and Power**

Anode potential measurements with a voltage meter. C. R. Cosens. Wireless Eng 12:84 Feb '35

Ferranti high-voltage direct-current testing equipment. il diags Engineering 156:6 July 2 '43

Galvanometer for measuring voltages in high resistance circuits. Robert Finlay. il Electronics 10:39 Nov '37

Measurement of radio-frequency power; cathode-ray wattmeter. A. H. Taylor. il diags Proc Inst Radio Eng 24:1342 Oct '36

Measurements of currents and voltages down to a wave-length of 20 centimeters. M. J. O. Strutt and K. S. Knol. bibliog il diags Proc Inst Radio Eng 27:783 Dec '39

Measurement of the radiofrequency voltage in a cyclotron. W. E. Danforth and M. B. Sampson. diags Rev Sci Instr 9:175 June '38

Measurements pertaining to the co-ordination of radio reception with power apparatus and systems. C. M. Foust and C. W. Frick. bibliog diags Elec Eng 62:Trans 281 June '43

Measuring r-f power with three ammeters. J. L. Hollis. diags Electronics 18:142 June '45

Method of measuring very small or very large impedances in the decimetric and centimetric-wave region; abstract. A. Weissfloch. Wireless Eng 21:601 Dec '44

Methods of measuring high voltages. Engineering Dept., Aerovox Res W. 17:1-2 Jan-Feb '45

Peak voltages. Engineering Dept., Aerovox Corporation. 8:6 June '36

Radio-frequency power measurement; using a diode rectifier and a wattmeter. P. M. Honnell. il diags Electronics 13:21 Jan '40

Radio-frequency power measurements with the quadrant electrometer. C. L. Bradford. il diags Proc Inst Radio Eng 23:958 Aug '35

R-f power measurements. G. F. Lampkin. diags Electronics 9:30 Feb '36

Voltage measurements at very high frequencies. E. S. Megaw. bibliog diags Wireless Eng 13:65, 135-201 Feb-Apr '36

Voltage measurements at very high frequencies, using a diode with adjustable electrode distance. M. von Ardenne. il diag Wireless Eng 14:248 May '37

*See also*

Voltmeters, Vacuum-Tube  
Wattmeters

**Vacuum-Tube Characteristics**

Anode to accelerating electrode space in thermionic valves. J. H. O. Harries. bibliog diags Wireless Eng 12:190 Apr '36; Discussion. 13:315 June '36

Characteristic curves of the triode. E. L. Chaffee. bibliog diags Proc Inst Radio Eng 30:383 Aug '42

Cathode-ray tube applications. H. F. Mayer. Electronics 11:14 Apr '38

Development problems and operating characteristics of two new ultra-high-frequency triodes. W. G. Wagener. Proc Inst Radio Eng 26:401 Apr '38

Dynamic characteristics of flow discharge tubes; abstract. Reich and Depp. diags Electronics 11:48 Aug '38

Dynamic measurement of electron-tube coefficients. W. N. Tuttle. Proc Inst Radio Eng 21:844 June '33

Exact measurement of electron-tube coefficients. R. W. Hickman and F. V. Hunt. Rev Sci Instr 6:268 Sept '35

Input conductance; measurement in high-slope frequency amplifier valves. F. Preisach and I. Zakarias. diags Wireless Eng 17:147 Apr '40

Input resistance of vacuum tubes as ultra-high-frequency amplifiers. W. R. Ferris. diags Proc Inst Radio Eng 24:82; Discussion. 105 Jour '36

Measurement of vacuum tube characteristics in the positive grid region by an oscillographic method. H. N. Kazanowski and I. E. Mouromtseff. Proc Inst Radio Eng 21:1082 Aug '33

Mutual conductive meter. C. B. Aiken and J. F. Bell. Communications 18:19 Sept '38

Operation of ultra-high frequency tubes. F. B. Llewellyn. Bell Sys Tech Jour 15:575 Oct '36

Oscillographic method of measuring positive grid characteristics. O. W. Livingston. Proc Inst Radio Eng 28:267 June '40

Power tube characteristics. E. L. Chaffee. il Electronics 11:34 June '38

Simplified method for computing performance of transmitting tubes. W. G. Wagener. diags Proc Inst Radio Eng 25:47 Jan '37

Theory of thermionic tubes. E. L. Chaffee. Chap IX McGraw-Hill, 1933

Tracing tube characteristics on a cathode-ray oscilloscope. J. Millman and S. Moskowitz. Electronics 14:36 Mar '41

*See also*

Vacuum Tubes

**Wave Form and Phase**

An analyzer for the voice-frequency range. C. R. Moore and A. S. Curtis. Bell Sys Tech Jour 6:217 Apr '27

Analyzer for complex electric waves. A. G. Landeen. Bell Sys Tech Jour 6:230 Apr '27

Basic elements of a general decimetric wave measuring technique; abstract. L. Rohde. Wireless Eng 22:194 Apr '45

- Cathode-ray phasemeter. S. Bagno and H. Barnett. *il Electronics* 11:24 Jan '38
- Circuit response to non-sinusoidal wave forms. P. T. Chin. *bibliog Electronics* 17:138 Oct '44
- Continuously variable phase-shifting device. O. O. Pulley. *Wireless Eng* 13:593 Nov '36
- Determination, by means of the impedance transformation, of the voltage or current phase difference between input and output of a four-terminal network; abstract. A. Weissflock. *Wireless Eng* 21:442 Sept '44
- Graphical harmonic analysis. J. A. Hutcheson. *Electronics* 9:16 Jan '36
- Instrument for direct measurement of the traveling wave coefficient in feeders. G. W. O. Howe. *diags Wireless Eng* 20:365 Aug '43
- Locked-in oscillator; its application to automatic tuning and measurement of modulation. S. Byard and W. H. Eccles. *diags Wireless Eng* 18:2 Jan '41
- Low-level wattmeter. A. L. Albert and H. P. Bockendorf. *bibliog il diag Electronics* 9:28 Mar '36
- Measurement of phase distortion. H. Nyquist and S. Brand. *Bell Sys Tech Jour* 9:522 July '30
- Measurement of amplification and phase shift in amplifiers. E. E. Wright and G. E. G. Graham. *il diags Wireless Eng* 14:259 May '36
- Measurement of the lateral deviation of radio waves by means of a spaced-loop direction finder. R. H. Barfield and W. Ross. *bibliog diags. Jour Inst Elec Eng* 83:98 pt 1-2 July '38
- Measurements of the angle of arrival in the short-wave band of European stations; particularly at times of layer dissolution; abstract. J. Grosskopf and K. Vogt. *Wireless Eng* 19:213 May '42
- Measurements of very short wave-lengths. *Electronics* 15:108 Dec '42
- Method of predicting audio-frequency harmonic distortion. *Electronics* 16:164 Apr '43
- Methods and apparatus for measuring distortion. M. Levy. *Elec Comm* 18:206 Jan '40
- Modulated-beam cathode-ray phase meter; measuring characteristics of amplifiers used in vibration measurement. A. Watton, jr. *bibliog il diags Proc Inst Radio Eng* 32:268 May '44
- Modulation measurement; use of diode rectifier followed by a linear d-c amplifier. C. G. Seright. *diags Electronics* 9:23 Aug '36
- New radio-frequency phase meter. R. R. Law. *Rev Sci Instr* 4:537 Oct '33
- Note on the fundamental suppression in harmonic measurements. H. M. Wagner. *Proc Inst Radio Eng* 23:85 Jan '35.
- Phase adjuster. K. Kreielsheimer. *Wireless Eng* 17:439 Oct '40
- Phase angle of vacuum tube transconductance at very high frequencies. F. B. Llewellyn. *diags Proc Inst Radio Eng* 22:947 Aug '34
- Phase-curve tracer for television. B. D. Loughlin. *Proc Inst Radio Eng* 29:107 Mar '41
- Phase shift in radio transmitters. W. A. Fitch. *Proc Inst Radio Eng* 20:683 May '32
- Phase shifting up to 360 degrees. F. A. Everest. *Electronics* 14:27 Nov '44
- Simple method of observing current amplitude and phase relations in antenna arrays. J. F. Morrison. *Proc Inst Radio Eng* 25:1310 Oct '37
- Some applications of negative feedback with particular reference to laboratory equipment. F. E. Treman, R. R. Buss, W. R. Hewlett, and F. C. Cahill. *Proc Inst Radio Eng* 10:649 Oct '39
- Wavelength measurements of decimetric centimetric and millimetric waves; abstract. A. C. Clavier. *diags Electronics* 15:108 Dec '42
- Vector response indicator. B. D. Loughlin. *Trans A. I. E. E.* 59:355 June '40
- Wave analysis. L. B. Arguimbau. *Gen Radio Exp* 7:12 June '33
- 36 and 72 ordinate schedules for general harmonic analysis. R. P. G. Denman. *Electronics* 15:44 Sept '42
- See also*  
Oscillograph Phase Waveform Analysis  
Propagation of Waves
- ### METEOROLOGRAPHIS
- Automatic weather station. H. Diamond and W. S. Hinman, jr., *bibliog diags 8 pls J. Research Nat Bur Stand* 25:133 Aug '40
- Automatic radio balloons report weather facts. W. G. Many. *il Radio N* 19:84 Aug '37
- Determining cloud depths; electronic photocell equipment; essential for safe aircraft flights. S. R. Winters. *diags Radio N.* 30:44 Oct '43
- Electric hygrometer and its application to radio meteorography. F. W. Dunmore. *diags pls J. Research Nat Bur Stand* 20:723 June '38
- Improved cosmic-ray radio sonde. W. H. Pickering. *diags Rev Sci Instr* 14:171 June '43; *Abstract. Electronics* 16:212 Dec '43
- Improved radio sonde and its performance. H. Diamond and others. *bibliog pls diags map Jour Research Nat Bur Stand* 25:327 Sept '40
- Increased safety for aviation; radio meteorograph. *Science* 85:sup9 Feb 19 '37
- Method for the investigation of upper-air phenomena and its application to radio meteorography. H. Diamond, W. S. Hinman, r., and F. W. Dunmore. *bibliog diags pls Jour Research Nat Bur Stand* 20:369 Mar '38; *Same. Proc Inst Radio Eng* 26:1235 Oct '38
- Navy radio meteorograph system. *Franklin Inst Jour* 225:351 Mar '38
- New radiosonde hygrometer. *Aero Digest* 46:102 July 1 '44
- Radio sonde. W. H. Pickering. *il diags Inst Radio Eng* 31:479 Sept '43
- Radio sonde. W. Moody, *diag Radio N* 28:13 Oct '42
- Radio sounding in the United States. C. B. Pear, jr. *bibliog il map Electronics* 16:82 Jan '43
- Radio meteorograph development by the Radio section of the Bureau of standards. *il Aero Digest* 30:64 Apr '37
- Radio meteorographs. C. B. Pear, jr. *il Electronics* 10:32 Sept '37
- Radio meteorograph. *il Aero Digest* 30:68 Feb '37
- Radio in the sky; instruments carried by balloons to investigate meteorological conditions in the upper atmosphere; illustrations. *Electronics* 10:28 Dec '37
- Radio weatherman; how weather reports are transmitted from the sky to robot weather observers. C. S. Van Dresser. *il Radio N.* 20:26 Aug '38

**METEOROLOGRAPHS—Continued**

- Radiosonde transmits weather information from the intensely cold stratosphere. *il* Radio. N 31: 207 Feb '44
- Recent applications of radio to the remote indication of meteorological elements. H. Diamond. bibliog *il* diags Elec Eng 60:163 Apr '41
- Receiver for radiometeorographs. A. C. Austin and L. L. Stockmann. *diag* Rev Sci Instr 7:462 Dec '36
- Sounding balloons and weather conditions. Science 81:sup8 May 3 '35
- To learn upper air weather conditions; U. S. Weather bureau radio-meteorograph. *il* Pub Works 69:44 Oct '38
- Weather conditions in the upper air; observations by radio meteorographs. Science 85:sup9 Feb '37
- Weather and war above the clouds. W. R. Thickstun and M. L. Blanc. *il* *diag* Radio N. 32:25 Nov '44

*See also*

Propagation of Waves  
Weather

**MICROPHONES**

- Absolute noise level of microphones; a definition proposed for discussion. H. G. Baerwald. Jour Amer Acoustical Soc 12:131 July '40
- Bomb scoring made more accurate by microphone method. *il* Sci Amer 168:128 Mar '43
- Broadcasting political conventions; technical report on radio facilities installed at Chicago Stadium. McElrath. *il* *diag* Electronic 18:116 Jan '45
- Calibration of microphones by the principles of similarity and reciprocity. H. F. Olson. *diags* RCA Rev 6:36 July '41
- Design of two-tube microphone amplifier. Paul Von Kunits. *il* Electronics 8:512 Dec '45
- Dipole microphone. B. Olney. Jour Amer Acoustical Soc 16:172 Jan '45
- Directional microphone with controlled characteristics. A. J. Ebel. *il* *diag* Electronics 11:40 Nov '38
- Effect of microphone polarity on percentage modulation. J. L. Mathaway. *il* Electronics 12:28 Oct '39
- Frequency response curve tracer. H. B. Shaper. *il* Electronics 18:118 Mar '45
- Impedance of a carbon microphone. F. Offner. *diag* Proc Inst Radio Eng 26:1009 Aug '38
- Lapel microphone of the velocity type. H. F. Olson and R. W. Carlisle. Proc Inst Radio Eng 22:1354 Dec '34
- Line microphones. H. F. Olson. Proc Inst. Radio Eng 27:438 July '39; abstract. Wireless Eng 16: 589 Dec '39
- Loudspeakers and microphones. E. C. Wentz and A. L. Thuras. Bell Sys Tech Jour 131:259 Apr '34
- Microphone input circuit. T. E. Campbell. *il* Radio N 33:49 Jan '45
- Microphones and Receivers. L. C. Pockock. Elec Comm 21:218 '44
- Mike and speaker placements. C. E. Jackson. *diags* Radio N 25:19 Jan '41
- Noise reduction anticipation circuits; additional microphone to provide signal. J. G. Frayne. *il* Soc Motion Pic Eng Jour 43:313 Nov '44
- On the collection of sounds in reverberant rooms, with special reference to the application of the

ribbon microphone. Harry F. Olson. Proc Inst Radio Eng 21:655 May '33

- Phase distortion in electroacoustic systems. F. M. Weiner. bibliog Jour Amer Acoustical Soc 13:115 Oct '41
- Polydirectional microphones; abstract. H. F. Olson. *diags* Electronics 16:278 Mar '43
- Signal corps microphone, war model. *il* *diags* Mod Plastics 21:72 Sept '43
- Spontaneous fluctuations in carbon microphone and and other granular resistances. C. J. Christensen and G. L. Pearson. Bell Sys Tech Jour 15:181 Apr 36
- Unidirectional dynamic microphone. Proc Inst Radio Eng 27:sup2 June '39
- Uniphase unidirectional microphones. B. B. Bauer. Jour Amer Acoustical Soc 13:41 July '41
- Western electric microphone; directivity by combination of ribbon and dynamic elements. Proc Inst Radio Eng Jan '39

*See also*

Public Address Systems  
Sound

**MICROSCOPE.** See Electron Microscope

**MICROWAVES**

- Dielectric constants and power factors at centimeter wavelengths; measurement by means of resonant lengths of coaxial transmission line. C. R. England. *il* Bell Sys Tech Jour 23:114 Jan '44
- Full parabolic reflectors for microwaves. C.I.H.A. Staal. Philips Transmitting News 3:14 '37
- Generation and amplification of microwaves. F. Cox. Electrician 128:73 Jan 30 '42; abstract. Elec Rev (Lond) 130:115 Jan 23 '42
- Generation of decimetric waves with diodes; abstract. J. Menke. Wireless Eng 21:490 Oct '44
- Introduction to microwaves. Simon Ramo. 138p McGraw-Hill, New York '45
- Ionosphere, skip-distance of radio waves, and the propagation of microwaves. E. O. Hurlburt. bibliog Proc Inst Radio Eng 23:1492 Dec '35
- Magnetron as receiver for centrimetric waves, including the use of superregeneration; abstract. H. Schmerson. Wireless Eng 18:293 July '41
- Magnetron oscillator for instruction and research in microwave technique. J. T. Tykociner and L. R. Bloom. *il* *diags* Proc Inst Radio Eng 32:299 May '44
- Measurements of currents and voltages down to a wavelength of 20 centimeters. M. J. O. Strutt and K. S. Knol. bibliog *il* *diags* Proc Inst Radio Eng 27:783 Dec '39
- Measurement of the sensitivity of receivers for short (metric and decimetric) waves; abstract. K. Franz. Wireless Eng 19:529, 574 Nov-Dec '42
- Micro-ray communication. W. L. McPherson and E. H. Ullrich. *diags* Jour Inst Elec Eng 78:632 June '36. Same. Elec Comm 14:340 '36
- Microwave radiation from the sun. G. C. Southworth. Franklin Inst Jour 239:285 Apr '45
- Microwave radio circuit of the Radio corporation of America; connecting New York and Philadelphia demonstration. Science 83:600 June 19 '36
- Micro-wave radio in yard service; Rock Island opens own station for train operation. *il* Ry Age 116:1210 June 24 '44

- Microwave transmission. J. C. Slater. 309 pp. McGraw-Hill. New York '42
- Microwaves, present and future; abstract. W. L. Barrow. Electronics 13:18 July '40
- Microwaves for postwar railroads. S. Freedman. il plans Radio N 32:21 July '44
- Microwaves to detect aircraft. il Electronics 8:284 Sept '35
- Microwaves useful for television and other applications. G. B. Hoadley. Sci Amer 172:174 Mar '45
- Principles of micro-wave radio. E. U. Condon. bibliog diags Rs Mod Phys 14:341 Oct '42
- Propagation at a wavelength of seventy-three centimeters. B. Trevor and R. W. George. Iil Proc Inst Radio Eng 23:461 May '35
- Propagation tests with micro rays. A. G. Clavier. Elec Comm 15:211 '37
- Superheterodyne reception of micro-rays A. H. Reeves and E. H. Ullrich. Elec Comm 16:153 '37
- Suppressor action of concentric lines with longitudinally layered dielectric in the decimetric wave band; abstract. H. Riedel. Wireless Eng 20:505 Oct '43
- Transmission and reception of centimeter waves. I. Wolff, E. G. Linder and R. A. Braden. il diag Jour Inst Radio Eng 23:20 Jan '35
- Transformation (matching) section for decimetric and centimetric waves, with slight dependence on frequency; abstract. A. Weissfloch. Wireless Eng 21:230 May '44
- Transformation theorem for loss-free quadripoles, and its application to the experimental investigation of decimetric and centimetric-wave circuits; abstract. A. Weissfloch. Wireless Eng 20:135 Mar '43
- U.H.F. simplified. M. S. Kiver. 236p. Van Nostrand, New York '45
- UHF vs. microwaves, in two-way radio communications. S. Freedman. il Radio No 31: 24 May '44
- Ultra-high-frequency radio engineering. W. L. Emery. 296p. Macmillan, New York '44
- Ultra-short and decimetric-wave valves; deflection of a focussed beam of electrons as a possible basis for construction. F. M. Colebrook. diags Wireless Eng 15:198 Apr '38; Discussion. 15:320, 612 June, Nov '3 8
- Using microwaves; pocket-size transmitter. J. Clemens. il diag Radio N 19:45 June '38
- Variable frequency oscillator for 25 centimeters; abstract. H. G. Ryans, diags Electronic 18:210 Jan '45
- Visualizing centimeter waves; sound wave analogy. W. Bacon. Electronics 17:258 June '44
- Wavelength measurements of decimetric, centimetric and millimetric waves; abstract. A. C. Clavier. diag Electronics 15:108 Dec '42
- 450-mc. microwave transmitter. R. B. Franck. il diag Radio N 33:38 May '45
- See also*
- |                   |                     |
|-------------------|---------------------|
| Cavity Resonators | Oscillators, U.H.F. |
| Klystron          | Waves Guides        |
| Magnetron         |                     |
- MILITARY RADIO**
- Army-navy preferred tubes; list. Electronics 15: 120 Nov '42
- Army radio direction finder networks. G. Twist. il diags Electronics 17:118 Nov '44
- Blitzkrieg television; use in army maneuvers. A. A. Lescarbourea. il Radio N 24:6 Dec '40
- Electronic megaphones; units using vacuum-tube amplifiers aid navy in maintaining communications among convoyed ships. il diags Electronics 16:125 Nov '43
- Laboratories to develop final victory; Signal corps general development laboratories. E. E. Uhrhane. il Radio N 28:112 Nov '42
- Military radio design; signal corps equipment. J. Hessel. il Radio N 28:110 Nov '42
- Mine locators. C. Chappell. il Radio N 31:34 Mar '44
- Navy electronics program and some of its past, present, and future problems; proposal for radar patents pool. J. B. Dow. Proc Inst Radio Eng 33:291-9 May '45; Same cond. Elec Eng 65:87 Mar '45
- Procurement; Signal corps procurement branch. E. V. Eleder. il Radio N 28:115 Nov '42
- Radio and the blitz. L. W. Orton. il Radio N 32:62 Aug '44
- Radio in the U. S. army; illustrations. Electronics Radio in the war effort; symposium. Proc Inst Radio Eng. 30:470 Oct '42
- Radio industry goes to war. L. Winner. il Radio N 27:10 May '42
- Radio production for the armed forces. S. C. Hooper. Proc Inst Radio Eng 31:640 '43; Abstract. Electronic 16:288 Mar '43
- Radio standards go to war. H. P. Westman, Proc Inst Radio Eng 31:381 July '43
- Some fundamental considerations in military amplifier design. S. L. Chertok. il Jour Soc Motion Picture Eng. 43:10 July '44
- U. S. army Signal corps issue. il Radio N 31:83 Feb '44
- Wartime radio production. R. C. Ellis. Proc Inst Radio Eng 31:379 July '43
- See also*
- Laws and Regulations
- MILLIAMMETER.** See Ammeters
- MIXER, Audio.** See Broadcasting Station Control Equipment
- MODULATION**
- Amplitude, frequency and phase-angle modulation. bibliog Wireless Eng 17:339 Aug 540
- Amplitude, frequency and phase modulation relations. A. Hund. Electronics 15:48 Sept '42; Correcton. 15:142 Oct '42
- Amplitude modulation. Engineering Dept., Aero-vox Res W. 14:6 June '42
- Analysis of load-impedance modulation. Hans Doder. Proc Inst Radio Eng 27:386 June '39
- Armstrong's frequency modulator. D. L. Jaffe. Proc Inst Radio Eng 26:475 Apr '38
- Asymmetric side-band broadcast transmission. P. P. Eckersley. diags Jour Inst Elec Eng 77:517 Oct '35; Abstract. Wireless Eng 12:321 June '35; Discussion, Jour Inst Elec Eng 77:532 Oct '35
- Auto-transformers in modulation circuits. T. A. Gross. diags Electronics 13:52 Nov '40
- Automatic adjustment for modulation indicator. R. W. Carlson. diag Electronics 11:40 Aug '38
- Cathode modulation. Frank Jones. Pacific Radio Pub Co., San Francisco

**MODULATION—Continued**

- Cathode ray frequency modulation generator. R. E. Shelly. *il Electronics* 13:14 Feb '40
- Combination of amplitude and frequency modulation for communication in seismograph exploration for petroleum reservoirs. E. M. Shook and others. *il diags Proc Inst Radio Eng* 32:583 Oct '44
- Communication by phase modulation. Murray G. Crosby. *Proc Inst Radio Eng* 27:126 Feb '39
- Development of transmitters for frequencies above 300 mc. N. E. Lindenblad. *Proc Inst Radio Eng* 23:1026 Sept '35
- Diode modulation. A. D. Balley and G. H. Fett. *diags Proc Inst Radio Eng* 33:254 Ap '45
- Experimental polyphase broadcasting. P. Loyet. *Proc Inst Radio Eng* 30:213 May '42
- Final stage class "B" modulation. C. E. Strong. *Elec Comm* 16:321 '38
- Frequency modulation. C. F. Sheaffer. *Proc Inst Radio Eng* 28:60 Feb '40
- Half-wave modulation. C. E. G. Bailey. *diags Wireless Eng* 18:279 July '41
- High-efficiency modulating system. A. W. Vance. *Proc Inst Radio Eng* 27:506 Aug '39
- High-efficiency modulation system. F. E. Terman and John R. Woodyard. *Proc Inst Radio Eng* 26:929 Aug '38
- High power outphasing modulation. H. Chireix. *il diags Proc Inst Radio Eng* 23:1370 Nov '35
- Inductively coupled frequency modulator. Bruce E. Montgomery. *Proc Inst Radio Eng* 29:559 Oct. '41
- Inter-modulation in audio-frequency amplifiers. A. C. Bortlett. *diags Wireless Eng* 12:70 Feb '35
- Linear plate modulation of triode radio-frequency amplifiers. Chao-Ying Meng. *Proc Inst Radio Eng* 28:563 Dec '40
- Method of reducing disturbances in radio signaling by a system of frequency modulation. E. H. Armstrong. *bibliog il diags Proc Inst Radio Eng* 24:689 May '36
- Modern methods of modulation. J. Loeb. *diags Electronics* 9:40 June '36
- Modulation high-frequency power amplifiers. T. C. Macnamara. *diag Wireless Eng* 13:294 June '36
- Modulation circuit theory. D. L. Jaffe. *Franklin Inst Jour* 229:779 June '40
- Modulation limits in FM. L. J. Black and H. J. Scott. *il Electronics* 13:30 Sept '40
- Modulation theory. A. Bloch. *bibliog Jour Inst Elec Eng* 91 pt3:31 Mar '44
- Mutual modulation between transmitters. W. Baumler and W. Pfitzer. *diags Electronics* 9:44 Apr '36
- New high efficiency system for modulated waves. W. H. Soherty. *Proc Inst Radio Eng* 24:1163 Sept '36
- New method of modulating the magnetron oscillator. J. Groszkowski and S. Ryzko. *diag Proc Inst Radio Eng* 24:771 May '36
- Note on modulation. J. G. Brainerd. *Proc Inst Radio Eng* 28:136 Mar '40
- Phase-opposition system of amplitude modulation. L. F. Gaudernack. *diags Proc Inst Radio Eng* 26:983 Aug '38
- Practical radio course; various unmodulated and modulated r.f. carrier waves and how they are used. A. A. Ghirardi. *il diags Radio N* 28:32 Dec '42
- Radio telephone modulation. H. A. Brown and C. A. Keener. *il diags Ill V Eng Exp Sta Bul* 148:1 '25
- Reactance-valve frequency modulator. E. Williams. *diags Wireless Eng* 20:369 Aug '43
- Response of a valve generator to a modulating voltage. E. B. Moullin. *diags Wireless Eng* 15:371 July '38; Discussion. D. A. Bell. 15:439 Aug '38
- Response of modulators at high audio-frequencies. D. A. Bell. *Wireless Eng* 12:535 Oct '35
- Reviewing some basic modulation processes. *Electronic Indus* 4:98 May '45
- Series modulation. C. A. Culver. *il diags Proc Inst Radio Eng* 23:481 May '35
- Sideband asymmetry in amplitude modulation; abstract. F. Bottcher. *Wireless Eng* 20:398 Aug '43
- Simple methods for checking radio frequency distortion or cross-modulation of pentode amplifier tubes. E. W. Herold. *Electronics* 13:82 Apr '40
- Transmission of radio waves; carrier modulation. *Electrician* 124:171 Mar 1 '40
- Transmission of radio waves; linearity of modulation. *diag Electrician* 124:266 Apr 5 '40
- Two-signal cross modulation in a frequency-modulation receiver. Harold A. Wheeler. *Proc Inst Radio Eng* 28:537 Dec '40
- Unique method of modulation for High-Fidelity Television Transmitters. William N. Parker. *Proc Inst Radio Eng* 26:946 Aug '38
- Variable slope with constant current. W. H. Stevens. *Wireless Eng* 21:10 Jan '44
- Volume limiter for broadcast transmitters, which raises average level of modulation. C. F. Sheaffer. *diags Electronics* 10:20 Dec '37

*See also*Carrier Sidebands  
Communication**MODULATION Measurements**

- Amplitude modulation measurements. G. Dexter. *il diags Radio N* 32:60 July '44
- Cathode ray modulation indicator. H. Burgess. *il diag Radio N* 20:51 Aug. '38
- Checking overmodulation in an amateur transmittee. E. M. Walker. *il diags Radio N* 17:270 Nov '35
- Differential modulation meter. V. V. Gunsolley. *il diags Electronics* 13:18 Jan '40
- Direct-reading modulation meter. J. Strong. *il Radio N* 19:349 Dec '27
- Locked-in oscillator; its application to automatic tuning and measurement of modulation. S. Byard and W. H. Eccles. *diags Wireless Eng* 18:2 Jan '41
- Methods of obtaining low distortions at high modulation levels. C. A. Cady. *Gen Elec Exp Vol* 16 Apr '43
- Modulation measurement; use of diode rectifier followed by a linear de-c amplifier. C. G. Seright. *diags Electronics* 9:23 Aug '36
- Modulator bridge; design and applications. R. K. Hellmann. *diags Electronics* 11:28 Mar '38
- Modulation measurement. C. G. Seright. *il Electronics* 9:23 Aug '36

- Modulation measurement by cathode ray tube. il Electronics 8:23 Jan '35
- New modulation meter. F. C. Williams and A. E. Chester. bibliog diags Wireless Eng 15:257 May '38
- Percentage modulation meter. S. T. Carter. diags Electronics 14:50 Jan '41
- Remote monitor for directional broadcasting; modified receiver gives continuous microammeter reading at transmitter. M. A. O'Bradovick. il diag Electronics 17:131 Sept '44
- Simple carrier shift indicator; a means of checking the transmitter for over-modulation. il diag Radio N 18:400 Jan '37
- Vacuum tube modulation meter. P. M. Honnell. il diags Electronics 10:18 Jan '37
- See also*
- Measurements, Wave Form and Phase
- MONITORS.** See Frequency Monitors
- See also*
- Broadcasting Station Control Equipment
- MULTIVIBRATORS**
- Adjustment of the multivibrator for frequency division. Victor J. Andrew. Proc Inst Radio Eng 19:1911 Nov '31
- An electronic switch and square-wave oscillator. J. R. Cosby and C. W. Lampson. Rev Sci Inst 12:187 Apr '41
- Deluxe frequency standard; crystal controlled multivibrator. C. G. Sims and C. B. Lester. il Radio N 25:20 Feb. '41
- Frequency monitoring unit for relay broadcasting stations. A. W. Curran. il diag Electronics 12:22, 32 Jan '39
- Generation of square-wave voltage at high frequencies. W. H. Fenn. bibliog Rev Sci Inst 11:369 Nov '40; abstract. Electronics 13:67 Dec '40
- Mesure en valeur absolue des periods oscillations electrique de haute frequence. H. Abraham and E. Block. Annal d Phys 12:337 Spt-Oct '19
- New square wave generator. E. H. B. Bartelink. il Gen Elec Rev 43:520 Dec '40
- Oscillations in certain non-linear driven systems. Donald L. Herr. Proc Inst Radio Eng 27:396 June '39
- Relaxation oscillations. Balh van der Pol. Phil Mag 2:978 Nov '26
- Simple square-wave generator; used to evaluate amplitude and phase response of an amplifier. R. P. Turner. il diags Radio N 31:30 Mar '44
- Some analysis of wave shapes used in harmonic producers. F. R. Stansel. il Bell Sys Tech Jour 20:331 July '41
- Square-wave harmonics. D. L. Herr. diag Electronics 13:34 May '40
- Stability of regeneration; the damping of the multivibrator circuit; abstract. A. Eisenmann. Wireless Eng 21:488 Oct '44
- Sync impulse generator for television deflection Circuits. G. Zaharis. diags Electronics 12:48 June '39
- Theory and operation of multivibrators. Engineering Dept. Aerovox Res W. 12:11 Nov '40
- Theory of the multivibrator. H. W. Webb and G. E. Becker. Jour Applied Phys 15:825 Dec '44
- Wide-band square-wave generator. E. H. B. Bartelink. Trans A. I. E. E. 60:371 '41
- 60 Cycle square-wave generator. K. H. Martin. il Electronics 14:46 July '41
- See also*
- Frequency Dividers
- Oscillators, Multivibrator
- N**
- NAVIGATIONAL Aids.** See Marine Radio
- NEGATIVE Feedback.** See Feedback
- NEGATIVE Resistance Oscillator.** See Oscillators
- NETWORKS**
- Coexistent thermal and thermionic fluctuations in complex networks. F. C. Williams. bibliog diags Jour Inst Elec Eng 83:76 July '38
- Communication networks. E. A. Guillemin. New York; John Wiley & Sons, Inc. 1935
- Contribution to the theory of corrected non-linear networks; abstract. J. Peters. Wireless Eng 21:443 Sept '44
- Contribution to the theory of network synthesis. R. A. Whiteman. Proc Inst Radio Eng 30:244 May '42
- Corrective networks for feedback circuits. V. Learned. diags Proc Inst Radio Eng 32:403 July '44
- Coupling networks. Communications. 18:12 Sept '38
- Coupled networks in radio-frequency circuits. A. Alford. il diags Proc Inst Radio Eng 25:55 Feb '41
- Dummy dipole network. H. Salinger. Proc Inst Radio Eng 32:115 Feb '44
- Filters terminated in negative impedance. Electronic Indus 3:123 Jan '44
- Generalized characteristics of linear networks. E. K. Sandeman. diags Wireless Eng 13:637 Dec '36
- Graphical analysis of alternating-current networks. K. Spangenberg. diags Proc Inst Radio Eng 24:657 Apr '36
- Measuring four-pole networks. J. L. Clarke. il Electronics 11:31 July '38
- Network coupling by means of static electronic frequency changers. O. K. Marti. bibliog diags Elec Eng 50:Trans495 'Sept '40
- Network resistances. R. E. Blakey. il Electronics 8:447 Nov '35
- New treatment of the Wheatstone bridge network. R. J. Wey. diags Wireless Eng 21:308 July '44
- Output networks for radio-frequency power amplifiers. W. L. Everitt. Proc Inst Radio Eng 19:725 May '31
- Simple RC equalizer networks. C. J. Merchant. diags Electronics 17:146 Feb '44
- Stability of linear networks. E. Chu. diags Proc Inst Radio Eng 32:630 Oct '44
- Stabilized amplifier for measurement purposes; network analyzer. H. A. Thompson. il diags Elec Eng 57:Trans379; Discussion. Trans 383 July '38
- Symmetrical electrical systems; method of evaluating the transmission characteristics of four-terminal networks. E. S. Purlington. diags Electronics 15:54 Nov '42; 16:69 Jan '43

**NETWORKS—Continued**

- Synthesis of electrical networks. Y. W. Lee. Jour Math and Phys 2:83 '32
- Thermal fluctuations in complex networks. F. C. Williams. bibliog diags Jour Inst Elec Eng 81:751 Dec '37; Discussion. 83:432 Sept '38
- Three-resonant circuit transformer. M. R. Winkler. il Electronics 16:96 Jan '43
- Time delay in resistance-capacity circuits. E. W. Kellogg and W. D. Phelps. il Electronics 11:26 Feb '38
- Transformed networks. H. J. Griese. diags Wireless Eng 19:463 Oct '42
- Transient amplifier analysis. E. A. Walker. il Electronics 12:39 Nov '39
- Vacuum tube networks. F. B. Llewellyn and L. C. Peterson. Proc Inst Radio Eng 32:144 Mar '44

*See also*

- |             |                    |
|-------------|--------------------|
| Attenuators | Wave Filters       |
| Equalizers  | Transmission Lines |

**Calculations**

- A reactance theorem. Ronald M. Foster. Bell System Tech Jour 3:259 Apr '24
- AC network calculator. il Electronics 17:150 May '44
- Applications of Thevenin's theorem. W. Richter. Elec Eng 64:103 Mar '45
- Communication networks. E. Guillemin. Vol II, Chap IV. John Wiley & Sons, New York '35
- Chart for determining square root of a complex number. R. G. Nisle. Electronics 16:127 Aug '43
- Distributed capacitance chart. P. H. Massaut. Electronics 11:31 Mar '38
- Equivalent resistance chart. A. 7. Teachman. Electronics 11:31 Aug '38
- Errors in the calibrated losses of symmetrical resistance networks. A. W. Melloh. diag Proc Inst Radio Eng 29:387 July '41
- Evaluating the transmission characteristics of four-terminal networks. E. S. Purington. il Electronics 15:54 Nov '42
- Geometric solutions of L-type excitation networks. R. C. Paine. il Electronics 17:242 Feb '44
- Impedance-combining chart. G. Muffy. Electronics 17:134 Mar '44
- Impedance magnitude and phase shift curves. V. L. Edutis. (ref sheets) Electronics 15:76 Nov '42
- Ladder network theorem. John Riodan. Bell System Tech Jour 18:300 Apr '39
- Measuring four-pole networks; reference sheets. J. L. Clarke. diags Electronics 11:31 July '38
- Network-selecting chart. P. J. Selgin. Electronics 12:32 Oct '39
- Network theorem. J. G. Brainerd. diags Proc Inst Radio Eng 24:316 Feb '36
- Network calculations; Thevenin theorem. T. F. Wall, diags Elec Rev (Lond) 129:501 Nov '41
- New method for obtaining transient solutions of electrical networks. W. P. Mason. Bell Sys Tech Jour 8:109 Jan '29
- Pi-network calculator; graphical method of calculating reactances. W. B. Bruene. bibliog il Electronics 18:140 May '45

Treatment of network problems by means of matrices; abstract. G. A. Usunoff. Wireless Eng 19:525 Nov '42

Vector conversion chart. E. L. Gruenberg. Electronics 12:42 Nov '39

Universal network chart. Electronics 8:84 Mar '35

Useful network theorem. J. Millman. diags Proc Inst Radio Eng 28:413.

**Design**

Attenuator design; formulas for calculating resistance networks. D. Espy. diags charts Electronics 14:51 Nov '41

Design chart for phase shifting and amplitude control networks. W. S. Duttera. Electronics 15:53 Oct '42

Design for dissymmetrical T pads. E. Y. Webb, jr. charts Electronics 16:123 July '43

Equalizer design: attenuation and phase functions of frequency-transmission characteristics in circle diagrams. M. J. Di Toro. Electronics 17:118 Apr '44

Forty commonly used pads; table of values of elements of resistive attenuators for input and output impedances encountered in communications circuits. A. Shelton. Electronics 13:53 Apr '40

Generalised characteristics of linear networks. E. K. Sandeman. diags Wireless Eng 13:637 Dec '36

Impulse response of electrical networks, with special reference to the use of artificial lines in network design. M. Levy. bibliog il diags Jour Inst Elec Eng 90 pt 3:153 Dec '43

Impedance of smooth lines and design of simulating networks. Ray S. Hoyt. Bell System Tech Jour 2:1 Jan '23

Method of designing simulative networks. W. A. Edson. diags Proc Inst Radio Eng 26:877 July '38

Network-selecting chart. P. J. Selgin. Electronics 12:32 Oct '39

Resistance networks; complete design tables. C. D. Colchester and M. W. Gough. bibliog diags Wireless Eng 17:206 May '40

R-f impedance-matching networks; data for the design of pi-section networks used in matching transmitters to antennas and in similar problems. R. P. Glover. chart Electronics 9:28 Jan '36

**NETWORKS, Attenuation**

Attenuator design; formulas for calculating resistance networks. D. Espy. diags charts Electronics 14:51 Nov '41

Circuit network for trebling the impedance angle of a lattice section, and its use for phase-correction in pupinised lines; abstract. M. Wald. Wireless Eng 20:392 Aug '43

Design of attenuation network. W. F. Lauterman. diags Electronics 2:508 Feb '31

Designing resistive attenuating networks. P. K. McElroy, fold table Proc Inst Radio Eng 23:213 Mar '35; Correction. 23:682 June '35

Lattice attenuating networks. G. C. Omer, jr. diag Proc Inst Radio Eng 25:620 May '37

Network resistance for balanced attenuators. R. E. Blakey. Electronics 8:446 Nov '35

Unsymmetrical attenuators. P. M. Honnell. *il*  
Electronics 15:41 Aug '42

*See also*

Attenuators

### NETWORKS, Equivalent Electrical

Equivalent electrical networks. Nathan Howitt.  
Proc Inst Radio Eng 20:1042 June '32

Equivalent networks of negative-grid vacuum  
tubes at ultra-high frequencies. F. B. Llewellyn.  
diags Bell Sys Tech Jour 15:575 Oct '36

Equivalent triode networks; abstract. H. A. Wheeler.  
diags Electronics 18:304 Mar '45

Network analyzer studies of electromagnetic cavity  
resonators; equivalent circuits for Maxwell  
field equations. J. R. Whinnery and others.  
diags Proc Inst Radio Eng 32:360 June '44

### NETWORKS, Filter

Approximate networks of acoustic filters. W. P.  
Mason. Bell Sys Tech Jour 9:332 Apr '30

Constant resistance networks with applications to  
filter groups. E. L. Norton. Bell Sys Tech Jour  
16:178 Apr '37

Filter networks for UHF amplifiers. G. Reber.  
Electronic Indus 3:86 Apr '44

Multi-circuit networks with smoothed resonance  
curve; abstract. A. Linnebach. Wireless Eng  
21:592 Dec '44

Network theory, filters, and equalizers. F. E. Terman.  
bibliog diags Proc Inst Radio Eng 31:288  
June '43

Theory and design of uniform and composite electric  
wave-filters. Otto J. Zobel. Bell Sys Tech  
Jour 2:1 Jan '23

Transmission networks and wave filters. T. E.  
Shea. Van Nostrand. New York '29

*See also*

Wave Filters

Filters

### NETWORKS, Impedance-Matching

Constant-impedance control networks. J. C. Coe.  
*il* Electronics 17:160 May '44

Determination by means of the impedance transformation,  
of the voltage and current phase difference between  
input and output of a four terminal network; abstract.  
A. Weissloch. Wireless Eng 21:442 Sept '44

Geometric solutions of L-type excitation networks.  
R. C. Paine. diags Electronics 17:242 Feb '44

Impedance of loaded lines and design of simulated  
and compensating networks. Ray S. Hoyt. Bell  
Sys Tech Jour 3:414 July '24

Pi-network calculator; graphical method of calculating  
reactances. W. B. Bruene. bibliog *il*  
Electronics 18:140 May '45

Pi networks as coupled tank circuits. F. D. Schottland.  
*il* Electronics 17:140 Aug '44

R-f impedance matching networks. R. P. Glover.  
*il* Electronics 9:28 Jan '36

Measurement of radio-frequency impedance with  
networks simulating lines. W. L. Barrow. diags  
Proc Inst Radio Eng 23:807 July '35

Reactance networks for coupling between unbalanced  
and balanced circuits. S. Frankel. diags  
Proc Inst Radio Eng 29:486 Sept '41

Single inductor coupling networks. C. T. McComb  
and A. P. Green. *il* Electronics 17:132 Sept '44

*See also*

Impedance Matching      Transmission Lines

### NETWORKS, Phasing

Design chart for phase shifting and amplitude  
control networks. W. S. Duttera. Electronics  
15:53 Oct '42

Design of L-C phase-shift networks. R. W. Woods.  
diags Electronics 18:144 Apr '45

Dissipation in phase-compensating networks. A.  
T. Starr. diags Proc Inst Radio Eng 23:1102  
Sept. '35

Loaded phase-shifting networks. P. T. Chin. *il*  
Electronics 17:146 Dec '44

Phase-compensation; design of phase compensating  
networks. A. R. A. Rendall. Elec Comm  
7:316 Apr '29

Phasing networks for broadcast arrays. C. R. Cox.  
*il* Electronics 17:120 June '44

*See also*

Phase

### NETWORKS, Resistance

Distortion correction in electrical circuits with  
consistent resistance recurrent networks. O. J.  
Zobel. Bell System Tech Jour 7:438 July '28

Errors in the calibrated losses of symmetrical  
resistance networks. A. W. Melloh. diag Proc  
Inst Radio Eng 29:387 July '41

Resistance networks; complete design tables. C.  
D. Colchester and M. W. Gough. bibliog diags  
Wireless Eng 17:206 May '40

Reactance networks with resistance terminations.  
E. S. Purington. *il* Electronics 16:69 Jan '43

*See also*

Resistance

NIGHT Errors. *See* Propagation of Waves

*See also*

Direction Finders

### NEUTRALIZATION

Analysis of admittance neutralization by means of  
negative transconductance tubes. E. W. Herold.  
Proc Inst Radio Eng 25:1399 Nov '37

Applying neutralization to a-f amplifiers. P. W.  
Klipsch. Electronics 7:252 Aug '34

Circuit for neutralizing low-frequency regeneration  
and power supply hum. Wen-Yuan Pan.  
Proc Inst Radio Eng 30:411 Sept '42

Compensation of vacuum tube input capacitance  
by bias potential control. J. F. Farrington. RMA  
Eng 4:13 Nov '37

Dependence of the interelectrode capacitances of  
valves upon the operating conditions. T. Iowerth  
Jones. Jour Inst Elec Eng 81:658 '37

Input conductance neutralization. F. Preisach.  
Wireless Eng 17:147 Apr '40

Method of neutralizing hum and feedback caused  
by variations in the plate supply. K. B. Gonser.  
Proc Inst Radio Eng 26:442 Apr '38

The shielded neutrodyne receiver. John F. Dreyer,  
jr., and Ray H. Manson. Proc Inst Radio Eng  
14:217 Apr '26

Theory and operation of tuned radio-frequency  
couplin systems. Harold A. Wheeler and W. A.  
MacDonald. Proc Inst Radio Eng 19:738 May '31

*See also*

Feedback



## NOISE

- Analysis of the signal-to-noise ratio of ultra-high-frequency receivers. E. W. Herold. RCA Rev Rev 6:302 Jan '42
- Background noise produced by valves and circuits. W. S. Percival and W. L. Horwood. bibliog il diags Eirless Eng 15:128 202 Mar-Apr '38
- Coexistent thermal and thermionic fluctuations in complex networks. F. C. Williams. Wireless section, I.E.E. 13:327 Sept '38; Jour I.E.E. 83:76 '38
- Course in time of noise voltages; abstract. P. A. Mann. Wireless Eng 21:594 Dec '44
- Cross modulation and input noise voltage; abstract. E. Hudec. Wireless Eng 21:88 Feb '44
- Diagnosing line radio noises. Engineering Dept., Aerovox Res W 9:6 June '37
- Distribution of amplitude with time in fluctuation noise. V. D. Landon. Proc Inst Radio Eng 29:50 Feb '41
- Evaluation of radio-noise-meter performance in terms of listening experience. C. M. Burrill. diag Proc Inst Radio Eng 30:473 Oct '42
- Experimental investigation of the characteristics of certain types of noise. K. G. Jansky, diags Proc Inst Radio Eng 27:763 Dec '39
- Experimental investigation of the characteristics of certain types of noise. K. G. Jansky. diags Proc Inst Radio Eng 27:763 Dec '39
- External noise silencer. L. M. Dezettel. il diag Radio N 24:15 Dec '40
- Fluctuations induced in vacuum-tube grids at high frequencies. Dwight O. North and W. Robert Ferris. Proc Inst Radio Eng 29:49 Feb '41
- Frequency modulation noise characteristics. M. G. Crosby. il diags Proc Inst Radio Eng 25:472 Apr '37
- Impulse noise in frequency modulation reception. V. D. Landon. il diags Electronic 14:26 Feb '41
- J. J. Lamb and A. R. R. L. staff announce new noise-silencing circuit. diags Electronics 9:8 Mar '36
- Limits to amplification. J. B. Johnson and F. B. Llewellyn. diag Elec Eng 53:1449 (bibliog pl 453) Nov '34; Same. Bell System Tech Jour 14:85 (bibliog p 95) Jan '35
- Mathematical analysis of random noise. S. O. Rice. Bell System Tech Jour 23:282 July '44
- Minimum noise levels obtained on short-wave radio receiving systems; effect of diathermy machines. K. G. Jansky. bibliog il Proc Inst Radio Eng 25:1517 Dec '37; Correction 26:400 Apr '38
- Noise in amplifiers; abstract. F. C. Williams. Elec Rev (Lond) 120:325 Feb 26 '37
- Noise in frequency modulation. H. Roder. diags Electronics 10:22 May '37
- Noise suppression by means of amplitude limiters. M. Wald. diags Wireless Eng 17:432 Oct '40
- Progress in the development of instruments for measuring radio noise. Charles M. Burrill. Proc Inst Radio Eng 29:433 Aug '41
- Radio manufacturers' association and Society of automotive engineers study noise. Electronics 9:41 May '36
- Receiver bandwidth and background noise. C. B. Aiken and G. C. Porter. Radio Eng 15:7 May '35
- Receiver input circuits; designs considerations for optimum signal/noise ration. R. E. Burgess. diag Wireless Eng 20:66 Feb. '43
- Shot noise and valve equivalent circuits. D. A. Bell. diags Wireless Eng 20:538 Nov '43
- Signal/noise characteristics of triode input circuits. R. E. Burgess. diags Wireless Eng 22:56 Feb. '45
- Spontaneous fluctuations in carbon microphone and other granular resistances. C. J. Christensen and G. L. Pearson. Bell Sys Tech Jour 15:181 Apr '36
- Square law rectification of electrical noise. F. R. W. Strafford. il Wireless Eng 14:242 May '37
- Study of the characteristics of noise. Proc Inst Radio Eng 24:1514 Nov '36
- The absolute sensitivity of radio receivers. D. O. North. RCA Rev 6:332 Jan '42
- Theory of fluctuation noise. D. A. Bell. bibliog diag Jour Inst Elec Eng 82:522. Discussion p 532 May '38
- Theory of noise for electron multipliers. W. Shockley and J. R. Pierce. Proc Inst Radio Eng 26:321 Mar '38
- Thermal fluctuations in complex networks. F. C. Williams. Wireless section I.E.E. 13:53 Mar '38; Jour I.E.E. 81:751 '37
- Thermal noise in a parallel RC circuit. C. J. Merchant. Electronics 17:143 July '44
- Tube noise (fluctuation noise) between 150 kc. and 15 mc. H. Rothe and G. Plato. Electronics 10:58 Mar '37
- VHF ignition noise. G. Sonbergh. Electronic Indus 3:94 Nov '44.
- Ultrasound electromagnetic waves; signal to-noise ration. B. Trevor. bibliog Elec Eng 62:407 Sept '43
- What noise does to people and why. Donald A. Laid. Electronics Indus 2:17 May '43
- Whistling notes in superheterodyne receivers. M. J. O. Strut. Wireless Eng 12:194 Apr '35
- See also*
- Hum                      Vacuum-Tube Noise  
Interference
- NOISE Elimination**
- Automatic volume expander noise silencer unit. M. Silver. il diag Radio N 19:46 May '38
- Circuit for neutralizing low-frequency regeneration and power-supply hum. W. Pan. diags Proc Inst Radio Eng 30:411 Sept '42
- Effect of volume compression on the tolerable noise level in electrical communication systems. E. L. E. Pawley. Wireless Eng 14:12 Jan '37
- External noise silencer. L. M. Dezettel. il diag Radio N 24:15 Dec '40
- Minimum noise levels obtained on short-wave radio receiving systems. K. G. Jansky. Proc Inst Radio Eng 25:1517 Dec '37
- New antenna system for noise reduction. V. D. Landon and J. D. Reid. Proc Inst Radio Eng 27:188 Mar '39
- Noise-reducing circuit. M. G. Nicholson. diags Electronics 9:14 Oct '36
- Noise rejection circuits. William Russell. il Electronics 12:38 May '39
- Noise limiter for ultra-high-frequency mobile installations. QST 27:63 Feb '43

Noise suppression by means of amplitude limiters. M. Wald. diags *Wireless Eng* 17:432 Oct '40  
*Electronics* 9:14 Oct '36

Noise suppression on small boats. H. B. Davis. il diags *Radio N* 32:47 Oct '44

Noise-suppression in the receiver: invention of James J. Lamb. W. N. Weeden. diag *Wireless Eng* 13:365 July '36

Radio noise elimination in military aircraft. A. Weinstein and others. *Elec Eng* 63:Trans793 Nov '44

Radio noise reduction handbook. W. W. Smith and others. ed. 2d ed 44p 35c *Radio, Ltd*, 1300 Kenwood rd, Santa Barbara, Calif. '40

Radio-receiving antennas of the noise-reducing type. R. B. Dome. diags *Gen Elec Rev* 40:580 Dec '37

Radiotelephone noise reduction by voice control at receiver. C. C. Taylor. *Elec Eng* 56:97 Aug '37

Receiver input circuits; design considerations for optimum signal/noise ratio. R. E. Burgess. diag *Wireless Eng* 20:66 Feb '43

Reducing radio noise. C. Wasmansdorff. il *Electronic Indus* 3:80 July '44

Shielded loop for noise reduction in broadcast reception. S. Goldman. il diags *Electronic* 11:20 Oct '38

Suppressing radio noise in the jeep. F. E. Butler. il diag *Electronics* 16:96 Dec '43

Very-high-frequency radio noise elimination. T. B. Owen. diags *Elec Eng* 63:Trans 949 Dec '44

See also

#### Interference Elimination

#### NOISE Measurements

Analysis of the signal-to-noise ratio of ultra-high-frequency receivers. E. W. Herold. bibliog diags *RCA Rev* 6:302 Jan '42

Commercial noise meters. *Electronics* 8:113 Apr '35

Evaluation of radio-noise-meter performance in terms of listening experience. C. M. Burrill. diag *Proc Inst Radio Eng* 30:473 Oct '42

Instruments and methods of measuring radio noise. C. V. Aggers, D. E. Foster and C. S. Young. diags *Elec Eng* 59:Trans 178; Discussion. *Trans* 187 Mar '40

Method of measuring noise levels on short-wave radiotelegraph circuits. H. O. Peterson. diags *Proc Inst Radio Eng* 23:128 Feb '35

Noise and noise measurement. Daniel Silverman. *Electronics* 12:34 Feb '39

Noise figures of radio receivers. H. T. Friis. bibliog diags *Proc Inst Radio Eng* 32:419 July '44

Noise measurement methods. il *Electronics* 8:110 Mar '35

Noise meter for planes. il *Electronics* 17:160 Feb '44

Noise of diodes and detectors (pyrite, carborundum) in the static and dynamic regimes; abstract. H. F. Matare. *Wireless Eng* 20:85 Feb '43

Progress in the development of instruments for measuring radio noise. C. M. Burrill. bibliog il diag *Proc Inst Radio Eng* 29:433 Aug '41

Signal/noise characteristics of triode input circuits. R. E. Burgess. diags *Wireless Eng* 22:56 Feb '45

Transportation noise studied by new analyzer. il *Electronics* 8:90 Mar '35

## O

#### OSCILLATION, Oscillators

Amplitude control for frequency oscillators. il *Electronics* 17:252 Sept '44

Application of the autodesynchronized oscillator to frequency demodulation. J. R. Woodyard. *Proc Inst Radio Eng* 25:612 May '37

Band-operative oscillator. Alan Bloch. il *Electronics* 12:36 July '40

Capacitor-matching oscillator. H. H. Tepper. il diag *Electronics* 17:114 Nov '44

Cathode-coupled oscillators. F. Butler. diags *Wireless Eng* 21:521 Nov '44

Conduction of high-frequency oscillatory energy. H. O. Roosenstein. *Proc Inst Radio Eng* 19:1849 Oct '31

Direct reading interpolation oscillator. D. R. Tibbets. il diags *Electronics* 14:35 Oct '41

Doubling in oscillators by using two tubes in parallel. H. W. Kline. il diag *Radio N* 23:31 June '40

Free oscillations of a resonant circuit loaded by a diode rectifier. F. C. Williams. diags *Wireless Eng* 14:403 Aug '37

Further study of oscillatory circuits having periodically varying parameters. W. L. Barrow, D. B. Smith and F. W. Baumann. bibliog *Jour Fr Inst* 221:403, 509 Mar-Apr '36

Input capacitance of a triode oscillator. J. van Slooten. diags *Wireless Eng* 17:13 Jan '40

Kinematics of reflection oscillators. A. E. Harrison. diags *Jour Applied Phys* 15:709 Oct '44

Necessary conditions for instability of electrical circuits. D. G. Reid. *Wireless Eng* 14:588 Nov '37

Negative feedback applied to oscillators. S. Sabaroff. bibliog diags *Electronics* 13:32 May '40

New valve-oscillator circuit. F. Butler. diags *Wireless Eng* 21:317 July '44

Oscillator at work. J. D. Rider

Oscillations due to ionization in dielectrics and methods of their detection and measurement. J. T. Tykociner, H. A. Brown and E. B. Paine. il diags *Ill U Eng Exp Sta Bul* 259:3 '33

Oscillator-mixer design considerations for the amateur-band superhet. Clinton B. De Soto. il *QST Vol* 20 Sept '36

Oscillator padding. Hans Roder. *Radio Eng Vol* 15 Mar '35

Phase-shift oscillators. E. L. Ginzton and L. M. Hollingsworth. *Proc Inst Radio Eng* 29:43 Feb '41

Prevention of public address oscillation. D. Polack. il *Radio N* 19:33 May '38

Relations existing between voltage impulses of exponential form and the response of an oscillating circuit. R. Lambert. bibliog il diags *Proc Inst Radio Eng* 26:372 Mar '38

Synchronized oscillators as FM receiver limiters. C. W. Carnahan and H. P. Kalmus. bibliog diags *Electronics* 17:108 Aug '44

Theory and design of valve oscillators for radio and other frequencies. H. A. Thomas. 270p bibliog (p261-5) 18s *Chapman & Hall, London* '39

Thermal-frequency-drift compensation. T. R. W. Bushby. *Proc Inst Radio Eng* 30:546 Dec '42

**OSCILLATORS—Continued**

- Triode linear saw-tooth-current oscillator. L. R. Malling. diags Proc Inst Radio Eng 32:753 Dec '44
- Valve-oscillator theorem. E. Williams. diags Wireless Eng 20:489 Oct '43
- Wavelength of oscillations along transmission lines and antennas. E. M. Siegel. Texas U Engineering Research Ser no32:1 '40
- Wide-range electronic generator; oscillator and amplifier for medical and other research. E. Mittelman. F. S. Grodins and A. C. Ivy. il diags Electronics 16:132 Dec '43

*See also***Feedback****Audio**

- Calibration circuit for audio oscillators. T. J. Rehfish and H. T. Bissmire. diag Electronics 13:48 June '40
- Low distortion audio-frequency oscillator. H. J. Reich. diags Proc Inst Radio Eng 25:1387 Nov '37
- Multi-frequency oscillator for audio testing. Jack Quinn. il Electronics 13:23 May '40
- New type of selective circuit and some applications. H. H. Scott. Proc Inst Radio Eng 26:226 Feb '38
- Temperature-compensated a-f oscillators. il Electronics 17:202 Apr '44

**Barkhausen-Kurz**

- Barkhausen oscillator. B. F. Llewellyn. Bell Lab Record 13:354 Aug '35
- Barkhausen-Kurz oscillations; the influence of the electron-sorting process on the efficiency; abstract. B. Kockel. Wireless Eng 19:527 Nov '42
- Harmonic mode of oscillation in Barkhausen-Kurz tubes. W. D. Hershberger. bibliog il Proc Inst Radio Eng 25:564 May '37
- Modes of oscillation in Barkhausen-Kurz tubes. W. D. Hershberger. il Proc Inst Radio Eng 24:964 July '36
- Positive grid and retarding field oscillators. R. I. Sarbacher and W. A. Edson. il diags Electronics 16:108 Aug '43
- Positive grid oscillators. Lumir F. Dryt. Electronic Indus 2:76 Oct '43
- Retarding field oscillator. W. Alexander. bibliog Wireless Eng 19:143 Apr '42
- Theory of electron oscillators; Barkhausen-Kurz and Gill-Morell circuits. J. E. Anderson. diags Electronics 9:9, 46 Aug '36
- Vacuum tubes for generating frequencies above one hundred megacycles. C. E. Fay and A. L. Samuel. Proc Inst Radio Eng 23:199 Mar '35

**Beat-Frequency**

- A-C operated beat oscillator. S. J. Haefner and E. W. Hamlin. il Electronics 9:20 May '36
- Beat-frequency oscillator for tuning radio receivers. il Sci Amer 153:286 Nov '35
- Beat oscillator. C. W. Caldwell and C. W. Harrison. il Electronics 12:50 Nov '39
- Beat oscillators for modern radio receivers. A. G. Manke. il Electronics 8:88 Mar '35
- First aid in locating weak signals; RCA beat oscillator. J. Strong. il diag Radio N 17:313 Jan '36

Four-electrode vacuum tube as beat frequency oscillator. S. R. Warren, jr. Proc Inst Radio Eng 18:544 Mar '30

Further notes on precision heterodyne oscillators. W. H. F. Griffiths. diags Wireless Eng 12:357 July '35

High-accuracy heterodyne oscillators. T. Slonczewski. bibliog il Bell System Tech Jour 19:407 July '40

Logarithmic scale for beat-frequency oscillator. E. R. Meissner. Proc Inst Radio Eng 17:879 May '29

*See also***Frequency Converters****Colpitts**

A recent development in vacuum tube oscillator circuits. J. B. Dow. Proc Inst Radio Eng 19:2095 Dec '31

Constant frequency oscillators. F. B. Llewellyn. Proc Inst Radio Eng 19:2063 Dec '31

New treatment of electron tube oscillators with feedback coupling. Proc Inst Radio Eng 19:2109 Dec. '31

*See also***Feedback (main entry)****Crystal**

Application and use of quartz crystals in telecommunications. C. F. Booth. Jour Inst Elec Eng 88:pt 3 p97 June '41

Application of quartz plates to radio transmitters. O. M. Hovgaard. Proc Inst Radio Eng 20:767 May '32

Crystal oscillators for radio transmitters; an account of experimental work carried out by the post office. C. F. Booth and E. J. C. Dixon. diags Jour Inst Elec Eng 77:197 (biblog p236) Aug '35; Abstract. Wireless Eng 12:198 Apr '35; Discussion Jour Inst Elec Eng 77:237 Aug '35

Determination of some of the properties of the piezo-electric quartz resonator. Karl S. Van Dyke. Proc Inst Radio Eng 23:386 Apr '35

Frequency characteristics of piezo-electric oscillators. J. E. Anderson. il Electronics 11:22 Aug '38

New direct crystal-controlled oscillator for ultra-short-wave frequencies. W. P. Mason and I. E. Fair. il diags Proc Inst Radio Eng 30:464 Oct '42

New piezo oscillations with quartz cylinders cut along the optical axis. August Hund and R. B. Wright. Jour Research 4:383 Mar '30

Notes on piezo-electric quartz crystals. Isaac Koga. Proc Inst Radio Eng 24:510 Mar '36

Oscillations of hollow quartz cylinders cut along the optic axis. Tsi-Ze Ny, Ling-Chao Tsien, and Sun-Hung Fang. Proc Inst Radio Eng 24:1484 Nov '36

Performance of piezo oscillators and the influence of decrement of quartz on the frequency of oscillation. M. Baella. Proc Inst Radio Eng 19:1252 July '31

Piezo-electric resonator. W. G. Cady. Proc Inst Radio Eng 10:83 Apr '22

Piezo-electric resonance and oscillatory phenomena with flexural vibrations in quartz plates. J. R. Harrison. Proc Inst Radio Eng 15:1040 Dec '27

Piezo-electric resonator and its equivalent network. K. S. Van Dyke. Proc Inst Radio Eng 16:742 June '28

Properties of quartz oscillators and resonators in the region from 300 to 5000 kilocycles per second; abstract. R. Bechmann. *Wireless Eng* 19:537 Nov '42

Quartz plate mountings and temperature control for piezo oscillators. V. E. Heaton and E. G. Lapham. *Proc Inst Radio Eng* 20:261 Feb '32

Quartz crystal controlled oscillator circuits. Harry R. Meahl. *Proc Inst Radio Eng* 22:732 June '34

Some improvements in quartz crystals circuit elements. F. R. Lack, G. W. Willard, and I. E. Fair. *Bell Sys Tech Jour* 13:453 July '34

Voltage stabilized high-frequency crystal oscillator circuit. S. Sabaroff. *diags Proc Inst Radio Eng* 25:623 May '37

6L6 beam-power tube as a high-output crystal oscillator. Edmonds. *QST* 20:20 June '36

*See also*

Piezoelectric Crystals

#### Dynatron

Crystal control applied to the dynatron oscillator. K. A. MacKennon. *Proc Inst Radio Eng* 20:1689 Nov '32

Different negative-resistance oscillator. Davidson. *QST* 27:25 July '43

Dynatron oscillator. J. E. Houldin. *diags Wireless Eng* 14:422 Aug '37

Grid-coupled dynatron. F. Malcolm Gager. *Proc Inst Radio Eng* 23:1048 Sept '35. Discussion; (Mar '36 p534)

Inner-grid dynatron and the duodynatron. T. Hayasi. *Proc Inst Radio Eng* 22:751 June '34

Quantitative study of the dynatron. F. M. Gager and J. B. Russell, Jr. *Proc Inst Radio Eng* 23:1536 Dec '35

*See also*

Oscillators, Negative Resistance Vacuum Tube, Dynatron

#### Electron-Coupled

Calibrated 40 m. electron coupled oscillator. H. Saborsky and P. V. Trice. *il diags Radio N* 24:28 Nov '40

Electron inertia effects. F. B. Llewellyn. Cambridge Univ Press pp96-98 1941

Electronic oscillations. E. C. S. Megaw. *Jour Inst Elec Eng* 72:313, 133. Same. *Wireless Sec I.E.E.* 8:59 June '33

Low-C electron-coupled oscillator. A. Seiler. *QST* 25:26 Nov '41

New circuit for the production of ultra-short-wave oscillations. H. N. Kazanowski. *Proc Inst Radio Eng* 20:957 June '32

On the mechanism of electron oscillations in a triode. H. E. Hollmann. *Proc Inst Radio Eng* 17:229 Feb '29

Theory of electron oscillators; Barkhausen-Kurz and Gill-Morell circuits. J. E. Anderson. *diags Electronics* 9:9 Aug '36

Vacuum tube as high frequency oscillators. M. J. Kelly and A. L. Samuel. *Trans A.I.E.E.* Also *Bell System Tech Jour* 14:97 Jan '35

Vacuum tubes for generating frequencies above one hundred megacycles. C. E. Fay and A. L. Samuel. *Proc Inst Radio Eng* 23:199 Mar '35

#### Feedback

(See Oscillators: Colpitts, Hartley)

#### Klystron

(See main entry)

#### Hartley

Constant frequency oscillators. F. B. Llewellyn. *Proc Inst Radio Eng* 19:2063 Dec '31

New treatment of electron tube oscillators with feedback coupling. C. K. Jen. *Proc Inst Radio Eng* 19:2109 Dec '31

Performance of piezo oscillators and influence of decrement of quartz on frequency of oscillation. M. Boella. *Proc Inst Radio Eng* 19:1252 July '31

Vacuum tubes as high frequency oscillators. E. D. McArthur and E. E. Spitzer. *Proc Inst Radio Eng* 19:1971 Nov '31

*See also*

Feedback (main entry)

#### Laboratory

A low-distortion audio-frequency oscillator. Herbert J. Reich. *Proc Inst Radio Eng* 25:1387 Nov '37

An oscillator having a linear operating characteristic. L. B. Arguimbau. *Proc Inst Radio Eng* 21:14 Jan '33

Calibration of test oscillators. K. Clough. *il Radio N* 19:334 Dec '37

Negative resistance and devices for obtaining it. E. W. Herold. *Proc Inst Radio Eng* 23:1201 Oct '35

New type of selective circuit and some applications. H. H. Scott. *Proc Inst Radio Eng* 26:226 Feb '38

Oscillators with automatic control of the threshold of regeneration. Janusz Groszkowski. *Proc Inst Radio Eng* 22:145 Feb '34

Phase-shift oscillators. E. L. Ginzton and L. M. Hollingsworth. *Proc Inst Radio Eng* 29:43 Feb '41

Resistance-tuned oscillators. W. G. Gordon and R. E. B. Makinson. *diags Wireless Eng* 14:467 Sept '37

Resistance tuning. Sewell Cabot. *Proc Inst Radio Eng* 22:709 June '34

Transitron oscillator. Clelio Brunetti. *Proc Inst Radio Eng* 22:88 Feb '39

#### Magnetostriction

Magnetostriction oscillators. G. W. Pierce. *Proc Inst Radio Eng* 17:42 Jan '29

Magnetostrictive alloys with low temperature coefficients of frequency. *Proc Inst Radio Eng* 22:177 Feb '34

Measurements on magnetostriction vibrators. John M. Ide. *Proc Inst Radio Eng* 19:1216 July '31

Static and motional impedance of a magnetostriction resonator. E. H. Lange and J. A. Myers. *Proc Inst Radio Eng* 17:1687 Oct '29

#### Magnetron

Anode-tank-circuit magnetron. Ernest G. Linder. *Proc Inst Radio Eng* 27:732 Nov '39

Characteristics of the negative-resistance magnetron oscillator. H. Chang and E. L. Chaffec. *bibliog diags Proc Inst Radio Eng* 28:519 Nov '40

Description and characteristics of the end-plate magnetron. E. G. Linder. *il diags Proc Inst Radio Eng* 24:633 Apr '36

Electron-beam magnetrons and type-B magnetron oscillations. Kinjiro Okabe. *Proc Inst Radio Eng* 27:24 Jan '39

**OSCILLATORS, Magnetron—Continued**

Electronic oscillations in positive-grid triodes, and resonance oscillations in magnetron generators. J. S. McPetrie. diags Jour Inst Elec Eng 80:84 Jan '37

Experimental investigation of resonance and electronic oscillations in magnetrons. J. S. McPetrie and L. H. Ford. bibliog Jour Inst Elec Eng 86:283 Mar '40

Generation of high-power oscillations with a magnetron in the centimeter band. N. F. Alekseev and D. D. Malairov. bibliog diags Proc Inst Radio Eng 32:136 Mar '44

Magnetron and the generation of ultra-short waves. il diags Wireless Eng 15:1 Jan '38

Magnetron frequencies. Electronic Indus 4:106 May '45

Magnetron oscillator for instruction and research in microwave technique. J. T. Tykociner and L. R. Bloom. il diags Proc Inst Radio Eng 32:299 May '44

Magnetron oscillator for very-high-frequency research. Electronics 17:214 May '44

Magnetron oscillators for the generation of frequencies between 300 and 600 megacycles. G. R. Kilgore. Proc Inst Radio Eng 24:1140 Aug '36

Magnetron oscillator with a compound field winding. L. H. Ford. diag Jour Inst Elec Eng 86:293 Mar '40

New method of modulating the magnetron oscillator. J. Groszkowski and S. Ryzko. diag Proc Inst Radio Eng 24:771 May '36

Theory of the magnetron. L. Brillouin. diags Phys Rev 60:385 Sept 1 '41. Same. Elec Comm 20:112 '42

Thermal method for measuring efficiencies at ultra-high frequencies applied to the magnetron oscillator. H. W. Kohler. il diags Proc Inst Radio Eng 25:1381 Nov '37

*See also*

Magnetron (main entry)

Vacuum Tubes, Magnetron

**Microwave**

Generation of decimetric waves with diodes; abstract. J. Menke. Wireless Eng 21:490 Oct '44

Practical microwave oscillators. J. Reed. il QST 26:14 June '42

Transmission and reception of centimeter waves. I. Wolff, E. C. Linder, and R. A. Braden. il diag Proc Inst Radio Eng 23:20 Jan '35

Transmission and reception of centimeter radio waves. C. W. Rice. il diag Gen Elec Rev 39:363 Aug '36

Ultra-short and decimetric-wave valves; deflection of a focussed beam of electrons as a possible basis for construction. F. M. Colebrook. diags Wireless Eng 15:198 Apr '38; discussion. 15:323, 612 June, Nov '38

Using microwaves; pocket-size transmitter. J. Clemens. il diag Radio N 19:45 June '38

450-mc. microwave transmitter. R. B. Frank. il diag Radio N 33:38 May '45

*See also*

Microwaves

**Multivibrator**

Adjustment of the multivibrator for frequency division. V. J. Andrew. Proc Inst Radio Eng 19:1911 Nov '31

Convenient method for referring secondary frequency standards to a standard time interval. L. M. Hull and J. K. Clapp. Proc Inst Radio Eng 17:252 Feb '29

Oscillations in certain non-linear driven systems. Donald L. Herr. Proc Inst Radio Eng 27:396 June '39

Wide-band square-wave generator. E. H. B. Bartelink. Trans A.I.E.E. 60:371 '41

*See also*

Harmonic Generators Oscillators, Relaxation Multivibrators

**Negative-Resistance**

Adjustment of the multivibrator for frequency division. Victor J. Andrew. Proc Inst Radio Eng 19:1911 Nov '31

Characteristics of the negative-resistance magnetron oscillator. Hsu Chang and E. L. Chaffee. Proc Inst Radio Eng 28:519 Nov '40

Controlled transitron oscillator. S. R. Jordan. diags Electronics 15:42 July '42

Deluxe frequency standard; crystal controlled multivibrator. C. G. Sims and C. B. Lester. il diags Radio N 25:20 Feb '41

Fundamental considerations on four-phase oscillation circuits. L. Takao. Electrotech Jour 3:75 Apr '39

Generation of polyphase oscillations by means of electron tubes. Rene Mesny. Proc Inst Radio Eng 15:471 Aug '25

Low distortion audio-frequency oscillator. Herbert J. Reich. Proc Inst Radio Eng 25:1387 Nov '37

Mesure en valeur absolue des periods oscillations electrique de haute frequence. H. Abraham and E. Block. Annal d Phys 12:237 Sept-Oct '19

Negative resistance and devices for obtaining it. E. W. Herold. Proc Inst Radio Eng 23:1201 Oct '35

New hard valve relaxation oscillator. D. H. Black. Elec Comm 18:50 '39

Non-linear theory of the maintenance of oscillations. P. LeCorbeiller. Jour Inst Elec Eng 79:361 '36. Same. Wireless Sec I. E. E. 2:292 Sept '36

Oscillations in certain non-linear driven systems. Donald L. Herr. Proc Inst Radio Eng 27:396 June '39

Oscillations in the circuit of a strongly damped triode. F. Vecchiacchi. Proc Inst Radio Eng 19:856 May '31

Production of relaxation oscillations; some experiments with a soft triode. S. Byard. bibliog diags Wireless Eng 15:252 May '38

Relaxation oscillations. Balh van der Pol. Phil Mag 2:978 Nov '26

Resistance-tuned oscillators. W. G. Gordon and R. E. B. Makinson. Wireless Eng 14:467 Sept '37

Resistance tuning. S. Cabot. Proc Inst Radio Eng 22:709 June '34

Stability of regeneration; the damping of the multivibrator circuit; abstract. R. Eisenmann. Wireless Eng 21:488 Oct '41

The van der Pol four-electrode tube relaxation oscillation circuit. R. M. Page and W. F. Curtiss. Proc Inst Radio Eng 18:192 Nov '30

Theory and operation of multivibrators. Engineering Dept., Aerovox Research W. 12:11 Nov '40

Unsymmetrical self-excited oscillations in certain simple non-linear systems. J. G. Brainerd and C. N. Weygandt. Proc Inst Radio Eng 24:914 June '36

Wide-band square-wave generator. E. H. B. Bartelink. Trans A. I. E. E. 60:371 '41

*See also*

Oscillators, Dynatron Oscillators, Transitron Oscillators, Magnetron

**Negative-Transconductance**  
(See Oscillators, Transitron)

**Positive-Grid**  
(See Oscillators, Barkhausen-Kurz)

#### Power

A recent development in vacuum tube oscillation circuits. J. B. Dow. Proc Inst Radio Eng 19:2095 Dec '39

Method of determining the operating characteristics of a power oscillator. E. L. Chaffee and C. N. Kimball. diags Jour Fr Inst 221:237 Feb '36

Power oscillators; circuit for surface hardening of steel. G. Babat and M. Losinsky. 11 diags Wireless Eng 17:16 Jan '40

Simplified methods for computing performance of transmitting tubes. W. G. Wagener. diags Proc Inst Radio Eng 25:47 Jan '37

The audion oscillator. R. A. Heising. Jour A. I. E. E. 39:365,471 Apr-May '20

Vacuum tubes as power oscillators. D. C. Prince. Proc Inst Radio Eng 11:275,405,527 June-Aug-Oct '23

#### Relaxation

An electronic switch and square-wave oscillator. J. R. Crosby and C. W. Lampson. Rev Sci Inst 12:187 Apr '41

Device for the precise measurement of high frequencies. F. A. Polkinghorn and A. A. Loetken. Proc Inst Radio Eng 19:937 June '31

Electronic switch and square-wave oscillator. J. R. Crosby and C. W. Lampson. Rev Sci Instr 12:187 Apr '41

Distortion of saw-tooth wave forms. M. von Ardenne. diag Electronics 10:36 Nov '37

Graphical analysis of saw tooth waves. U. R. Furst. diag Electronics 15:49 July '42

Impedance measurements with square waves. F. Rockett. diags Electronics 17:138 Sept '44

Microsecond pulse generator. E. F. Kiernan. diag Electronics 17:141 Sept '44

New hard valve relaxation oscillator. D. H. Black. Elec Comm 18:50 July '39

Non-linear theory of the maintenance of oscillations. P. Le Corbeiller. Jour Inst Elec Eng 79:361 '36; also, Wireless sec I.E.E. 2:292 Sept '36

Oscillations in certain non-linear driven systems. Donald L. Herr. Proc Inst Radio Eng 27:396 June '39

Oscillations in the circuit of a strongly damped triode. V. Vecchiacchi. Proc Inst Radio Eng 19:856 May '31

Production of relaxation oscillations; some experiments with a soft triode. S. Byard. bibliog diag Wireless Eng 15:252 May '38

Pulse generator. Electronics 17:334 July '44

Relaxation oscillations. Balh van der Pol. Phil Mag 2:978 Nov '26

Saw-tooth generator for high-frequency oscilloscopes. W. Muller. Electronic Indus 3:120 May '44

Steady-state testing with saw-tooth waves. D. L. Waidelich. bibliog 11 Proc Inst Radio Eng 32:339 June '44

The van der Pol four-electrode tube relaxation oscillation circuit. R. N. Page and W. F. Curtiss. Proc Inst Radio Eng 18:1921 Nov '30

*See also*

Oscillators, Dynatron Oscillators, Transitron Oscillators, Multivibrator Time Delay

#### Transitron

Analytical demonstration of Hartley oscillator action. F. A. Record and J. L. Stiles. diags Proc Inst Radio Eng 31:281 June '43

Transitron oscillator. Cleo Brunetti. Proc Inst Radio Eng 27:88 Feb '39

*See also*

Oscillators, Dynatron

#### Ultra-High-Frequency

Beam tubes as ultra-high frequency generators. R. King. diags Electronics 13:68 Jan '40

Butterfly circuit in v-h-f oscillator. diag Elec 18:216 Feb '45

Diode for ultra-high-frequency oscillations. J. S. McPetrie. Exp Wireless and Wireless Eng 11:118 Mar '34

Experimental study of regenerative ultra-short-wave oscillators. William H. Wenstrom. Proc Inst Radio Eng 20:113 Jan '32

Heil tube. A. Heil and O. Heil. Z. Physik 93:752 '35

High frequency oscillator and amplifier. Russell H. Varian and Sigurd F. Varian. Jour Applied Phys 10:321 May '39

Megacycle oscillator. A. Binnewig Jr. 11 Electronics 10:29 July '37

Multi-tube oscillators for the ultra-high frequencies. F. Zottic. QST 20:21 Feb '36

Negative grid triode oscillator and amplifier for ultra-high frequencies. A. L. Samuel. bibliog 11 diag Inst Radio Eng 25:1243 Oct '37; Abstract. Bell System Tech Jour 16:568 Oct '37

Practical ultra-high-frequency oscillators. R. Ricketts. diags Radio N 29:28 Apr '43

Production of ultra-high-frequency oscillations by means of diodes. F. B. Llewellyn and A. E. Bowen. Bell Sys Tech Jour 18:280 Apr '39

Resonators for ultra-high frequencies; abstract. C. G. A. von Lindern and G. de Vries. Wireless Eng 19:524 Nov '42

Theoretical and experimental investigation of electron motions in alternating fields with the aid of ballistic models. H. E. Hollmann. Proc Inst Radio Eng 29:70 Feb '41

U-H-F oscillator frequency-stability considerations. S. W. Seeley and E. I. Anderson. diag RCA Rev 5:77 July '40

Ultra-high-frequency oscillography; electron optical spectral analysis of oscillations; Lissajous figures. H. E. Hollmann. bibliog 11 diags Proc Inst Radio Eng 28:213 May '40

**OSCILLATORS, U.H.F.—Continued**

- Ultra high frequency technique; ultrahigh frequency generators. I. E. Mouroumtseff, R. C. Retherford and J. H. Findley. bibliog diags Electronics 15:45 Apr '42
- Ultra-short and decimetre-wave valves; deflection of a focussed beam of electrons as a possible basis for construction. F. M. Colebrook. diags Wireless Eng 15:198 '38; Discussion. 15:323, 370, 612 June-July, Nov '38
- Ultra-short wave oscillators. D. H. Black. Elec Comm 17:325 '39
- Vacuum tubes of extremely small dimensions for use at extremely high frequencies. G. M. Rose Jr. Proc Inst Radio Eng 21:1707 Dec '33
- Variable frequency oscillator for 25 centimeters; abstract. H. G. Ryan. diags Elec 18:210 Jan '45
- Wide-band inductive-output amplifier. A. V. Haeff and L. S. Negaard. Proc Inst Radio Eng 28:126 Mar '40
- 20 to 60 Mc. oscillator. A. Binneweg, Jr. il Elec 9:12 Oct '36
- 50 to 100 cm. oscillator design using 955 Acorn tube. A. Binneweg Jr. diags Elec 10:36 Dec '37
- See also*
- Ultra-High Frequencies

**OSCILLOGRAPH, Cathode-Ray**

- A type of radial deflection for the cathode-ray oscillograph. G. Goubau. Hochf-tech. u. Elek-akus., p1 July '32 (In German)
- An oscillograph for television development. A. C. Stocker. Proc Inst Radio Eng 25:1012 Aug '37
- Beam blanking circuit for oscilloscopes. Walter Richter. il Electronics 17:128 Sept '44
- Cathode-ray oscillograph for frequency comparisons. diags Electronics 15:94 Apr '42
- Cathode-ray oscilloscope impedance comparator. Vincent Salmon, il Electronics 15:54 Feb '42
- Cathode-ray oscillography. J. T. MacGregor-Morris and J. A. Henley. London: Chapman & Hall, 1936
- Cathode ray screen patterns. il Electronics 10:28 June '37
- Cathode-ray time axis for high frequency. L. M. Leeds. bibliog diags Proc Inst Radio Eng 24:872 June '36
- Channel checker to be used with oscilloscope. J. F. Gordon. il diag Radio N 24:23 Dec '40
- Circular and polar sweeps. Ralph R. Batcher. il Electronic Indus 3:80 Sept-Oct '44
- Cold cathode oscillograph. Electronic Indus 4:90 May '45
- Combination vacuum tube switch for double-trace cathode-ray oscillograph, audio-amplifier and mixer. H. K. Hughes and R. F. Koch. bibliog diags Rev Sci Instr 12:183-7 Apr '41
- Decimetric-wave oscillography; abstract. Ganswindt and Pieplow. Wireless Eng 18:342 Aug '41
- Deflection sensitivity of parallel-wire lines in cathode-ray oscillographs. H. G. Rudenberg. bibliog diags Jour Ap Phys 16:279 May '45
- Delayed single sweep circuit to be used in conjunction with cathode ray oscilloscope. W. E. Gilson. il Electronics 15:65 Mar '42
- Development of cathode-ray tubes for oscillographic purposes. R. T. Orth, P. A. Richards, and L. B. Headrick. Proc Inst Radio Eng 23:1308 Nov '35
- Direct-coupled push-pull oscillograph driver stage. diag Electronics 10:40 Aug '37
- Direct writing oscillograph. Lovett Garceau. Electronic Indus 2:87 Sept '43
- Distortion of saw-tooth wave forms. Manfred von Ardenne. il Electronics 10:36 Nov '37
- Electronic switch and square wave oscillator. J. R. Cosby and C. W. Lampson. Rev Sci Instr 12:187 Apr '41
- Electronic switch for the simultaneous observation of two waves with the cathode-ray oscillograph. H. J. Reich. diag Rev Sci Instr 12:191 Apr '41
- Feedback amplifier for cathode-ray oscilloscopes. G. R. Mezger. il Electronics 17:126 Apr '44
- Flexible sweep circuit and deflection amplifier for cathode ray oscillographs. W. A. Geohagan. diags Electronics 14:38 Dec '41
- Frequency measurements with the cathode-ray oscillograph. F. J. Rasmussen. Trans A. I. E. E. 45:1256 '36
- General Electric six-element oscillograph. il Rev Sci Instr 15:329 Nov '44
- Graphical analysis of saw-tooth waves. V. R. Furst. il Electronics 15:49 July '42
- High speed oscillography. il Electronics 15:74 July '42
- High-speed time bases. William A. Stewart. il Electronic Indus 3:112 Aug '44
- Industrial oscillograph for impulse testing. O. Ackerman. il Electronics 18:154 May '45
- Linear sweep generators used in oscilloscopes and television apparatus. A. Tatz. il diags Radio N 33:52 May '45
- Linearity circuits. A. C. Clarke. diags Wireless Eng 21:256 June '44. Discussion. 22:72 Feb '45
- Making oscillographs produce dotted line tracings. Electronics 16:160 May '43
- Method of electrostatically biasing the beam of a high-speed cathode-ray oscillograph. J. L. Miller and J. E. L. Robinson. diags Jour Inst Elec Eng Oct '35
- Moving coil oscillograph. il Electronics 17:182 Jan '44
- Mullard low-frequency cathode ray oscillograph. il Engineer 178:479 Dec 15 '44; Electrician 133:560 Dec 22 '44
- Oscillograph amplifiers for very wide frequency ranges. M von Ardenne. il diags Wireless Eng 13:59 Feb '36; Abstract. Electronics 9:38 Nov '36
- Oscillograph design considerations. R. Robert Mezger. Proc Inst Radio Eng 27:192 Mar '39
- Oscillograph for television development. A. C. Stocker. Proc Inst Radio Eng 25:1012 Aug '37
- Oscillographic method of measuring positive-grid characteristics. O. W. Livingston. diag Proc Inst Radio Eng 28:267 June '40
- Oscilloscope for pulse studies. H. Atwood and R. P. Owen. il Electronics 17:110 Dec '44
- Portable high-frequency square-wave oscillograph for television. R. D. Kell, A. V. Bedford, and H. N. Kozaowski. Proc Inst Radio Eng 30:458 Oct '42
- Saw-tooth generator for high frequency oscilloscopes. W. Muller. il Electronic Indus 3:120 May '44
- Signal synchronized sweep circuits for cathode-ray oscillography. il Electronics 8:158 May '35
- Small two-channel oscilloscope; abstract. R. F. Wild and D. C. Culver. il Electronics 18:302 Mar '45

Sweep circuit. J. L. Potter. Proc Inst Radio Eng 20:713 June '38

Triode linear saw-tooth-current oscillator. L. R. Malling. diags Proc Inst Radio Eng 32:753 Dec '44

Ultra-high-frequency oscillography; electron-optical spectral analysis. H. E. Hollmann. bibliog il diags Proc Inst Radio Eng 28:213 May '40

Versatile oscilloscope. W. E. Gilson. il Electronics 14:22 Dec '41

Very-high-frequency use of oscilloscopes. Stanley Cutler. il Electronics 17:124 Mar '44

Wave form circuits for cathode ray tubes. H. M. Lewis. il Electronics 15:44, 48 July-Aug '42

Wide-band oscilloscopes. E. H. Bartelink. il Electronics 17:122 Feb '44

Wide-band oscilloscope for problems in television and other fields. E. D. Cook. Proc Inst Radio Eng 31:410 Aug '43

10-megacycle oscilloscope. il Electronics 15:72 Feb '42

*See also*

Amplifiers, Direct-Coupled	Electronic Switch
Cathode-ray Tube	Time Base
Electron Optics	Waveform Analysis

#### OSCILLATORS, Frequency Stability of

An improvement in constant-frequency oscillators. G. F. Lampkin. Proc Inst Radio Eng 27:199 Mar '39

Bridge-stabilized oscillator. L. A. Meacham. Proc Inst Radio Eng 26:1278 Oct '38

Constant frequency oscillators. F. B. Llewellyn. Proc Inst Radio Eng 19:2063 Dec '31

Frequency control by low power factor line circuits. Clarence W. Hansell and Philip S. Carter. Proc Inst Radio Eng 24:597 Apr '36

High precision standard of frequency. W. A. Morrison. Proc Inst Radio Eng 17:1103 July '29

Limits of inherent frequency stability. Walter Van B. Roberts. RCA Rev 4:478 Apr '40

New methods of frequency control employing long lines. J. W. Conklin, J. L. Finch and C. W. Hansell. Proc Inst Radio Eng 19:1918 Nov '31

Parasitics and instability in radio transmitters. G. W. Fyler. il diags Proc Inst Radio Eng 23:985 Sept '35

Piezoelectric stabilization of high frequencies. Harold Osterberg and John W. Cookson. Rev Sci Instr 5:281 Aug '34

Relations existing between voltage impulses of exponential form and the response of an oscillating circuit. R. Lambert. bibliog il diag Proc Inst Radio Eng 26:372 Mar '38

Resonant lines for frequency control. C. W. Hansell. Elec Eng 54:852 Aug '35

Simplified circuit for frequency substandards employing a new type of low-frequency zero-temperature-coefficient quartz crystal. S. C. Hight and G. W. Willard. Proc Inst Radio Eng 25:549 May '37

Stabilized oscillator. il Electronics 16:130 Feb '43

Stabilized sweep circuit oscillator. W. E. Kock. il Electronics 12:20 Apr '39

Thermal stability in receiver oscillators. Ralph R. Batcher. Electronic Indus 4:96 Apr '45

## P

**PANORAMIC Reception.** See Receivers, Panoramic

**PARABOLIC Reflector.** See Antennas, Parabolic Reflector

#### PARASITICS

Parasitics and instability in radio transmitters. G. W. Fyler. Proc Inst Radio Eng 23:985 Sept '35

*See also*

Transmitters, Radiotelegraph

#### PATENTS

Dormant inventions utilized through employee patent plan. W. K. Rieber. Product Eng 16:187 Mar '45

Enemy-owned patents; description of some electronic patents, available to American industry. diags Electronics 16:182 Sept '43

How to write and understand patents. T. R. Goldborough. il 13:10 Feb '40

International patent office; further discussion of possibilities. Chem Age (Lond) 51:611 Dec '30 '44

Navy electronics program and some of its past, present, and future problems; proposal for radar patents pool. J. B. Dow. Proc Inst Radio Eng 33:297 May '45; Same. Elec Eng 64:90 Mar '45

New patents issued. Published in monthly numbers of Electronic Industries

Patent pitfalls. Rudolph Wild. Electronics 15:78 Dec '42

Patents practice essentials. T. R. Goldsborough. (Reference sheet) Electronics 9:33 Sept '36

Recent U. S. patents. Published in monthly numbers of Electronics

Ways to improve the U. S. patent system. Electronics 11:9 May '38

Wireless patents; a summary of recently accepted specifications. Published in monthly numbers of Wireless Engineer

*See also*

Laws and Regulations

**PENTAGRID Converter.** See Frequency Converters

**PENTODE.** See Vacuum Tubes, Pentode

**PERMEABILITY.** See Ferromagnetic Materials

#### PHASE

Amplifier without phase distortion. diags Electronics 10:26 June '37

Automatic frequency and phase control of synchronization in television receivers; abstracts. K. R. Wendt and E. L. Fredenall. Electronics 15:80 Aug '42

Control of phase-fading in long distance radio communication. A. L. Green and O. O. Pulley. Jour Inst Elec Eng 80:623; Discussion. 633 June '37

Dissipation in phase-compensating networks. A. T. Starr. Proc Inst Radio Eng 23:1102 Sept '35



**PHASE—Continued**

Interpretation of amplitude and phase distortion in terms of paired echoes. H. A. Wheeler. Proc Inst Radio Eng 27:359 June '39

Phase and group velocity in the ionosphere. G. W. O. Howe. Wireless Eng 20:577 Dec '43

Phase and magnitude of earth currents near radio transmitting antennas. G. H. Brown. Proc Inst Radio Eng 23:168 Feb '35

Phase angle of vacuum tube transconductance at very-high frequencies. F. B. Llewellyn. Proc Inst Radio Eng 22:947 Aug '34

Phase compensation; Nyquist method of measuring time delay. E. K. Landeman and I. L. Turnbull. Elec Comm 7:327 Apr '29

Phase convention of currents and voltages in valve circuits. diags Wireless Eng 17:95 Mar '40

Phase curve tracer for television. B. D. Loughlin. Proc Inst Radio Eng 29:107 Mar '41

Phase distortion and phase distortion correction. S. P. Mead. Bell Sys Tech Jour 7:195 Apr '28

Phase distortion in television. R. G. Sheffenbauer. bibliog. il diag Wireless Eng 13:21 Jan '36

Phase distortion reduced by amplifier. II Electronics 10:26 June '37

Relations between attenuation and phase in feedback amplifier design. H. W. Bode. diags Bell System Tech Jour 19:421 July '40

Sideband phase distortion. D. M. Johnstone and E. E. Wright. Wireless Eng 13:534 Oct '36

Some phase effects with coincidence proportional counters. C. L. Meaker and A. Roberts. R Sc Instr 15:149-51 June '44

*See also*

Measurements, Wave Form and Phase Oscillograph, Cathode-Ray

**PHASE-Equalizing Networks.** See Networks

**PHASE Inverters**

Methods of phase inversion. Engineering Dept. Aerovox Res W. 8:6 June '36

Phase inverter analysis and design. H. Jacobowitz. Electronic Indus 1:47 12 '42

Phase inverter circuits. C. G. McProud and R. T. Wildermuth. diags Electronics 13:50 Oct '40

Phase inverters and feedback. M. T. Putnam. diags Radio N 27:20 Apr '42

Phase inverter circuits. C. G. McProud and R. T. Wildermuth. diags Electronics 13:50 Oct '40

**PHASE Measurements.** See Measurements

*See also*

Oscillograph, Cathode-Ray

**PHASE Meters**

Cathode ray antenna phasemeter. J. P. Taylor. II Electronic 12:62 Apr '39

Electronic phase-angle meter. E. L. Ginzton. il diags Electronics 15:60 May '42

Electronic phase bridge for measurements. II Electronics 15:96 Nov '42

Phase-indicating null indicator for bridges. II Electronics 17:242 Aug '44

Phase meter calibrator for directional antennas. D. Espy. diags Electronics 15:80 Oct '42

Phasemeter calibrator. Dawkins Espy. II Electronics 15:80 Oct '42

Vector response indicator. B. D. Loughlin. Trans A. I. E. E. 59:355 June '40

Wide range, linear, unambiguous electronic phase-meter; abstract. J. E. Shepherd. Electronics 15:110 Feb '42

*See also*

Measurements, Waveform and Phase Oscillograph, Cathode-Ray

**PHASE Modulation**

Amplitude, phase, and frequency modulation. Hans Roder. Proc Inst Radio Eng 19:2145 Dec '31

Armstrong's frequency modulator. D. L. Jaffe. Proc Inst Radio Eng 26:475 Apr '38

Carrier and side frequency relations with multi-tone frequency or phase modulation. Murray G. Crosby. RCA Rev 3:103 July '38

Cathode-ray frequency modulation generator. Robert E. Shelby. Electronics 13:14 Feb '40

Communication by phase modulation. Murray G. Crosby. Proc Inst Radio Eng 27:126 Feb '39

Phase modulation by easily saturated coil. Electronic Indus 2:60 Aug '43

Phase-opposition system of amplitude modulation. L. F. Gandernack. Proc Inst Radio Eng 26:983 Aug '38

System of phase and frequency modulation. S. Sabaroff. Communications 20:11 Oct '40

*See also*

Frequency Modulation

**PHASE Shift**

Automatic phase reversal amplifier. R. P. Crosby. Electronics 14:64 Oct '44

Combining of phase-shifted rectified sine waves. Electronics 16:160 Apr '43

Continuously variable phase-shifting device. O. O. Pulley. Wireless Eng 13:593 Nov. '36

Control of a gas-filled valve through a phase-shifting input valve; relay-amplifier. L. B. Turner. Wireless Eng 14:229 May '37

Design of L-C phase-shift networks. R. W. Woods. diags Electronics 18:144 Apr '45

Impedance magnitude and phase angle charts; reference sheet. T. C. Blow. Electronics 16:94 Jan '43

Impedance magnitude and phase shift curves; two-terminal three-element linear networks; reference sheet. V. L. Edutis. Electronics 15:76 Nov '42

Measurement of amplification and phase-shift in amplifiers. E. E. Wright and G. E. G. Graham. II diags Wireless Eng 13:259 May '36

Phase-shift oscillator design charts. W. W. Kunde. II Electronics 16:332 Nov '43

Phase-shift oscillators. E. L. Ginzton and L. M. Hollingsworth. Proc Inst Radio Eng 29:43 Feb '41

Phase-shifting device for the rapid determination of audio-frequency amplifier characteristics, Karl Spangenberg and Winslow Palmer. Proc Inst Radio Eng 27:555 Sept '39

Phase shifting up to 360 degrees. F. A. Everest. II Electronics 14:46 Nov '41

Single method for observing current amplitude and phase relations in antenna arrays. John F. Morrison. Proc Inst Radio Eng 25:1310 Oct '37

Wattmeter testing; a phase shifting device. A. G. Hewitt. *Elec Rev (Lond)* 136:317 Mar 2 '45

Zero phase shift amplifier design. L. R. Malling. *diags Electronics* 18:136 Mar '45

*See also*

Amplifiers

## PHONOGRAPHS

Departure in pickup design. F. V. Hunt and J. A. Pierce. *il Electronics* 11:9 Mar '38

Disc-cutting problems. C. J. LeBel. *il Electronics* 12:17 Dec '39

Embossing at constant groove speed; a new recording technique. E. E. Griffin. *il Electronics* 13:26 July '40

Frequency modulation phonograph pickup. B. F. Meissner. *il Electronics* 17:132 Nov '44

Lateral disk recording for immediate playback with extended frequency and volume range. H. J. Hasbrouck. *Proc Inst Radio Eng* 27:184 Mar '39

"Mass-less" pickup. W. N. Weeden. *il Electronics* 9:36 May '36

Multiunit phonograph for schools. *il Electronics* 10:42 Feb '37

Photoelectric tape recording. *il Electronics* 13:16 May '40

Pickup tracking error. Benjamin Olney. *il Electronics* 10:19 Nov '37

Recording and reproducing standards. L. C. Smeby. *Proc Inst Radio Eng* 30:355 Aug '42

Record-saving pickup. R. P. Glover. *il Electronics* 10:31 Feb '37

Some problems of disk recording. S. J. Begun. *Proc Inst Radio Eng* 28:389 Sept '40

Sound-on-disc. *il Electronics* 9:6 Oct '36

Turntable wobble indicator. W. F. Wickart. *il Electronics* 11:13 Feb '38

*See also*

Public-Address Systems  
Recording Sound

## PHOTOELECTRIC-Cell Control

Application of electronic control. E. H. Vedder. *il diags A.S.M.E. Trans* 66:261 May '44

Applications of photoelectric controllers. E. H. Vedder. *diags Elec Eng* 32:425 Oct '35

Control scheme uses tubeless amplifier. A. S. Fitzgerald. *il diag Elec W* 107:1592 May 8 '37

Guide for inspection of photoelectric control; tabulation. E. B. McDowell. *Elec World* 120:2270 Dec 25 '43

How to correct trouble on photoelectric control; trouble-shooting chart. E. B. McDowell. *Elec World* 120:2270 Dec 25 '43

Power supplies for photoelectric controls. D. Schulman. *diags Electronics* 18:177 Feb '45

*See also*

Electronic Applications—Control Systems

### Lighting Control

Analysis of photoelectric classroom lighting control. D. P. Caverly. *il diag Illum Eng Soc Trans* 34:907 Sept '39; *Discussion. Illum Eng* 35:257 Mar '40

Automatic lighting control safeguards children's eyes. D. P. Caverly. *il diag Elec W* 107:542 Feb 13 '37

Better school lighting pays; Mt. Lebanon, Pa. H. L. Johnston. *Elec W.* 104:1078 Dec 8 '34

Blackout control by photocell relay. *il diag Elec W* 117:682 Feb 21 '42

Candle flame in England lights lamp in U.S.A.; dedication ceremonies of the Museum of science and industry in Radio City, N. Y. *Illum Eng Soc Trans* 31:337 Apr '36

Daylight-control street lights; automatic control on stormy, foggy or smoky days. W. R. Weise and A. H. Lamb. *il diags Elec W.* 104:935 Nov 23 '34

Light-meter and its uses. C. L. Dows and C. J. Allen. *il Illum Eng Soc Trans* 31:675 July '36

Light-ray road signals; novel system of pedestrian and traffic control. *il Elec Rev (Lond)* 118:535 Apr 10 '36

Light regulator. B. Chance. *il diags Electronics* 13:25 Feb '40

Light relays; conveyor control in an icecream plant. *il Elec Jour* 32:542 Dec '35

Luximeter; photoelectric instrument for measuring light transmission through a liquid. W. L. Carson. *il Gen Elec Rev* 43:91 Feb '40

New color corrected photronic cells for accurate light measurements. M. E. Fogle. *il Illum Eng Soc Trans* 31:773 Sept '36

New light meter is announced by General electric company. *Illum Eng Soc Trans* 30:656 Nov '35

Photo-electric relays; their use for the control of street lighting. *il Electrician* 115:522 Oct 25 '35; *Elec Rev (Lond)* 117:530 Oct 18 '35; *Engineering* 140:456 Oct 25 '35; *Engineer* 160:385 Oct 11 '35

Photo-electric unit regulates lighting; Wallach brothers' new Fifth Avenue store, New York. *il Elec W* 105:1718 July 6 '35

Progress in the use and application of photoelectric cell control; lighting in the typical school classroom. A. J. C. Knudstrup. *Illum Eng Soc Trans* 31:785 Sept '36

Rectified photo-electric cell applied to control gas lighting. W. H. B. Hall. *il diags Gas Jour (Lond)* 214:175-7; *Discussion.* 177 Apr 15 '36

Reflection meter and its application. W. P. Digby. *il Engineer* 159:219 254 Mar 1-8 '35; *Abstract (pt 2).* *Iron Age* 135:18 May 23 '35

Sensitive light intensity indicator. F. H. Shepard. *diag Electronics* 9:36 June '36

Street lighting much increased; negligible increase in bill; Niagara Falls replaces magnetic arcs with incandescents; photo-electric control. C. H. Anderson. *il diags Elec W* 113:1363 May 4 '40

Street lights better with photo control; installation on the Hollywood carrier-current system. O. W. Holden. *diag Elec W* 106:3900 Dec 19 '36; *Abstract. Electronics* 10:36 Mar '37

Street lights controlled by 200 photocell units; Buffalo's highway illumination. *il diags Elec W* 108:1028 Sept 25 '37

Street lighting in France; control of the Paris system. *diags Electrician* 124:19 Jan 12 '40

Testing lighting systems before installation. *Science* 83:sup10 June 5 '36

## Machine Control

Berwick stock heating machine has electric eye control. *il Iron Age* 135:33, 34 Jan 24 '35

Direct-coupled amplifier for an engraving system. *il diag Radio N* 16:736 June '35

**PHOTOELECTRIC-Cell Control—Continued**

- Dorn automatic photoelectric form cutting and die sinking machine. *diag Automobile Eng* 25:258 July '35
- Electronic control of gas-cutting machines. R. D. McComb. *diags Welding J* 23:11 Jan '44; Same cond. *Electronics* 16:172 Dec '43
- Electric eye controls elevator; conveyor for handling steel containers. *diag Elec World* 121:126 Jan 8 '44
- Electronic controls for industrial machines. A. E. Bailey, jr. *il diags Product Eng* 14:760 Dec '43
- Electronic controls in paper industry. *Electronic Indus* 3:111 Sept '44
- Photo-cell recorder measures motor slip. R. L. Witzke. *il diag Elec W* 106:2228 July 18 '36
- Photoelectric cell controls hoist. W. M. Hoen. *Eng & Min Jour* 136:427 Aug '35
- Phototube control of fluid flow; system combines rotameter, amplifiers, and thyatrons to control motor-driven regulating valve. R. C. McNickle. *il diags Elec* 17:110 Sept '44
- Photo-tube charts motor revolutions. W. S. Weil. *il diags Elec W* 115:1015 Mar 22 '41
- Phototube controls punch press; curtain of light protection device. R. A. Powers. *il diag Electronics* 10:21 July '37
- Photronic code machine; moving picture machine converted to continuous-film recorder and reproducer used by Army Air Forces for code training. T. M. Morse. *il plan diags Radio N* 32:25 July '44
- Precimax automatic grinding machines, with photoelectric cell for size control. *il diags Automobile Eng* 26:479 Nov '36
- Tube control of a-c motors. J. D. Ryder. *diags Electronics* 9:31 Apr '36
- See also*
- Electronic Applications—Control Systems**
- Protective Alarms**
- Automatic detection of incendiary bombs. *il Engineering* 152:196 Sept 5 '41
- Cyclops up to date; invisible ray photo cell equipment guards plants. F. Williams. *il plan Safety Eng* 82:6 Aug '41
- Defense against sabotage, espionage is vital to war production effort; photoelectric equipment. R. E. Appel. *il Steel* 112:90 Feb 1 '43
- Electronic mine-shaft signal system at Magma copper company, Euperior, Ariz. H. C. Loesche. *il diags U S Bur Mines Information Circ* 7318:1 '45
- Electronic protective systems. M. H. A. Lindsay. *bibliog il diags Elec Eng* 63:367 Oct '44
- How to build an efficient black light burglar alarm. G. Forest. *il diags Radio N* 19:268 Nov '37
- Incendiary bomb detection; the British standards specification and photo-electric devices. *il Electrician* 127:165 Sept 19 '41
- Infra-red photo-alarm protects 13,000 sq. ft. *il plan Electronics* 10:43 May '37
- Intrusion alarms. C. E. Jackson. *il diags Radio N* 29:14 May '43
- Invisible electric eye operates burglar alarms. *Mach* 43:716 July '37; *plan Sci Amer* 157:58 July '37
- Invisible light for protection against sabotage; American district telegraph co. invisible ray alarm. P. M. Farmer. *il diag Aero Digest* 39:171 Aug '41
- Mint is guarded by electronics. *Electronics* 16:120 Feb '43
- Photoelectric intrusion detection system; protection of industrial plants against sabotage. *il Electronics* 15:73 Mar '42
- Photoelectric safety equipment; projection of a curtain of light for the protection of men who operate sheet metal presses. *il Nat Safety N* 36:96 July '37
- Photoelectrics for industrial safety; equipment using infra-red rays suited for protection of defense plants. R. E. Appel. *il diags Radio N* 27:36 May '42
- Phototube relay for infrared radiation; burglar alarm and other applications. C. C. Smith. *diag Electronics* 13:54 Dec '40
- Protection of property by electronic methods. P. M. Farmer. *il Electronics* 16:120 Mar '43

**Recorders**

- Applications of the photoelectric recorder. W. L. Carson. *il diags Gen Elec Rev* 38:189 Apr '36
- Automatic recording; drawing of light-sensitive-cell characteristic curves accomplished by photoelectric recorder. H. T. Wrobel. *il diag Gen Elec Rev* 45:585 Oct '42
- Dew-point recorder safeguards gas line against freezing. J. A. Setter. *diag Gas Age* 88:31 Nov 20 '41; Same. *Electronics* 14:72 Nov '41; Same. *Chem & Met Eng* 49:132 Feb '42; Same. *Pet Eng* 13:134 Feb '42; Same. *Oil & Gas Jour* 41:90 Sept 24 '42; Same cond. *Refrig Eng* 43:180 Mar '42.
- Double photoelectric recorder. W. L. Carson. *il Gen Elec Rev* 40:228 May '37; *Excerpt. Iron Age* 139:102 May 13 '37
- Electronic eye records ultraviolet in sunshine. *Refrig Eng* 44:175 Sept '42
- Film-recording seismograph. H. Benioff and others. *il diags Electronics* 16:89 May '43
- High-sensitivity electronic recorder. *il diag Electronics* 17:148 May '44
- High-speed photoelectric recorder. H. L. Clark. *il diags Gen Elec Rev* 45:384 July '42
- Method of recording low intensity flashes of light; intensity changes in light given off by luminous animals. C. Butt and R. S. Alexander. *bibliog il diag Rev Sci Instr* 13:151 Apr '42; *Abstract. Electronics* 15:108 Oct '42
- Photoelectric potentiometer recorder. D. F. Hang. *il diags Gen Elec Rec* 46:623 Nov '43
- Photoelectric tape recording. *il Electronics* 13:16 May '40
- Synthetic reverberation; recording fugitive sound pattern of original program signal on rotating phosphor-coated disk by means of modulated light source and simple optical system. P. C. Goldmark and P. S. Hendricks. *il diags Proc Inst Radio Eng* 27:747 Dec '39
- Ultraviolet recording meter for milk irradiation. L. J. Wolf. *bibliog il diag Electronics* 9:12 June '36

*See also*

Recorders (main listing)

## Temperature Control

- Automatic control of electrical bar heating. C. H. S. Tupholme. *Can Chem & Met* 21:260 July '37
- Brown proto-electrode system for preventing failure of fuel systems. *il Mach* 47:165 Dec '40
- Electric control of steam boilers on Diesel-electric and straight electric locomotives. E. H. Burgess. *il diag Elec Eng* 61:Trans 604 Aug '42
- Photoelectric cell insures ignition flame in furnace. R. M. Bowser. *diag Power* 78:365 Dec '34
- Photoelectric cooling control; TVA fertilizer works. P. Ewald. *il diag Electronics* 14:55 Nov '41
- Photoelectric control of resistance type metal heaters. E. H. Vedder and M. S. Evans. *il diags Elec Eng* 54:645 June '35
- Phototube temperature control. R. A. Powers. *il diags Electronics* 10:12 Apr '37
- Photoelectric temperature control. A. D. Compton, jr. *diags Science* 93:215 Feb 23 '41
- Radlovisor bar heater controller. *il Electrician* 117:540 Oct 30 '36
- Simple photoelectric thermo-regulator. W. L. Walsh and N. A. Milas. *bibliog diag Ind & Eng Chem Anal ed* 7:122 Mar 15 '35
- Temperature measurement and control by electronics. C. Walsh. *bibliog il diags Electronics* 15:56 Oct '42
- Temperature measurement and control with solid photoelectric cells. M. E. Fogle. *il diag Electrochem Soc Trans* 83 (preprint 14):183 Apr '43
- Temperature measurement with blocking-layer photo-cells. B. M. Larsen and W. E. Shenk. *diags Jour Ap Phys* 11:555 Aug '40
- Valve heating controlled by photoelectric cell. *Steel* 87:38 Nov 11 '35

*See also*

## Electronic Control Systems—Temperature Control

## Water Control

- Electric eye controls water in station washroom. *il Nat Pet Nov* 27:38 Nov 27 '35
- Electronic controls; constant supervision of rate of flow of liquid in a pipeline. V. Zeluff. *il diag Sci Amer* 171:260 Dec '44
- New method of photoelectric level control prevents overflow of storage tanks. T. A. Beck. *diag Chem & Met* 51:116 Mar '44
- Photoelectric automatic liquid level control. N. H. Ceaglske and S. A. Kesslinger. *diags Ind & Eng Ehem Anal ed* 16:393 June '44

## PHOTOELECTRIC-Cell Meters

- Color analyzer plots own curve; recording photoelectric spectrophotometer. *il diag Electronics* 9:17 Mar '36
- Color analyzer plots reflectance; General Electric photoelectric spectrophotometer. *diag Elec W* 106:1948 June 20 '36
- Colorimetry; basic principles in design of visual and photoelectric colorimeters. A. A. Shurkus. *il diags Radio N* 31:25 June '44
- Electrical developments of 1941; printing; photoelectric color-register equipment. G. Bartlett. *Gen Elec Rev* 45:30 Jan '42
- Lumetron photoelectric colorimeter. *il Paper Tr Jour* 109:113 Nov 30 '39; *Power Pl Eng* 44:92 Feb '40

Method for analysis of boiler scales and sludges; colorimetric and turbidimetric methods in conjunction with a phototester as compared with gravimetric methods. F. K. Lindsay and R. G. Bielenberg. *bibliog il diag Ind & Eng Chem Anal ed* 12:460 Aug 15 '40

Method of evaluating color variations of baked food products. W. B. Kirk. *il diags Amer Gas Assn Mo* 22:261 July Aug '40

Photoelectric color; description and mensuration of the color of petroleum products. I. M. Diller, R. J. De Gray and J. W. Wilson Jr. *bibliog Ind & Eng Chem Anal ed* 14:607 Aug 15 '42

Photoelectric colorimeter for rapid reactions. B. Chance. *il diags Rev Sci Instr* 13:158 Apr '42

Photoelectric colorimeter with logarithmic response. R. H. Muller and G. F. Kinney. *diags Jour Amer Opt Soc* 25:342 Oct '35

Photoelectric colorimetry in microanalysis; photoelectric methods in macro- and micro-analysis. R. H. Muller. *bibliog il diags Ind & Eng Chem Anal ed* 7:223 July 15 '35

Photoelectric color temperature meter for incandescent lamps. M. H. Sweet. *bibliog il diag Jour Amer Opt Soc* 30:568 Nov '40

Photoelectric comparator for colorimetric copper assay. J. C. Russell. *diags Eng & Min J* 142:53 Sept '41

Photoelectric photometers for use in colorimetry. C. Zinzadze. *bibliog diag Ind & Eng Chem Anal ed* 7:280 July 15 '35

Photoelectric tristimulus colorimetry with three filters. R. S. Hunter. *Opt Soc Amer Jour* 32:509-38 *bibliog* (51 titles) p536-8 Sept '42; *Same*. *U S Nat Bur Stand Circ* C429:1-46; pa 10c *Supt of doc* '42

*See also*

## Electronic Applications—Measurements, Testing, etc.

## Densitometers

- Direct-reading color densitometer. M. H. Sweet. *bibliog il diags Electronics* 18:102-6 Mar '45
- Linear densitometer. J. A. Tiedman. *diags Electronics* 14:48 Mar '41
- Linear photoelectric densitometer. C. W. Miller. *il diag Rev Sci Instr* 6:125 Apr '35
- Microdensitometer with d-c amplifier. S. R. Winters. *il diag Electronics* 17:225 July '44
- Photoelectric densitometer. C. C. Smith. *diag Electronics* 15:79 Dec '42
- Photovoltaic cell reflection densitometer. N. M. Mohler and D. A. Taylor. *diag Jour Amer Opt Soc* 26:386 Oct '36
- Precision densitometer. D. M. Gallagher. *il diags Photo Tech* 3:53 Apr '41
- Precision direct-reading densitometer. M. H. Sweet. *bibliog il diags Soc Motion Picture Eng Jour* 38:148; *Discussion* 171 Feb '42 *Abstract. Electronics* 15:68 July '42
- Push-pull photoelectric photodensitometer for determining fine structure in ultraviolet absorption spectra. J. R. Loofbourow. *bibliog diag Jour Amer Soc* 29:535 Dec '39
- Simple photoelectric microdensitometer. M. Spiegel-Adolf and R. H. Peckham. *bibliog il diag Ind & Eng Chem Anal ed* 12:182 Mar 15 '40

**PHOTOELECTRIC-Cell Meter's—Continued**

Stop calibration of photographic objectives; principle and null-indicating densitometer adapted to measurement of camera lens iris settings. E. W. Silvertooth. *il diag Soc Motion Picture Eng Jour* 39:119 Aug '42

**Photometers**

- Barrier-layer photoelectric cell in photoelectric photometry. A. W. Smith, H. Newhouse and P. Drake. *diag Rev Sci Instr* 7:433 Nov '36
- Determining probability curves by photoelectric integration of light impulses. I. J. Saxl. *bibliog diags Rev Sci Instr* 7:429 Nov '36
- Electronic controls; second-by-second measurements of gas content of air. V. Zeluff. *il Sci Amer* 171:259 Dec '44
- Instrumentation studies; photoelectric device for objective measurement of light scattered by small particles, and surface fuzz of paper. *diags Paper Tr Jour* 105:33 Aug 26 '37
- Les cellules photoélectriques. L. M. T. et leurs applications en photométrie. *il Genie Civil* 109:229 Sept 12 '36
- Measurement of the velocity of light. W. C. Anderson. *il diags Rev Sci Instr* 8:239 July '37
- National physical laboratory; photometry, illumination standards, photoelectric cells. *Engineering* 142:632 Dec 11 '36
- Recent improvements in integrating and polar curve photometers of the photoelectric pattern. K. Edgcombe. *il diag Light & Lighting* 29:167 June '36
- Recent improvements in total flux photometers. *il diag Illum Engr* 28:296 Sept '35
- Report of the committee on photoelectric portable photometers. *bibliog diags Illum Eng Soc Trans* 32:379; Discussion. 419 Apr '37
- Selenium rectifier phototube; manufacture, properties, and use in photometry. J. S. Preston. *Jour Inst Elec Eng* 79:424 Oct '36
- Stanford builds automatic photoelectric photometer. L. H. Brown. *il Elec West* 77:25 Aug '36

**Pyrometers**

- Application of photoelectric pyrometer to Bethlehem shape mills. A. J. Standing. *il plan Iron Age* 138:49 Nov 19 '36
- Blocking layer cell color temperature pyrometer. J. T. M. Malpica. *il Gen Elec Rev* 44:439 Aug '41
- Combination visual and autometric method of optical pyrometry. E. I. Shobert, 2d. *diag Instruments* 14:69 Mar '41
- Lovic Johnson pyrometer. *diag Engineer* 162:611 Dec 4 '36
- New two-color optical pyrometer. H. W. Russell. C. F. Lucks and L. G. Turnbull. *il diags Jour Amer Opt Soc* 30:248 June '40
- Photoelectric pyrometer. W. R. King. *il diag Gen Elec Rev* 39:526 Nov '36; Abstract. *Electronics* 10:52 Feb '37
- Portable blocking-layer photo-cell pyrometer. G. F. Hubing. *diags Jour Amer Opt Soc* 26:260 June '36
- Sensitivity of solid-cell pyrometer mixed blessing; abstract. M. E. Fogle. *Steel* 114:124 Jan 17 '44
- Yield of 48-inch structural mill is improved by phototube pyrometer. *il plan Steel* 99:66 Dec 21 '36

**Smoke Meters**

- Combustion indicator tests diesel engine exhaust smoke. *il Electronics* 16:116 May '43
- Improved Penn State smokemeter. P. H. Schweitzer. *il diags Instruments* 15:346 Sept '42; Same cond. *Oil & Gas Jour* 41:182 Jan 28 '43
- Improved oil combustion with photoelectric smoke alarm. B. Meyer. *diag Heating-Piping* 15:303 June '43
- Photoelectric smoke meter. *il diag Diesel Power* 21:408 May '43
- Photo-electric smoke meters. R. J. Wey. *diags Engineer* 173:283 Apr. 3-24 '42
- Requirements of a smokemeter to evaluate degree of smoke in diesel engine exhaust. K. M. Brown. *il diags S A E Jour* 31:235 May '41
- Seven-eighths less smoke; installation of smoke alarms and higher stack; Seattle gas company. J. F. Pollard. *il Power* 79:518 Oct '35
- Smoke density indicator and recorder for industrial plants. *diag Electronics* 18:148 Feb '45
- Smoke-density indicators. *diags Power* 88:236 Apr '44
- Smoke detector for ducts. *il Electronics* 16:212 June '43
- Tobacco smoke control; preliminary study; Madison Square Garden tests. C. S. Leopold. *diags Heating-Piping* 17:164; Discussion. 169 Mar '45

**Spectrophotometer**

- Null-type photoelectric spectrophotometer. C. J. Barton and J. H. Yoe. *bibliog il diags Ind & Eng Chem Anal ed* 12:166 Mar 15 '40
- Optimum response scanning slit-image; sound reproduction from film. G. Logan. *diags Electronics* 15:140 June '42
- Quartz photoelectric spectrophotometer. H. H. Mary and A. O. Beckman. *il diags Jour Soc Amer* 31:682 Nov '41
- Recording spectrophotometer and spectropolarimeter. W. R. Brode and C. H. Jones. *il diags Jour Amer Opt Soc* 31:743 Dec '41
- Simplified spectrophotometer uses self-generating photo cell. *Electronics* 13:44 May '40
- Survey of abridged spectrophotometers; including list of instruments with brief descriptions and manufacturers' addresses. J. A. Van den Akker. *bibliog diags Paper Tr Jour* 111:28 Sept 12 '40
- Survey of spectrophotometers; use of photoelectric cell for accurate colorimetric specification of white and near-white materials. K. S. Gigson. *Paper Tr Jour* 111:33 bibliog (p333) Sept 5 '40
- Use of photronic cell and spectrophotometer for measuring translucency of whiteware. F. C. Arrance. *il diags Jour Amer Cer Soc* 25:116 Feb 15 '42
- Wide range intensity measurements in photoelectric spectrophotometry. W. C. Bosch and B. B. Brown. *diag Jour Amer Opt Soc* 29:466 Nov '39

**PHOTOELECTRIC Cells**

- Application of conventional vacuum tubes in unconventional circuits. F. H. Shepard, Jr. *diags Proc Inst Radio Eng* 24:1573 Dec '36
- Application of electronic control. E. H. Vedder. *il diags A S M E Trans* 66:261 May '44
- Application of electron tubes in industry. D. E. Chambers, *il diags Elec Eng* 54:82 Jan '35

- Application of photo-electric controllers. E. H. Vedder. diags Elec Jour 32:425 Oct '35
- Applications of a photoelectric cell of the dry disk type. A. H. Lamb. il diags Elec Eng 54:1186 Nov '35
- Baird multiplier photocells. diags Electrician 119:162 Aug 6 '37
- British Thomson-Houston photo-electric controls. il diag Engineering 143-448 Apr 16 '37
- Cadmium magnesium alloy photo-tubes. L. R. Koller and A. H. Taylor. Jour Amer Opt Soc 25:184 June '35
- Characteristics of phototubes. diags Electronics 14:63 July; 77 Aug; 84 Sept; 100 Oct; 100 Nov; 82 Dec '41
- Comparison of photoemissive and photovoltaic devices their use in measuring radiant energy in various spectral regions. E. D. Wilson. Electrochem Soc Trans 69 (preprint 19):221 Apr '36
- Comparison of phototubes and photocells. E. D. Wilson. il Elec Jour 33:307 July '36
- Compensating circuit for blocking-layer photoelectric cells. B. A. Brice. bibliog diags Rev Sci Instr 8:279 Aug '37
- Data curves on General Electric blocking layer photocells. Electronics 9:42 Mar '36
- Electrically-focused multiplier phototube. J. A. Rajchman and R. L. Snyder. il diags Electronics 13:20 Dec '40
- Electronic engineering handbook. Ralph R. Batcher and William Moulic. 456p. Electronic Development Associates, Inc., N. Y. '44
- Farnsworth electron multiplier phototube. diags Electronics 13:54 May '40
- Filmbild-leuchtwerbeanlage mit gluhlampen. K. Kruger. diag Zeit Ver Deutsch Ing 81:1151 Sept 25 '37
- Frequency response of photronic cells. A. Bloch. Rev Sci Instr 6:173 June '35
- Fundamentals of industrial electronics; photo-electric relay and its applications. G. M. Chute. il diags Steel 114:108 Apr 17 '44
- General Electric secondary-emission photocells. Elec Rev (Lond) 120:770 May 21 '37
- High-sensitivity phototube circuit. H. S. Bull and J. M. Lafferty. il diags Electronics 13:31 Nov '40
- Industrial applications involving electronic detection. Abraham Edelman. il Electronics 16:129 Mar '43
- Industrial electronic control applications. F. H. Gulliksen and R. N. Stoddard. il diags Elec Eng 54:10 Jan '35; Discussion. 54:752 July '35
- Lichtelektrisches verfahren zur bestimmung der kornverteilung in staublufft. K. Gosele. diag V D I 84:138 Feb 24 '40
- Light-sensitive cell. R. H. Mighell. il diag Gen Elec Rev 40:372 Aug '37
- Light-sensitive cells; types and applications. R. C. Walker. il Light & Lighting 29:149 May '36
- Petoscope; a new principle in photo-electric applications. A. S. Fitzgerald. il diags Jour Fr Inst 222:289 Sept '36
- Photo-cells in industry. il diags Elec Rev (Lond) 128:831 July 18 '41
- Photoelectric industrial controls. H. J. Hague. il diag Electronics 17:114 Apr '44
- Photoelectric phenomena. C. D. Prater. diags Radio N 30:26 July '43
- Photo-emf cell characteristics. R. M. Holmes. Electronics 10:33 Apr '37
- Plating under a vacuum; magnets used in making photoelectric cells. il Comp Air M 46:6421 Apr '41
- Polarized-light servo system. T. M. Berry. bibliog il diags Elec Eng 63:Trans 195-8 Apr '44
- Power supplies for photoelectric controls. D. Schulman. diags Electronics 18:177 Feb '45
- Recent developments in phototubes. R. B. Janes and A. M. Glover. il diag RCA Rev 6:43 July '41
- Recent progress in applications of dry-disk photocells. A. H. Lamb. il diags Instruments 14:210, 212, 214 July '41
- Review of the development of sensitive phototubes. A. M. Glover. bibliog (83 titles) diag Proc Inst Radio Eng 29:413 Aug '41
- Secondary electrons from semiconductors with marked photoelectric properties; abstract. H. Wolff. Wireless Eng 18:468 Nov '41
- Secondary emission phototube. H. Iams and B. Salzberg. il Proc Inst Radio Eng 23:55 Jan '35
- Selenium vs. photo-electric cells; type, description, operation and application. F. Lowenberg. Power PI Eng 41:376 June '37
- Turning light into electricity; General Electric light sensitive cell. Gen Elec Rev 40:212-Apr '37
- Über die methodik der photoelektrischen analyse mit wechsellicht. F. Muller and W. Durichen. diags Chemische Fabrik 8:267 July 17 '35
- Unusual barrier cells appear in Germany. diags Electronics 10:42 Apr '37
- Vacuum tubes in action; photo-electric application. H. C. Stanley. diags Elec West 78:43 Apr '37
- Vacuum tubes in action; photo-electric phenomena. H. C. Stanley. diags Elec West 78:43 Mar '37
- Various circuits for vacuum tubes and photoelectric cells. F. H. Shepard. diags Electronics 9:34, 36, 38 June '36
- Zero-potential circuit for blocking-layer photocells. L. A. Wood. diag Rev Sci Instr 7:157 Mar '36

*See also*

Electronic Applications

#### PHOTOELECTRIC Cells in Aviation

- Aerial night photography by robot cameraman. Gen Elec Rev 48:54 Mar '45
- Airplane vibration reproducer. G. R. Crane. il Soc Motion Picture Eng Jour 44:53 Jan '45
- Electronic telescope control; device for tracking aircraft in flight. A. L. Rubenstein. il diags Electronics 13:54 Aug '40
- Human centrifuge; dive effects on pilot studied by means involving electronics. il Electronics 18:95 Apr '45
- Photoelectric eye measures plane speeds. Aero Digest 37:185 Oct '40
- Tubes measure cloud ceilings for pilots. il Electronics 17:194 Dec '44

*See also*

Aeronautical Radio

**PHOTOELECTRIC Cells for Counting, Sorting, Etc.**

Accurate sorting of colored objects; tiles emerging from kilns automatically shuttled into proper bins; utilizing cathode-ray oscilloscopes and phototubes. L. L. Antes. diags Electronics 17:114 June '44

Central conveyor control expedites product handling; photo-cell counters regulate capacity being handled. H. A. Delius. il Elec W 107:1118 Mar 27 '37

Color matching of porcelain. R. F. Bisbee. il diag Elec Jour 31:482 Dec '34

Colour variations of baked food products. il diags Gas Jour (Lond) 232:335 Nov 20 '40

Determination of fineness by means of the photo-cell. K. Shujo and J. Suzuki. diags Concrete (mill sec) 49:186 June '41

Device to record traffic flow. il Safety Eng 72:29 Nov '36; Steel 100:82 Feb 15 '37

Electronic integrator for counting circuit contacts; ultraviolet radiation recorder. G. W. Kenrick. il diag Electronics 14:33 Mar '41

Electronic mail sorting; abstract. W. C. White. Electronics 17:192 May '44

Electronic moisture indicator. E. Eidlinger. il diag Radio N 33:35 May '45

Electronic sorting. diags Sci Amer 171:61 Aug '44

Hints on uses of photoelectric counting in a sugar refinery. H. A. Delius. il diag Elec W 107:886 Mar 13 '37

How color comparators work. J. Keating. diags Radio N 30:41 Aug '43

Matching colors photo-electrically; Telecolor. il Sci Amer 152:312 June '35

New color-separator. W. Richter. diags Electronics 10:28 Mar '37

Photo-cell control for casting wheel. il Elec W 106:3512 Nov 7 '36

Photocell sorts letters for British post office. Electronics 10:34 Apr '37

Photo-electric cell adapted to raw-silk grading. il Textile World 86:896 Apr '36

Photoelectric cell protects city water. W. W. Turbut. il diag Eng W 105:2248 Sept 14 '35

Photoelectric cell used to tab autos. Elec W 106:3369 Oct 24 '36

Photoelectric cells used for taking Texas traffic census. il Oil & Gas Jour 35:55 Mar 18 '37

Photoelectric color measuring device used for process control. Electronics 9:36 Jan '36

Photoelectric gauging of piston rings. il Electronics 18:148 May '45

Photoelectric grading of sugars. S. Seymour. diags Electrician 131:137 Aug 6 '43

Photoelectric mine door control. diag Electronics 9:36 Aug '36

Photoelectric relay for batch weighing, metering. il diags Electronics 16:112 Feb '43

Photoelectric test table facilities meter checking. T. Oakley. il diags Elec W 118; 2102 Dec 26 '42

Phototube limit relay applied to weighing problems. il Electronics 10:40 Oct '37

Phototube pump control. H. H. Iler. il plan Factory Management 92:555 Dec '34

Phototube traffic recorders. diag Electronics 9:38 Nov '36

Phototubes used in sorting and tabulating machine. Electronics 10:50 Nov '37

Post office research station photoelectric equipment for examining letters. il diags Engineer 163:69 Jan 15 '37

Prove accuracy of photocell counters; Dawson brewery. il Elec W 108:1240 Oct 9 '37

Radio-frequency gun for spot-gluing wood. J. P. Taylor. il Electronics 16:106 Nov '43

Reflectance comparator matches color of porcelain enamel. F. H. Catlin and F. L. Michael. il Steel 109:85 Oct 6 '41

Refrigerator cabinets sorted enroute from factory to warehouse; General electric co. il plan Steel 99:65 Oct 12 '36

Self-opening doors; photoelectric devices by the Stanley works. H. H. Raymond. Electronics 9:36 Feb '36

Service test for electric counters. C. Jones. diag Factory Management 94:265 July '36

Thousandth-of-a-second timing for racing. Illum Eng Soc Trans 32:775 Sept '37

Traffic count printed hourly by photoelectric recorder. diags Electronics 16:130 May '43

Transparency meter tests with photox cell. diag Electronics 10:28 July '37

*See also*

Electronic Applications

**PHOTOELECTRIC Cells, Manufacturing Uses of**

Application of electron tubes in industry. D. E. Chambers. il diags Elec Eng 54:82 Jan '35

Application of the photo-cell in the manufacture of knit goods. W. Hildebrandt. diags Rayon 17:807; 18:39 Dec '36-Jan '37

Automatic metal pouring in foundries. il Electronics 18:152 June '45

Bottle inspection speeded up by use of photo-cells. diag Sci Amer 171-12 July '44

Brightness rating of metal surfaces measured by reflected light. A. M. Suggs. diag Product Eng 13:253 May '42

Electric dust recorder. il Eng & Min Jour 137:47 Jan '36

Electric eye detects missing cans. il Elec Jour 32:118 Mar '35

Electric eye makes further advances; inspection and control of automotive manufacturing. J. Geschelin. il Automotive Ind 75-380 Sept 19 '36

Electronic circuit maintains edge-control on moving strip. il diag Product Eng 15:157 Mar '44

Electronic detection of pinholes in tin plate. H. J. Hague. il diag Steel 114:108, 110 Mar 20 '44

Electronics applied to packaging machinery. E. F. Cornock. il diags Electronics 14:24 Mar '41

Electronics insures accurate loop control on continuous-strip processing lines. L. U. C. Kelling. il diags Machine Design 17:143 Apr '45

Evaluating the surface finish of metals. J. Guild. diags Engineering 150:44 July 19 '40

Fundamentals of industrial electronics; photoelectric relay and its applications. G. M. Chute. il diags Steel 114:108 Apr 17 '44

- Hole detector simplifies quality production on shearing line. *il* Steel 106:55 Apr 29 '40; Blast F & Steel Pl 28:460 May '40
- How to measure the width of moving webs or strips; photoelectric devices; production of textiles, paper, and strip metal. E. H. Alexander. *il* diags Gen Elec Rev 44:615 Nov '41; Excerpts. Electronics 15:66 Jan '42
- Industrial electronic control applications. F. A. Gulliksen and R. N. Stoddard. *il* diags Elec Eng 54: Jan '35; discussions 54:752 July '35
- Industrial applications involving electronic detection. A. Edelman. *il* Electronics 16:129 Mar '43
- Infrared spectroscopy in industry. Electronics 17:214 Aug '44
- Manufacturing grain doors; phototube control for edging machine. *il* Ry Mech Eng 109:472 Nov. '35
- New methods of measuring the properties of cotton fibers; cotton fibrograph for length analysis. K. L. Hertel. *il* Rayon 24:529 Oct '43
- News penetration tester. J. Hammond. *il* diag Paper Tr Jour 103:37 Nov 19 '36
- Paper loop held accurately by photoelectric control. W. L. Bendz. *il* diag Pape Tr Jour 105:28 Sept 30 '37
- Photo-cell applications to mechanical handling. Mech Handling 22:66 Mar '35
- Photocell timer for meter tests. J. Lang. *diag* Elec W 105:1020 Apr 13 '35
- Photo-electric and electronic controls in the machinery field. B. W. Steverman. *il* diags Mach 47:140 Oct '40
- Photo-electric combustion analysis. R. A. Rose, G. C. Wilson and R. R. Benedict. *il* diags S A E Jour 39:459 Nov '36; Excerpts. Automotive Ind 74:877 June 20 '36
- Photoelectric control for removing skew from cotton cloth. Gen Elec Rev 40:305 June '37
- Photo-electric control of Bessemer steelmaking. H. K. Work. *il* diags Engineering 151:237 Mar 21 '41; Excerpts. Iron Age 147:106 Feb 27 '41; Electronics 14:124 June '41
- Photoelectric control reduces pouring hazards. Steel 116:162 June 4 '45
- Photo-electric relay reduces losses of bottle-forming process. H. A. Moore. *diag* Elec Jour 33:266 June '36
- Photoelectric scales in process weighing. *il* Chem & Met Eng 42:571 Oct '35
- Photometering raw silk for hosiery: Evenometer. R. Finlay. *il* diag Electronics 9:12 July '36
- Phototube control indexes bag designs. *il* Elec W 106:3320 Oct 24 '36
- Phototube follows cutting pattern. Electronic Indus 3:127 May '44
- Phototube inspects steel strips for pinholes. *il* Electronics 13:60 June '40
- Phototubes control perforating of U.S. stamps. A. W. Hall. *diags* Electronics 16:124 Dec '43
- Phototubes examine edges of razor blades. A. R. Stargardter, Electronics 10:34 Jan '37
- Phototubes section, paper coater drive; West Virginia pulp and paper company. *il* Elec W 106:490 Feb 15 '36
- Reflection-transmission relationships in sheet materials. H. F. Launer. *bibliog* Amer Opt Soc 32:84 Feb '42
- Refrigerator finish matched by electric eye. *il* Sci Amer 152:105 Feb '35
- Sheffield electronic piston-ring inspector. *il* Mach 51:196 Feb '45; Steel 116:127 Apr 30 '45
- Shortcuts for determining sulphur and molybdenum in alloy steels. E. R. Vance. *il* Steel 111:56 Aug 31 '42
- Tube controlled candy wrapper. F. A. Hall. *il* Electronics 10:18 Aug '37
- See also*  
Electronic Applications
- PHOTOELECTRIC Cells, Miscellaneous Applications of**
- A.c. photoelectric control. J. A. Bennett. *diag* Rev Sci Instr 6:204 July '35
- An electronic sewing machine. N. Hoyler. *il* Electronics 16:90 Aug '43
- Air-conditioning safety device for theaters; fire damper release and method of preventing smoke from being recirculated into auditorium through air-conditioning system. E. R. Morin. *il* diags Soc Motion Picture Eng Jour 37:307 Sept '41
- Aniseikon for detection of cracks and flaws; abstract. W. Somer. Electronics 18:172 Jan '45
- Application of the photronic photocell to chemical processes. M. E. Fogle. *il* diags Electrochem Soc Trans 69 (preprint 15):183-96 Apr '36
- Applications of a photoelectric cell of the dry disk type. A. H. Lamb. *il* diags Elec Eng 54:1188 Nov '35
- Automatic electronic exposure control provides uniform X-ray exposures. H. D. Moreland. *il* diag Steel 116:98 Jan 8 '45
- Electric-eyeing telegrams; Western Union uses phototubes on conveying equipment. P. C. Bennett. *il* diags Electronics 9:22 Mar '36
- Electronic area calculator; photoelectric amplifier and an electronic calculator. *il* Electronics 17:146 May '44
- Electronic circuit for studying hunting. M. J. De Lerno and R. T. Basnett. *il* diags Elec Eng 61:603 Dec '42
- Electronic load regulator for meter testing. B. E. Lenahan. *il* diag Electronics 16:116 July '43
- Electronic robot measures creep of metals. *il* Mach 49:160 Oct '42; Electronics 15:86 Nov '42
- Electronic typewriting speedometer. B. Ephraim. *diags* Electronics 12:32 Dec '39
- Electronics on Broadway; sign utilizing phototubes for projecting animated figures; illustrations. Electronics 10:21 Sept '37
- Fluxmeter uses lightbeam. *il* diag Electronics 17: 176 May '44
- Holds meter load constant for tests by means of a control wattmeter and light-sensitive cell. W. C. Woodson. *diag* Elec W 105:2472 Oct 12 '35
- How to maintain positioning for successive operations in multicolor printing. W. L. Wright. *il* diags Gen Elec Rev 44:526 Nov '41; Abstracts. Electronics 15:72 Feb '42
- Light relay helps provide accurate transmission of time signals testing watt hour meters. *il* Elec Jour 33:153 Mar '36
- Measurement of projectile speed. Science 85: sup12 Apr 2 '37
- Measuring haze of transparent plastics. *diag* Mod Plastics 19:80 Aug '42



## PHOTOELECTRIC Cells, Misc.—Continued

- Metals by electronics; in mines and mills, electronics speeds production, increases safety, improves quality. V. Zeluff. *il Sci Amer* 172:210 Apr '45
- New accessories feature U. S. Smelting underground hoist installations. G. Martin. *il diags Eng Q Min Jour* 136:129 Mar '35
- New Broadway sign controlled by phototubes; production of moving images. *il Electronics* 13:48 Dec '40
- New high speed, high sensitivity photoelectric potentiometer. R. W. Gilbert. *diags Rev Sci Instr* 7:41 Jan '36
- New photoelectric reflection meter. Paper Tr Jour 101:40 Oct 31 '35
- Photocell-controlled dynamometer loader; motor fuel research. R. R. Proctor. *il diags Instruments* 15:194 June '42; Abstract. *Electronics* 15:110 Oct '42
- Photo cells control biggest swing bridge. *Elec W* 107:306 Jan 16 '37
- Photo-electric block system speeds tunnel trains; construction trains in the 13-mile Continental Divide tunnel. *il Eng N* 128:752 Apr 30 '42; *Elec Eng* 61:457 Sept '42; *Elec West* 89:44 Nov '42
- Photoelectric cell increases sensitivity of potentiometer operation. *il diags Nat Pet N* 28:42 Mar 11 '36
- Photoelectric determination of the permeability of paper to fluids. H. L. Vincent. *bibliog' il diag Paper Tr Jour* 110:29 May 30 '40
- Photoelectric dimension gauge. A. Edelman. *il Electronic Indus* 3:96 May '44
- Photoelectric galvanometer amplifier. G. Asset. *il diags Electronics* 18:126 Feb '45
- Photoelectric guiding of astronomical telescopes. A. E. Whitford and G. E. Kron. *bibliog il diags Rev Sci Instr* 8:78 Mar '37
- Photoelectric meter testing. *diag Engineer* 170:190 Sept 20 '40
- Photoelectric phonograph reproducer. *il Electronics* 13:42 Dec '40
- Photo-electric pilot provides automatic steering for boats. *il Marine Eng* 46:53 Feb '41
- Photoelectric potentiometer is versatile performer. *il diags Elec W* 113:1052 Apr 6 '40
- Photo-electric relays prevent spoilage of bread. *il Elec June* 32:424 Oct '35
- Photoelectric star counter. S. W. McCuskey and R. M. Scott. *il diags Rev Sci Instr* 12:597 Dec '41
- Photoelectric tester modernizes meter testing. T. A. Abbott. *il diag Gen Elec Rev* 43:244 June '40
- Phototube revolves doors. *Electronic Indus* 3:131 June '44
- Portable phototube unit using an RCA 954 tube. G. H. Gabus and M. L. Pool. *diag Rev Sci Instr* 8:196 June '37
- Post office speaking clock. E. A. Speight and O. W. Gill. *il diags Jour Inst Elec Eng* 80:493; Discussion. 510-16 May '37
- Practical strain-gage applications; electronic techniques. R. O. Fehr. *bibliog il diags Electronics* 18-112 Jan '45
- Talking mirror uses capacity relay and photo tube-film reproduction. *il diag Electronics* 10:36 Feb '37
- Teletouch corporation; electronic devices for various commercial purposes. *il diag Electronics* 10:26 Feb '37
- Three phototubes available for ultraviolet meter. *il Electronics* 13:42 Feb '40
- Unusual application of a General Electric torque balance watt telemeter; obtaining hourly integration of power interchange. C. Wasserman. *diags Instruments* 13:219 Aug '40
- Use of the photoelectric cell in physiological experiments. A. S. Marazzi. *il Science* 82:254 Sept 13 '35
- Web tension and side register control for slitting and roll winding machines. H. E. Overacker. *il diags India Rubber W* 103:51 Dec '40
- X-ray inspection with phosphors and photoelectric tubes. H. M. Smith. *diags Gen Elec Rev* 48:13 Mar '45

*See also*

Electronic Applications

## PHOTOELECTRIC Cells, Photographic Uses of

- ABC of photographic sound recording. E. W. Kellogg. *diags Soc Motion Picture Eng Jour* 44:151 bibliog (p138-94) Mar '45
- Aerial night photography by robot cameraman. *Gen Rev* 48:54 Mar '45
- Angle of acceptance; a definition and a method of measurement (photoelectric exposure meters). T. Von Sabo. *il Photo Tech* 3:61 May '41
- Calibrating stop values of lenses; photoelectric measurement. D. B. Clark. *diag Electronics* 16:186 July '43
- Designed for better pictures; photoelectric exposure meters. F. K. McCune and E. W. Clark. *diags Photo Tech* 3:63 Mar '41
- Electronic aids to photography. R. P. Turner. *il diags Radio N* 33:32 May '45
- For engineer-photographers only; electronic device. D. G. Fink. *il diags Electronics* 10:22 June '37
- High-speed photolight; valuable in studying high-speed motion. S. L. Bellinger. *il diag Gen Elec Rev* 47:31 Mar '44
- New X-ray technique introduced; photo-fluorography. *il diag Aero Digest* 48:112 Jan 1 '45
- Patent for automatic electric eye camera granted to Dr. Albert Einstein. *Science* 84:sup8 Dec 4 '36
- Photoelectric exposure meters. G. Keinath. *Photo Tech* 3:56 Jan '41
- Photoelectric flash camera. *Electronic Indus* 3:95 July '44
- Photoelectric method of measuring shutter speeds. A. R. Frey. *diag Tech* 3:63 Apr '41
- Photoelectric time-interval meter; designed primarily for measurement of speed of camera shutters and photo-flash synchronizing mechanism. T. M. Berry. *il diag Gen Elec Rev* 43:137 Mar '40; Abstract. *Electronics* 13:66 May '40
- Photoscope photoelectric exposure meter. *il Sci Amer* 154:103, 160 Feb-Mar '36
- Speed meter for camera shutters. C. J. Penther. *bibliog il diag Electronics* 17:164 May '44

*See also*

Photography

**PHOTOELECTRIC Cells, Scientific Applications of**

- Applications of electronics to physiology. W. E. Gilson, bibliog diags Electronics 16:86 Jan '43
- Cloud heights and densities; measurements by modulated light and a photoelectric ceilometer. P. H. Houser. il diag Gen. Elec Rev 48:7 Apr '45
- Cloud heights measured in daylight by photoelectric method. Aviation 40:96 Nov '41
- Daily record of ultraviolet solar and sky radiation in Washington, 1941 to 1943. W. W. Coblenz and R. Stair. bibliog J Res Nat Bur Stand 33:21 pl 1-2 July '44
- Determining cloud depths; electronic photocell equipment; essential for safe aircraft flights. S. R. Winters. diags Radio N 30:44 Oct '43
- Direct-current amplifier employing negative feedback for measuring stellar photoelectric currents. Q. S. Heidelberg and W. A. Rense. bibliog diag Rev Sci Instr 11:386 Nov '40
- Exploration of Cosmic Rays. H. T. Stetson. Electronic Indus 3:94 Jan '44
- Factors affecting ultraviolet solar-radiation intensities. W. W. Coblenz and R. Stair. bibliog pl Jour of Research Nat Bur Stand 15:123 Aug '35
- False horizon; study of atmospheric haze as conducted at Stanford University. V. Finch. Aviation 40:73 Oct '41
- General Electric light-beam instrument measures flux density. il Automotive & Aviation Ind 90:150 Mar 15 '44
- Human centrifuge; dive effects on pilot studied by means involving electronics. il Electronics 18:95 Apr '45
- Integrating photoelectric meter for measuring ultraviolet energy. J. B. H. Kuper, F. S. Brackett and M. Eicher. diag Rev Sci Instr 12:87 Feb '41
- Ionization gauge circuit with a magic eye. W. E. Parkins and W. A. Higinbotham. diag R Sci Instr 12:366 July '41
- Laboratory earthquakes; equipment at the Massachusetts Institute of Technology. il Sci Amer 154:144 Mar '36
- New electronic eye to measure U.S. sunfall. il Heat & Ven 39:61 D '42; Sci Amer 167; 274 Dec '42
- New photoelectric hysteresigraph. R. F. Edgar. bibliog il diags Elec Eng 56:805 July '37; Abstract. Electronics 10:46 Sept '37
- Photocells for high-frequency modulated light; Abstract. P. Grivet. Wireless Eng 22:38 Jan '45
- Photoelectric Fourier analysis; Abstract. R. Furth and R. W. Pringle. il diag Electronics 18:254 Apr '45
- Photoelectric measurement of the diurnal and seasonal variations in daylight and a globe integrating photometer; abstract. W. R. G. Atkins and H. H. Poole. Electrician 116:688 May 29 '36
- Photoelectric method for the determination of the parameters of elliptically polarized light. C. V. Kent and J. Lawson. diag Jour Amer Opt Soc 27:117 Mar '37
- Photoelectric method for tracing current wave forms. W. S. Huxford and R. W. Engstrom. diag Rev Sci Instr 8:385 Oct '37

- Photoelectric method of measuring the transparency of the lower atmosphere. G. M. Byram. diag Jour Amer Opt Soc 25:393 Dec '35
- Recording blood flow in stomach with thermocouples and phototubes. Electronics 16:190 July '43
- Simple photoelectric turbidimeter. S. Silverman. diag Rev Sci Instr 12:77 Feb '41; Abstract. Electronics 14:100 Apr '41
- Use of ceiling projector has extended to daytime photoelectric measurement of cloud heights. M. K. Laufer and L. W. Foskett. diags Elec Eng 60:209 May '41

*See also*

Electronic Applications

**PHOTOGRAPHY**

- Calibrating stop values of lenses. il Electronics 16:186 July '43
- Calibration of camera shutters with the cathode-ray oscillograph. T. H. Bullock. il Electronics 16:106 July '43
- Electron microscope uses a diffraction camera; abstract. J. Hiller, R. F. Baker and V. K. Zworykin. Science 96:sup12 July 3 '42
- Electroplane camera. il Electronics 15:44 Mar '42
- Photographic aspects of television operations. H. R. Lubcke. il Soc Motion Picture Eng Jour 36; 185 Feb. '41
- Some factors affecting the choice of lenses for television cameras. H. B. DeVore and Harley Iams. Proc Inst Radio Eng 28:369 Aug '40
- Television technique adopted in photographing sun's corona. il diags Electronics 13: 34 Feb '40

*See also*

Electron Microscope

Photoelectric Cells

Electron Optics

**PHOTORADIO.** See Facsimile**PIEZOELECTRIC Crystals, Piezoelectricity**

- Bibliography on piezoelectricity. W. G. Cady. Proc Inst Radio Eng 16:521 Apr '28
- Contour-mode vibrations in Y-cut quartz-crystal plates. G. Builder and J. E. Benson. bibliog diag Proc Inst Radio Eng 29:182 Apr '41
- Crystal-controlled wireless beacons. il Engineer 160:19 July 5 '35; Electrician 115:52 July 12 '35
- Crystal holder design. L. A. Elbl. il diags Electronics 16:134 Oct '43
- Crystal shifter. P. V. Trice. il diags Radio N 24:15 Oct '40
- Crystals for Signal corps sets. il Radio N 31:202 Feb '44
- Design of a portable temperature-controlled piezo oscillator. V. E. Heaton and W. H. Brattain. Proc Inst Radio Eng 7:1239 July '30
- Development and application of quartz crystals. S. A. Bokovoy. Elec Comm 21:233 '44
- Electro-acoustic reactions; with special reference to quartz crystal vibrators. A. T. Starr. diags Wireless Eng 17:247 303 June-July '40
- Flexural vibrations of piezoelectric quartz bars and plates. J. T. Tykociner and M. W. Woodruff. il diags U Eng Exp Sta Bul 291:1 '37
- Frequency control and measurement of radio waves. N. C. Rolfe. Electrician 119:664 Nov 26 '37
- General Electric crystal calibrator for radio frequency measurements. il Electrician 126 Feb 14 '41

**PIEZOELECTRIC Crystals—Continued**

- History and application of piezoelectricity. M. Tournier. *Elec Comm* 15:312 '37
- Low-frequency quartz-crystal cuts having low temperature coefficients. W. P. Mason and R. A. Sykes. *il diags Proc Inst Radio Eng* 32:208 Apr '44
- Low temperature coefficient quartz crystals. W. P. Mason. *bibliog diags Bell Sys Tech Jour* 19:74 Jan '40
- Manufacture of quartz crystal filters. G. K. Burns. *Bell Sys Tech Jour* 19:516 Oct '40
- Modes of vibration of piezoelectric crystals. N. H. Williams. *Proc Inst Radio Eng* 21:990 July '33
- Mounting quartz oscillator crystals. R. C. Hitchcock. *Proc Inst Radio Eng* 15:902 Nov '27
- New crystal unit for broadcast service, G30. *il Gen Elec Rev* 43:474 Nov '40
- New quartz-crystal plate, designated the GT, which produces a very constant frequency over a wide temperature range. W. P. Mason. *bibliog il Proc Inst Radio Eng* 28:220 May '40
- Notes on piezoelectric quartz crystals. Isaac Koga. *Elec Com* 14:327 '36
- Notes on quartz plates, air gap effect, and audio-frequency generation. August Hund. *Proc Inst Radio Eng* 16:1072 Aug '28
- Notes on the design of temperature control units. J. K. Clapp. *Gen Radio Exp Vol* 18 Aug '44
- Novel amplifier for use with a piezo-crystal installation. N. G. Calvert. *il diag Electrician* 117:164 Aug 7 '36
- Oscillations of hollow quartz crystals cut along the optic axis. Tsi-Ze Ny, Long-Chas Tsien, and Sun-Hung Fang. *Proc Inst Radio Eng* 24:1484 Nov '36
- Quartz and tourmaline for piezoelectric equipment. P. Modrak. *il diags Wireless Eng* 14:127 175 Mar-Apr '37
- Quartz-crystal accelerometer. R. O. Fehr. *il diag Gen Elec Rev* 45:269 May '42; Same cond. *Electrician* 129:172 Aug 14 '42
- Quartz crystal applications. C. F. Booth. *Jour Inst Elec Eng* 90 pt 3:27 Mar '43
- Quartz crystals; their piezoelectric properties and use in control of high frequencies. C. F. Baldwin. *Gen Elec Rev* 43:188 237 43 May-June '40
- Quartz orientation. Ray Setty. *Electronic Indus* 2:102 Dec '43
- Quartz plate mountings and temperature control for piezo oscillators. Vincent E. Heaton and E. G. Lapham. *Proc Inst Radio Eng* 20:261 Feb '32
- Radio progress during 1944. *bibliog Proc Inst Radio Eng* 33:150 Mar '45
- RCA crystal attachment to provide crystal control of receiver frequency. *Aero Digest* 30:58 Jan '37; *il Aviation* 35:39 Dec '36
- Rochelle salt crystal devices of low impedance; Monobar unit. R. W. Tibbetts. *il diags Electronics* 16:88 Apr '43
- Simple quartz-crystal filters of variable bandwidth. G. Builder and J. E. Benson. *bibliog diags Wireless Eng* 20:138 Apr '43; Discussion. J. Robinson 20:435 Sept '43
- Simplified circuit for frequency substandards employing a new type of low-frequency zero-temperature-coefficient quartz crystal. S. C. Hight and G. W. Willard. *diags Proc Inst Radio Eng* 25:549 May '37

- Standard frequency quartz plates. *diag Electronics* 10:52 Dec '37
- Test set for quartz crystals. W. E. McNatt. *il diag Electronics* 18:113 Apr '45
- See also*
- Oscillators, Crystal Standards, Frequency
- PLASTICS**
- Better television. *il diag Sci Amer* 172:362 June '45
- Chemical properties of plastics affect design of parts. W. S. Larson. *il Product Eng* 15:845 Dec '44
- Correct design insures optical efficiency of acrylic parts. *diags Product Eng* 16:415 June '45
- Creep characteristics of plastics. W. N. Findley. *bibliog il Mod Plastics* 22:513 Dec '44
- Electrical and general physical properties of plastics, changes on heating, mechanical properties; molecular structure; a discussion. *Chem & Ind* 59:537 July 27 '40
- Fine art of model making. *il Mod Plastics* 22:113 Jan '45
- High frequency insulation materials; results of laboratory tests of synthetic plastics. P. Mabb. *Electrician* 123:453 Nov 24 '39
- How much real muscle do plastics offer the designer? J. Delmonte. *bibliog diags Machine Design* 16:99 Dec '44
- Mechanical and electrical properties of pastics used in electronic apparatus. Herbert Chase. *il Electronics* 9:10 Mar '36
- Molded plastics; general properties and uses; engineering data sheet. J. H. Du Bois. *Machine Design* 17:171 Feb '45
- Plastic materials in telephone use. J. R. Townsend and W. J. Clarke. *Bell Sys Tech Jour* 18:482 July '39
- Plastic chemistry in the electrical field. W. C. Goggin and R. F. Boyer. *diags Elec World* 122:100 Dec 9 '44
- Plastic radio cabinet design. Herbert Chase. *il Electronics* 12:16 June '39
- Plastics as engineering materials. H. V. Potter. *Engineering* 149:519 May 24 '40
- Plastics competition award to Bell aircraft corp.; radio mast stanchions. *il Mod Plastics* 19:134 Nov '41
- Plastics in the electronics field. John Sasso. *il Electronics* 15:26 July '42
- Plastics index; world wide summary of plastics progress. Published monthly. Publications publishing company, 521 Fifth av., N. Y. C.
- Polymerization of styrene and some concepts of the electrical properties of plastics. A. A. Warner. *Elec Rev* 48:10 *bibliog Feb '45*
- Progress in engineering knowledge during 1944; plastics. P. L. Algar and J. Stokley. *il Gen. Elec Rev* 48:10 *bibliog Feb '45*
- Reflective optics in projection television; aspherical correcting lenses from clear plastics for home receivers. I. A. Malof and D. W. Epstein. *bibliog il Electronics* 17:98 Dec '44
- Relative temperature stability of stressed plastics. J. A. Sauer. *diag Mod Plastics* 22:153 Mar '45
- Selecting plastic materials for appearance and performance. W. S. Larson. *il diag Product Eng* 16:192 Mar '45
- Some recent developments in engineering materials. A. black. *bibliog Mech Eng* 67:268 Apr '45

Sorption of water by plastics. G. M. Kline, A. R. Martin and W. A. Crouse. bibliog Mod Plastics 18:119 Oct '40

*See also*

Cabinets  
Manufacturing, Radio

### POLICE Communication Systems

AM vs FM in two-way radio as applied to police communications. S. Freeman. il diags Radio N 30:42 Dec '43

Applying police radio requires a careful analysis of terrain, noise level, and type of service. R. N. Harmon, Electronic 10:22 Oct '37

Cops on the air. J. Ranson. 669 pa 75c Eagle library, Brooklyn, N. Y. '37

Engineering work of the FCC; police, aviation and maritime services. W. N. Krebs. Proc Inst Radio Eng 32:324 June '44

Field survey for police service in Milwaukee. Electronics 9:36 July '36

FM for emergency communication. H. Du Val jr. Electronics 13:79 Oct '40

High frequency police equipment. Electronic Indus 4:81 June '45

Michigan's FM state police system. C. J. Scavarda. il Electronic Indus 3:90 Feb '44

Military police radio in European theater of operations. D. Talley. il Radio N 31:212 Feb '44

Mobile crime laboratory and emergency truck; Illinois state highway maintenance police. C. H. Nicholson. il diags Radio N 29:16 Mar '43

Our police radio telegraph networks. A. A. Curry. il map Radio N 27:40 May '42

Planning a VHF communications system; details concerning the Massachusetts state police system. J. A. Doremus. il plan map Electronics 16:96 Sept '43

Police radio communication. E. L. White and E. C. Denstaedt. il maps Elec Eng 56:532 May '37

Police satellite system; FM signals automatically relayed to central point by two mountain-top stations; design of 60-degree corner reflector receiving antennas. E. S. Naschke. il diags Electronics 17:94 May '44

Postwar two-way radio systems. S. Freedman. il plan Radio N 31:24 Mar '44

State-wide frequency modulation police network; state police of Connecticut. D. E. Noble. il diags. Electronics 13:19 Nov '40

*See also*

Transmitters, Radio-Telephone

**POLARIZATION.** See Propagation of Waves

### POSTWAR Planning

Broadcasting's post-war equipment plans; survey. W. W. MacDonald. il Electronics 18:92 Jan '45

Engineer's place in the post-war picture. S. S. Egert. Electronics 16:86 July '43

Frequency modulation and its postwar future. J. E. Brown. il Electronics 17:94 June '44

Objectives for post-war television. W. Miner. il Electronics 16:100 Dec '43

Postwar airways; communications planning. A. Scott. Air Transport 1:51 Dec '43

Postwar civilian aviation radio prospects. R. E. Ricketts. il diag Electronics 16:86 Aug '43

Postwar control of air traffic. il Electronics 17:148 Mar. '44

Postwar design for television broadcasting: model of proposed television broadcasting building. il Eng N 132:525 Apr 13 '44

Post-war FM and television. B. Dudley. il Electronics 16:94 Nov '43

Post-war planning problems; electronics industries. W. MacDonald. Electronics 16:72 May '43

Postwar radio sets. il Electronic Indus 2:82 Oct '43

Postwar radio; what the public will buy; Sylvania survey. Adv & Sell 48:170 May '45

Postwar television. R. R. Beal. Proc Inst Radio Eng 31:521 Sept '43

Postwar television. P. Glanzer. Radio N 31:46 Mar '44

Postwar U-H-F. I. E. Mouromtseff. Radio N 30:46 Nov '43

Radio technical planning board on postwar frequency modulation. Electronics 17:125 Nov '44

Role of ultra-high frequencies in post-war broadcasting. K. I. Jones and B. A. Bell. Jour Inst Elec Eng 91pt 3:11 Mar '44

Technical plan for post-war television. maps diags Electronics 17:95 Aug '44

Television and FM plans of receiver manufacturers. Electronic Indus 3:90 Sept '44

Television industry prepares for postwar. J. H. Carmine. il Radio N 33:43 Jan '45

Television's postwar possibilities. P. Glanzer. il Radio N 32:120 July '44

War facts and post-war fancies; prospects for home radio, FM and television are bright; industrial electronics is the enigma. il Electronics 17:92 Feb '44

*See also*

Engineering Television, Post-war  
Manufacturing, Radio

**POWER Amplifiers.** See Amplifiers, Power

**POWER Measurement.** See Measurements

### POWER Supply Systems

A life test power supply utilizing thyatron rectifiers. H. W. Lord. Proc Inst Radio Eng 21:1097 Aug '33

Broadcasting with diesel power; station WMBD. il Diesel Power 19:224 Mar '41

Copper-oxide rectifiers in standard broadcast transmitters. R. N. Harmon. Proc Inst Radio Eng 30:534 Dec '42

Cooperation is keynote in rectifier supply coordination; power for Crosley radio station; report of telephone interference investigation and remedial measures. F. E. Sanford and V. G. Rettig. il diag Edison Elec Inst Bul 3:329 Aug '35

Hot-cathode mercury vapour high-tension supply equipment for broadcast stations. A. Rabuteau. Elec Comm 15:141 '36

Improved 32v. farm power supply. A. L. Campbell. il diags Radio N 24:14 July '40

Improvements in B-battery portability. H. F. Finch. Proc Inst Radio Eng 29:299 June '41

Inductive coordination of common-neutral power distribution systems and telephone circuits. J. O'R. Coleman and R. F. Davis. Bell Sys Tech Jour 16:76 Jan '37

**POWER Supply Systems—Continued**

- Low-capacitance a-c power supplies. G. Mountjoy and C. W. Finnigan. diags RCA 6:455 Apr '42
- Power supply filter design. H. S. Renne. il diags Radio N 33:38 Feb '45
- Power-system governor sensitive to frequency and load. T. E. Curtis. il diags Elec Eng 60:Trans 89-82 Mar '41
- Power supplies. Engineering Department. Aerovox Res W. Vol 8 Nos. 2-3 Feb-Mar '36
- Radio-frequency-operated high-voltage supplies for cathode ray tubes. O. H. Schade. Proc Inst Radio Eng 31:158 Apr. '43
- Radio receiver power supplies. Engineering Dept. Aerovox Res W. Vol 8, Nos. 8-9-10-11 Aug-Sept-Oct-Nov '37
- Selecting radio power for cargo ships. B. Breedlove. Marine Eng 41:185 Apr '36
- Solution for faults at two locations in three-phase power systems. E. F. Vaage. Bell Sys Tech Jour 19:19:290 Apr '40
- Thermionic rectifier circuits. R. C. Hitchcock. il Electronics 17:102 Jan '44
- Transformerless power supplies. Engineering Dept. Aerovox Res W. 14:2, 3 Feb '42
- Transmitter bias supplies. Engineering Dept. Aerovox Res W. Vol 14 No. 4 Apr '42
- Stable power supplies for electron microscopes. A. W. Vance. RCA Rev. 5:293 Jan '41
- Versatile high power for industrial research. il Electronics 17:150 Jan '44

*See also*

Filters Rectifiers  
Receiver Power Supply Transmitters

**PROGRAM** Transmission. See Broadcasting Station Control Equipment

**PROPAGATION of Waves**

- Application of graphs of maximum usable frequency to communication problems. Research Nat Bur Stand 22:81 Jan '39
- Electric and magnetic fields of a linear radiator carrying a progressive wave. F. M. Colebrook. bibliog diags Jour Inst Elec Eng 86:169 Feb '40; Discussion. 86:484 May '40
- Frequency characteristics of electromagnetic wave propagation undergo continuous changes and call for broader concepts. S. Ramo. diags Gen Elec Rev 45:557 Oct '42
- High-frequency radio transmission conditions, April 1941, with predictions for July 1941. National bureau of standards. Proc Inst Radio Eng. 28:214 Apr '41. Same, with prediction for August 29:349 June '41; for September, 29:403 July '41; for October, 29:467 Aug '41; for November, 29:521 Sept '41; for December, 29:563 Oct '41; for January and February 1942, 29:653 Dec '41
- Interaction of radio waves. V. A. Bailey and D. F. Martyn. Wireless Eng 12:122 Mar '35
- Ionosphere and radio transmission, January 1941, with predictions for April 1941. National bureau of standards. Proc Inst Radio Eng 29:32 Jan '41 Same: with prediction for May, 29:80 Feb '41; for June, 29:136 Mar '41
- Measuring the reflecting regions in the atmosphere. A. W. Friend and R. C. Colwell. Proc Inst Radio Eng 25:1531 Dec '37

Note on the source of interstellar interference. Karl G Jansky. Proc Inst Radio Eng 23:1158 Oct '35

- Propagation of electromagnetic waves in a magnetized medium, for vertical incidence (and the question of secondary splitting); abstract. K. Fosterling. Wireless Eng 19:313 July '42
- Propagation of electromagnetic waves in water. Wireless Eng 15:67 Feb '38
- Propagation tests with micro-rays. A. G. Clavier. Elec Comm 15:211 '37
- Radial field in a spherical electromagnetic wave. G. W. O. Howe. Wireless Eng 22:209 May '45
- Radio investigation of air movement in the upper atmosphere; abstract. O. P. Ferrell. Wireless Eng 22:79 Feb '45
- Radio transmission anomaly; co-operative observation between the United States and Argentina. J. H. Dellinger and A. T. Cosentino. Proc Inst Radio Eng 28:431 Oct '40
- Report of committee on radio wave propagation. bibliog maps Proc Inst Radio Eng 26:1193 Oct '38
- Scattering of radio waves in the lower and middle atmosphere. J. H. Piddington. bibliog il diag Proc Inst Radio Eng 27:753 Dec '39
- Standards on radio wave propagation; definition of terms. 8 pages. Institute of Radio Engineers. New York City \$0.50
- Standards on radio wave propagation; measuring methods. bibliog diags Proc Inst Radio Engineers 30:1 pt2 July '42. Also 16 page booklet. \$0.50
- Transmission theory of plane electromagnetic waves. S. A. Schelkunoff. bibliog diags Proc Inst Radio Eng 25:1457 Nov '37
- Typography and VHF wave propagation. Qst 28:15 Feb '44
- World-wide high-frequency communications patterns. QST 26:38 Aug '42
- See also*
- |               |                        |
|---------------|------------------------|
| Communication | Transmission           |
| Radiation     | Ultra-High-Frequencies |
- Atmosphere
- Further results of a study of ultra-short-wave transmission phenomena. E. R. England, A. B. Crawford, and W. W. Mumford. Bell Sys Tech Jour 14:369 July '35
- General theory on the ionized layer of the upper atmosphere. S. Namba. Proc Inst Radio Eng 21:238 Feb '33
- L'application de Petude des parasites atmospheriques a la meteorologie. R. Bureau. il Genie Civil 113:226 Sept 10 '38
- Note on the determination of the ionization of the upper atmosphere. J. C. Schelleng. Proc Inst Radio Eng 16:1471 Nov '28
- Physical reality of space and surface waves in the radiation field of radio antennas. K. A. Norton. Proc Inst Radio Eng 25:1182 Sept '37
- Propagation of radio waves over the surface of the earth and in the upper atmosphere; the propagation from vertical, horizontal and loop antennas over a plane earth of finite conductivity. K. A. Norton. diags Proc Inst Radio Eng 25:1203 Sept '37; Correction. 25:1366 Nov '37
- Radio progress during 1944; radio wave propagation. bibliog Proc Inst Radio Eng 33:152 Nov '35

- Radio transmission studies of the upper atmosphere. J. P. Schafer and W. M. Goodall. Proc Inst Radio Eng 19:1334 Aug '31
- Wireless waves in the upper atmosphere. J. F. M. Mellor. Electrician 120:258 Feb 25 '38

**Atmospherics**  
(See main entry)

**Attenuation**

- East-west and north-south attenuations of long radio waves on the Pacific. E. Yokoyama and T. Nakai. Proc Inst Radio Eng 17:1240 July '29
- Graphs to Prof. Sommerfeld's attenuation formula for radio waves. B. Rolf. Proc Inst Radio Eng 18:391 Mar '30; Discussion. W. H. Wise. 18:1971 Nov '30
- Investigation of the attenuation of electro-magnetic waves and the distances reached by radio stations in the wave band from 200 to 2000 meters. H. Fassbender, F. Eisner and G. Kurlbaum. bibliog Proc Inst Radio Eng 19:1446 Aug '31
- Relation between the effective ground conductivity (as obtained by the dipole measuring method) and the attenuation of propagation; abstract. J. Grosskopf and K. Vogt. Wireless Eng 21:131 Mar '44

See also

**Attenuators**

**Below 100 Kilocycles**

- Effects of sunspots and terrestrial magnetism on long-distance reception of low-frequency waves. E. Yokoyama and T. Nakai. Proc Inst Radio Eng 19:882 May '31
- General theory of the propagation of radio waves in the ionized layer of the upper atmosphere. S. Namba. Proc Inst Radio Eng 21:238 Feb '33
- Investigation of the attenuation of electro-magnetic waves and the distances reached by radio stations in the wave bands from 200 to 2000 meters. H. Fassbender, F. Eisner and G. Kurlbaum. Proc Inst Radio Eng 19:1446 Aug '31
- Long-wave radio transmission phenomena associated with a cessation of the sun's rays. A. Bailey and A. E. Harper. maps Bell System Tech Jour 15:1 bibliog June '36
- Low-frequency radio receiving measurements at the Bureau of Standards in 1931 and 1932. E. B. Judson. Proc Inst Radio Eng 21:1354 Sept '33
- Low-frequency radio transmission. P. A. de Mars, G. W. Kenrick and G. W. Pickard. Proc Inst Radio Eng 18:1488 Sept '30
- Low-frequency transmission over transatlantic paths. H. H. Beverage and G. W. Kenrick. Proc Inst Radio Eng 24:472 Mar '36
- Preliminary note on proposed changes in the constants of the Austin-Cohen transmission formula. L. W. Austin. Proc Inst Radio Eng 14:377 June '26
- Transatlantic long-wave radio telephone transmission and related phenomena from 1923 to 1933. A. Bailey and H. M. Thompson. Bell Sys Tech Jour 14:680 Oct '35
- Trans-atlantic radio telephone transmission. L. Espenschied, C. N. Anderson and A. Bailey. Proc Inst Radio Eng 14:7 Feb '26

**500-1500 Kilocycles**

- Direct ray broadcast transmission. T. L. Eckersley. Proc Inst Radio Eng 20:1555 Oct '32
- Distribution of radio waves from broadcasting stations over city areas. R. Brown and G. D. Gillett. Proc Inst Radio Eng 12:395 Aug '24
- Notes on radio transmission. C. N. Anderson. Proc Inst Radio Eng 19:1150 July '31
- Selection of a radio broadcast transmitter location. W. B. Lodge. Proc Inst Radio Eng 21:621 Oct '39

**Cosmic Phenomena**

- Cosmic and governmental phenomena. H. R. Mimmo. Science 82:516 Nov 29 '35
- Cosmic static. G. Reber. il diags Proc Inst Radio Eng 30:367 Aug '42
- Diurnal variation of cosmic-ray intensity. J. L. Thompson. Phys Rev 50:809 Nov 1 '36
- New cosmic phenomenon; fading of radio signals at regular intervals. J. H. Dellinger. Science 82:351 Oct 11 '35

**Day and Night**

- Diurnal and seasonal variations in the ionosphere during the years 1933 and 1934. P. J. Schaefer and W. M. Goodall. Proc Inst Radio Eng 23:670 June '35
- Diurnal variation of cosmic-ray intensity. J. L. Thompson. Phys Rev 50:869 Nov 1 '36

**Deviation From Great-Circle Path**

- Analysis of the effect of scattering in radio transmission. T. L. Eckersley. Jour Inst Elec Eng 86:548 '40
- Deviations of short radio waves from the London-New York great-circle path. C. B. Feldman. Proc Inst Radio Eng 27:635 Oct '39
- Measurements of the delay and direction of arrival of echoes from near-by short-wave transmitters. C. F. Edwards and K. G. Jansky. Proc Inst Radio Eng 29:322 June '41
- Short-range echoes with short waves. E. Quack and H. Mogel. Proc Inst Radio Eng 17:824 May '29
- Study of short-time multiple signals. J. B. Hoag and Victor J. Andrew. Proc Inst Radio Eng 16:1368 Oct '28

**Diffraction**

- Application of the phase integral method to the analysis of the diffraction and refraction of wireless waves 'round the earth. T. L. Eckersley and G. Millington. Phil Trans Royal Soc (Lond) 237:273 June '38
- Diffraction of electro-magnetic waves from an electrical point source round a finitely conducting sphere, with applications to radio telegraphy and the theory of the rainbow. B. van der Pol and H. Bremmer. Phil Mag 24:141 July '37
- Diffraction of radio ranges by hills. W. R. Haseltine. Phys Rev 57:717 Apr 15 '40
- Diffraction of wireless waves round the earth. T. L. Eckersley and A. Millington. Phil Mag 27:517 May '39
- Experimental verification of the diffraction analysis of the relation between height and gain for radio waves of medium length. T. L. Eckersley and G. Millington. Proc Phys Soc (Lond) 51:805 Sept '39
- The diffractive propagation of radio waves. B. Wivedensky. Tech Phys USSR 3:195 Nov '36

## PROPAGATION of Waves—Continued

## Direction

- Deviations of short radio waves from the London-New York great-circle path. C. B. Feldman. Proc Inst Radio Eng 29:635 Oct '39
- Determination of the direction of arrival of short radio waves. H. T. Friis, C. B. Feldman, and W. H. Sharpless. Proc Inst Radio Eng 22:47 Jan '34
- Directional studies of atmospherics at high frequencies. Karl G. Jansky. Proc Inst Radio Eng 20:1920 Dec '32
- Oscillographic observations on the direction of propagation and fading of short waves. H. T. Friis. Proc Inst Radio Eng 16:658 May '28
- Directional characteristics of tropical storm static. Stephan S. Sashoff and Willmar K. Roberts. Proc Inst Radio Eng 30:131 Mar '42

See also

## Directional Reception and Transmission

## Earth

- Contribution to the theory of the Zenneck field inclination to the surface of the earth; abstract. O. Schriever. Wireless Eng 19:70 Feb '42
- Effect of the earth's magnetic field in the ionosphere. G. W. O. Howe. diags Wireless Eng 21:1 Jan '44
- Effect of the earth's curvature on ground-wave propagation. Charles R. Burrows and Marion C. Gray. Proc Inst Radio Eng 29:16 Jan '41; Correction. E. Fubini Feb '41 p 105
- Electromagnetic wave fields near the earth's surface. C. R. Mings. bibliog il diags Proc Inst Radio Eng 25:1419 Nov '37
- Polar molecules in the earth's electric field as absorbers of wireless waves. M. C. Holmes. Franklin Inst Jour 225:309 Mar '38
- Propagation of radio waves over the surface of the earth and in the upper atmosphere; ground-wave propagation from short antennas. K. A. Norton. 2 fold pls Proc Inst Radio Eng 24:1367 Oct '36
- Radiation energy and earth absorption for dipole antennae. A. Sommerfeld and F. Renner. diags Wireless Eng 19:351, 409, 457 Aug-Oct '42
- Radio propagation over plane earth; field strength curves. C. R. Burrows. bibliog Bell System Tech Jour 16:45 Jan '37
- Radio propagation over spherical earth. C. R. Burrows. bibliog Proc Inst Radio Eng 23:470 May '35; Same. Bell System Tech Jour 14:477 May-July '35
- Reflection coefficient of the earth's surface for radio waves. J. S. McPetrie. Jour Inst Elec Eng 82:214 Feb '38
- Reflection curves and propagation characteristics of radio waves along the earth's surface. J. S. McPetrie and A. C. Strickland. bibliog Jour Inst Elec Eng 87:135; Discussion. 160 Aug '40
- Some observations of the behaviour of earth currents and their correlation with magnetic disturbances and radio transmission. I. S. Bennis. Proc Inst Radio Eng 19:1931 Nov '31
- Surface wave in radio propagation over plane earth. C. R. Burrows. bibliog il map Proc Inst Radio Eng Feb '37
- Ultra-short-wave propagation along the curved earth's surface. P. von Handel and W. Pfister. diags Proc Inst Radio Eng 25:346 May '37

Wireless waves at the earth's surface. Wireless Eng 17:385 Sept '40

## Echoes

- Analysis of the effect of scattering in radio transmission. T. L. Eckersley. bibliog diags Jour Inst Elec Eng 86:548, pl 1-4; Discussion. 563 June '40
- Analysis of the ionosphere. K. K. Darrow. il diags Bell System Tech Jour 19:455 July '40; Same abr. Elec Eng 59:272 July '40
- Developments in meteorological sounding by radio waves. A. W. Friend. il Jour Aeronautical Sci 7:347; Discussion. 350 June '40
- Echo measurements in long-distance transmission and their relation to zenithal reflections; abstract. R. Eyfrig. Wireless Eng 18:242 June '41
- Further studies of the Kennelly-Heaviside layer by the echo method. L. R. Hafstad and M. A. Tuve. Proc Inst Radio Eng 17:1508 Sept '29
- Group velocity and long retardations of radio echoes. A. Breit. Proc Inst Radio Eng 17:1508 Sept '29
- Measurements of the delay and direction of arrival of echoes from near-by short wave transmitters. C. F. Edwards and K. G. Jansky. diags maps Proc Inst Radio Eng 29:322 June '41
- Reception of radio echoes from distant ionospheric irregularities. J. A. Pierce and H. R. Mimno. il diags Phys Rev 57:95 Jan 15 '40
- Scattering of radio waves in the lower and middle atmosphere. J. H. Piddington. bibliog il diags Proc Inst Radio Eng 27:753 Dec '39
- Wireless echoes of long delay. P. O. Pedersen. Proc Inst Radio Eng 17:1750 Oct '29

## Eclipses

- Eclipse effects in the ionosphere. J. P. Schafer and W. M. Goodall. bibliog Proc Inst Radio Eng 23:1356 Nov '35; Same. Bell System Tech Jour 15:162 Jan '36
- Eclipse of August, 1932, observed by radio facsimile. E. F. W. Alexanderson. il Proc Inst Radio Eng 23:454 May '35
- Ionosphere studies during partial solar eclipse of February 3, 1935. T. R. Gilliland, S. S. Kirby and E. B. Judson. Proc Inst Radio Eng 24:1027 July '36
- Predictions of normal radio critical frequencies related to solar eclipses in 1940. N. Smith. bibliog Jour Research Nat Bur Stand 24:225 Feb '40
- Radio data during the recent solar eclipse. Science 84:sup7 Aug 14 '36
- Radio observations of the Bureau of standards during the solar eclipse of August 31, 1932. S. S. Kirby and others. U. S. Bur Stand Jour Research 11:829 Dec '33
- Radio observations of the ionosphere during an eclipse. Franklin Inst Jour 232-278 Sept '41
- Reception of radio echoes from distant ionospheric irregularities. J. A. Pierce and H. R. Mimno. il diags Phys Rev 57:95 Jan 15 '40
- Report on ionization changes during a solar eclipse. E. V. Appleton and S. Chapman. maps Proc Inst Radio Eng 23:658 June '35
- Ultra-shore-wave propagation along the curved earth's surface. P. von Handel and W. Pfister. diags Proc Inst Radio Eng 25:346 Mar '37; Discussion. bibliog 26:240 Feb '38

**Fading**

Abnormal ionization of the E-region of the ionosphere. L. V. Berkner and H. W. Wells. *Terr Mag and Atmos Elec* Mar '37

Concerning the nature of radio fade-outs. L. V. Berkner. *Phys Rev* 55:536 Mar 15 '39

New cosmic phenomenon; fading of radio signals at regular intervals. J. H. Dellinger. *Science* 82:351 Oct 11 '35

Observations during a strongly marked Dellinger effect. Hess. *Qst* 21:68 June '37

Some observations on short period radio fading. T. Parkinson. *Proc Inst Radio Eng* 17:1042 June '29

Some studies in radio broadcast transmission. R. Brown, De L. K. Martin and R. K. Potter. *Proc Inst Radio Eng* 14:57 Feb '26

Study of radio fade-outs. L. V. Barkner and H. Wells. *Terr Mag and Atmos Elec* June '37

Sudden disturbances of the ionosphere. J. H. Dellinger. *Proc Inst Radio Eng* 25:1253 Oct '37

Transmission characteristics of a short wave telephone circuit. R. K. Potter. *Proc Inst Radio Eng* 18:581 Apr '30

*See also*

Fading (main heading)

Ionosphere

**Formulas**

Modified Sommerfeld's integral and its applications. S. A. Schelkunoff. *Proc Inst Radio Eng* 24:1388 Oct '36

Preliminary note on the proposed changes in the constants of the Austin-Cohen transmission formula. L. W. Austin. *Proc Inst Radio Eng* 14:377 June '26

Propagation of surface waves over stratified and uneven ground and the derivation of a modified Zenneck wave; abstract. J. Grosskopf. *Wireless Eng* 19:169 Apr '42

Sommerfeld's formula. W. A. Fitch. *bibliog Electronics* 9:23 Sept '36

**Ground-Wave**

Calculation of ground-wave field intensity over a finitely conducting spherical earth. K. A. Norton. *Proc Inst Radio Eng* 29:623 Dec '41

Diffraction of electromagnetic waves from an electrical point source sound a finitely conducting sphere, with applications to radiotelegraphy and the theory of the rainbow. B. van der Pol and H. Bremmer. *Phil Mag* 24:141 July '37

Diffraction propagation of radio waves. B. W. Wedensky. *Tech Phys USSR* 3:195 Nov '36

Effect of the earth's curvature on ground-wave propagation. C. R. Burrows and M. C. Gray. *bibliog Proc Inst Radio Eng* 29:16 Jan '41

Ground and ionospheric rays. W. Ross. *Wireless Eng* 14:306 June '37

Physical reality of Zenneck's surface wave. W. Howard Wise. *Bell Sys Tech Jour* 16:35 Jan '37

Polarization of high-frequency waves and their direction finding. S. Namba, E. Iso, and S. Ueno. *Proc Inst Radio Eng* 19:2000 Nov '31

Propagation of electromagnetic waves over inhomogeneous ground; abstract. J. Grosskopf. *Wireless Eng* 21:333 July '44

Propagation of surface waves over stratified and uneven ground and the derivation of a modified Zenneck wave; abstract. J. Grosskopf. *Wireless Eng* 19:169 Apr '42

Some observations on the behaviour of earth currents and their correlation with magnetic disturbances and radio transmission. Isabel S. Bemis. *Proc Inst Radio Eng* 19:1931 Nov '31

Study of ground-wave radio transmission. R. C. Higgy and E. D. Shipley. *Proc Inst Radio Eng* 24:483 Mar '36

Table of some typical ground constants. *Radio Engineer's Handbook*. F. E. Terman. New York Mc Graw-Hill p 709

Zenneck rotating field in the ground-wave field of a transmitter; abstract. J. Grosskopf. *Wireless Eng* 19:469 Oct '42

*See also*

Ionosphere

**Long-Distance**

Long-distance observations of radio waves of medium frequencies; abstract. D. F. Martyn, R. O. Cherry and A. L. Green. *Electrician* 113:609 Nov 9 '34

Problems of space-wave propagation; mathematical investigation of the glide wave hypothesis for long-distance and round-the-earth short-wave transmission; abstract. O. Burkard. *Wireless Eng* 18:116 Mar '41

*See also*

Broadcasting—Chort-Wave

**Luxemburg Effect**

Accurate measurements of Luxemburg effect. G. W. O. Howe. *Wireless Eng* 15:187 Apr '38

Common wave broadcasting and the interaction of modulation (Luxembourg effect); abstract. F. Vilbig. *Wireless Eng* 20:79 Feb '43

The interaction of radio waves. V. A. Bailey and D. F. Martyn. *Exp Wireless and Wireless Eng* 12:122 Mar '35

**Magnetic Storms**

Ionosphere and magnetic storms. S. S. Kirby and others. *bibliog Phys Rev* 51:992 June 1 '31

Ionosphere, sunspots and magnetic storms. S. S. Kirby. *Phys Rev* 48:849 Nov 15 '35

Magnetic storm of March 24, 1940; effects in the communication system. L. W. Germaine. *map Edison Elec Inst Bul* 8:367 July '40

Wireless telegraphy and magnetic storms. H. B. Maris and E. O. Hulbert. *Proc Inst Radio Eng* 17:494 Mar '29

*See also*

Ionosphere

**Measurement of Received Signals**

Calculation of ground-wave field intensity over a finitely conducting spherical earth. K. A. Norton. *bibliog charts Proc Inst Radio Eng* 29:623 Dec '41

Experiments in recording signal intensity. L. W. Austin. *Proc Inst Radio Eng* 17:1192 July '29

Indirect ray measurements on the Droitwich transmitter. C. H. Smith. *Wireless Eng* 15:537 Nov '37

Measurement of the angle of downcoming waves from Indian regional short-wave stations; abstract. M. R. Rao. *Wireless Eng* 20:495 Oct '43

Measurement of the lateral deviation of radio waves by means of a spaced-loop direction-finder. R. H. Barfield and W. Ross. *bibliog diags Jour Inst Elec Eng* 83:98 pl 1 July '38



**PROPAGATION of Waves—Continued**

Problem of space-wave propagation; mathematical investigation of the glide wave hypothesis for long-distance and round-the-earth short-wave transmission; abstract. O. Burkard. *Wireless Eng* 18:116 Mar '41

Study of the electromagnetic field in the vicinity of a radiator. F. R. Stansel. *Proc Inst Radio Eng* 24:802 May '36

Standards on radio wave propagation—measuring methods. *Inst of Radio Eng, New York* '42. 50c

*See also*

Field Intensity Measurements  
Reception, Receivers

**Meteors**

Abnormal ionization in the E region of the ionosphere. A. M. Skellett. *Proc Inst Radio Eng* 23:132 Feb '35

Ionizing effects of meteors. A. M. Skellett. *Proc Inst Radio Eng* 23:132 Feb '35

Whistling meteors and alternative causes of Delhi whistles; abstract. S. R. Khartgir. *Wireless Eng* 21:533 Nov '44

**Meteorological Influence**

Radio is the sky; instruments carried by balloons to investigate meteorological conditions in the upper atmosphere; illustrations. *Electronics* 10:28 Dec '37

**Moon**

Further evidence for a lunar effect on the ionosphere from radio measurements. H. T. Stetson. *Science* 83:595 June 19 '36

Kennelly-Heaviside layer height observations for 4045 kc and 8650 kc. T. R. Gilliland. *Proc Inst Radio Eng* 19:114 Jan '31

Moon tides in the radio reflecting layers; abstract. H. T. Stetson. *Science* 83sup13 May 8 '36

**Night Error**

Experimental investigations on night effect producing direction-finding errors; abstract. G. Borkowetz and A. Hagen. *Wireless Eng* 12:156 Mar '35

Radio direction finding by transmission and reception. R. L. Smith-Rose. *Proc Inst Radio Eng* 17:425 Mar '29

Some experiments on night errors for long waves. I. Tanimura. *Proc Inst Radio Eng* 18:718 Apr '30

*See also*

Directional Reception and Transmission

**Optical Behavior**

Optics of radio transmission. Ernest Merritt. *Proc Inst Radio Eng* 20:29 Jan '32

Optical behavior of the ground for short radio waves. C. B. Feldman. *Proc Inst Radio Eng* 21:764 June '33

Ultra-short-wave transmission over a 39-mile "Optical" path. C. R. England, A. B. Crawford, and W. W. Mumford. *Proc Inst Radio Eng* 28:360 Aug '40

*See also*

Transmission, Ultra-High-Frequency

**Over Earth**

Horizontally polarized electromagnetic waves over a spherical earth. M. C. Gray. *Phil Mag* 27:429 Apr '39

Problem of space-wave propagation; mathematical investigation of the glide wave hypothesis for

long-distance and round-the-earth short-wave transmissions; abstract. O. Burkard. *Wireless Eng* 18:116 Mar '41

Propagation of electric waves over the earth. H. W. Nichols and J. C. Schelleng. *Bell Sys Tech Jour* 4:215 Apr '25

Propagation of radio waves over the earth. A. H. Taylor and E. O. Hulburt. *Phys Rev* 27:189 Feb '26

Radio propagation over plane earth; field strength curves. C. R. Burrows. *bibliog Bell System Tech Jour* 16:45-574 Jan Oct '37

Radio propagation over spherical earth. C. R. Burrows. *bibliog Proc Inst Radio Eng Jour* 23:470 May '35; Same. *Bell System Tech Jour* 14:477 July '35

Surface wave in radio propagation over plane earth. C. R. Burrows. *bibliog il map Proc Inst Radio Eng* 25:219 Feb '37

Transmission of electric waves around the earth. G. N. Watson. *Proc Roy Soc (Lond)* 95:546 July 15 '19

Ultra-high-frequency wave propagation over plane earth and fresh water. R. C. Colwell and A. W. Friend. *bibliog diag Proc Inst Radio Eng* 25:32 Jan '37

Ultra-short-wave propagation along the curved earth's surface. Paul von Handel and Wolfgang Pfister. *Proc Inst Radio Eng* 25:346 Mar '37. *Discussion* 26:240 Feb '38

*See also*

Transmission

**Over Land**

Ultra-short-wave propagation over land. C. R. Burrows, A. Decino and L. E. Hunt. *il diags Proc Inst Radio Eng* 23:1507 Dec '35

**Polarization**

An ionospheric investigation concerning the Lorentz polarization correction. H. G. Booker and L. V. Berkner. *Terr Mag and Atmos Elec* 43:427 Dec '38

Horizontally polarized electromagnetic waves over a spherical earth. M. C. Gray. *Phil Mag* 27:429 Apr '39

Limiting polarization of down-coming radio waves travelling obliquely to the earth's magnetic field. A. L. Green and W. G. Baker. *Proc Inst Radio Eng* 21:1103 Aug '33

Method of determining the state of polarization of downcoming waves. E. V. Appleton and J. A. Ratcliffe. *Proc Roy Soc (Lond)* 117A:576 Mar '28

Method of using horizontally polarized waves for the calibration of short-wave field-strength measuring sets by radiation. J. S. McPetrie and B. G. Pressey. *bibliog diags Jour Inst Elec Eng* 83:210 Aug '38

Oblique-incidence radio transmission and the Lorentz polarization term. Newberry Smith. *Jour Res Nat Bur Stand* 26:105 Feb '41

Polarization errors in direction finders. R. A. W. Watt. *Wireless Eng* 13:3 Jour '36

Polarization of sky waves in the southern hemisphere. A. L. Green. *Proc Inst Radio Eng* 22:324 Mar '34

Propagation of radio waves over the surface of the earth and in the upper atmosphere. K. A. Norton. *Proc Inst Radio Eng* 25:1203 Sept '37

Vertical vs. horizontal polarization. G. H. Brown. *diags Electronics* 13:20 Oct '40

### Reflection and Refraction

- Fundamental problem concerning the Lorentz correction to the theory of refraction. H. G. Booker and L. V. Berkner. *Science* 87:257 Mar 18 '38
- Heights of reflection of radio waves in the ionosphere. F. H. Murray and J. B. Hoag. *bibliof Phys Rev* 51:333 Mar 1 '37; *Correction* 51:779 May 1 '37
- Optical behavior of the ground for short radio waves. C. B. Feldman. *Proc Inst Radio Eng* 21:764 June '33
- Reflection coefficient of the earth's surface for radio waves. J. S. McPetrie. *Jour Inst Elec Eng* 82:214 '38
- Reflection curves and propagation characteristics of radio waves along the earth's surface. J. S. McPetrie and A. C. Stickland. *bibliof Jour Inst Elec Eng* 87:135; *Discussion*. 160 Aug '40
- Reflection of radio waves from the surface of the earth. L. C. Verman. *Proc Inst Radio Eng* 18:1396 Aug '30

Reflections of waves at earth's surface. G. W. O. Howe. *Exp Wireless and Wireless Eng* 11:59 Feb '34

Ultra-short-wave refraction and diffraction. T. L. Eckersley. *Jour Inst Elec Eng* 80:286 Mar '37

Wave reflections from diffuse boundaries. C. D. Thomas and R. C. Colwell. *Phys Rec* 56:1214 Dec 15 '39

### Scattering

Limiting waves and scattering in wireless propagation; abstract. B. Beckmann, W. Menzel and F. Vilbig. *Wireless Eng* 19:212 May '42

Scattering of radio waves in the lower and middle atmosphere. J. H. Riddington, *bibliof Proc Inst Radio Eng* 27:753 Dec '39

### Short-Wave

High-frequency propagation characteristics. F. Hamburger Jr., C. V. Larrick and M. Jones. *diags Proc Inst Radio Eng* 28:175 Apr '40

New explanation of the transit of short waves round the earth; abstract. O. von Schmidt. *Wireless Eng* 14:81 Feb '37

Short wave radio transmission and geomagnetism. Henry E. Hallborg. *RCA Rev* 5:395 Apr '41

Terrestrial magnetism and its relation to worldwide short-wave communications. Henry E. Hallborg. *Proc Inst Radio Eng* 24:455 Mar '36

*See also*

Ultra-High-Frequencies

### Sky Wave

Maximum usable frequencies for radio skywave transmission, 1933 to 1937. T. R. Gilliland and others. *bibliof Jour Research Nat Bur Stand* 20:627 May 38; *Same*. *Proc Inst Radio Eng* 26:1347 Nov '38

Microwave radiation from the sun. G. C. Southworth. *bibliof Franklin Inst Jour* 239:285 Apr '45

Relation of radio sky-wave transmission to ionosphere measurements. N. Smith. *Proc Inst Radio Eng* 27:332 May '39

Significant radiation from directional antennas of broadcast stations for determining sky-wave interference at short distances. J. H. Dewitt Jr. and A. D. Ring. *bibliof diags Proc Inst Radio Eng* 32:668 Nov '44

### Solar Phenomena

Comparison of data of the ionosphere, sunspots, and terrestrial magnetism. E. B. Judson, *Jour Research Nat Bur Stand* 17:323 Sept '36; *Same*. *Proc Inst Radio Eng* 25:38 Jan '37

Correlation of radio transmission with solar phenomena. A. M. Skellett. *Proc Inst Radio Eng* 23:1361 Nov '35

Effects of solar activity on the ionosphere and radio communications. H. W. Wells. *Proc Inst Radio Eng* 31:147 Apr '43

Effects of sunspots and terrestrial magnetism on long-distance reception of low frequency waves. E. Yokoyama and T. Nakai. *Proc Inst Radio Eng* 19:882 May '31

Ionosphere, sunspots and magnetic storms. S. S. Kirby and others. *Phys Rev* 48:849 Nov 15 '35

Long-wave radio transmission phenomena associated with a cessation of the sun's rays. A. Bailey and A. E. Harper. *maps-Bell Sys Jour* 15:1 *bibliof* Jan '36

Time relation between solar emission and terrestrial disturbances. C. N. Anderson. *Proc Inst Radio Eng* 28:503 Nov '40

### Surface Wave

Physical reality of space and surface waves in the radiation field of radio antennas. K. A. Norton. *bibliof Proc Inst Radio Eng* 25:1192 Sept '37; *Correction*. 25:1366 Nov '37

Physical reality of Zenneck's surface wave. W. H. Wise. *bibliof Bell System Tech Jour* 16:35 June '37

Space and surface waves in radio propagation. K. A. Norton. *bibliof Phys Rev* 52:132 July 15 '37

### Terrestrial Magnetism

Comparison of data on the ionosphere, sunspots and terrestrial magnetism. Elbert B. Judson. *Proc Inst Radio Eng* 25:38 Jan '37

Notes on the time relation between solar emission and terrestrial disturbances. C. N. Anderson. *Proc Inst Radio Eng* 28:503 Nov '40

Terrestrial magnetism and its relation of worldwide short-wave communications. H. E. Hallborg. *maps charts Proc Inst Radio Eng* 25:455 Mar '36

### Troposphere

A theory of troposphere wave propagation. K. A. Norton. *FCC Memeo Rpt* 40,003 Mar 18 '40

Heights of the reflecting regions in the troposphere. A. W. Friend and R. C. Colwell. *Proc Inst Radio Eng* 27:626 Oct '39

Measuring the reflecting regions in the troposphere. A. W. Friend and R. C. Colwell. *il diags Proc Inst Radio Eng* 25:1531 Dec '37

Nonexistence of continuous intense ionization in the troposphere and lower stratosphere. O. H. Gish and H. G. Booker. *Proc Inst Radio Eng* 27:117 Feb '39

Scattering of radio waves in the lower and middle atmosphere. J. H. Piddington. *Proc Inst Radio Eng* 27:753 Dec '39

Theory of tropospheric wave propagation. K. A. Norton. *FCC Nimeo Rept No.* 40,003 Mar 18 '40

Troposphere and radio waves. R. C. Colwell. *Proc Inst Radio Eng* 28:299 July '40

Ultra-short-wave transmissions and atmospheric irregularities. C. R. Englund and others. *Bell Sys Tech Jour* 17:489 Oct '38

**PROPAGATION of Waves—Continued****Ultra-High-Frequency**  
(See main entry)**Velocity**

- Experimental determination of the velocity of radio waves. R. C. Colwell, N. I. Hall and L. R. Hill. *diags Jour Fr Inst* 222:551 Nov '36
- Propagation velocity of the energy of monochromatic electromagnetic waves in dielectric media; abstract. F. Borgnis. *Wireless Eng* 19:67 Feb '42
- Radio waves change speed. H. T. Stetson. *il Electronics* 9:64 Sept '36
- Research work on the speed of wireless waves; abstracts. R. L. Smith-Rose. *diags Electrician* 129:415 Oct 16 '42; *Elec Rev (Lond)* 131:484 Oct 16 '42
- Theorem connecting the energy momentum tensor with the velocity of propagation of waves. O. Halpern. *Phys Rev* 48:431 Sept 1 '35
- Theoretical investigations of radiation diagrams and radiation resistance for progressive waves of various phase velocities; abstract. W. Jachnow. *Wireless Eng* 20:87 Feb '43
- Velocity of acoustical and electromagnetic waves. *Wireless Eng* 18:265 July '41
- Velocity of radio waves over short paths. R. C. Colwell and others. *Proc Inst Radio Eng* 30:129 Mar '42
- Velocity of radio waves over long distances. R. C. Colwell and A. W. Friend. *Phys Rev* 51:990 June 1 '37
- Wave energy and transconductance of velocity-modulated electron beams. W. C. Hahn. *diags Gen Elec Rev* 42:497 Nov '39

*See also***Electron Velocity****Wide-band**

- A study of ultra-high-frequency wide-band propagation characteristics. R. W. George. *Proc Inst Radio Eng* 27:28 Jan '39
- Wideband propagation characteristics; abstract. R. W. George. *Electronics* 11:33 July '38

*See also***Television****PUBLIC Address Systems**

- Air corps radio phraseology training; specially-designed amplifier. B. A. Susan. *il diog Radio N* 33:70 Jan '45
- Air terminal sound system; Lockheed air terminal at Burbank. W. W. Brockway and D. C. Brockway. *il diags Electronics* 18:138 June '45
- All-purpose public address amplifier. A. Besse. *il diag Radio N* 27:10 Apr '42
- Audio mixer design. F. W. Crane. *diags Electronics* 18:10 June '45
- Automatic public address amplifier volume level control. H. Boucke. *diag Electronics* 9:45 May '36
- Automatic volume control applied to public address. Harry Paro. *il Electronics* 10:24 July '37
- Complete public address amplifier. O. T. Read. *il diag Radio No* 20:56 July '38
- Designing a public address amplifier. L. M. Dezettel. *il Radio N* 27-18 Apr '42
- Dual speed recording unit; combination recording cutter and playback, radio reception, and public-address system. *il Radio* 33:49 May '45

- Frequency modulation phonograph pickup. B. F. Meissner. *il Electronics* 17:132 Nov '44
- High-fidelity public address and translating system. S. C. Tenac and S. D. Wilburn. *Elec Comm* 18:266 '40
- Microphone input circuit. T. E. Campbell. *il diags Radio N* 33:49 Jan '45
- New York Fair sound system. *il Electronics* 12:26 July '39
- Phasing of loud speakers. N. B. Cook. *il diags Radio N* 33:30 Apr '45
- Prevention of public address oscillation. D. Pollack. *il diags Radio N* 19:33 May '38
- Production of inharmonic subfrequencies by a loudspeaker. R. V. L. Hartley. *Jour Amer Acoustical Soc* 16:206 Jan '45
- Public address AVC. Harry Paro. *Electronics* 10:24 July '37
- Public address on S. S. Normandie. *il Electronics* 8:367 Oct '35
- Public address system at the thirty-fourth International Eucharistics Congress, Budapest, May 22-29 1938. G. A. de Czegledy. *Elec Comm* 17:319 '39
- Public address systems. S. Hill. *Elec Comm* 21:13 '42
- Putting P. A. to work. Harold Benner. *il Electronics* 9:36 Dec '36
- Redesigning for the future; John Meck industries. *il Mod Plastics* 22:108 Jan '45
- Servicing public address equipment. W. Moody. *il diags Radio N* 33:46 Jan '45
- Shipyard public-address system. W. R. Aiken. *il Elec Eng* 63:402 Nov '44
- Speakers speed freight movement; Illinois Central's outbound freight house, Chicago. *il Ry Age* 118:234 Jan 27 '45
- Some new and efficient public address systems. W. C. Dorf. *il diags Radio N* 17:466 Feb. '36
- Two-way horn system. J. K. Hilliard. *il Electronics* 9:24 Mar '36
- Two-way talk with linemen; device uses car radio receiver. W. L. Campbell. *il diags Elec World* 123:123 June 9 '45
- Universal public address amplifier. R. B. Frank. *il diag Radio N* 26:8 Aug. '41

*See also*Loudspeakers  
MicrophonesPhonographs  
Recording**Q****Q Measurements**

- Design of inductances for frequencies between 4 and 25 megacycles. D. Pollack. *Elec Eng* 56:1169 Sept '37
- Oscilloscope patterns of damped vibrations of quartz plates and Q measurements with damped vibrations. H. A. Brown. *Proc Inst Radio Eng* 29:195 Apr '41
- Parallel-resonance methods for precise measurements of high impedances at radio frequencies and a comparison with the ordinary series-resonance methods. D. B. Sinclair. *Proc Inst Radio Eng* 26:1466 Dec '38
- Q meter and its theory. V. V. L. Rao. *Proc Inst Radio Eng* 30:502 Nov '42
- Q for unloaded concentric transmission lines; alignment chart makes possible rapid determi-

- nation of Q and sending-end impedance. R. C. Miedke. *Electronics* 16:139 Sept '43
- Radio engineering. F. E. Terman. 2d ed., p. 54, McGraw-Hill, New York '37
- Some applications of negative feedback with particular reference to laboratory equipment. F. E. Terman, R. R. Buss, W. R. Hewlett and F. C. Cahill. *Proc Inst Radio Eng* 10:649 Oct '39
- Values of Q for various component parts. *Electronics* 8:126 Apr '35
- Versatile Q meter. F. E. Planer *il Electronics* 16:190 Sept '43
- See also*
- |         |              |
|---------|--------------|
| Bridges | Measurements |
| Coils   |              |
- QUARTZ Crystals. *See* Piezoelectric Crystals.
- QUASI-Optical Waves. *See* Ultra-High-Frequencies

## R

- RADAR**
- Air conditioning essential service for radar electronics laboratory; Rauland corp. H. C. Hoffmann. *il diags Heating-Piping* 16:615 Nov '44
- Automatic landings by radar predicted. *Aviation* N 2:41 Jan 1 '45
- CAA applies radar to civilian aviation. *CAA Jour* 6:37 Apr 15 '45
- CAA experiments on radar equipment. *Aviation* N 3:13 Mar 26 '45
- Electronic aviation. V. Zeluff. *il diag Sci Amer* 170:256 June '44
- Electronics as a possible aid in the study of bird flight and migration. M. Brooks. *Science* 101:329 Mar 30 '45
- Electronics in transportation. *il diag Sci Amer* 171:160 Oct '44
- Final report on shrinkage control of steatite porcelain for radio and radar equipment; abstract. R. L. Stone. *Amer Cer Soc Bul* 23 (Cer A 23):171 Oct 15 '44
- Flying electronics. V. Zeluff. *il Sci Amer* 172:348 June '45
- More about radar. *il Electronic Indus* 3:124 June '43
- Navy electronics program and some of its past, present, and future problems; proposal for radar patents pool. J. B. Dow. *Proc Inst Radio Eng* 33:291 May '45; Same cond. *Elec Eng* 64:87 Mar '45
- Navy's history of radar. *Electronics* 16:212 July '43
- New radar developments make Allied weapons more deadly. *Aviation* N 3:47 Mar 12 '45
- Officials deny lack of radar caused recent airline accidents. B. Stubblefield. *Aviation* N 3:58 Feb 12 '45
- Operational elements of a radar system. *Electronic Indus* 4:76 May '45
- Practical radar. J. McQuay. *il diags Radio* N 33:29 June '45
- Radar equation. *Electronics* 18:92 Apr '45
- Radar for airports and planes. *Science* 101: sup10 Apr 6 '45
- Radar principles. R. L. Smith-Rose. *il Electronics* 18:180 Mar '45
- Radar prospects broad. *Amer Mach* 89:148j Apr 12 '45
- Radar search sets turn B-24's into deadly attackers by night. *Aviation* N 3:30 Apr 9 '45
- Radar terms and abbreviations. *Aviation* N 3:24 Apr 2 '45; Same. *Electronics* 18:252 May '45
- Radars in production. *il Electronic Indus* 2:59 July '43
- Radar techniques. Clinton B. De Soto. *il OST* 29:20 Apr; 46 May; 44 June '45
- Radio and radar at war. *il Electronics* 16:118 Aug '43
- Radio, refrigerators, and radar; Philco has always made a virtue of moving in late. *il map Fortune* 30:114 Nov '44
- Some of the men who developed radar. *Electronic Indus* 2:54 July '43
- Spot planes 150 miles away. *il Electronic Indus* 2:173 July '43
- Story of radar. *il Electronic Indus* 2:102 May '43
- RADIATION**
- Absorption law for total radiation measurements. W. P. Berggren. *diag Phys Rev* 57:1183 June 15 '40
- Are the formulae for the absorption of high energy radiations valid? J. R. Oppenheimer. *Phys Rev* 47:44 Jan 1 '35
- Carbon arc as a radiation standard. H. G. Macpherson. *Opt Soc Amer Jour* 30:189 May '40
- Converter for low frequency sinusoidal voltages and a source of sinusoidal radiation intensity. L. Harris and A. C. Scholp. *diags Rev Sci Instr* 11:23 Jan '40
- Correlation of color temperatures based on the Planck radiation formulas. R. S. Estey. *bibliog Opt Soc Amer Jour* 28:293 Aug '38
- Effect of radiation on the vibrations of a circular diaphragm. M. Lax. *Acoustical Soc Amer Jour* 16:5 July '41
- Electromagnetic radiations. E. R. Rutherford. *il diags Engineering* 139:434 Apr 26 '35
- High energy formulae. E. J. Williams. *bibliog Phys Rev* 47:569 Apr 1 '35
- Matter, energy and radiation. J. R. Dunning and H. C. Paxton. 668p \$3.50 McGraw-Hill '41
- Measurement of radiations. A. Stager. *diag Elec Rev (Lond)* 118:522 Apr 10 '36
- Method for determining the effect of the earth on the radiation from aerial systems. J. S. McPetrie. *Jour Inst Elec Eng* 70:382 Mar '32
- Microwave radiation from the sun. G. C. Southworth. *bibliog Franklin Inst Jour* 239:285 Apr '45
- Principles of short-wave radiation. Ernst Weber. *il Electronic Indus* 3:69 Jan '43
- Radiation-counting circuits. B. H. Porter. *il Electronics* 9:28 July '36
- Radiation from high pressure mercury arcs. E. B. Noel. *bibliog il Illum Eng* 36:243 Feb '41
- Radiation instruments using Geiger-Muller tubes. Paul Weisz. *il Electronics* 15:44 Oct '42
- Spectral distribution of radiation from lamps of various types. B. T. Barnes, W. E. Forsythe and W. J. Karash. *bibliog Gen Elec Rev* 42:540 Dec '39
- Spectrum chart; radio, sound, light, etc. *Electronics* 13:50 Apr '40

**RADIATION**—Continued

Tables of Planck's radiation and photon functions. A. N. Lowan and G. Blanch. bibliog Opt Soc Amer Jour 30:70 Feb '40

*See also*

Antenna Radiation                      Propagation of Waves  
Communication                          Transmission

**RADIO Aids to Aviation.** See Aeronautical Radio

**RADIO Aids to Navigation.** See Marine Radio

**RADIO Range**

Airway radio range development. D. S. Little. il diags Aero Digest 40:66 Mar '42

All-direction radio range developed by C.A.A. technicians. Civil Aero Jour 5:140 Dec 15 '44

All-direction static-free radio range. Auto and Aviation Ind 91:48 Dec 1 '44

Analysis of the flight of an aeroplane, when directed by means of a radio beacon, for all possible values of wind velocity. F. B. Greatrex. diags Jour Roy Aeronautical Soc 41:591 July '37

Beacon marker transmitter, installed at WBNS for the benefit of aircraft. L. H. Nafzgar. il Electronics 9:29 May '36

Burgin range projector, aid in solving problems of radio navigation either in flying the radio ranges or in direction finding. il Aero Digest 32:56 Jan '38

Cone of silence markers identify exact locations of range stations. H. I. Metz. il diags Air Commerce Bul 8:169 Feb '37

Development of an ultra-high frequency aural radio range; abstract. J. C. Hromada. Proc Inst Radio Eng 29:356 June '41

Diffraction of radio ranges by hills. W. R. Haseltine. Phys Rev 57:717 Apr 15 '40

Electronic radio range monitor. il Electronics 17:172 Apr '44

Flying the radio ranges. H. W. Roberts. diags Aero Digest 31:52 July '37

Impetus which aviation has given to the application of ultra-high frequencies. W. E. Jackson. Proc Inst Radio Eng 28:49 Feb '40

Monitor stations for radio range beacons. Air Commerce Bul 7:189 Feb '36

Mountain effects and the use of radio compasses and radio beacons for piloting aircraft. H. Buisignies. Elec Comm Vol 19, No 3 p 44 '41

Omnidirectional radio-range system. D. G. C. Luck. bibliog RCA Rev 6:55 July '41

Panoramic reception applied to aerial navigation. Electronics 13:42 Dec '40

Pitfalls in radio orientation. R. B. Morse. diags Aero Digest 40:115 May '42

Radio range ambiguities. D. S. Little. map Aero Digest 39:62 Dec '41

Radiating system for 75-megacycle cone-of-silence marker. E. A. Laport and J. B. Knox. il diags Proc Inst Radio Eng 30:26 Jan '42

Radio marker beacon used to indicate to airmen location of radio towers. il Air Commerce Bul 6:119 Nov '34

Radio phenomena at Salt Lake range station studied by Bureau of air commerce. maps Air Commerce Bul 8:65 Sept '36

Radio range cone of silence. C. W. Lample. diags Air Commerce Bul 8:127 Nov '36

Radio range beacon network of the Department of commerce; map. Aero Digest 30:42 June '37

Radio ranges. D. M. Stuart. il map Radio N 29:126 June '43

Radio system of American airlines. H. W. Roberts. il diags Aero Digest 31:36 Oct '37

RCA omnidirectional beacon. il Aero Digest 37:89 Nov '40

Rotary radio beacons. E. Kramar. bibliog diags Aero Digest 32:38 Apr '38

Simultaneous radio range and telephone transmission. W. E. Jackson and D. M. Stuart. diags Proc Inst Radio Eng 25:314 Mar '37

Simultaneous transmission of radio beacon signals and voice in trial service at Pittsburgh. Air Commerce Bul 7:1 July '35

Ultra-high frequency range beacon. diag Aero Digest 32:70 Apr '38

United air lines radio network. H. W. Roberts. il map Aero Digest 30:38 June '37

Ultra-short-wave guide-ray beacon and its application. E. Kramar and W. Hahnemann. bibliog il diags map plans Proc Inst Radio Eng 26:17 Jan '38

Visual beam flying. E. H. Kunkel. il diags Aero Digest 48:77 Jan 15 '45

Wireless beacon for the Liverpool aerodrome. Engineer 159:310 Mar 22 '35

Z marker beacon. il diag Aero Digest 30:62 Apr '37

*See also*

Aeronautical Radio

**RADIO Servicing.** See Servicing, Radio

**REACTANCE**

Measurement of coil reactance in the 100 megacycle region. F. Hamburger, jr. and C. Frank Miller. Proc Inst Radio Eng 28:475 Oct '40

Note on a modified reactance frequency chart. J. R. Tolmie. Proc Inst Radio Eng 21:1364 Sept '33

Note on the frequency behavior of reactances. Hans Salinger. Proc Inst Radio Eng 26:107 Jan '38

Parallel-resonance methods for precise measurements of high impedances at radio frequencies and a comparison with the ordinary series-resonance methods. D. B. Sinclair. Proc Inst Radio Eng 26:1466 Dec '38

Q meter and its theory. V. V. L. Rao. Proc Inst Radio Eng 30:502 Nov '42

Reactance amplifiers using iron-core reactors saturated by d.c. from copper oxide rectifiers. il Electronics 10:28 Oct '27

Reactance calculation for transmission lines. William Moulic. Elec Ind 3:78 Aug '43

Reactance networks for coupling between unbalanced and balanced circuits. S. Frankel. diags Proc Inst Radio Eng 29:486 Sept '41

*See also*

Capacitance  
Inductance

**RADIOTELEPHONY.** See Transmission, Radiotelephone

**REACTANCE Amplifier.** See Frequency Modulation

**RECEIVER Alignment**

- Condenser tracking test set. J. L. Roemisch. *il diags Electronics* 10:12 Mar '37
- Design calculations for the three-point-balance circuit for the tracking in superheterodyne receivers; abstract. K. Franz. *Wireless Eng* 21:290 June '44
- Determination of the optimum tracking points in superheterodyne receivers; abstract. O. Meisinger. *Wireless Eng* 21:392 Oct '44
- Intermediate frequency stability. J. J. Adams. *Electronics* 15:166 June '42
- Intermediate-frequency transformer alignment. R. Nathan. *diags Electronics* 10:33 Feb. '37
- Notes on tracking circuits. A. Bloch. *diags Wireless Eng* 19:508 Nov '42
- Padding condenser; solution to problem of mis-tracking in superheterodyne receivers. L. R. Sklar. *diags Electronics* 10:40 May '37
- Superheterodyne padding capacities; the use of fixed padding condensers. W. T. Cocking. *Wireless Eng* 14:246 May '37
- Superheterodyne receiver tracking. G. W. O. Howe. *diags Wireless Eng* 19:141 Apr '42
- Superheterodyne tracking charts. A. L. Green and R. Payne-Scott. *bibliog diags Wireless Eng* 19:243 June-July '42
- Superheterodyne tracking charts; the padded signal circuit. A. L. Green. *Wireless Eng* 20:581 Dec '43
- Superheterodyne tracking simplified; use of chart. P. C. Gardner. *diag chart Electronics* 15:75 Nov '42
- Superheterodyne tracking solution. R. De Cola. *diags Electronics* 15:29 Feb '42
- Visual alignment generator. H. F. Mayer. *il Electronics* 13:39 Apr '40
- Visual alignment of wide-band I-F amplifiers. H. A. Cook and H. Moss. *il diags Electronics* 17:130 Oct '44

*See also*

Servicing, Radio

**RECEIVER Design**

- Advanced receiver design. E. E. Beard. *Electronics* 10:44 July '37
- Application of iron-core i-f transformers to amateur-band superhet design. Detrick and Morrison. *il QST Vol* 19 Aug '35
- Automatic gain control-noise considerations in receiver design. J. B. Moore. *diags Electronics* 18:116 May '45
- Automatic tuning, simplified circuits and design practice. D. E. Foster and S. W. Seeley. *diags Proc Inst Radio Eng* 25:289 Mar '37
- Battery radio design. P. Marsol. *il Electronics* 11:12 Jan '38
- Considerations in the design of a high-fidelity radio-gramophone. W. J. Brown. *Il diags Jour Inst Elec Eng* 78:194. Discussion. Feb '36
- Design and development of television receivers using the Scopphony optical scanning system. J. Slegger. *Proc Inst Radio Eng* 27:489 Aug '39
- Design and testing of multi-range receivers. D. E. Hartnett and N. P. Case. *diags Proc Inst Radio Eng* 23:579. Discussion. J. Dreyer, jr. 592 June '35

- Design calculations of the three-point-balance circuit for the tracking in super-heterodyne receivers; abstract. K. Franz. *Wireless Eng* 21:290 June '44
- Design of an intermediate-frequency system for frequency-modulated receivers. W. H. Parker jr. *diags Proc Inst Radio Eng* 32:751 Dec '44
- Design of inductances for frequencies between 4 and 25 megacycles. D. Pollack. *bibliog diags Elec Eng* 56:1169 Sept '37
- Design of television receivers. A. D. Sobel. *il Radio N* 33:32 Mar '45
- Engineering double-superhet receivers. John D. Reid Jr. *Electronic Indus* 4:82 Mar '45
- Further advances in super design, new Hammarlund super-pro. S. G. Taylor. *il diag Radio N* 18:474, 539 Feb-Mar '31
- Important points in designing a set tester. S. C. Milbourne. *il diags Radio N* 19:404, 461 Jan-Feb '38
- Miniature receivers; review of characteristics and design features. *il diags Electronics* 13:17 Dec '40
- Modern design of high-frequency stages for the amateur superheterodyne. James Millen. *il QST Vol* 19 Jan '35
- Modern design trends in radio receivers. C. H. Leet. *Cornel Eng* 1:5 Oct '35
- New designs in FM. H. Van Val, jr. *Gen Elec Rev* 46:631 Nov '43
- Power supply filter design. H. S. Renne. *il diags Radio N* 33:38 Feb '45
- Radio receiver design; discussion meeting of radio section of Institution of electrical engineers. *Elec Rev (Lond)* 136:661 May 5 '45; *Electrician* 134:405 May 4 '45
- Radio receiving design. T. A. M. Craven. *Proc Inst Radio Eng* 31:124 Apr '43
- Receiver circuit design related to tube performance. L. C. Hollands. *il Electronics* 12:18 Mar '39
- Recent improvements in frequency-modulation receiver design. J. A. Worcester, jr. *RMA Tech Bul* 2 Nov 12 '40
- Redesigning for the future; John Meck Industries. *il Mod Plastics* 22:108 Jan '45
- Some factors involved in the optical design of a modern television receiver using moving scanner. H. W. Lee. *Proc Inst Radio Eng* 27:496 Aug '39
- Television receiver design. M. S. Kiver. *il diag Radio N* 33:40 Jan '45
- Unitized radio-chassis design. S. Morrison and others. *Proc Inst Radio Eng* 32:521 Sept '44
- V-H-F receiver oscillator design. C. Y. White. *Electronics* 16:96 July '43
- What's new in radio sets. *il diags Electronics* 11:8 Aug '38

*See also*

Receiver Manufacture  
Manufacturing, Radio

**RECEIVER Manufacture**

- Alphabetical finding list of electronic manufacturers. *Electronic Indus* 2:108 Mar '43
- Change in weight of merits of construction in two 1942 radio receivers from 1940 practice; tabulation. D. D. Israel. *Electronics* 14:35 Dec '41

**RECEIVER Manufacture—Continued**

- Electrical supply equipment at a wireless works. *il Engineer* 169:482 May 24 '40
- German set production; Siemens and Halske plant, Berlin; illustrations. *Electronics* 9:11 Apr '36
- High-speed soldering with radio-frequency power. J. P. Taylor. *il diags Electronic* 17:144 Feb '44
- Incentive program gets workers' cooperation; receiver division, General electric company. A. R. Goodwin. *Factory Management* 102:98 Nov '44
- Learadio, its factory and facilities. W. P. Lear. *il Aero Digest* 36:81 June '40
- Model shop links design and production; RCA manufacturing company. F. L. Craeger. *il Amer Mach* 82:689 July 27 '38
- Modern radio plant practice; Stromberg-Carlson telephone manufacturing company. H. Chase. *il plans Electronics* 12:9 Dec '39
- Les nouveautes dans la construction radio-electrique en France. M. Adam. *diags Genie Civil* 112:206 Mar 5 '38
- Plant procedure for expediting war production; Alden products company. *diags Electronics* 16:60 Jan '43
- Plastics in radio production; discussion. *Jour Inst Elec Eng* 90 pt 3:26 Mar '43
- Plastics in the electronics field; with directory of trade names and suppliers. J. Sasso. *il Electronics* 15:26 July '42
- Postwar radio sets. *il Electronic Indus* 2:82 Oct '43
- Postwar television and FM plans of receiver manufacturers. *Electronic Indus* 3:90 Sept '44
- Precision laminating and fabricating for radio. E. W. Beeman and I. J. Kaar. *il Mod Plastics* 13:40 June '36.
- Precision receiver, precision made; Hammarlund Super-Pro; illustrations. *Electronics* 11:22 Jan '38
- Process control of production plating; Bridgeport works, General Electric Company. W. R. Meyer. *il Amer Mach* 81:906 Oct 6 '37
- Production alignment apparatus for television receivers; abstract. L. J. Hartley. *diag Electronics* 12:17 Oct '39
- Production of television receivers at RCA. *il Electronics* 12:36 June '39
- Quartz, from raw stock to finished crystal; laboratory of the General electric company; illustrations. *Electronic* 13:26 Nov. '40
- Radio and electronics in the navy. S. P. Sashof. *il Electronics* 16:72 Apr '43
- Radio and the victory program; effect on production of receivers and on associated components for civilian use. Y. Winner. *il Radio N* 27:9 Mar '42
- Radio and wire communications for invasion; special packaging requirements. *il Mod Packaging* 17:114 Aug '44
- Radio factory; Galvin manufacturing co., Chicago; views, plans and schedule of equipment and materials. *Arch Rec* 83:116 June '38
- Radio, refrigerators, and radar; Philco has always made a virtue of moving in late. *il map Fortune* 30:114 Nov. '44
- Recent advancements in aircraft radio production. W. D. Van Dyke. *il diags Aero Digest* 38:69 Mar '41
- Recent die castings for radio receivers; illustrations. *Electronics* 11:17 May '38
- Record production of broadcast receivers, 1941. *Electronics* 15:100 Jan '42
- Replacements developed in the radio manufacturing field. *Sci Amer* 166:15 Jan '42
- Replacing rubber with synthetic resin at the plants of RCA manufacturing co.; resistoflex PVA. E. S. Peierls. *il Rubber Age* Jan '43
- Soldering signal corps equipment. M. Salant. *il Amer Mach* 88:114 May 25 '44
- Specially equipped comparator speeds inspection of aircraft radio part. *il Mach* 49:141 June '43
- Standards for replacement parts for civilian radio in war time. O. H. Caldwell. *il Ind Stand* 13:312 Dec '42
- Studies in lighting of intricate production, assembly and inspection processes. *il diags Illum Eng Soc Trans* 32:1019; Discussion. 1050 Dec '37
- Substitutions made engineers resort to common substances in manufacture of radio apparatus. *Sci Amer* 170:131 Mar '44
- Television components for receivers. *il diags Electronics* 12:18 May '39
- Television receiver production at the RCA Victor plant. *il Electronics* 12:36 June '39
- Television receivers in production. *il diags Electronics* 12:22 Mar '39
- Use effective production planning and control; case of E. H. Scott radio laboratories. *il Factory Management* 102:113 Aug. '44
- War contributions of radio manufacturing. P. V. Galvin. *Proc Inst Radio Eng* 30:479 Oct '42
- War facts and post-war fancies; prospects for home radio. FM and television are bright; industrial electronics is the enigma. *il Electronics* 17:92 Feb '44
- War model standards assure replacement parts for home radios. *il Ind Stand* 14:77 Mar '43
- Wartime production of radio equipment. P. Glanzer. *il Radio N* 32:66 Sept '44
- Wartime production of radio equipment. P. Glanzer. *il Radio N* 32:66 Sept. '44
- Westinghouse electric and mfg co. air conditions its radio and television assembly and research plant. F. J. Rice. *il plan Heat & Ven* 38:37 Sept. '41
- Where plastic replaces rubber; fifteen widely varied applications at RCO. *il Factory Management* 100:106 Sept '42
- Winding the universal coil. A. W. Simon. *diags Electronics* 9:22 Oct '36; Correction 9:52 Nov '36
- 1941 radio receiver production; comparison with 1940; tabulation. *Electronics* 15:96 May '42
- 1,250,000 out of 4,200,000 U. S. radios sold last year bore the Philco trademark. *il Fortune* 11:74 Feb '35

*See also*

Manufacturing, Radio                      Post-War Planning  
Plastics    Vacuum-Tube Manufacture

**RECEIVER Noise**

- Amplitude of noise voltages; abstract. K. Franz. *Wireless Eng* 20:397 Aug '43
- Analysis of the signal-to-noise ratio of ultra-high-frequency receivers. E. W. Herold. *bibliog diags RCA Rev* 6:302 Jan '42

- Background noise produced by valves and circuits. W. S. Percival and W. L. Horwood. bibliog il diags Wireless Eng 15:128, 202 Mar-Apr '38; Discussion. 15:213, 268, 440 Apr-May, Aug '38
- Chart for radio noise. J. M. Sowerby. Wireless Eng 20:237 July '43
- Course in time of noise voltages; abstract. P. A. Mann. Wireless Eng 21:594 Dec '44
- Cross modulation and input noise voltage; abstract. E. Hudec. Wireless Eng 21:88 Feb '44
- Evaluation of radio-noise-meter performance in terms of listening experience. C. M. Burrill. diag Proc Inst Radio Eng 30:473 Oct '42
- Feedback amplifiers, signal-to-noise ratio. F. S. Macklem. Electronics 16:211 Apr '43; Discussion. J. T. Pratt, 16:336 June '43
- Frequency modulation noise characteristics. M. G. Crosby. il diags Proc Inst Radio Eng 25:472 Apr '37
- Limits to amplification. J. B. Johnson and F. B. Llewellyn. diag Elec Eng 53:1449 (bibliog p1453) Nov '34; Same. Bell System Tech Jour 14:85 (bibliog p95) Jan '35
- Method of measuring noise levels on short-wave radiotelegraph circuits. H. O. Peterson. diags Proc Inst Radio Eng 23:128 Feb '35
- Minimum noise levels obtained on short-wave radio receiving systems; effect of diathermy machines. K. G. Jansky, bibliog il Proc Inst Radio Eng 25:1517 Dec '37; Correction. 26:400 Apr '38
- Noise figures of radio receivers. H. T. Friis. bibliog diags Proc Inst Radio Eng 32:419 July '44; Discussion. 33:125-7. Feb '45
- Noise in frequency modulation. H. Roder. diags Electronics 10:22 May '37
- Noise of diodes and detectors (pyrite, carborundum) in the static and dynamic regimes; abstract. H. F. Matare. Wireless Eng 20:85 Feb '43
- Noise suppression by means of amplitude limiters. M. Wald. Wireless Eng 17:43 Oct '40
- Radio tube noise. H. G. Hamilton. il diag Electronics 10:26 Aug '37
- Receiver input circuits; design considerations for optimum signal-to-noise ratio. R. E. Burgess. diag Wireless Eng 20:66 Feb '43
- Shielded loop for noise reduction in broadcast reception. il Electronics 11:20 Oct '38
- Shot-effect noise in space-charge-limited vacuum tubes; abstract. B. J. Thompson and D. O. North. Electronics 9:10 Dec '36
- Signal/noise characteristics of triode input circuits. R. E. Burgess. diags Wireless Eng 22:56 Feb '45
- Some aspects of radio reception at ultra-high frequency; admittances and fluctuation noise of tubes and circuits; signal-to-noise ratio. E. W. Herold and L. Malter. bibliog diags Proc Inst Radio Eng 31:491 Sept '43
- Square law rectification of electrical noise. F. R. W. Strafford. il Wireless Eng 14:242 May '37
- Standard tests for radio receivers; acoustic tests. Electrician 118:357 Mar 12 '37
- Study of the characteristics of noise. V. D. London. il Proc Inst Radio Eng 24:1514 Nov '36
- Suppressing radio noise in the jeep. F. E. Butler. il Electronics 16:96 Dec '43
- Theoretical gain and signal-to-noise ratio of the grounded-grid amplifier at ultra-high frequencies. M. Dishal. bibliog diags Proc Inst Radio Eng 32:276 May '44
- Threshold howl in reaction receivers. L. S. B. Adler. Exp Wireless and Wireless Eng 7:107 Apr '30
- Tube noise (fluctuation noise) between 150 kc. and 15 mc. H. Rothe and G. Plato. Electronics 10:58 Mar '37
- Ultrashort electromagnetic waves; signal-to-noise ratio. B. Trevor. bibliog Elec Eng 62:407 Sept '43
- Very high-frequency radio-noise elimination. T. W. Owen. diags Elec Eng 63:Trans 949-54 Dec '44
- Whistling notes in superheterodyne receivers. M. J. O. Strutt. Wireless Eng 12:194 Apr '35  
*See also*
- Noise  
Vacuum-Tube Noise
- RECEIVER Power Supplies**
- Battery substitutions for portables. G. Garvin. il Radio N 28:28 July '42
- Experimenters' power supply. H. L. Davidson. il diags Radio N 29:17 Jan '43
- Half-wave voltage-doubling rectifier circuit. D. L. Waidelich and C. H. Gleason. bibliog diags Proc Inst Radio Eng 30:535 Dec '42
- Low-capacitance a-c power supplies. G. Mountjoy and C. W. Finnigan. diags RCA Rev 6:455 Apr '42
- Radio receiver power supplies. Engineering Dept. Aerovox Res W. Vol 8, Nos. 8-9-10-11 Aug-Sept-Oct-Nov '37
- Replacement power supplies. R. F. Scott. diags Radio N 30:42 Oct '43
- Skyscraper universal power pack (for small short wave sets). D. Pollack and S. G. Taylor. il diags Radio N 16:403 Jan '35
- Variable B voltage supply for lab or classroom. A. H. Brolly and J. L. Lahey. il diag Electronics 16:156 Oct '43
- Weightless power supplies; voltage-doubler. F. Shunaman. diags Radio N 27:11 Feb '42
- 28-volt operation of receiving tubes. C. R. Hammond and others. Electronics 17:116 Aug '44  
*See also*
- Power Supply Systems**
- RECEIVER Selectivity**
- Advanced receiver design. E. E. Beard. Electronics. 10:44 July '37
- High-selectivity tone-corrected receiving circuits. F. M. Colebrook. H. M. Stationery Office. London '32
- Outline of the action of a tone-corrected highly selective receiver. E. B. Moullin. Proc Inst Radio Eng 21:1252 Sept. '33
- Preselection in inexpensive broadcast receivers. E. B. Passou. il diags Electronics 14:50 Sept '41
- Receiver selectivity. diag Radio N 25:38 June '41
- Selectivity of radio receivers. P. David. Electronics 10:62 Mar '37
- Undercoupling in tuned coupled circuits to realize optimum gain and selectivity. J. J. Adams. diag Proc Inst Radio Eng 29:277 May '41
- Variable resistors for sensitivity and volume control. L. A. De Rosa. Radio N 16:484 Feb '35



**RECEIVER Selectivity—Continued**

- Variable selectivity and the intermediate frequency amplifier. W. T. Cocking. diags *Wireless Eng* 13:119, 179, 237 Mar-May '36
- Variable-selectivity superhet. M. Silver. diags *Electronics* 11:47 Feb '38
- Variable selectivity superheterodyne. *il Electronics* 8:180 June '35

*See also*

Automatic Selectivity Control

**RECEIVER Sensitivity**

- Absolute sensitivity of radio receivers. D. O. North. bibliog diags *RCA Rev* 6:332 Jan '42
- Coupled circuit filters; generalised selectivity, phase shift, and trough and peak transfer impedance curves. K. R. Sturley. diags *Wireless Eng* 20:425, 473 Sept-Oct '43
- Fidelity and selectivity with variable intermediate frequency coupling. A. A. Webster. *il Radio N* 16:479 Feb '35
- Graphical design of an intermediate-frequency transformer with variable selectivity. C. Baranovsky and A. Jenkins. diags *Proc Inst Radio Eng* 25:340 Mar '37
- Highest attainable sensitivity of receivers with band-filter input; abstract. H. Behling. *Wireless Eng* 16:35 Jan '43
- Measurement of the sensitivity of receivers for short (metric and declimetric) waves; abstract. K. Franz. *Wireless Eng* 19:529 574 Nov-Dec '42
- Modulation response and selectivity curves of a resonant circuit loaded by a diode rectifier. F. C. Williams. bibliog diags *Wireless Eng* 15:189 Apr '38
- Multivibrator for checking receiver sensitivity. M. Silver. *il diags Radio N* 32:30 July '44
- Sensitivity calibration of receivers; radiation method for wavelengths below 10 meters. J. S. McPetrie and others. *il diags Wireless Eng* 22:6 Jan '45
- Sensitivity in visual reception and instrument observation; abstract. K. Franz. *Wireless Eng* 19:177 Apr '42
- Sensitivity of ultra-high-frequency receivers, with special attention to the U.H.F. duopentode type EFF50; abstract. R. Wilke. *Wireless Eng* 19:530 Nov '42

**RECEIVER Testing**

- Acoustic testing of high fidelity receivers. H. A. Wheeler and V. E. Whitman. *il Proc Inst Radio Eng* 23:610 June '35
- As I see it; test equipment standards. J. F. Rider. *Radio N* 25:14 Feb '41
- Communication and electronic maintenance. W. H. Bohlke, *il diags Radio N*: 25:25 Jan; 30 Feb; 24 Mar; 36 Apr; 36 May; 26:26, 44 July '41
- Design and testing of multirange receivers. D. E. Harnett and N. P. Case. diags *Proc Inst Radio Eng* 23:578; Discussion. J. F. Dreyer, jr. 592 June '35
- Improved form of response-curve projection apparatus. D. G. Reid. diags *Jour Inst Elec Eng* 79:194; Discussion. 201 Aug '36
- Multi-servimeter. R. F. Scott. *il diags Radio N* 29:24 Jan '43
- Principles of signal tracing. N. B. Cook. *il diags Radio N* 32:32 Nov '44

Radio manufacturers' association specification for testing and expressing the overall performance of radio receivers. diags *Jour Inst Elec Eng* 81:104 July '37; Excerpts. *Elec Rev (Lond)* 120:197 Feb 5 '37; Discussion. *Jour Inst Elec Eng* 81:111 July '37

Standards on radio receivers; methods of testing broadcast radio receivers. Institute of Radio Engineers, N. Y. C., \$0.50

Standard tests for radio receivers. diags *Electrician* 118:487, 521 Apr 9 '37

Using the cathode-ray oscillograph. K. Clough. *il diags Radio N* 17:35 July '35

20-100 mc. signal generator for testing all wave receivers. C. J. Franks. *il Electronics* 9:16 Aug '36

*See also*

Servicing, Radio

**RECEIVER Volume Control**

- Amplitude range control. S. B. Wright. *Bell System Tech Jour* 17:520 Oct '38
- Bass compensation design chart. P. A. D'Orio and R. deCola. *Electronics* 10:38 Oct '37
- Devices for controlling the amplitude characteristics of telephonic signals. A. C. Norwine. *Bell System Tech Jour* 17:539 Oct '38
- Variable resistors for sensitivity and volume control. L. A. de Rosa. diags *Radio N* 16:484 Feb '35
- Volume and bass frequency expansion in phonograph reproducers and radio receivers; abstract. C. M. Sinnett. *Electronics* 9:20 June '36

*See also*

Automatic Volume Control

Volume Expanders

**RECEIVERS**

- Advanced receiver design. E. E. Beard. *Electronics* 10:44 July '37
- Advancements in ac-dc design. Paul Ware. *il Electronics* 9:14 Jan '35
- Audio perspective system for home radio receivers. I. Volpe. diags *Electronics* 16:156 Aug '43
- Broadcast receivers; a review. N. M. Rust and others. diags *Jour Inst Elec Eng* 88 pt 3:79 June '41
- Characteristics of American broadcast receivers as related to the power and frequency of transmitters. A. Van Dyck and D. E. Foster. bibliog diags *Proc Inst Radio Eng* 25:387 Apr '37
- Community aerial system of broadcast distribution. C. W. Earp and S. Hill. *Elec Comm* 15:129 '36
- Developments in the electrical industry during 1934; broadcast receivers. J. Liston. *il Gen Elec Rev* 38:33 Jan '35
- Dial mechanisms. *il Electronics* 8:435 Nov '35
- Electrical development of 1941. G. Bartlett. *il Gen Elec Rev* 45:45 Jan '42
- Entwicklungslinien im bau von rundfunkempfängern. H. Penner. *il diags Zeit Ver Deutsch Ing* 80:1084 Aug 29 '36
- Five band receiver for automobile service. J. H. Little and F. X. Rettenmeyer. *Proc Inst Radio Eng* 29:151 Apr '41
- Frequency drift in receivers. H. D. Hooton. *Radio N* 17:629 Apr '36
- Frequency stability problems with particular reference to commercial radio-receiver develop-

- ment. C. W. Eggleton. Electrician 129:554 Nov 20 '42; Elec Rev (Lond) 131:656 Nov 20 '42
- Future of citizens' radiocommunication service; proposal to allocate band for civilian use of walkie-talkie equipment. Electronics 18:194 May '45
- German army entertainment receiver. Capt Gifford-Hull. il diag Electronics 18:216 June '45
- German receiver designs. W. E. Schrage. il Electronics 8:388 Oct '35
- Improvement in foreign radio receivers. C. J. Van Loon. Electronics 10:60 Feb '37
- Installation of radio distribution in the Beaujon Hospital, Paris. G. Meunier. Elec Comm 15:207 '37
- Measurement of loop-antenna receivers. W. O. Swinyard. il diags Proc Inst Radio Eng 29:382 July '41
- Messerschmitt Me 109 radio. W. P. Lear. il Aviation 40:100 Aug '41; Abstracts. Electronics 14:82 Sept. '41; Radio N 26:29 Oct '41
- Microphones and receivers. L. C. Pocock. Elec Comm 21:218 '44
- Neon tube coupled amplified circuit for radio cosmic-ray receivers. S. A. Korff. diag Rev Sci Instr 9:256 Aug '38; Abstracts. Electronics 11:69 Nov '38
- Postwar radio sets. il Electronic Indus 2:82 Oct '43
- Preselection in inexpensive broadcast receivers. E. B. Passow. il diag Electronics 14:50 Sept '41
- Radio-frequency distributing systems; installation in Waldorf-Astoria, N. Y. F. X. Rettenmeyer. Proc Inst Radio Eng 23:1299 Nov '35
- Radio progress during 1944; radio receivers. Proc Inst Radio Eng 33:145 Mar '45
- Radio receiver design; discussion meeting of radio section of Institution of electrical engineers. Elec Rev (Lond) 136:661 May 4 '45; Electrician 134:405 May 4 '45
- Receiver for radiometeorographs. A. C. Astin and L. L. Stockmann. diag Rev Sci Instr 7:462 Dec '36
- Receiver input circuits; abstract. H. Behling. Wireless Eng 20:198 Apr '43
- Receivers for the tropics. W. E. Stewart. Electronics 14:28 Mar '41
- Receiver tuned circuits. Engineering Dept. Aero-vox Res W. 12:8 Aug '40
- Redesigning for the future; John Meck industries. il Mod Plastics 22:108 Jan '45
- Single sideband Musa receiving system for commercial operation on transatlantic radiotelephone circuits. F. A. Polkingham. Bell Sys Tech Jour 19:306 Apr '40
- Teledynamic control by selective ionization with application to radio receivers. S. W. Seeley, H. B. Deal and C. N. Kimball. diags Proc Inst Radio Eng 26:813 July '38
- Television and FM plans of receiver manufacturers. Electronic Indus 2:82 Oct '43
- Transmitter controlled receiving system. il Electronics 15:86 Jan '42
- Very-high frequency receiver oscillator design. S. Y. White. il Electronics 16:96 July '43
- See also*
- Receiver Manufacture
- RECEIVERS, Aircraft**
- Aircraft electrical system and radio installations. C. J. Schauers. Radio N 26:32 Sept '41
- Aircraft radio, 1939. il Electronics 12:10 Jan '39
- Aircraft radio design. A. F. Trumbull. il Electronics 17:98 Nov '43
- Aircraft radio equipment for use on European air lines. A. D. Hodgson. il plan Proc Inst Radio Eng 23:979 Sept '35
- Airlines' radio requirements met with a 24-pound receiver. D. S. Little. il Aero Digest 38:45 Jan '41
- Aviation radio; Bendix aircraft radio receiver; other receivers. C. J. Schauers. il Radio N 27:25 Feb 28-Mar '42
- Bendix airport receiver. il Aero Digest 32:78 Feb '38
- Communications equipment for private aircraft. il QST Vol 26 Aug '42
- Bendix announces two new receivers for communication and beacon use. il Aviation 36:44 Dec '37
- Developments in aircraft radio. il Electronics 11:20 Feb '38
- Lear model K radio receiver. il Aero Digest 26:41 Jan '35
- Loop antennas for aircraft. G. F. Levy. bibliog Proc Inst Radio Eng 31:56 Feb '43. Correction, 31:384 July '43
- Nazi aircraft radio. J. H. Jupe. il Electronics 15:58 Nov '42
- Panoramic reception applied to aerial navigation. Electronics 13:42 Dec '40
- Panoramic reception makes possible new type of reception using cathode ray tube. il Aviation 37:46 June '38
- Portable receivers. il Aero Digest 35:137 July '39
- Radio maintenance for aircraft. A. F. Trumbull. il Electronics 17:118 July '44
- RCA's beacon receiver. Aviation 38:44 Sept. '39
- RCA two-way in 25 lb; new lightweight transmitter and receiver. il Aviation 38:66 Feb '39
- RC9 aircraft receivers; models AVR-7D, E, F and G. il Aero Digest 31:81 Nov '37
- Visual direction finders. D. S. Bond. il Electronics 17:144 Jan '44
- See also*
- Aeronautical Radio
- RECEIVERS, All-Wave**
- All-wave receivers. M. L. Muhleman. il Sci Amer 152:290 June '35
- Application of superheterodyne frequency conversion systems to multirange receivers. W. A. Harris. diags Proc Inst Radio Eng 23:279 Apr '35
- Checking up on a 23-tube superhet; the Scott all-wave high fidelity receiver. S. G. Taylor and L. M. Cockaday. il diag Radio N 17:653, 713 May-June '36
- Design and testing of multirange receivers. D. E. Harnett and N. P. Case. Proc Inst Radio Eng 23:578 June '35
- Five-band receiver for automobile service; suggestion that short wave stations be used to serve areas not covered by broadcast bands. J. H. White and F. X. Reffenmeyer. bibliog il diags maps Proc Inst Radio Eng 29:151 Apr '41
- Frequency changers in all-wave receivers. M. J. O. Strutt. il Wireless Eng 14:184 bibliog(57 tiles, p191-2) Apr '37
- New converter tube for all-wave receivers. E. W. Herold, W. A. Harris and T. J. Henry. RCA Rev 3:67 July '38

**RECEIVERS, All-Wave—Continued**

- New dial disk proves worth on air tests; Midwest 18-tube all-wave receiver. W. C. Dorf. *il diag Radio N 18:345 Dec '36*
- Portable all-wave receiver. R. B. Frank. *il diag Radio N 26:21 Sept '41*
- World's largest all-wave set; Waldorf-Astoria Hotel, New York. L. M. Cockaday. *il map Radio N 17:71 Aug '35*
- 1936 all-wave receivers. *il Sci Amer 153:220 Oct '35*
- 20-100 mc. signal generator for testing all-wave receivers. C. J. Franks. *il Electronics 9:16 Aug '36*

**RECEIVERS, Amateur**

- Advanced amateur receivers. *il Electronics 9:20 Dec '36*
- Amateur receivers of advanced design. B. Dudley. *il Electronics 9:20 Dec '36*
- Compact gear for 224-mc. Semel. *QST 28:9 Nov '44*
- Double regenerative superhet. C. Goodman. *il QST 22:15 Mar '38*
- Dual-diversity phone reception with single-control tuning. H. McLoughlin and J. J. Lamb. *il QST 20:39 May '36*
- Dual-diversity preselector. *il QST 25:37 Apr '41*
- Ham built communications type receiver. C. Mayo. *il QST 28:13 Apr '44*
- Heterotone CW telegraph reception. James J. Lamb. *il QST 20:16 Nov '36*
- Improved dual-diversity receiver. H. McLoughlin and Miles. *il QST 21:17 Dec '37*
- Looking over the circuits of the new amateur-band superhets. James J. Lamb. *il QST 19:21 May '35*
- Midget portable receiver. *il QST Vol 35 Oct '35*
- New i-f coupling systems for superhet receivers. James J. Lamb. *il QST 21:28 Apr '37*
- Oscillator-mixer design considerations for the amateur-band superhet. Clinton B. De Soto. *il QST 20:31 Sept '36*
- Panoramic radio spectroscopy adapter. George Grammar. *il QST 26:16 July '42*
- Pocket superregenerative receivers. N. Roberts. *il QST 20:22 Jan '36*
- Regenerative receiver with high audio selectivity. Gager and Graham. *il QST 22:16 Jan '38*
- Two tube superhet. *il QST 25:12 Feb '41*
- Versatile regenerative-detector receiver. *il QST 26:71 Dec '42*
- Versatile two-tube regenerative receiver. Bradley. *QST 28:9 Oct '44*

**RECEIVERS, Automatic Alarm. See Marine Radio****RECEIVERS, Automobile**

- Auto radio makes good test receiver for noise location work; abstract. T. S. Bailey. *diags Elec W 115:1328 Apr 19 '41*
- Five-band receiver for automobile service. J. H. Little and F. X. Rettenmeyer. *Proc Inst Radio Eng 29:151 Apr '41*
- Making a transmitter-receiver from an auto radio. W. D. Wenger. *il diags Radio N 21:15 May '39*
- Modernize those police receivers. H. L. Lipson. *il diags Radio N 32:44 Sept '44*

- Radio receivers for motor cars. *il Engineering 141:361 Apr. 3 '36.*
- Servicemen's vibrator tester for auto radio sets. F. H. Barnhart. *il diags Radio N 21:19 Mar '39*
- Short-wave spread bands in automobile and home receivers. D. E. Foster and G. Mountjoy. *diags Proc Inst Radio Eng 30:222 May '42*
- Substitute for car antenna checks capacitance. P. F. Magee. *il diag Electronics 17:218 Oct '44*
- Transport communications for highways. *il Radio N 32:36 Sept. '44*
- Trends in automobile radio; abstract. J. H. Little. *S A E Jour 53:sup40 May '45*
- Two-way talk with linemen; device uses car radio receiver. W. L. Campbell. *il diags Elec World 123:133 June 9 '45*
- Vehicle speaker requirements for service on cars and boats. R. P. Adams. *il Radio N 19:378 Dec '37*

**RECEIVERS, Frequency-Modulation**

- Constructing an ac-dc FM receiver. P. T. Williamson. *il diag Radio N 26:21 Dec '41*
- Experimental AM-FM mobile receiver. O. Read. *il diag Radio N 24:20 Dec '40*
- FM receiver for carrier-current communication. George M. Guill. *il QST 29:46 Mar '45*
- Frequency dividing locked-in oscillator F-M receiver; abstract. G. L. Beers. *diags Electronics 17:190 Nov. '44*
- Frequency-dividing locked-in oscillator frequency modulation receiver. G. L. Beers. *diags Proc Inst Radio Eng 32:730 Dec '44*
- Frequency-modulation phonograph pickup. B. F. Miessner. *diags Electronics 17:132 Nov '44*
- Frequency modulation receivers; design and performance. Marvin Hobbs. *il Electronics 13:22 Aug '40*
- Frequency-modulation transmitter and receiver for studio-on-transmitter relay system. F. F. Goetter. *il diags Proc Inst Radio Eng 31:600 Nov '43*
- Impulse noise in frequency modulation reception. V. D. Landon. *il Electronics 14:26 Feb '41*
- Intermediate-frequency values for frequency-modulated-wave receivers. Dudley E. Foster and John A. Rankin. *Proc Inst Radio Eng 29:546 Oct '41*
- New designs in FM. H. DuVal, jr. *il Gen Elec Rev 46:631 Nov '43*
- Phase discriminator; its use as frequency-amplitude converter for frequency-modulated reception. K. R. Sturley. *diags Wireless Eng 21:72 Feb. '44*
- Recent improvements in frequency-modulation receiver design. J. A. Worcester, jr. *RMA Tech Bul 2 Nov 12 '40*
- Reduction of band width in F. M. receivers. D. A. Bell. *Wireless Eng 19:497 Nov '42*
- Synchronized oscillators as F-M receiver limiters. C. W. Carnahan and H. P. Kalmus. *bibliog diags Electronics 17:108 Aug '44*
- Tuning indicators and circuits for frequency-modulation receivers. J. A. Rodgers. *diags Proc Inst Radio Eng 31:89 Mar '43*
- Two-tube TRF regenerative FM receiver. Barbee. *il QST 27:24 Nov '43*
- See also*
- Frequency Modulation

**RECEIVERS, High-Fidelity**

- Acoustic testing of high fidelity receivers. H. A. Wheeler and V. E. Whitman. *il Proc Inst Radio Eng* 23:610 June '35
- Comments on high fidelity. O. B. Hanson. *Electronics* 17:130 Aug '44
- Conditions necessary for an increase in usable receiver fidelity. A. N. Goldsmith. *Proc Inst Radio Eng* 22:9 Jan '34
- Fidelity and selectivity with variable intermediate frequency coupling. A. A. Webster. *il Radio N* 16:479 Feb. '35,
- High-fidelity radio-gramophone; abstracts. W. J. Brown. *Elec Rev (Lond)* 116:717 May 17 '35; *Wireless Eng* 12:379 July '35
- High fidelity receivers with expanding selectors. H. A. Wheeler and J. K. Johnson. *diags Proc Inst Radio Eng* 23:594 June '35.
- High-fidelity reception test; Philco 200-X. J. Strong. *il Radio N* 16:4469 Feb '35
- High-fidelity tuner. O. Read. *il diag Radio N* 25: 22 Jan '41
- High fidelity with adjustable transformer. I A. Mitchell. *il diag Radio N* 16:621 Apr '35
- Home built receiver designed for high-fidelity reception. J. M. Borst. *il diags Radio N* 16:536 Mar '35
- Improved carrier interference eliminator. W. Baggally. *Wireless Eng* 12:647 Dec '35
- New 19-tube receiver for high-fidelity reproduction. M. Silver. *il diag Radio N* 17:146, 212 Sept-Oct '35
- Quality radio broadcast transmission and reception. S. Ballantine. *Proc Inst Radio Eng* 22:564 May '34
- Receiver bandwidth and background noise. C. B. Aiken and G. C. Porter. *Radio Eng* 15:7 May '35 tabulation. D. D. Israel. *Electronics* 14:35 Dec
- Scott high-fidelity receivers. E. A. Scott. *Proc Inst Radio Eng* 29:295 June '41
- Something new in radio; high fidelity receiver. M. Silver. *il diag Radio N* 20:60 July '38
- Telecommunication; fidelity in radio receivers. *Electrician* 115:775 Dec 20 '35
- Wide-band tuner for high fidelity reception. W. N. Weeden. *il diag Electronics* 10:19 Feb '37

**RECEIVERS, Marine**

- Commercial marine transmitter-receiver. R. J. Higgins and R. E. Samuelson. *il diag Radio N* 20:20 Dec '38
- Panoramic reception; all stations on dial of receiver may be indicated on cathode-ray oscilloscope; suited to radio navigation. *il Electronics* 13:14 June '40
- Queen Mary; radio and telephone equipment; broadcasting arrangements. *il Electrician* 116: 691 May 29 '36
- Radio equipment for motor lifeboats. *il Marine Eng* 40:520 Dec '35
- Radio equipment for the Queen Mary. S. Kaufman. *il Radio N* 17:655 May '36.
- Requirements for automatic radio alarm approved. *Marine Eng* 51:210 Apr '36
- Selecting radio power for cargo ships. B. Breedlove. *Marine Eng* 51:185 Apr. '36

- Short wave radio receivers used for keeping in touch with the world on board ship. B. Breedlove. *il Marine Eng* 42:67 Feb '37
- Should broadcasting occur in the 500-500 kc. band? improved marine radio equipment would reduce interference. C. B. Aiken. *map Electronics* 9:17 Oct '36
- Survey of marine radio progress, with special reference to R. M. S. Queen Mary. F. G. Loring, W. L. McPherson and W. H. McAllister. *il diags plans Jour Inst Elec Eng* 81:190. Discussion. Aug '37
- Towboat radio service is under experiment. *Weekly Underw* 134:961 May 9 '36
- Vehicle speaker requirements for service on cars and boats. R. P. Adams. *il Radio N* 10:378 Dec '37
- Weather maps go to set over new wireless service. *Weekly Underw* 134:890 May 2 '36

**RECEIVERS, Panoramic**

- Compact panoramic radio spectroscopy adapter. George Grammar. *il QST* 26:16 July '42
- Panoramic radio spectroscopy. Miller. *il QST* 26:16 Mar '42
- Panoramic reception; all stations on dial of receiver may be indicated on cathode-ray oscilloscope; suited to radio navigation. *il Electronics* 13:14 June '40
- Panoramic reception; applied to aerial navigation. *Electronics* 13:42 Dec '42
- Panoramic reception for increased receiving efficiency; panoramic spectroscopy adapter; continuous indication of radio signals within plus or minus 50 kc of tuned frequency of receiver. *il diag Electronics* 14:36 '41
- Panoramic reception makes possible new type of reception using cathode-ray tube. *Aviation* 37:46 June '38
- Panoramic reception shows promise in radio navigation; cathode-ray tube used. *il diags Electronics* 11:36 July '38
- Panoramic reception; visual observation and analysis of radio-frequency spectrum. C. T. Read. *il diag Radio N* 31:35 Mar '44

**RECEIVERS, Phono-Radio Combination**

- Considerations in the design of a high-fidelity radio gramophone. W. J. Brown. *il diags Jour Inst Elec Eng* 78:194. Discussion. 212 Feb '36
- Dual speed recording unit; combination recording cutter and playback, radio reception, and public-address system. *il Radio N* 33:49 May '45
- Pianos of the future; dynatone, combining electronic piano with radio and phonograph reproduction. S. Kempner. *il diags Radio N* 33:25 Mar '45
- 1942 console radio-phonograph combinations; some available, but stocks will soon be exhausted. *Consumers' Research Bul* 11:15 Dec. '42
- See also*
- Phonographs, Recorders

**RECEIVERS, Portable**

- Battery substitutions for portables. G. Garvin. *il Radio N* 28:28 July '42
- Camper's broadcast receiver. H. T. Burgess. *il diags Radio N* 20:23 Oct. '38

**RECEIVERS, Portable—Continued**

- Canadian walkie-talkie; portable communications equipment. *il* Radio N 31:48 Jan '44
- Emergency portable for existing channels. O. Read. *il* diags Radio N 28:24 52 Aug '42
- Five-meter combination receiver-transmitter for portable and mobile use. N. Bishop. *il* diag Radio N 18:734 June '37
- Miniature receivers; review of characteristics and design features. *il* diag Electronics 13:17 Dec '40
- Mobile 30-40 Mc receiver for the U. S. Forest service. H. K. Lawson and L. M. Belleville. *il* diag Electronics 15:22 Jan '42
- New short wave portable. *il* diags Radio N 17:14 July '35
- Pocket superregenerative receivers. Roberts. *il* QST 20:22 Jan '36
- Portable duplex radio-telephone. W. Lewis and C. L. Milner. bibliog *il* diags Wireless Eng 13:475 Sept. '36
- Portable Learadio transmitter and receiver for field use. *il* Aviation 36:43 Feb '37
- Portable radio receivers. *il* Consumers' Research Bul 9:1 Oct '41
- Portable radio station. O. T. Read. *il* diags Radio N 19:49 June '38
- Portable receivers. *il* Aero Digest 35:137 July '39
- Radio in the infantry. *il* Radio N 27:30 Jan '42
- Radio transmitter and receiver not much larger than the handset of French telephone; transceiver. *il* Gen Elec Rev 45:248 Apr '42
- Vestpocket receiver. G. Bradfield. *il* diag Radio N 20:8 Nov '38
- 112-120 mc emergency portable. O. Read. *il* diags Radio N 28:26 Dec '42

**RECEIVERS, Remote-Controlled**

- Build a remote control tuner. R. F. Shea. *il* diags Radio N 16:691 May '35
- Built-in broadcast receiver control for the home. R. P. Adams. *il* diags Radio N 20:23 Dec '38
- Home remote controller. W. E. Barour, jr. *il* diags Radio N 23:18 Apr '40
- New system for the remote control of radio broadcast receivers. J. B. Sherman. diags Proc Inst Radio Eng 23:47 Jan '35
- Radio News a.c. preamplifier and remote control. A. J. Haynes. *il* diag Radio N 19:540 Mar '38
- Receiver control by transmitted signal, alert receiver; device would enable stations to turn on receivers for news, civilian defense purposes, etc. H. B. Deal, *il* diags RCA Rev 6:167 Oct '41; Abstract. Electronics 15:86 Jan '42
- Remote radio controller. A. D. Rickert. diag Radio N 25:28 Mar '41
- Resistance network provides interlock for simple relays; pushbutton-operated remote receiver. J. H. Miller. diag Electronics 16:317 Mar '42

*See also*

**Remote Control****RECEIVERS, Short-Wave**

- Diversity telephone receiving system of RCA communications, inc. for radiotelegraphy. H. O. Peterson, H. H. Beverage, and J. B. Moore. Proc Inst Radio Eng 19:562 Apr '31
- Dual-diversity phone reception with single-control tuning. G. McLoughlin and J. J. Lamb. *il* QST 20:39 May '36

- Dual-diversity preselector. *il* QST Vol 25 Apr '41
- Dual-diversity radiotelegraph reception. F. A. Bartlett. Electronics 12:48 Aug '39
- Effective 2½-55 meter receiver; Haynes R-S-R. W. C. Dorf. *il* diag Radio N 17:660 May '36
- Fail activity on 5 and 10 meters; improving transmitters and receivers. *il* diag Radio N 18:272 Nov '36
- Five-meter car radio; transmitter and receiver installations for amateurs. L. M. Cockaday. *il* diags Radio N 17:519; 600 Mar-Apr '36
- Quartet for 5-and-10-meter reception. C. Watzel and others. *il* diag Radio N 18:522, 602, 730 Mar-Apr June '37
- Receivers for 10 meters. S. C. Taylor. *il* diag Radio N 18:661 May '37
- Short-wave cathode-ray direction finding receiver. *il* diags Wireless Eng 15:432 Aug '38
- Short-wave receivers. D. R. Parsons. diag Jour Inst Elec Eng Nov '35
- Short wave receivers for amateur stations. E. M. Walker. *il* Radio N 17:398, 472 Jan-Feb '36
- Single sideband receiver for short wave telephone service. A. A. Roetken. Proc Inst Radio Eng 26:1455 Dec '38
- Tri-band short wave receiver. H. D. Hooton. *il* diags Radio N 16:730 June '35
- ¾ meter transceiver. B. Bartlett. *il* diag Radio N 20:26 Sept. '38

**RECEIVERS, Superheterodyne**

- Constant frequency superheterodyne receiver. B. Duono. *il* Electronics 12:33 Aug '39
- Design and construction data on a new type of high frequency superheterodyne, the BRL-8. C. Watzel and W. Bohlen. *il* diags Radio N 17:400 471 Jan-Feb '36
- Design features of the new Masterpiece 21-tube receiver. M. Silver. *il* diag Radio N 19:213 285 Oct-Nov '37
- Double superheterodyne receiver. R. I. Kinross. diags Wireless Eng 14:351 July '37
- Further advances in super design, new Hammarlund Super-Pro. S. G. Taylor. *il* diag Radio N 18:474 539 Feb-Mar '37
- Further notes on ganging superheterodyne receivers. M. Wald. diags Wireless Eng 18:146 Apr '41
- Ganging superheterodyne receivers. M. Wald. diag Wireless Eng 17:105 Mar '40
- Interfering responses in superheterodynes. H. K. Morgan. Proc Inst Radio Eng 23:1164 Oct '35
- Looking over the circuits of the new amateur-band superhets. James J. Lamb. *il* OST Vol 19 May '35
- New 4-band super; G. E. model 81. *il* Radio N 16:627 Apr. '35
- New superheterodyne principle; use of part of received wave to produce heterodyne oscillation. Wireless Eng 13:177 Mar '36
- Operation of superheterodyne first-detector valves. J. Stewart. diags Jour Inst Elec Eng 227 Feb '35
- Postwar radio sets. Electronic Indus 2:82 Oct '43
- Radio progress during 1944; radio receivers. Proc Inst Radio Eng 33:145 Mar '45
- Real ultra-high-frequency superhet. R. Clark. *il* diag Radio N 17:668 May '36

- Scott high-fidelity receivers. E. H. Scott. il diags Proc Inst Radio Eng 29:295-9 June '41
- Scott Philharmonic 30-tube receiver. L. M. Cockaday and S. G. Taylor. il Radio N 19:83 157 220 Aug-Oct '37
- Six-tube compact .5-40 mc superheterodyne. R. F. Laycock. il diag Radio N 20:32 Nov '38
- Some aspects of radio reception at ultra-high frequency; general superheterodyne considerations at ultra-high frequencies; frequency mixing in diodes. E. W. Herold and L. Malter. diags Proc Inst Radio Eng 31:567 Oct '43
- Superheterodyne converter system considerations in television receivers. E. W. Herold. RCA Rev 4:324 Jan '40
- Superheterodyne first-detector considerations in television receivers; abstract. E. W. Herold. Proc Inst Radio Eng 27:612 Sept '39
- Superheterodyne padding capacities; the use of fixed padding condensers. W. T. Cocking. Wireless Eng 14:246 May '37
- Superheterodyne tracking simplified. P. C. Gardiner. il Electronics 15:74 Nov '42
- Thermal drift in superheterodyne receivers. J. M. Miller. Electronics 10:21 Nov '37
- Ultra-high-frequency superheterodyne receiver for direction-finding. L. C. L. Yuan and C. E. Miller. il diags Rev Sci Instr 11:273 Sept '40; abstract. Elec 3:75 Oct '40
- Whistling notes in superheterodyne receivers. M. J. O. Strutt. Wireless Eng 12:194 Apr '35
- Bandsread problem. R. C. Woodhead. il Electronics 10:29 Jan '37
- Basic principles of superregenerative reception. F. W. Frink. il diags Proc Inst Radio Eng 26:76 Jan '38
- Bibliography on superregeneration. Electronics 8:30 Jan '35
- Development of a frequency-modulated police receiver for ultra-high-frequency use. H. E. Thomas. RCA Rev 6:222 Oct '44
- German VHF command set. R. A. Gordon. il diag Electronics 17:132 Apr '44
- Homebuilt 1-10 meter receiver. P. Popenoe, jr. il diag Radio N 23:25 June '40
- Measurement of the sensitivity of receivers for short (metric and decimetric) waves; abstract. K. Franz. Wireless Eng 19:529 Nov-Dec '42
- Mobile 30-40 Mc receiver for the U. S. Forest service. H. K. Lawson and L. M. Belleville. il diag Electronics 15:22 Jan '42
- Sensitivity of ultra-high-frequency receivers, with special attention to the U. H. F. duo-pentode type EFF50; abstract. R. Wilke. Wireless Eng 19:530 Nov '42
- Superregeneration of an ultra-short-wave receiver. H. Ataka. diags Proc Inst Radio Eng 23:481 Aug '35
- Superregeneration with particular emphasis on its possibilities for frequency modulation. H. P. Kalmus. diags Proc Inst Radio Eng 32:591 Oct '44
- Superregeneration with reference to broadcast receivers. D. Maurice. bibliog diags Wireless Eng 15:4 Jan '38
- Superregenerative receiver. M. G. Scroggie. bibliog diags Wireless Eng 13:581 Nov '36
- Superregenerative receivers for the ultra-high frequencies. N. Bishop. il diags Radio N 18:402 472 527 Jan-Mar '37
- Three-band ultra-high frequency super-regenerative. C. E. Jackson. il diag Radio N 26:18 Sept '41
- Tiny tot; 5-meter superregenerative. A. J. Haynes. il diags Radio N 19:152 Sept '37
- Ultra-high frequency technique; ultra-high frequency reception and receivers. B. Dudley. bibliog diags Electronics 15:51 Apr '42
- Ultra-high frequency reception and receivers. B. Dudley. il Electronics 15:51 Apr '42
- Unicontrol radio receiver for ultra-high-frequencies using concentric lines as interstage couplers. F. W. Dunmore. Proc Inst Radio Eng 24:837 June '36
- V-H-F receiver oscillator design. S. Y. White. Electronics 16:96 July '43
- 130-212 mc receiver for FM-AM coverage. C. E. Jackson. il diag Radio N 30:23 July '43

See also

Vacuum Tubes, U.H.F.

RECEIVING Tubes. See Vacuum Tubes

## RECEPTION

Application of negative feedback to frequency modulation systems. J. A. Chaffie. Proc Inst Radio Eng 27:317 May '39

High quality radio broadcast transmission and reception; the receiving system. S. Ballantine. il diags Proc Inst Radio Eng 23:618 June '35

## RECEIVERS, Television

Automatic frequency and phase control of synchronization in television receivers. K. R. Wendt and G. L. Fredendall. il diags Proc Inst Radio Eng 31:7 Jan '43

Design and development of television receivers using the Scophony control scanning system. J. Sieger. Proc Inst Radio Eng 27:487 Aug '39

Design of television receivers. A. D. Sobel. il Radio N 33:35 Mar '45

Experimental television receiver using a cathode-ray tube. Manfred von Ardenne. Proc Inst Radio Eng 24:409 Mar '36

Laboratory television receiver. D. G. Fink. il diags Electronics 11:16 Oct; 26 Nov '38

New large-screen RCA television receiver. il Radio N 33:98 June '45

Scanning in television receivers. F. J. Somers. il Electronics 10:18 Oct '37

Some factors involved in the optical design of a modern television receiver using moving scanners. H. W. Lee. Proc Inst Radio Eng 27:496 Aug '39

Television receiver. D. G. Fink. il Electronics 11:16, 26, 22, 16, 26, 16 July to Dec '38

Television receiver. E. M. Noll. il diags Radio N 33:32 Apr '40 May '50 June '45

The supersonic light control and its application to television with special reference to the Scophony television receiver. D. M. Robinson. Proc Inst Radio Eng 27:483 Aug '39

See also

Television, Large-Screen

## RECEIVERS, Ultra-High Frequency

Analysis of the signal-to-noise ratio of ultra-high-frequency receivers. E. W. Herold. bibliog diags RCA Rev 6:302 Jan '42

**RECEPTION—Continued**

- Frequency stability problems with particular reference to commercial radio-receiver development. C. W. Eggleton. *Electrician* 129:554 Nov 20 '42; *Elec Rev (Lond)* 131:656 Nov 20 '42
- Impulse-noise in FM reception. Vernon D. Landon. *Electronics* 14:26 Feb '41
- Measurements pertaining to the co-ordination of radio reception with power apparatus and systems. C. M. Foust and C. W. Frick. bibliog diags *Elec Eng* 62; *Ttrans* 284 June '43
- Narrow-band vs. wide-band reception in FM reception. M. L. Levy. *Electronics* 13:26 June '40
- Panoramic reception; all stations on dial of receiver may be indicated simultaneously on cathode-ray oscilloscope; suited to radio navigation. *il Electronics* 13:14 June '40
- Panoramic reception applied to aerial navigation. *Electronics* 13:42 Dec '42
- Review of broadcast reception in 1935. R. H. Langley. *Proc Inst Radio Eng* 24:376 Mar '36
- Some aspects of radio reception at ultra-high frequency. E. W. Herold and L. Malter. bibliog diags *Proc Inst Radio Eng* 31:423 491 567 Aug-Oct '43.
- Transmission and reception of centimeter radio waves. C. W. Rice. bibliog *il diags Gen Elec Rev* 39:363 Aug '36
- Transmission and reception of centimeter waves. I. Wolff, E. G. Linder and R. A. Braden. *il diag Proc Inst Radio Eng* 23:20 Jan '35
- Ultra-high frequency technique; ultra-high frequency reception and receivers. B. Dudley. bibliog diags *Electronics* 15:51 Apr '42
- See also*
- Receivers  
Communication

**RECEPTION, Panoramic.** *See* Receivers, Panoramic

**RECORDING, Recorders**

- ABC of photographic sound recording. E. W. Kellogg. bibliog *Jour Soc Motion Pic Eng* 44:75 Feb '45
- Automatic blood pressure recorder. W. E. Gilson. *il diags Electronics* 15:54 May '42
- Automatic line level recording apparatus. F. A. Peachey. diags *Wireless Eng* 13:462 Sept. '36
- Automatic recording; drawing of light-sensitive-cell characteristic curves accomplished by photoelectric recorder. H. T. Wrobel. *il diag Gen Elec Rev* 45:585 Oct '42
- Bass compensation by screen-grid injection. L. M. Barcus. *il diag Electronics* 13:44 June '40
- Cellophone tape recorder. *il Electronics* 17:146 Mar '44
- Computation of the composite noise resulting from random variable sources; statistical method for computing reading on a sound level meter. E. Dietze and W. D. Goodale Jr. bibliog *Bell Sys Tech Jour* 18:605 Oct '39
- D-c amplifier for logarithmic recording. J. P. Taylor. *il diag Electronics* 10:24 Mar '39
- Dew-point recorder safeguards gas line against freezing. J. A. Setter. *diag Gas Age* 88:31 Nov 20 '41; Same. *Electronics* 14:72 Nov '41; Same. *Chem & Met Eng* 49:132 F '42; Same. *Pet Eng* 13:134 Feb '42; Same. *Oil & Gas Jour* 41:90 Sept '42; Same cond. *Refrig Eng* 43:180 Mar '42
- Directional recording of radio atmospherics. F. E. E. Lutkin. bibliog *il diag maps. Jour Inst Elec Eng* 82:289 Mar '38
- Double photoelectric recorder. W. L. Carson. *il Gen Elec Rev* 40:228 May '37; Excerpt. *Iron Age* 139:102 May 13 '37
- Dual speed recording unit; combination recording cutter and playback, radio reception and public-address system. *il Radio N* 33:49 May '45
- Electrical water-level control and recording equipment for model of Cape Cod canal. H. L. Hazen. *il diags Elec Eng* 56:237 Feb '37
- Electron tubes in recorders and controllers. C. O. Fairchild. *Metal Prog* 34:406 Oct '38
- Electronic eye records ultraviolet in sunshine. *Refrig Eng* 44:175 Sept '42
- Electronic tachometer, accelerometer and vibrometer; testing gyroscope rotors. flowdiags *il Electronics* 17:100 June '44
- Electronic temperature recorder contributes to aviation developments; primarily a flight recorder. *il Electronics* 15:114 Nov '42
- Electrostatic recording and reproduction. P. Selenyi. diags *Elec Rev (Lond)* 117:528 Oct 18 '35
- Embossed groove recording. Lincoln Thompson. 15:30 Mar '42
- Engineering details of magnetic wire recorder. D. W. Pugsley. *il Electronic Indus* 3:116 Jan '44
- Enhanced stereophonic recordings demonstrated by Bell laboratories. *il Electronics* 13:30 May '40
- Film-recording seismograph. H. Benioff and others. *il diags Electronics* 16:89 May '43
- Flight recorder for aircraft. H. D. Giffen. *il diags Radio N* 29:14 Apr '43
- Flight recorder to ease test pilot's job; electronic instrument records temperature and pressure changes. *il Aviation* 41:149 Nov '42
- Frequency-modulation phonograph pickup. B. F. Meissner. *il Electronics* 17:132 Nov '44
- Headway recorder for omnibuses. *il diag Engineer* 165:347 Mar 25 '38; *Elec Rev (Lond)* 122:655 May 6 '38
- High-fidelity recording amplifier. I. J. Abend. diags *Electronics* 13:44 Oct '40
- High-gain d-c amplifier for bio-electric recording. H. Goldberg. diags *Elec Eng* 59; *Trans* 60 Jan '40
- High-sensitivity electronic recorder. *il diag Electronics* 17:148 May '44
- High-speed photoelectric recorder. H. L. Clark. *il diags Gen Elec Rev* 45:384 July '42
- High-speed recording of radiotelegraph signals. R. B. Armstrong and J. A. Smale. *il diags Jour Inst Elec Eng* pt 3:194 Dec '44; Excerpts *Electrician* 132:453 May 26 '44
- Investigation of magnetic tape recorders. M. C. Selby. *il Electronics* 17:133 May '44
- Magnetic tape recording. C. E. Winter. *il diags Radio N* 33:32 June '45
- Method of recording low intensity flashes of light; intensity changes in light given off by luminous animals. C. Butt and R. S. Alexander. bibliog *il diag Rev Sci Instr* 13:151 Apr '42; Abstract. *Electronics* 15:108 Oct '42
- Mikes, heads, pickups, home recording equipment; descriptions and technical data. *Radio N* 24:37 Sept; 22 Oct; 29 Nov; 41 Dec '40

- Multi-channel sound recording on film. *Electronic Indus* 4:92 Apr '45
- Multi-frequency automatic recorder of ionosphere heights. T. R. Gilliland. pls diags U S. Bur Stand J Research 11:561 Oct '33
- Multifrequency ionosphere recording and its significance. T. R. Gilliland. *Proc Inst Radio Eng* 23:0176 Sept '35
- Multiple-unit recorder capable of 600 measurements per hour. T. T. Woodson. il diags *Gen Elec Rev* 43:512 Dec '40
- National physical laboratory; measurement of sound, noise abatement, sound transmission through walls, floors and pipes. *Engineering* 148:494 Nov 3 '39
- New field intensity recorder. H. W. Kline. il diag *Electronics* 15:50 Jan '42
- Optimum response scanning slit-image. George Logan. il *Electronics* 15:140 June '42
- Orthacoustic recording; abstract. R. M. Morris. *Electronics* 13:59 May '40
- OWI mobile recorder for detached service. *Electronic Indus* 4:106 Fem '45
- Photoelectric potentiometer recorder. D. F. Hang. il diags *Gen Elec Rev* 46:623 Nov '43
- Photoelectric tape recording. il *Electronics* 13:16 May '40
- Plane flutter recorder. il *Electronics* 17:150 Nov '44
- Preamplifier-filter for crystal pickups. Charles Affelder. il *Electronics* 15:78 Apr '42
- Pressure of exploding gunpowder is recorded with oscillograph. il *Electronics* 16:186 Aug '43
- Radio signal-intensity recorder. B. Saltmarsh. plans *Exp Wireless* 4:743 Dec '27
- Recording audio analyzer. il diags *Electronics* 16:100 July '43
- Recording blood flow in stomach with thermocouples and phototube. *Electronics* 16:190 July '43
- Recording FM bursts for observation. O. Read. il *Radio N* 32:31 Nov '44
- Recording unit for strain and timing functions; dynamic performance of heavy machines recorded by combination of electronic and photographic equipment. J. H. Meter. il diags *Electronics* 16:79 Apr '43
- Recording war news with the SX-28. O. Read. il diags *Radio N* 29:18 Feb '43
- Recording welder currents on oscillograph. H. W. Lord. il *Electronics* 10:16 Dec '37
- Reduction of record noise by pickup design. A. D. Burt. il *Electronics* 16:90 Jan '43
- Resistance-coupled thyatron recording circuit. J. B. Wilkie. *diag Rev Sci Instr* 16:97 Apr '45
- Reverberation control in motion picture recording. J. K. Hilliard. il *Electronics* 11:15 Jan '38
- River level recorded by radio. il *Electronics* 17:152 May '44
- Seismic prospecting method uses electronic recorders. plan *Electronics* 9:40 Jan '36
- Some problems of disk recording. S. J. Begun. *Proc Inst Radio Eng* 28:839 Sept '40
- Sound recording depends upon electronics. C. R. Keith. il *Electronics* 16:114 Mar '43
- Strange behavior of f-m signals recorded. *Electronics* 17:256 July '44
- Synthetic production and control of acoustic phenomena by a magnetic recording system. S. K. Wolf. *Proc Inst Radio Eng* 29:365 July '41
- Synthetic reverberation; recording fugitive sound pattern of original program signal on rotating phosphor-coated disk by means of modulated light source and simple optical system. P. C. Goldmark and P. S. Hendricks. il diags *Proc Inst Radio Eng* 27:747 Dec '39
- Techniques of sound recording. F. E. Butler. il *plan Radio N* 30:21 Nov '43
- Theory and practice of disc recording; design of an inexpensive tuner. O. Read. il *diag Radio N* 28:24 July '42
- Tube recorder used in testing enameled wire. *diag Electronics* 10:36 Jan '37
- Ultra-violet recording meter. L. J. Wolf. 9:12 June '36
- Use of high-vacuum cathode-ray tube for recording high-speed transient phenomena. D. I. McGillevie. *Elec Comm* 17:124 '38
- Variable equalizer amplifier for reproduction of records. H. Rahmel. il diags *Electronics* 14:26 July '41
- Wire recorders for army. il *Electronics* 16:234 Oct '43
- Wow meter; electronic instrument for measuring instantaneous speed variations of phonograph turntables. C. R. Miner. il diags *Gen Elec Rev* 47:31 Apr '41

*See also*

Photoelectric-Cells Recorders  
Public-Address Systems

#### RECTIFICATION, Rectifiers

- Analysis of rectifier operation. O. H. Schade. bibliog il diags *Proc Inst Radio Eng* 341 July '43
- Application of the memnoscope to rectifier study; device employing rotating condensers for studying randomly occurring electrical phenomena. W. E. Pakala and V. Wouk. diags *Inst Radio Eng Proc* 32:336 June '44
- Characteristics of thermionic rectifiers. W. H. Alodus. *Wireless Eng* 13:576 Nov '36
- Critical inductance and control rectifiers. W. P. Overbeck. *Proc Inst Radio Eng* 27:655 Oct '39
- Determination of operating data and allowable ratings of vacuum-tube rectifiers. R. C. Frommer. *Proc Inst Radio Eng* 29:481 Sept '41
- Diode as rectifier and frequency-changer. D. A. Bell. diags *Wireless Eng* 18:395 Oct '41
- Electronic rectifiers applied to machine tools. il *Iron Age* 150:49 Aug 6 '42
- Electronic time-delay relay for applying plate voltage to rectifiers. L. Van Arsdale, jr. il *Radio N* 23:24 Mar '40
- External characteristic of diode rectifier. E. B. Moullin. *Jour Inst Elec Eng* 80:553 '37; also *Wireless Section I.E.E.* 12:156 June '37
- Free oscillations of a resonant circuit loaded by a diode rectifier. F. C. Williams. diags *Wireless Eng* 14:403 Aug '37
- Graphical solution of rectifier circuits. W. K. H. Panofsky and C. F. Robinson. diags *Electronics* 14:42 Apr '41
- Grid control of radio rectifiers. S. R. Durand and O. Keller. bibliog il diags *Proc Inst Radio Eng* 25:570 May '37
- Half-wave gas rectifier circuits; applications of operational calculus. C. M. Wallis. diags *Electronics* 11:12 Oct '38
- Harmonic generation in polyphase rectifier circuits. H. Rissik. *Elec Comm* 18:271 '40



**RECTIFICATION, Rectifiers—Continued**

- Harmonic power consumption of polyphase rectifier systems. H. Rissik. Jour Inst Elec Eng 86:568 June '40; Discussion. 88 pt 2:221 June '41
- Kinescope power supply. E. Moen. *il* Electronics 15:68 May '42
- Modulation response and selectivity curves of a resonant circuit loaded by a diode rectifier. F. C. Williams. bibliog diags Wireless Eng 15:189 Apr '38
- Polyphase rectification special connections. R. W. Armstrong. Proc Inst Radio Eng 19:78 Jan '31
- Power pack rectifiers. L. J. Gamache. *il* diags Radio N 19:29 Apr '38
- Radio receiver power supplies. Engineering Dept. Aerovox Res W. Vol 8, Nos 8 to 11 Aug-Nov '37
- Reactance amplifiers using iron core reactors, saturated by d.c. from copper oxide rectifiers. *il* Electronics 10:28 Oct '37
- Rectification with imperfect rectifiers. Electronic Indus 3:176 Mar '44
- Rectifying with metallic detectors. H. Pelabon. diags Radio N 9:24 Sept '27
- Rectilinear rectification applied to voltage integration. S. S. Stevens. diags Electronics 15:40 Jan '42
- Response of rectifiers to fluctuation voltages. F. C. Williams. bibliog diags Jour Inst Elec Eng 80:218 Feb '37
- Solving a rectifier problem. R. Lee. diags Electronics 11:39. Apr '38
- Square wave rectification of electrical noise. F. R. W. Stafford. *il* Wireless Eng 14:242 May '37
- Theory of diode rectifiers. J. Marique. diags Wireless Eng 12:17 Jan '35
- Thermionic rectifier circuits. R. C. Hitchcock. bibliog *il* diags Electronics 17:102 Feb '44
- Transient response of controlled rectifier circuits. P. T. Chin and G. E. Walter. bibliog Elec Eng 64:Trans 208-14 Apr '45
- Vacuum rectifiers working with condenser input; graphical assessment of their performance. R. G. Mitchell. diags Wireless Eng 20:414 Sept '43
- Voltage multiplier circuits. D. A. Waidellch. *il* Electronics 14:28 Mar '41
- Voltage surges in rectifier circuits. Electronics 15:114 Oct '42
- Weightless power supplies; voltage-doubler. F. Shunaman. diags Radio N 27:11 Feb '42

*See also*

Power Supply Systems Vacuum-Tube Rectifiers Rectifier Filters

**Copper-Oxide**

- Copper-oxide rectifier applications. L. L. Beranek. *il* Electronics 12:15 July '39
- Copper-oxide rectifiers in standard broadcast transmitters. R. N. Harmon. *il* Proc Inst Radio Eng 30:354 Dec '42
- New electronic rectifier. L. O. Grondahl and P. H. Geiger. Trans A.I.E.E. 46:357 '27
- Use of copper-oxide rectifier for instrument purposes. J. Sahagen. Proc Inst Radio Eng 21:990 July '33

**Dry-Disc**

- Electronically controlled dry-disc rectifier. A. Rosenstein and H. N. Barnett. diags Elec Eng 63:Trans 21-3 Jan '44
- Dry-disc rectifiers. Engineering Dept., Aerovox Res W 15:3 Mar '43

**Full-Wave**

- Analysis of full wave rectifier with choke input. L. C. Tillotson and C. M. Wallis. diags Electronics 16:94 Apr '43
- Full-wave voltage-doubling rectifier circuit. D. L. Waidelich. diags Proc Inst Radio Eng 29:554 Oct '41
- Full-wave rectifier analysis. C. M. Wallis. diags Electronics 13:19 Mar '40

**Half-Wave**

- Behaviour of half-wave rectifiers. M. B. Stout. *il* Electronics 12:32 Sept '39
- Half-wave gas rectifier circuits. C. M. Wallis. *il* Electronics 11:12 Oct '38
- Half-wave voltage-doubling rectifier circuit. D. L. Waidelich and C. H. Gleason. bibliog diags Proc Inst Radio Eng 30:535 Dec '42

**Mercury-Type**

- Design of hot-cathode mercury-vapor rectifier circuits. C. R. Dunham, Jour Inst Elec Eng 75:278 '34; 76:421 '35. Also, Wireless sec I.E.E. 9:275 Sept '34; 10:108 June '35
- High voltage mercury-pool tube rectifiers. C. B. Foss and W. Lattemann. Proc Inst Radio Eng 24:977 July '36
- Hot-cathode mercury vapor high-tension supply equipment for broadcasting stations. G. Rabuteau. Elec Comm 15:141 '36
- Hot-cathode mercury-vapor rectifier tubes. H. C. Steiner and H. T. Maser. Proc Inst Radio Eng 18:67 Jan '30
- Ignitron rectifier testing. L. F. Dytrt. Electronic Indus 21:102 Nov '43
- Indicators for arc-back in mercury vapor rectifiers. E. W. Logan. *il* Electronics 12:48 Apr '39
- Mercury arc rectifier and circuits. D. C. Prince and F. B. Vodes. McGraw-Hill, New York, '27
- Mercury arc power rectifiers. O. K. Marti and H. Winograd. McGraw-Hill, New York, '30
- New ignitron firing circuit. H. Klemperer. bibliog Electronics 12:12 Dec '39
- Protecting the cathode of a mercury-vapor tube. E. F. Lowry. diags Elect Jour 33:187 Apr '36
- Some considerations in the design of hot-cathode mercury-vapor rectifier circuits. C. R. Dunham. Jour Inst Elec Eng 75:278 '34; also Wireless Sec I.E.E. 9:275 Sept '34; 10:108 June '35
- Simple test for mercury vapor rectifiers. M. J. Weiner. diags Electronics 16:112 Apr '43
- Surface-controlled mercury-pool rectifier. T. M. Libby. Proc Inst Radio Eng 28:52 Feb '40
- Vapor tube rectifier circuits with opposing direct voltages. J. M. Fluke. *il* Electronics 16:112 June '43

**Selenium**

- Characteristics and applications of the selenium rectifier. E. A. Richards. Jour Inst Elec Eng 88:pt3 p238 Dec '41; also 89:pt3 p 73 Mar '42
- Selenium rectifier characteristics; applications and design factors. C. A. Clarke. Elec Comm 20:47 '41

Selenium rectifier. G. Ramsey. bibliog il diag Elec Eng 63:425 Dec '44

Selenium rectifier photo-electric cell; its characteristics and response to intermittent illumination. J. T. MacGregor-Morris and R. M. Billington. diags Jour Inst Elec Eng Oct '36; Excerpts. Electrician 116:345 Mar 13 '36; Elec Rev (Lond) 118:385 Mar 13 '36; Discussion. Jour Inst Elec Eng 79:448 Oct '36

Selenium rectifier photocell; manufacture, properties, and use in photometry. J. S. Preston. 79:424. bibliog (p433-4) Oct '36; Conclusions. Electrician 116:345 Mar 13 '36; Elec Rev (Lond) 118:385 Mar 13 '36; Discussion. Jour Inst Elec Eng 79:448 Oct '36

Selenium rectifier phototube; manufacture, properties and use in photometry. J. S. Preston Jour Inst Elec Eng 19:424 Oct '36

Selenium vs. photoelectric cells; type, description, operation and application. F. Lowenberg. Power Pl Eng 41:376 June '37

Selenium rectifiers and their design. J. E. Yarmack. Trans A.I.E.E. 61:488 July '42

Selenium self-generating type of cell. G. Mainzer. Light & Lighting 29:180 June '36

Selenium rectifiers for closely regulated voltages. J. E. Yarmack. il Electronics 14:46 Sept '44

Simple stroboscope shows rectifier action. C. D. Savage. il Radio N 17:532 Mar '36

The selenium rectifier; how it operates. C. A. Slark. Electronic Indus 2:94 Apr '43

#### Thyratron

Analysis and characteristics of vacuum-tube thyratron phase-control circuit. S. C. Coroniti. diags Proc Inst Radio Eng 31:653 Dec '43

Applications of the hot-cathode grid-controlled rectifier, or thyratron. A. L. Whiteley. diags Jour Inst Elec Eng 78:516 May '36; Excerpts. Electrician 116:5 Jan 3 '36; Discussion. Jour Inst Elec Eng 78:528 722-3 May-June '36; Elec Rev (Lond) 118:53 Jan 10 '36; Electrician 116:50 Jan 10 '36

Circuit for the rapid extinction of the arc in a thyratron. W. H. Pickering. diags Rev Sci Instr 9:180 June '38

Gas filled triodes; abstract. H. G. Boumester and M. K. Druyvesteyn. diags Electronics 10:66 May '37

Grid control of gas-filled tubes. W. D. Cockrell. il Electronics 17:124 June '44

Half-cycle magnetizer with thyratron control. H. W. Lord. il diags Gen Elec Rev 40:418 Sept '37

Operating characteristics of small grid-controlled hot-cathode arcs or thyratrons. H. W. French, Jr. bibliog diags Jour Fr Inst 221:83 Jan '36

Recent electron tube developments; thyratrons for battery charging. S. B. Ingram. Elec Eng 64:23 Jan '45

Resistance-coupled thyratron recording circuit. J. B. Wilkie. diag Rev Sci Instr 16:97 Apr '45

Resistance welding improved by thyratron control. W. C. Hutchins. il Gen Elec Rev 40:121 Mar '37

Thyratrons and their uses. E. F. W. Alexanderson. il diags Electronics 11:8 Feb '38

Thyratron control equipment for resistance welding. H. L. Palmer. il diags Gen Elec Rev 40:229 May '37

Thyratron control of d-c motors. G. W. Garman. il diags Gen Elec Rev 41:202 Apr '38; Same, with bibliog. Elec Eng 57:Trans 335. Discussion. Trans 342 June '38

Thyratron reactor lighting control. E. D. Schneider. bibliog il diags Elec Eng 57; Trans 328 June '38

Thyratron tube tester. V. P. McKinney. il Electronics 16:128 July '43

#### Voltage-Doubling

Diode as half-wave, full-wave and voltage-doubling rectifier; with special reference to the voltage output and current input. N. H. Roberts. diags Wireless Eng 13:351, 423-30 July-Aug '36

Full-wave voltage-doubling rectifier circuit. D. L. Waidelich. diags Proc Inst Radio Eng 29:554 Oct '41

Half-wave voltage-doubling rectifier circuit. D. L. Waidelich and C. H. Gleason. bibliog diags Proc Inst Radio Eng 30:535 Dec '42

New voltage doubler. W. W. Garstang. Electronics 4:50 Feb '32

Voltage multiplier circuits. D. L. Waidelich. il Electronics 14:28 May '41

Weightless power supplies; voltage-doubler. F. Shunaman. diags Radio N 27:11 Feb '42

#### RECTIFIER Filters

Filter design for grid-controlled rectifiers. H. A. Thomas. il Electronics 17:142 Sept '44

Hum in all-electric radio receivers. B. F. Messner. Proc Inst Radio Eng 18:137 Jan '30

Note on a cause of residual hum in rectifier filter systems. F. E. Terman and S. B. Pickles. Proc Inst Radio Eng 22:140 Aug '34

Note on the simple two-element low-pass filter of two and three sections. L. B. Hallman, Jr. Proc Inst Radio Eng 21:1603 Nov '33

Rectifier filter design. H. J. Scott. diags Electronics 11:28 June '38

Ripple factor evaluation chart. Radio N 31:40 May '44

Simple improvements in R-C power supply filters. H. H. Scott. Electronics 12:42 Aug '32

The first filter choke; its effect on regulation and smoothing. F. S. Dellenbaugh, Jr., and R. S. Quimby. QST 16:26 Mar '32

Vacuum rectifiers working with condenser input; graphical assessment of their performance. R. G. Mitchell. diags Wireless Eng 20:414 Sept '43

*See also*

#### Filters

#### REGENERATION

Circuit for neutralizing low frequency regeneration and power-supply hum. Wen-Yuan Pan. Proc Inst Radio Eng 30:411 Sept '42

Effect of regeneration on the received signal strength. Balth van der Pol. Proc Inst Radio Eng 17:339 Feb '29

Experimental study of regenerative ultra-short-wave oscillators. William H. Wenstrom. Proc Inst Radio Eng 20:113 Jan '32

Fractional-frequency generators utilizing regenerative modulation. R. L. Miller. Proc Inst Radio Eng 27:446 July '39

Method of neutralizing hum and feedback caused by variations in the plate supply. K. B. Gonser. Proc Inst Radio Eng 26:442 Apr '38

Oscillation in tuned radio-frequency amplifiers. B. J. Thompson. Proc Inst Radio Eng 19:421 Mar '31

**REGENERATION—Continued**

- Oscillators with automatic control of the threshold of regeneration, J. Groszkowski. *Proc Inst Radio Eng* 22:145 Feb '34
- Recording and reproducing standards. Lynne C. Smeby. *Proc Inst Radio Eng* 30:355 Aug '42
- Regenerative detectors. H. A. Robinson. *QST* 17:26 Feb '33
- Regenerative theory. H. Nyquist. *Bell System Tech Jour* 11:126 Jan '32
- Regeneration theory and experiment. E. Peterson, J. G. Kreer, and L. A. Ware. *Proc Inst Radio Eng* 22:1191 Oct '34. Same; *Bell System Tech Jour* 13:680 Oct '34
- Secondary frequency standard using regenerative frequency-dividing circuits. F. R. Stansel. *Proc Inst Radio Eng* 30:157 Apr '42

*See also*

**Feedback****REGULATIONS. See Laws and Regulations****RELAYS**

- Adjusting sensitive relays. R. T. Fisher. *il diag Electronics* 16:70 Feb '43
- Automatic liquid level controls. T. A. Cohen. *bibliog il Electronics* 18:120 Apr '45
- Automatic transmitter protection. Frank Marx. *Electronics* 17:98 June '44
- British Columbia broadcast relay system. N. R. Olding. *il Electronics* 17:92 Sept '44
- Capacity-operated relay applied to furnace heat control. G. A. F. Machlet. *il diag Electronics* 10:46 Nov '37
- Circuit elements in electrical remote control. C. J. Dorr and L. N. Galton. *Electronics* 15:57 Dec '42
- Cold cathode tubes used on relays. E. C. Schurch. *Elec W* 119:468 630 782 980 Feb 6-Mar 20 '43
- Condensation of the theory of relays. A. R. van C. Warrington. *il Gen Elec Rev* 43:370 Sept '40
- Control of gas-filled valve through a phase-shifting input valve; relay-amplifier. L. B. Turner. *il diags Wireless Eng* 14:229 May '37
- Early high-frequency prime-relay control system. G. A. F. Machlet. *il diags Instruments* 14:74 Mar '41
- Electric relays; constructional details and notes on the use of magnetic, mercury, thermionic, and photo-electric relays. J. Rosslyn 184p \$2.50 Chemical Pub Co '41
- Electronic overvoltage relay. G. G. Kretschmar. *diag Electronics* 14:48 Feb '41
- Electronic relay. C. E. Rudy, Jr., and P. Fugassi. *diags Ind & Eng Chem Anal ed* 12:757 Dec 15 '40
- Electronic relay tester. S. Bagno. *diag Electronics* 13:44 Sept '40
- Electrons operate directional relay. R. L. Ward. *diag Elec W* 106:3796 Dec 5 '36
- Electronic relay for heat control. A. C. Hall and L. J. Heidt, *plan Science* 92:133, 612 Aug 9, Dec 27 '40
- Electronic relay with improved characteristics. R. C. Hawes. *diag Science* 93:24 Jan 3 '41
- Electronic relays. S. Redfern. *bibliog diags Ind & Eng Chem Anal ed* 14:64 Jan 15 '42
- Frequency modulation transmitter and receiver for studio-on-transmitter relay system. F. F. Goetter. *il diags Proc Inst Radio Eng* 31:600 Nov '43
- Graphic solution of design problems involving sensitive relays. R. T. Fisher. *il Electronics* 16:125 Oct '43
- Keyless telegraphy; relay circuit. D. P. Boder. *diag Electronics* 14:62 Aug '41
- Limited impulse and delay relays; class room bell timer, and a photographic printing time control. D. E. Noble. *il diags Electronics* 9:28 Aug '36
- New development in thermionic relays. H. M. Waddle and W. Saeman. *bibliog diag Ind & Eng Chem Anal ed* 12:225 Apr 15 '40
- New trigger circuit for closing a switch; an electronic device. J. J. Ruiz. *bibliog diags Elec Eng* 54:1405 Dec '35
- Practical application of an ultra-high frequency radio-relay circuit. J. Ernest Smith, Fred H. Kroger, and R. W. George. *Proc Inst Radio Eng* 26:1311 Nov '38
- Radio-relay-systems development by the Radio Corporation of America; couplings between directional antennas. C. W. Hansell. *diags Proc Inst Radio Eng* 33:164 Mar '45
- Rectifier relay for transformer protection. E. L. Michelson. *il diags Elec Eng* 64:Trans252 May '45
- Relays for electronic circuits; electro-mechanical relays reviewed and classified. *il Electronics* 13:13 Aug '40
- Relays in industrial tube circuits. V. R. Furst. *il Electronics* 17:134 Dec '44; 18:136, 133 Jan, Feb '45
- Relays in tube output circuits; circuit conditions determined by superimposing relay characteristic chart on tube static curves. E. E. George. *Electronics* 10:19 Aug '37
- Resistance network provides interlock for simple relays; pushbutton-operated receiver. J. H. Miller. *diags Electronics* 16:317 Mar '42
- Safety relay for transmitters. J. B. Duess. *il diag Radio N* 23:18 May '40
- Seeing beyond our horizons, with television relay. W. R. G. Baker. *il Gen Elec Rev* 43:148 Apr '40
- Sensitive tube relay, *il Electronics* 15:103 Nov '42
- Several operations controlled over one line. *diag Electronics* 17:168 Dec '44
- Three years of television relaying. R. L. Smith. *il diags Electronics* 16:122 Sept '43
- Time delay relays. H. Seymour. *diags Electrician* 129:142 Aug 7 '42
- Torsional-type frequency-selective relay. *il Electronics* 17:168 Dec '44
- Tubes drive relay in telegraph repeater circuit. A. F. Connery. *diag Electronics* 16:226 June '43
- Two practical capacity-operated relays. *diags Electronics* 10:35 Apr '37
- Ultrahigh relay; I.B.M. and G.E. experiment in 1,900-mc. range. *Bsns W* p42 Nov 18 '44
- Use of secondary electron emission to obtain trigger or relay action. A. M. Skellet. *diags Jour Apr Phys* 13:519 Aug '32; *Abstract. Electronics* 15:100 Oct '42
- Use of supersonic waves as a light relay in television. *diag Wireless Eng* 16:167 Apr '39
- Using antenna relays. E. M. Walker. *il diags Radio N* 19:90 Aug '37
- Using phone line for remote indication of over-modulation. Alvin Leeman. *il Electronics* 16:144 July '43
- Vacuum tube relays save testing error. W. R. Morse. *diag Elec W*. 106:393 Dec 19 '36

- Vacuum tube time-delay relay. E. J. Serfass. diags Ind & Eng Chem Anal ed 13:352 May 15 '41
- Voice-operated electronic relay. C. J. Quirk. il Electronics 18:236 June '45
- Westinghouse airplane relay improves multi-generator systems. Steel 116:102 Feb 12 '45
- 600 megacycle radio-relay distribution system for television. F. H. Kroger, B. Trevor and J. E. Smith. bibliog diags RCA Rev 5:31 Jan '40
- See also*
- Photoelectric Cells
- REMOTE Control**
- Air raid warning problems and remote control. E. J. Madden. il diags Radio N 28:14 July '42
- Build a remote control tuner. R. F. Shea. il diags Radio N 16:691 May '35
- Built-in broadcast receiver control for the home. R. P. Adams. il diags Radio N 20:23 Dec '38
- Home remote controller. W. E. Barbour Jr. il diags Radio N 23:18 Apr '40
- Remote control of a model boat. W. P. West. il diags Electronics 13:19 Aug '40
- Remote control via 5 meters enables Signal corps to select, stop and start one of several radio transmitters on Bedloes Island. W. W. Walz. diags Electronics 9:17 Feb '36
- Remote monitor for directional broadcasting; modified receiver gives continuous microammeter reading at transmitter. M. A. O'Bradovick. il diag Electronics 17:131 Sept '44
- Remote radio controller. A. D. Rickert. diag Radio N 25:28 Mar '41
- Resistance network provides interlock for simple relays; pushbutton-operated remote receiver. J. H. Miller. diag Electronics 16:317 Mar '42
- See also*
- Receivers, Remote-Controlled
- REPEATERS**
- AT&T to try UHF repeater links. Electronic Indus 3:166 May '44
- Television transmission over wire lines; co-axial cable with repeaters. M. E. Strieby and J. F. Wentz. bibliog il diags Bell System Tech Jour 20:62 Jan '41
- Repeater amplifier. il Electronic Indus 4:98 Apr '45
- Saga of the vacuum tube; repeater tube developments. E. F. J. Tyne. il bibliog Radio N 33:58 May '45
- UHF repeater station; transmissions from isolated mountain dams relayed to flood-control headquarters; Los Angeles County flood control district. M. E. Kennedy. flow diags il Electronics 17:106 June '44
- See also*
- Transmission
- RESEARCH**
- Does the radio act hamper research? H. R. Mimno. Science 83:54 Jan 17 '36
- Electronic research opens new frontiers. R. R. Beal. Proc Inst Radio Eng 33:5 Jan '45
- Engineering at NBC. il Electronics 9:41 Nov '36
- Engineering and technical service is responsible for research, development and standardization of Signal corps sets. R. B. Colton. il Radio N 31:116 Feb '41
- Engineering work of the F. C. C.; symposium. E. K. Jett and others. Proc Inst Radio Eng 32:317 June '44
- Navy's history of radar. Electronics 16:212 July '43
- Operational research, U. S. Signal corps. W. L. Everitt. il Radio N 31:161 Feb '41
- Radiation laboratory. A. W. Smith. il diags Ohio State U Eng Exp Sta Circular 46:1 '44
- Radio corporation of America; dedication of the laboratories at Princeton, N.J. Science 96:325 Oct 9 '42
- Radio research and production. G. M. Garro-Jones. Engineering 156:135 Aug 13 '43
- Radio research board for India. Science 84:175 Aug 21 '36
- Radio research in 1934. E. V. Appleton. Electrician 114:99 Jan 25 '35
- Radio research, 1935. E. V. Appleton. Electrician 116:133 Jan 31 '36
- Radio research; developments in 1936. E. V. Appleton. Electrician 118:142 Jan 29 '37
- Radio research, 1942-1943. P. F. Lazarsfeld and F. N. Stanton, eds. 599p \$5 Duell, Sloan and Pearce Inc., New York '44
- RCA research and development. il Electronics 10:supl-16 Aug '37
- Recent research in radio communication. F. Hamburger, jr. Elec Eng 54:842 Aug '35
- Research and research workers. Wireless Eng 19:391 Sept '42
- Researches in radiotelephony. R. Brown. bibliog diags map Jour Inst Elec Eng 83:395 Sept '38. Same. Electrician 121:335 Sept 23 '38
- Research laboratories at Princeton of the Radio Corporation of America. Sci 93:297 Mar 28 '41
- Research work on the speed of wireless waves; abstracts. R. L. Smith-Rose. diags Electrician 129:415 Oct 16 '42; Elec Rev (Lond) 131:484 Oct 16 '42
- Story of the Bell telephone laboratories. il map Electronics 9:(insert 43) Sept '36
- Survey of research accomplishments with the electron microscope. G. A. Morton. bibliog diag RCA Rev 6:131 Oct '41
- Television laboratory; Edison electric co. il Electrician 117:715 Dec 4 '36
- War! stimulus for inventions. A. Toombs. Radio N 27:13 June '42
- What research does. Electronics 11:48 Oct '38
- RESISTANCE, Resistors**
- Alternating-current resistance of rectangular conductors. S. J. Haefner. bibliog il diags Proc Inst Radio Eng 25:434 Apr '37
- Behaviour of resistors at high frequencies. il Wireless Eng 15:363 July '38; Discussion. P. Pontecorvo. 15:500 Sept '38
- Behaviour of high resistances at high frequencies; observations on the Boella effect. O. S. Puckle. diags Wireless Eng 12:303 June '35
- Calculation of the alternating-current resistance of layered cylindrical conductors; abstract. W. Egloff. Wireless Eng 20:391 Aug '43
- Coatings for wire-wound resistors; abstract. E. E. Marbaker. Cer Ind 44:100 May '45
- Concerning new methods of calculating radiation resistance, either with or without ground. W. W. Hansen and J. G. Beckerley. diags Proc Inst Radio Eng 24:1594 Dec '36

**RESISTANCE, Resistors—Continued**

- Electrolytic resistors for direct-current applications in measuring temperatures. D. N. Craig. *pl Jour Research Nat Bur Stand* 21:225 Aug '38
- Effective resistance of closed antennas. V. I. Bashenoff and W. A. Mjasoedoff. *diags Proc Inst Radio Eng* 24:778 May '36
- Equivalent resistance chart. A. E. Teachman. *diags chart Electronics* 11:31 Aug '38
- Electronics negative resistors. J. R. Tillman. *bibliog diags Wireless Eng* 22:17 Jan '45
- Experimental determination of the resonance resistance of resonators in the centimetric wave band; abstract. F. Borgnis. *Wireless Eng* 20:509 Oct '43
- High-frequency resistance of plated conductors. R. F. Proctor. *diags Wireless Eng* 20:56 Feb '43
- High resistance measurement with vacuum tubes. Albert Presiman. *il Electronics* 8:214 July '35
- Influence of magnetic field on plate resistance. *diag Electronics* 11:82 Sept '38
- Input resistance of vacuum tubes as ultra-high-frequency amplifiers. W. R. Ferris. *diags Proc Inst Radio Eng* 24:82
- Insulation resistance of fixed condensers. J. F. Rider. *Radio N* 23:10 Feb '40
- Materials for high temperature service; electrical resistor materials. O. E. Harder. *Metals & Alloys* 21:729 Mar '45
- Mathematical treatment of the grid bias resistor. W. Richter. *diag Electronics* 10:62 Nov '37
- Metrosil; its characteristics and applications. *diags Electrician* 133:406 Nov 3 '44
- New type of carbon resistor. *il Radio N* 16:556 Mar '35
- Negative and positive resistance; sources and sinks of power. D. M. Tombs. *diags Wireless Eng* 19:341 Aug '42
- Proper use of resistors to extend meter ranges. *Engineering Dept., Aerovox Res W.* 7:8 Aug '35
- Resistance networks; complete design tables. C. D. Colchester and M. W. Gough. *bibliog diags Wireless Eng* 17:206 May '40
- R-f resistance of copper wire; chart. J. H. Miller. *Electronics* 9:38 Feb '36
- Resistance coupling for push-pull amplifier. Walter Richter. *il Electronics* 8:382 Oct '35
- Resistors and condensers in mass production. H. Chase. *il Electronics* 12:28 Sept '39
- Resistors at video frequencies. A. W. Barber. *il Electronics* 12:38 Jan '39
- Some characteristics of a stable negative resistance. C. Brunetti and L. Greenough. *bibliog diags Proc Inst Radio Eng* 30:542 Dec '42
- Theory and application of resistance tuning. C. Brunetti and E. Weiss. *bibliog diags Proc Inst Radio Eng* 29:333 June '41
- Thermal resistor elements for electrical circuit applications. R. S. Goodyear. *il Product Eng* 16:93 Feb '45
- Variable resistors for sensitivity and volume control. L. A. de Rosa. *Radio N* 16:484 Feb '35
- Variation in the high-frequency resistance and permeability of ferromagnetic materials due to a superimposed magnetic field. J. S. Webb. *diags Proc Inst Radio Eng* 26:433 Apr '38
- Water-cooled resistors for ultrahigh frequencies, television transmitter and other u-h-f services. G. H. Brown and J. W. Conklin. *il diags Electronics* 14:24 Apr '41
- See also*  
Measurements

**RESONANT Circuits**

- Aspects of coupled and resonant circuits. Jesse B. Sherman. *Proc Inst Radio Eng* 30:511 Nov '42
- Bandwidth factors for cascade tuned circuits. C. E. Dean. *Electronics* 14:41 July '41
- Discussion on frequency stability of tuned circuits. *Jour Inst Elec Eng* 89 pt 3:173 Sept '42
- Free oscillations of a resonant circuit loaded by a diode rectifier. F. C. Williams. *diags Wireless Eng* 14:403 Aug '37
- Modulation response and selectivity curves of a resonant circuit loaded by a diode rectifier. F. C. Williams. *bibliog diags Wireless Eng* 15:189 Apr '38
- New type of selective circuit and some applications. H. H. Scott. *Proc Inst Radio Eng* 26:226 Feb. '38
- On single and coupled circuits having constant response band characteristics. Ho-Shou Loh. *Proc Inst Radio Eng* 26:469 Apr '38. *Errata* Nov, p 1310); *Errata* (Dec, p 1430)
- Resonance in mica capacitors. A. P. Green and C. T. McComb. *Electronics* 17:119 Mar '44
- Resonant lines in radio circuits. F. E. Terman. *Elec Eng* 53:1046 July '34
- Television by resonance. W. H. Preiss. *il Radio N* 20:31 July '38
- See also*  
Coupled Circuits, Coupling

**REVERBERATION. See Acoustics**

- See also*  
Broadcasting Station Control Equipment

**SCANNING. See Iconoscope****SCHOOLS AND TRAINING**

- Basic Signal corps training; examples of various military and civilian training courses. *il diags Radio N* 28:172 Nov '42
- CCC networks. S. C. Manning, Jr. *il Radio N* 27:68 Jan '42
- Civilian radio army; Signal corps training courses. A. Toombs. *il Radio N* 28:10 July '42
- Civilian schools teach radio operators. P. R. Howland. *il Radio N* 28:10 Aug '42
- Civilian training in our war effort. L. B. Bender. *il Radio N* 28:10 Dec '42
- Eastern Signal corps schools code training. *il Radio N* 30:24 Sept '43
- Ft. Monmouth radio school. *il Radio N* 26:24 Nov '41
- Gallups island goes to war; training of radio operators to man ships. J. J. Canavan. *il Radio N* 32:28 Nov '44
- How enlisted men learn; Signal corps training in radio and wire communication. F. C. Shidel. *il Radio N* 28:70 Nov '42

- Leathernecks pound brass; Marine corps is equipping its force with radio equipment. J. V. Sandberg. il Radio N 27:44 May '42
- Microwave plumbing; laboratory instruction u-h-f equipment used at Harvard. D. D. King. il diags Electronics 16:116 Sept; 118 Oct '43
- Midwestern Signal corps training. W. E. Prosser. il Radio N 28:65 Nov '42
- New postgraduate course in industry in high-frequency engineering. A. R. Stevenson, Jr., and S. Ramo. Elec Eng 59:Trans 374; Discussion. Trans 378 July '40
- NYA installs centralized sound system; high school at Roaring Spring, Pa. il Radio N 26:36 Oct '41
- NYA radio. il Radio N 27:62 Jan '42
- Photronic code machine; moving picture machine converted to continuous-film recorder and reproducer used by Army air forces for code training. T. M. Morse. il plan diags Radio N 32:25 July '44
- Radio in the armored force. J. M. Askew. il Radio N 27:34 Jan '42
- Radio in the Marine corps. J. G. Smith. il Radio N 27:54 Jan '42
- Radio mechanics; training for the air forces executed at AAFTTC post (Camp Truax). E. O. Dice. il Radio N 29:64 June '43
- Radio mock-ups; devices for training aircraft radiomen. il Radio N 30:40 Dec '43
- Radio operators for our bombers. H. A. Evans. il Radio N 29:68 June '43
- Radio training for the air forces; Scott Field, radio university of the air. J. R. Johnston. il Radio N 28:6 July '42
- Radio training in the Coast guard. R. Donohue. il Radio N 27:35 May '42
- Royal Signals training centre. Electrician 133:71 July 28 '44
- Signal corps radio school. il Radio N 32:28 July '44
- Sioux Falls broadcasting system; public address system constructed by Army air forces training command radio school. P. Minoff. il Radio N 31:44 May '44
- Training RAF radiomen. A. C. H. Purthrey. il Radio N 29:21 May '43
- Training centers; Signal corps school. G. L. Van Deusen. il Radio N 27:20 Jan '42
- Training radio ops for the airlines. L. Winner. il Radio N 28:34 Dec '42
- Training; Signal corps facilities. G. L. Van Deusen. il Radio N 28:60 Nov '42
- U. S. army communications; students receive complete training under expert government supervision. J. R. Johnston. il Radio N 26:24 Sept '41
- Visual aids in Signal corps training. E. A. Redding, Jr. il diags Radio N 31:191 Feb '44
- See also*  
Engineering  
Engineers
- SELECTIVITY.** See Receiver Selectivity
- SELENIUM Rectifier.** See Rectifiers, Selenium
- SERVICING, Radio**
- A-f signal tracers. R. Turner. il diags Radio N 31:36 Jan '44
- Aircraft radio maintenance. A. F. Trumbull. il Electronics 17:118 July '44
- Airways maintenance. W. Boesch Jr. and J. F. Teunisson. il Radio N 29:110 June '43
- Bridge analyzer solves elusive service problems. G. Browning. il diags Radio N 18:591 Apr '37
- Clearing that intermittent; defect in receivers. Y. Gabin. il diags Radio N 32:50 Sept '44
- Developments in 1938 receivers. il diag Electronics 10:13 '42 Aug '37
- G. I. radio servicing; problems of an army radio technician in servicing radio receivers, using available parts. W. Fernald. diags Radio N 31:47 May '44
- Maintenance of foreign marine radio. C. Coleman and J. T. Donnelly. il diags Radio N 29:36 Mar '43
- Measurements in radio servicing. W. Moody. il diags Radio N 26:14 Sept '41
- Modern radio servicing. A. A. Ghirardi. 1302p \$4; Radio field service data, supplement and answer book, by A. A. Ghirardi and B. M. Freed. 204p pa \$1.50 Radio & Technical Pub. Co., 45 Astor place, New York '35
- Modern service problems. F. A. Bramley. il diags Radio N 20:39 July '38
- New unit saves time in set alignment; Monarch multivibrator model 20. J. H. Potts. il Radio N 19:464 Feb '38
- Oscillator as a service tool. O. J. Morelock Jr. il Radio N 16:741; 17:52 June-July '35
- Oscilloscope applied to radio servicing. A. Howard and M. Eddy. il diags Radio N 32:28 Sept '44
- Overhaul assembly line trains specialists quickly; TWA's electrical and radio overhaul by straightline method. W. Maxfield. il Air Transport 2:55 Aug '44
- Radio field service data. A. A. Ghirardi, 2d rev ed \$2.50 Radio & technical pub. co, 45 Astor place, New York '36
- Radio for blackouts and power line failures; air raid precautions. P. T. Williamson. il Radio N 27:51 May '42
- Radio troubleshooter's handbook. A. A. Ghirardi. 2d ed rev & enl 708p \$3.50 Radio & technical pub. co, New York '41
- Rome radio; Rome (N.Y.) army air field, repair and overhaul shop. G. Herrick. il Air Transport 2:48 Oct '44
- Selling service. A. A. Ghirardi and T. S. Ruggles. il Radio N 17:338 Dec '35
- Serviceman's resonance indicator. J. Wininsky. il diag Radio N 18:151 Sept '36
- Serviceman's study of output meters. J. Strong. il diags Radio N 17:533, 692 Mar-Apr '36
- Servicemen's multimeter. W. C. Hunter. il diags Radio N 33:40 Mar '45
- Servicing auto radios; vibrator power supplies. M. S. Kiver. il diags Radio N 33:28 Mar '45
- Servicing by signal tracing. J. F. Rider, 360p \$2 John F. Rider, 404 4th av., New York '39
- Servicing hints on auto radio interferences. M. S. Kay. il diag Radio N 33:48 Apr '45
- Servicing hints on tube substitutions. M. S. Kay. il diags Radio N 32:54 July '44
- Signal tracing vs. catch-as-catch-can. J. F. Rider; Bradley. il Radio N 23:16 Jan '40; Discussion. 23:22 Mar '40

**SERVICING, Radio—Continued**

Tropical troubles of radio receivers. H. C. Schwalm. *Electronics* 15:126 Mar '42

U.S. Army repairs; electric equipment in repair depots. *il Elec Rev (Lond)* 135:422 Sept 22 '44

Watt-hour meter used as a radio service instrument. *il Radio N* 18:612 Apr '37

*See also*

Measurements Oscillograph  
Receivers

**SERVO Systems**

Considerations in servomechanism design. S. W. Herwald. *bibliog diags Elec Eng* 63:Trans 871 Dec '44

Continuous-control servo system. J. T. McNaney. *bibliog il diags Electronics* 17:117 Dec '44

Integration of the automatic pilot system and the Norden bombsight. J. B. Nealey. *il Aero Digest* 49:98 June 1 '45

K-8 computing gunsight; aircraft turret gunsight and electronic servo system. H. E. Hale. *il diag Electronics* 18:94 Jan '45

Polarized-light servo system. T. M. Berry. *bibliog il diags Elec Eng* 63:Trans 195-8 Apr '44

Polarized light servo-system for integration. *il Electronics* 17:216 Apr '44

Servomechanisms; how they work. R. H. Rogers. *il diags Machine Design* 17:119-24 Apr '45

Servo problem; abstract. E. B. Ferrell. *diags Electronics* 18:328 Mar '45

Servo system for continuous control. J. T. McNaney. *il Electronics* 17:118 Dec '44

**SHIELDING**

Aircraft-engine radio shielding. D. W. Randolph. *diags S A E Jour* 50:538 Dec '42

Campbell-Shackelton shielded ratio box. L. Behr and A. J. Williams, jr. *il diags Proc Inst Radio Eng* 20:969 June '32

Effect of screening cans on the effective inductance and resistance of coils. G. W. O. Howe. *Wireless Eng* 11:155 Mar '34

Effective resistance and inductance of screened coils. A. B. Bogle. *Jour Inst Elec Eng* 87:299 '40. Also, *Wireless section I.E.E.* 15:221 Sept '40

Electromagnetic shielding effect of an infinite plane conducting sheet placed between circular coaxial coils. S. Levy. *bibliog diags Proc Inst Radio Eng* 24:923 June '36

Experiments on electromagnetic shielding at frequencies between one and thirty kilocycles. W. Lyons. *Proc Inst Radio Eng* 21:574 Apr '33

Graphic determination of the decrease in inductance produced by a coil shield. *RCA Application Note* 48 June 12 '35

Ignition shielding design. J. J. Mascuch. *il Aero Digest* 41:227 Nov '42

Ignition shielding; abstracts. D. W. Randolph. *Automotive and Aviation Ind* 86:24 Apr 1 '42; *Aviation* 41:177 May '42

Magnetic shielding of transformers at audio frequencies. W. G. Gustafson. *Bell System Tech Jour* 17:416 July '38

Magnetic shields. W. B. Ellwood. *Bell Lab Rec* 17:93 Nov '38

Method of measuring the effectiveness of electrostatic loop shielding. D. E. Foster and C. W. Finnigan. *diags Proc Inst Radio Eng* 31:253 June '43

Non-metal shields; colloidal graphite films. B. H. Porter. *Electronics* 15:33 Apr '42

Radio shielding on air transports. H. E. Gray. *diags S A E Jour* 41:527 Nov '37; *abstract. Automotive Ind* 76:747 May 15 '37

Radio in aircraft; shielding and bonding data. H. W. Roberts. *il diags Radio N* 16:422 Jan '35

Reactance and effective height of screened loop aerials. R. E. Burgess. *diag Wireless Eng* 21:210 May '44

Shielded room for high-voltage tests. R. H. Titley. *Elec World* 120:2078 Dec 11 '43

Shielded loop for noise reduction in broadcast reception. Stanford Goldman. *il Electronics* 2:20 Oct '38

Shielded transformers for impedance bridges. *Gen Radio Exp Vol* 10 Oct '35

Shielding of radio-frequency ammeters. J. D. Wallace. *Proc Inst Radio Eng* 29:1 Jan '41

Some considerations on the design of radio-frequency signal generators. J. R. Bird. *Proc Inst Radio Eng* 19:438 Mar '31

**SHIP-to-Shore Telephony.** See Marine Radio

**SIDEBANDS**

Asymmetric side-band broadcast transmission. P. P. Eckersley. *diags Jour Inst Elec Eng* 77:517 Oct '35; *Abstracts. Elec Rev (Lond)* 116:632 May 3 '35; *Wireless Eng* 12:321 June '35; *Discussion. Jour Inst Elec Eng* 77:532 Oct '35

Asymmetric-sideband broadcasting. N. Koomans. *Proc Inst Radio Eng* 27:687 Nov '39

Carrier and side frequency relations with multi-tone frequency or phase modulation. M. G. Crosby. *RCA Rev* 3:103 July '38

Contribution to the theory of the sidebands in frequency modulation; abstract. T. Vellat. *Wireless Eng* 19:122 Mar '42

Effect of the quadrature component in single sideband transmission. H. Nyquist and K. W. Pfeleger. *il Bell System Tech Jour* 19:63 Jan '40

Partial suppression of one side band in television reception. W. J. Poch and D. W. Epstein. *Proc Inst Radio Eng* 25:15 Jan '37

Physical reality of side-bands. F. M. Colebrook. *diags Exp Wireless* 8:4 Jan '31; *Discussion. E. B. Moullin.* 8:257 May '31

Production of single sideband for trans-Atlantic radio telephony. R. A. Heising. *Proc Inst Radio Eng* 13:291 June '25

Quantitative study of asymmetric-sideband broadcasting. P. P. Eckersley. *diags Jour Inst Elec Eng* 83:36 July '38; *Abstracts. Electrician* 120:289 Mar 4 '38; *Elec Rev (Lond)* 122:312 Mar 4 '38; *Discussion. Jour Inst Elec Eng* 83:71 July '38

Relations of carrier and sidebands in radio transmission. R. V. L. Hartley. *Proc Inst Radio Eng* 11:34 Feb '23

Side-band phase distortion. D. M. Johnstone and E. E. Wright. *Wireless Eng* 13:534; *Discussion.* 517 Oct '36

Single-sideband filter theory with television applications. John M. Hollywood. *Proc Inst Radio Eng* 27:457 July '39

Single sideband music receiving system for commercial operation on transatlantic radio telephone circuits. F. A. Polkinghorn. *il diags Bell System Tech Jour* 19:306 Apr '40; Same. *Proc Inst Radio Eng Jour* 28:157 Apr '40

Single sideband radiotelephone system. A. A. Oswald. *Proc Inst Radio Eng* 26:1431 Dec '38

Single-sideband receiver for short wave telephone service. A. A. Roetken. *Proc Inst Radio Eng* 26:1455 Dec '38

Single side-band short-wave system for transatlantic telephony. F. A. Polkinghorn and N. F. Schlaack. *il diags Jour Inst Radio Eng* 23:701 July '35; Same. *Bell System Tech Jour* 14:489 July '35

Single-side-band telephony applied to the radio link between the Netherlands and the Netherlands East Indies. N. Koomans. *il diags Proc Inst Radio Eng* 26:182 Feb '38

Single-sideband transmission. *Electronics* 18:230 Feb '45

Solution of unsymmetrical-sideband problems with the aid of the zero-frequency carrier. H. A. Wheeler. *bibliog diags Proc Inst Radio Eng* 29:446 Aug '41

Some possibilities of intelligence transmission when using a limited band of frequencies. F. E. Terman. *Proc Inst Radio Eng* 8:167 Jan '30

Transient response of single-sideband systems. H. E. Kallmann and R. E. Spencer. *Proc Inst Radio Eng* 28:557 Dec '40

Transmission characteristics of asymmetric-sideband communication networks. E. C. Cherry. *bibliog diags Jour Inst Elec Eng* 89 pt 3:19; 90 pt 3:75 Mar '42, June '43; Discussion. 89 pt 3:39 Mar '42

Twin-channel single-sideband transmitter. K. L. King. *diag Electronics* 14:119 June '41

*See also*

Carrier Transmission  
Modulation

## SIGNAL Generators

All-wave signal generator. S. Egert. *il Radio N* 17:651 May '36

Capacitron signal generator. J. H. Potts. *il diags Radio N* 18:588, 658 Apr-May '37

Design and testing of multirange receivers. D. E. Harnett and N. P. Case. *Proc Inst Radio Eng* 23:578 June '35

Measuring tube capacities with a signal generator. *diag Electronics* 13:56 Jan '40

Note on frequency modulation; with particular reference to standard-signal generators. F. M. Colebrook. *Wireless Eng* 21:112 Mar '44; Discussion. K. R. Sturley. 21:278 June '41

Picture signal generator. M. P. Wilder and J. A. Brustman. *il diags Electronics* 13:25 Apr, 26 May, 30 June, 28 July, 30 Aug '40

Potentiometer arrangement for measuring micro-voltages at radio frequencies. A. G. Jensen. *Phys Rev Vol* 26 July '25

Precision television synchronizing-signal generator. A. V. Bedford and J. P. Smith. *RCA Rev* 5:51 July 11 '40

Signal generator characteristics at UHF. H. J. Tyzer. *Electronic Indus* 2:84 July '43

Signal generator covering frequency range of from 50 to 400 Mc; abstract. J. M. Van Beuren. *diag Electronics* 14:34 Dec '41

Signal generator for frequency modulation; for receiver testing. C. J. Franks and A. G. Richardson. *il diags Electronics* 14:36 Apr '41

Signal generator for the ultra-high frequencies. *Gen Radio Exp* Nov '39

Some considerations on the design of radio-frequency signal generators. J. R. Bird. *Proc Inst Radio Eng* 19:438 Mar '31

Standard signal generator; all-wave a.c. operated test set made by E. K. Cole, Ltd. *il Wireless Eng* 13:6 Jan '36

Standard signal generators for the frequency band 50-600 Mc/s; abstract. A. Klemt. *Wireless Eng* 21:450 Sept '44

Sweep circuits. Engineering Dept. Aerovox Res W 11:4 Apr '39

Visual alignment generator; frequency-modulated signal generator. H. F. Mayer. *il diags Electronics* 13:39 Apr '40

Visual alignment of wide-band I-F amplifiers. H. A. Cook and H. Moss. *il diags Electronics* 17:130 Oct '44

20-100 mc. signal generator for testing all-wave receivers. C. J. Franks. *il Electronics* 9:16 Aug '36

100-22,000 kc. signal generator. J. H. Potts. *il diags Radio N* 16:482, 560, 718 Feb-Mar, May '35

*See also*

Receivers  
Servicing, Radio

SOLAR Effects. *See Propagation of Waves*

## SOUND

Acoustics of small rooms and studios; abstract. J. Moir. *Plan Electronics* 18:286 Feb '45

Atmospheric propagation of sound. *Electronics* 15:102 Dec '42

Audible audio distortion. H. H. Scott. *bibliog diag Electronics* 18:126 Jan '45

Contemporary problems in television sound. C. L. Townsend. *il Proc Inst Radio Eng* 31:3 Jan '43

Designing a public address amplifier. L. M. Dettel. *il diags Radio N* 27:18 Apr '42

Dramatic use of controlled sound. Noel Urquhart. *il Electronics* 8:121 Apr '35

Engraved sound tracks for film recording. *il Electronics* 8:52 Feb '35

Extraneous frequencies generated in air carrying intense sound waves. A. L. Thuras. *Bell System Tech Jour* 14:159 Jan '35

Improved sound-level meter. W. Mikelson. *il Gen Elec Rev* 43:515 Dec '40

Magnetic wire sound recorder and reproducer. *il Electronics* 18:360 June '45

Measuring the frequency response of a sound system with the sound-level meter. *Gen Radio Exp* Aug '39

Noise and its elimination by corrective design and control. W. A. Keetch. *il Product Eng* 16:183 Mar '45

Notes on loudspeaker response measurements and some typical response curves. Benjamin Olney. *Proc Inst Radio Eng* 19:1113 July '31



**SOUND—Continued**

- On the collection of sound in reverberant rooms, with special reference to the application of the ribbon microphone. Harry F. Olson. Proc Inst Radio Eng 21:655 May '33
- Portable sound measurements. C. A. Anderson. il Electronics 9:26 Apr '36
- Progress in sound pictures. Carl Dreher. il Electronics 9:7 June '36
- R-C sound filter circuits. G. J. Thiessen. diags Jour Amer Acoustical Soc 16:275 Apr '45
- Some acoustical problems of sound picture engineering. W. A. MacNair. Proc Inst Radio Eng 19:1606 Sept '31
- Sound recording depends upon electronics. C. R. Keith. il Electronics 16:114 Mar '43
- Sound effects machine with high impedance mixing. M. J. Weiner. diag Electronics 11:56 June '38
- Sound illusion pre-amplifier. C. F. Sheaffer. diag Electronics 11:14 Sept '38
- Sound recording on magnetic tape. C. N. Hickman. Bell System Tech Jour 14:165 Jan '35
- Standards for sound control. il Arch Rec 87:102 Mar '40
- Suggestions for the design of volume expanders. R. W. Crane. Electronics 18:236 May '45
- Taking guess work out of sound analysis. Electronic Indus 2:81 May '43
- The "sound" prism. O. H. Schuck. Proc Inst Radio Eng 22:1295 Nov '34
- Theory of the directional patterns of continuous source distributions on a plane surface. R. C. Jones. bibliog Jour Amer Acoustical Soc 16:147 Jan '45
- Two-way horn system. J. H. Hilliard. il Electronics 9:24 Mar '36
- Wide range adjustable acoustic impedance. W. F. Meeker and F. H. Slaymaker. bibliog diag Jour Amer Acoustical Soc 16:178 Jan '45

*See also*Acoustics  
Noise**STANDARDS**

- Adapting television receivers to the new standards. Electronics 14:63 Nov '41
- American standard: standard vacuum tube base and socket dimensions. 8p Institute Radio Engineers. New York '39 20c
- American standard: manufacturing standards applying to broadcast receivers; 1939. 16p Institute of Radio Engineers. New York 20c
- American standard: loudspeaker testing; 1942. 12p Institute of Radio Engineers. New York 25c
- American standard: volume measurements of electrical speech and program waves; 1942. 8p Institute of Radio Engineers. New York 20c
- As I see it! test equipment standards. J. F. Rider. Radio N 25:14 Feb '41
- Necessity for uniform measurement standards and reference levels. J. M. Borst. diag Radio N 18:535 Mar '37
- New standard volume indicator and reference level. H. A. Chinn, D. K. Gannett and R. M. Morris. il diags Proc Inst Radio Eng 28:1 Jan '40; Same. Bell System Tech Jour 19:94 Jan '40

- Proposed standard conventions for expressing the elastic and piezoelectric properties of right and left quartz. W. G. Cady and K. S. Van Dyke. bibliog diags Proc Inst Radio Eng 30:495 Nov '42
- Radio station of the national bureau of standards. Science 98:sup8 Aug 20 '43
- Radio technical planning board report on frequency modulation. Electronics 17:125 Nov '44
- Rules and standards for broadcast stations. R. F. Guy. Electronics 12:11 Aug '39
- Standards and standardisation. W. H. F. Griffiths. Wireless Eng 20:109 Mar '43
- Standardization effects on postwar radio. Harold P. Westman. Electronic Indus 2:76 July '43
- Standardization of aircraft radio. D. S. Little. il diag Aero Digest 40:76 Apr; 99 May '42
- Standardized marine radio unit. il Electronics 15:36 Jan '42
- Standards for industrial control equipment. Electronics 17:150 Dec '44
- Standards of good engineering practice concerning standard broadcast stations. Federal Register July 8 '39
- Standards on electroacoustics; 1938. 37p. Institute of Radio Engineers
- Standards on facsimile; definitions of terms. Proc Inst Radio Eng 30:1 pt4 July '42
- Standards on radio receivers; methods of testing broadcast radio receivers. 58p. Institute of Radio Engineers. New York 50c
- Standards on radio wave propagation; definitions of terms. Proc Inst Radio Eng 30:1 pt3 July '42
- Standards on radio wave propagation; measuring methods. bibliog diags Proc Inst Radio Eng 30:1 pt 2 July '42
- Standards on transmitters and antennas; methods of testing; 1938. 10p Institute of Radio Engineers. New York 50c
- Standards on transmitters and antennas; definition of terms, 1938. 42p. Institute of Radio Engineers. New York

*See also*

Laws and Regulations

**STANDARDS, Component**

- Component parts standards. W. W. MacDonald. il Electronics 17:94 Jan '44
- Fewer but better finishes; RCA manufacturing company's standards program. A. L. Pippert. il Ind Stand 12:209 Aug '41; Same. Metal Finishing 40:158 Mar '42
- Joint army-navy tube standardization program. C. W. Martel and J. W. Greer. Proc Inst Radio Eng 32:430 July '44
- Mica capacitor standard first American war standard on radio. H. P. Westman. il Ind Stand 13:296 Dec '42
- New war standards on glass and porcelain radio insulators. H. R. Wilsey. diags Ind Stand 15:6 Jan '44
- New standard on glass-bonded mica radio insulators. diags Ind Stand 14:239 Aug '43
- Radio standards go to war. H. P. Westman. Proc Inst Radio Eng 31:381 July '43
- RMA standardization setup. Electronics 17:282 Apr '44

- Second war standard in series covers steatite radio insulators. H. R. Wilsey. *il Ind Stand* 14:273 Oct '43
- Standardization of radio parts aids production. S. K. Wolf. *il Ind Stand* 14:149 May '43
- Standards for replacement parts for civilian radio in war time. O. H. Caldwell. *il Ind Stand* 13:312 Dec '42
- Tube standardization; preferred tube list *Electronics* 13:56 Jan '40
- War and radio standards. H. P. Westman. *il Electronics* 16:56 Feb '43
- War radio components standardized. *Electronics* 16:126 June '43
- War standard outlines tests for radio resistors. *il Ind Stand* 14:309 Nov '43
- War standards for ceramic materials for radio insulators. A. N. Goldsmith. *il Ind Stand* 14:81 Mar '43
- War standards for military radio. *Electronic Indus* 1:33 Dec '42
- STANDARDS, Frequency**
- Broadcast stations as frequency standards. G. Dexter. *il Radio N* 31:32 Mar '44
- Current standard for high frequency. H. R. Meahl. *il Elec W* 109:1562 May 7 '38
- Deluxe frequency standard; crystal controlled multivibrator. C. G. Sims and C. B. Lester. *il diags Radio N* 25:20 Feb '41
- Device for the precise measurement of high frequencies. F. A. Polkinghorn and A. A. Roetken. *Proc Inst Radio Eng* 19:937 July '39
- Distribution of standard frequencies. J. K. Clapp. *Gen Radio Exp Vol* 19 Nov '44
- Frequency standardising equipment. H. J. Finden. *diags Wireless Eng* 15:117 Mar '37
- Halicrafters wide utility crystal frequency standard. *diag Electronics* 13:78 Mar '40
- Harmonic method of intercomparing the oscillators of the national standard of radio frequency. E. G. Lapham. *diags Jour of Research Nat Bur Stand* 17:491 Oct '36; Same. *Proc Inst Radio Eng Proc* 24:1495 Nov '36
- High frequencies; status of standards and measurements. H. R. Meahl. *il Gen Elec Rev* 45:617 Nov '42
- High precision standard of frequency. W. A. Marrison. *Proc Inst Radio Eng* 17:1103 July '29
- International radio frequency proposals. *Electronics* 17:92 Nov '44
- Interpolation method for use with harmonic frequency standards. J. K. Clapp. *Proc Inst Radio Eng* 18:1575 Sept '30
- Laboratory frequency standard. G. P. Harnwell and J. B. H. Kuper. *il diags Rev Sci Instr* 8:83 Mar '37
- Frequency standardising equipment. H. J. Finden. *diags Wireless Eng* 14:117 Mar '37
- Method of measuring very short wavelengths and their use in frequency standardization. F. W. Dunmore and F. H. Engel. *Proc Inst Radio Eng* 11:467 Oct '23
- Monitoring the standard radio-frequency emissions. E. G. Lapham. *pl diag Jour of Research Nat Bur Stand* 14:227 Mar '35; Same. *Proc Inst Radio Eng* 23:719 July '35
- National physical laboratory, electricity department; frequency standards and high-frequency measurements. *il Engineering* 142:576 Nov 27 '36
- National primary standard of radio frequency. E. L. Hall, V. E. Heaton and E. G. Lapham. *bibliog il diags pls Jour of Research Nat Bur Stand* 14:85 Feb '35
- Portable audio-frequency standard; facilitates adjustment of carrier-current communication system circuits. W. Fayer. *il diag Electronics* 17:100 July '44
- Revised standard frequency broadcasts. *Franklin Inst Jour* 233:271 Mar '42
- Secondary frequency standard using regenerative frequency-dividing circuits. F. R. Stansel. *Proc Inst Radio Eng* 30:157 Apr '42
- Simplified circuit for frequency substandards employing a new type of low-frequency zero-temperature-coefficient quartz crystal. S. C. Hight and G. W. Willard. *diags Proc Inst Radio Eng* 25:549 May '37
- Some data concerning the coverage of the five-megacycle standard frequency transmission. E. L. Hall. *Proc Inst Radio Eng* 23:448 May '35
- Standard frequencies for the musician. *Gen Radio Exp* Aug-Sept '37
- Standard frequency broadcasts. *Gen Radio Exp Vol* 19 Aug '44
- Standard frequency broadcasts of National Bur Stand. *Electronics* 16:228 Sept '43; Same. *Elec Eng* 62:424 Sept '43; Same. *Proc Inst Radio Eng* 31:642 Nov '43; Same. *Frank Inst Jour* 236:392 Oct '43; Same cond. *Elec West* 120:1008 Sept 18 '43
- Standard frequency source. H. L. Clark and H. Johnston. *il diags Gen Elec Rev* 47:42 May '44
- Standardization of quartz-crystal units. K. S. Van Dyke. *Proc Inst Radio Eng* 33:15 Jan '45
- UHF secondary standard. *Electronic Indus* 2:115 Nov '43
- See also*  
Measurements  
Piezoelectric Crystals
- STANDARDS, R-F Measurement**
- Analysis of air condenser loss resistance. W. Jackson. *Proc Inst Radio Eng* 22:957 Aug '34
- Method of determining the residual inductance and resistance of a variable air condenser at radio frequencies. R. F. Field and D. B. Sinclair. *Proc Inst Radio Eng* 24:255 Feb '36
- Method for measurement of high resistance at high frequency. Paul B. Taylor. *Proc Inst Radio Eng* 20:1802 Nov '32
- Variable air condensers. R. Faraday Proctor. *Wireless Eng* 17:257 June '40
- See also*  
Frequency  
Measurements—Circuit Constants at Radio  
Frequency
- STATIC.** *See Atmospheric*
- STROBOSCOPE**
- Application of a stroboscope to a telescope. *diags Sci Amer* 162:316 May '40
- Dynamic balancing in the field with the aid of a stroboscope. *Gen Radio Exp Vol* 18 Mar '45
- Frequency monitor stroboscope for frequency checks at KVOE. W. S. Wiggins and S. A. Gunther. *Electronics* 18:138 May '45

**STROBOSCOPE**—Continued

- Measuring the speed of moving parts without contact; strobomeca. *il* Power Pl Eng 49:107 May '45
- New model of the Edgerton stroboscope. *Gen Radio Exp Vol 10 Nov '35*
- Practical stroboscope circuit. C. C. Street. *il* Electronics 13:36 Apr '40
- Simple stroboscope for moving machinery. R. C. Paine. *il* Electronics 17:154 Dec '44
- Stroboscope circuit. C. C. Street. *il* Electronics 13:36 Apr '40
- Stroboscopic depiction of electron motion on transmission lines. J. F. Kline. *il* Electronics 18:258 June '45
- Stroboscopic light source. H. E. Kallmann. *Proc Inst Radio Eng 27:690 Nov '39*
- Ultrasonic stroboscope for measuring sound wavelengths in liquids. F. E. Fox and G. D. Rock. *il* diags *Rev Sci Instr 10:345 Nov '39*

*See also*

Photography

**SUPERHETERODYNE.** *See* Receivers, Superheterodyne

**SUPERREGENERATION**

- Basic principles of superregeneration reception. Frederick W. Frink. *Proc Inst Radio Eng 26:76 Jan '38*
- Bibliography on superregeneration. *Electronics 8:30 Jan '35*
- Some recent developments in regenerative circuits. Edwin H. Armstrong. *Proc Inst Radio Eng 10:244 Aug '22*
- Superregeneration. E. O. Hulbert. *Proc Inst Radio Eng 11:391 Aug '23*
- Superregeneration of an ultra-short-wave receiver. H. Ataku. *Proc Inst Radio Eng 23:841 Aug '35*
- Superregeneration with particular emphasis on its possibilities for frequency modulation. H. P. Kalmus. *Proc Inst Radio Eng 32:591 Oct '44*
- Superregeneration with reference to broadcast receivers. D. Maurice. *bibliog diags Wireless Eng 15:4 Jan '38*
- Superregenerative receiver. M. G. Scroggie. *bibliog diags Wireless Eng 13:581 Nov '36*
- Superregenerative wave meter for ultra-short waves. H. Ataka. *Proc Inst Radio Eng 21:1590 Nov '33*

*See also*

Receivers, Ultra-High-Frequency

**T****TELEGRAPHY**

- Advances in carrier telegraph transmission. A. L. Matte. *Bell System Tech Jour 19:161 Apr '40*
- Application of printing telegraph to long-wave radio circuits. A. Bailey and T. A. McCann. *Bell System Tech Jour 10:601 Oct '31*
- Automatic facsimile telegraph put in service by Western Union Sci Amer 160:312 May '39; *Electronics 12:51 Apr '39*
- Carrier telegraph systems. F. B. Bramhall. *il* *diag Elec Eng 63:283 Aug '44*
- Effect of telegraph distortion on the margins of operation of start-stop receivers. W. T. Rea. *bibliog Bell Sys Tech Jour 23:207 July '44*

- Frequency-modulated carrier telegraph system. F. B. Bramhall and J. E. Boughtwood. *il* *diags Elec Eng 61:Trans 36 Jan '42*; *abstract. Electronics 15:106 Apr '42*
- Frequency modulation applied to telegraph lines. *Science 94:sup 10 Dec 12 '41*
- Line telegraphy in 1938. F. E. Nancarrow. *Electrician 122:108 Jan 27 '39*
- Multi-channel voice frequency telegraphs; abstract P. G. McMahon. *Electrician 131:569 Dec '43*
- Permatron and its application in industry; telegraphy relay. W. P. Overbeck. *diag Electronics 12:26 Apr '39*
- Propagation of electric currents in terminated lines; solutions of the telegraphic equation. R. H. Kent. *Phys Rev 55:762 Apr 15 '39*
- Recent developments in the measurement of telegraph transmission. B. B. Schranck. F. A. Cowan and S. I. Cory. *bibliog il* *diags Bell System Tech Jour 18:143 Jan '39*

**TELEGRAPHY, Radio.** *See* Transmitters, Radiotelegraph

**TELEPHONY, Radio.** *See* Transmitters, Radiotelephone

**TELETYPE**

- Auctions by wire; nine large cities and Florida citrus market are linked by television system to produce marketing plan. *il* *Business Week p. 85 Jan 13 '45*
- C.A.A. to add 24,000 miles to teletype. *Civil Aero Jan 2:166 July 1 '41*
- Effect of telegraph distortion on the margins of operation of start-stop receivers. W. T. Rea. *bibliog diags Bell System Tech Jour 23:207 July '44*
- Frequency-shift radiotelegraph and teletype system. R. M. Sprague. *il* *diags Electronics 17:126 Nov '44*
- High-speed recording of radio-telegraph signals; abstract. R. B. Armstrong and J. T. Smale. *Electrician 132:453 May 26 '44*
- International telecommunications. A. S. Angwin. *Engineering 156:357 Oct 29 '43*
- Inter-office communications system facilitate industry's operations; automatic industry's inter-city telegraph, telephone and teletype systems. E. L. Warner, Jr. *il* *maps Automotive Ind 83:50 July 15 '40*
- Radioteletype in the AACS. Hart. *il* *QST 28:12 Nov '44*
- Railroad telegraph and telephone construction in 1942. J. H. Dunn. *il* *Ry Age 114:138 Jan 2 '43*
- Subcenter switching systems for teleprinter tie lines. F. L. Currie. *il* *Elec Eng 62:Trans 635 Oct '43*
- Teleprinter network; L.N.E.R. installation. *il* *Elec Rev (Lond) 130:799 June 19 '42*; *Electrician 128:554 June 5 '42*
- Teletype editor new short-cut in ATC work. *Civil Aero Jour 4:113 Sept 15 '43*
- Use of subcarrier frequency modulation in communication systems. W. H. Bliss. *il* *diags Proc Inst Radio Eng 31:419 Aug '43*

## TELEVISION

- Advantages and disadvantages of various types of focusing and deflection methods used in television. B. J. Edwards. *il Radio N* 28:42 Sept '42
- A.T.&T. to try u-h-f repeater links. *Electronic Indus* 3:15 May '44
- Blitzkrieg television; use in army maneuvers. A. C. Lescarbours. *il Radio N* 24:6 Dec. '40
- British television. H. M. Lewis and A. M. Loughren *il Electronics* 10:32 Oct '37
- British television. W. J. Brown. *il Electronics* 12:26 Dec '39
- Challenge of television; offers potential competition and stimulation to the photographic industry. B. Dudley. *il map Photo Tech* 3:38 Mar '41
- CBS-Farnsworth deal. *Business Week* p16 Apr 17 '37
- Columbia urges immediate television improvement. *Electronic Indus* 3:148 June '44
- Commercial television and its needs; abstract. A. N. Goldsmith. *Electronics* 9:13 Dec '36
- Contemporary problems in television sound. C. L. Townsend. *il Proc Inst Radio Eng* 31:3 Jan '43
- Description of an experimental television system and the kinescope. V. K. Zworykin. *Proc Inst Radio Eng* 21:1655 Dec '33
- Developments in radio and television. W. R. G. Baker. *il Elec Eng* 64:152 Apr '45
- Electrical developments of 1940; radio and television. G. Bartlett. *il Gen Elec Rev* 44:6, 48 Jan '41
- Electron microscope and television. J. Stokley. *Science* 92;sup 8 Nov 1 '40
- Elektronenoptische systeme und ihre anwendung. V. K. Zworykin. *Angew Chemie* 49:297 May 9 '36
- European style of television. *il Electronics* 10:32 Mar '38
- European television. M. P. Wilder. *il Electronics* 10:13 Sept '38
- Experimental television system. E. W. Engstrom. *Proc Inst Radio Eng* 21:1652 Dec '33
- Frequency modulation in television. C. W. Carnahan. A. V. Loughren. *diags Electronics* 13:26 Feb '40
- Groundwork laid for commercial television; F. C. C. hearing. *Electronics* 14:18 Apr '41
- Industrial applications for television. J. Beal. *il Electronic Indus* 3:116 July '44
- I. R. E. annual review of progress: television. *Proc Inst Radio Eng* 27:161 Mar '39; 28:121 Mar '40; 29:98 Mar '41; 30:66 Feb '42; 31:130 Apr '43; 32:128 Mar '44; 33:148 Mar '45
- "La telephonie a haute frequence et la visio-telephonie. M. Adam. *il diags Genie Civil* 117:82 Feb 4 '40
- Linear sweep generators used in oscilloscopes and television apparatus. A. Tatz. *il diag Radio N* 33:52 May '45
- More television room. O. B. Hanson. *Electronic Indus* 2:196 Aug '43
- NBC plans nation-wide television system. *Electronic Indus* 3:224 May '44
- NBC sets the pace. C. W. Marrier. *il Radio N* 21:28 May '39
- New era in television. D. Sarnoff. *RCA Rev* 6:3 July '41
- New television development; use of colour technique and stereoscopic relief. J. L. Baird. *diags Electrician* 127:359 Dec 26 '41
- Philco shows 441-line television. *il Electronics* 10:8 Mar '37
- Photographic aspects of television operations. H. R. Lubcke. *il Soc Motion Picture Eng* Jan 36:185 Feb '41
- Postwar design for television broadcasting; model of proposed television broadcasting building. *il Eng N* 132:525 Apr '44
- Principles of television engineering. D. G. Fink. McGraw-Hill '40
- Progress in motion picture industry; report of the progress committee, 1940-41. *Soc Motion Picture Eng* Jan 39-306 Nov '42
- Radio progress during 1944; television. *bibliog Proc Inst Radio Eng* 33:148 Mar '45
- Simple television demonstration system. J. B. Sherman. *il diags Proc Inst Radio Eng* 30:8 Jan '42
- Single sideband filter theory with television applications. John M. Hollywood. *Proc Inst Radio Eng* 27:457 July '39
- Situation de la television en France et a l'etranger. J. Le Duc. *il Soc Ing Civils Memoires* 90:130 Jan '37
- Socophony television. *il Electronics* 9:27 June '35.
- Statement presented before Federal communications commission relating to television broadcasting. P. J. Larsen. *Soc Motion Picture Eng Jour* 44:123 Feb '45
- Steady-state response of a network to a periodic driving force of arbitrary shape, and application to television circuits. C. N. Carnahan. *Proc Inst Radio Eng* 23:1393 Nov '35
- Television. W. E. Tremain. *bibliog il diags Jour Inst Elec Eng* J 86:460 May '40
- Television. *il Electronic Indus* 3:120 Sept '44
- Television; abstracts of I. R. E. papers. *diags Electronics* 14:23 Feb '41
- Television, an agency for preparedness; with summary of six months of commercial operation. N. E. Kersta. *maps Electronics* 15:26 Mar '42
- Television and the F. C. C. *Electronic* 13:11 May '40
- Television, as I see it. L. de Forest. *il Radio N* 33:35 Jan '45
- Television broadcaster association 1st annual meeting, New York. *Electronics* 18:318 Feb '45
- Television by resonance. W. H. Preis. *il Radio N* 20:31 July '38
- Television communications in combat. *Electronic Indus* 3:97 Dec '44
- Television cyclopaedia. A. T. Watts. 151p \$2.50 Van Nostrand '37
- Television developments; Institute of radio engineers papers. *Electronics* 13:77 July '40
- Television; history, principles of operation, and present status reviewed. G. R. Town. *il diags Elec Eng* 59:313 Aug '40

**TELEVISION—Continued**

- Television laboratory; Edison Swan electric co. il Electrician 117:715 Dec 4 '36; Elec Rev (Lond) 119:781 Dec 4 '36
- Television-receiver and channel; discussion by I. E. E. Radio section. Electrician 134:16 Jan 5 '45
- Television report, order, rules, and regulations, Federal communications commission. diags Soc Motion Picture Eng Jour 37:87 July '41
- Television service; Hankey committee's recommendations. Elec Rev (Lond) 136:377 May 16 '45
- Television service hinges on frequency. Electronic Indus 3:102 Dec '44
- Television technique adopted in photographing sun's corona. il diags Electronics 13:34 Feb '40
- Television terminology. il diags Electronics 10:14 June '34 Aug '37
- Television; the electronics of image transmission. V. K. Zworykin and G. A. Norton. 646p \$6 Wiley '40
- Television today. (Monthly department). Electronic Indus May '44 to June '45
- Television without scanning. il Electronic Indus 3:122 June '44
- Text of British television report. il Electronics 8:76 Feb '35
- The television market. Thomas P. Joyce 2:93 Dec '43
- What's happened to television? troubles in video engineering. D. G. Fink. il Tech Rev 43:144 Jan '41
- Where television stands today. il Elec. 2:671 June '31
- 500-megacycle radio relay distribution system for television. F. H. Kroger, B. Trevor and J. E. Smith. bibliog RCA Rev 5:31 July '40
- TELEVISION, Aeronautical Applications of**
- Noctovision and television. H. Rosin. il Radio N 27:6 Feb '42
- Television equipment in transport plane relays pictures to NBC audience. Electronics 13:70 Apr '40
- Television for future airway traffic control. T. M. Morse. il diags Radio N 33:38 Jan '45
- See also*
- Aeronautical Radio**
- TELEVISION, Color**
- Cold light for television; abstract. H. W. Leverenz. Science 92:sup9 Dec 13 '40
- Color in television. L. de Forest. diag Radio N 25:9 Feb '41
- Colour television; Baird developments. il Elec Rev (Lond) 128:207 Jan 3 '41
- Color television demonstrated by CBS engineers. il Electronics 13:32 Oct '40
- Color television. P. C. Goldmark and others. bibliog (23 patents, 49 titles) il diags Proc Inst Radio Eng 30:1662 31:465 Apr '42, Sept '43; Same (pt 1). Soc Motion Picture Eng Jour 38:311 bibliog (p348) Apr '42; Same abr (pt 1) Jour Ap Phys 13:666 Nov '42
- Electronic color television receivers. il Electronics 16:174 May '43
- Electronics color television. il Electronics Indus 3:101 Nov '44
- Home television in colour; Baird system. Electrician 125:333 Dec 27 '40
- La television en couleurs par le systeme Baird. M. Adam. diag Genie Civil 112:227 Mar 26 '38
- Looking ahead to color and ultra-high-frequency television; abstract. P. C. Goldmark. Proc Inst Radio Eng 33:205 Mar '45
- New Baird tube gives television in color. il diags Electronics 17:190 Oct '44
- New step in television; colored stereoscopic pictures. diag Elec 130:7 Jan 1 '43
- New television development; use of colour technique and stereoscopic relief. J. L. Baird. diags Electrician 127:359 Dec 26 '41
- Stereoscopic television in colour. Engineering 153:35 Jan 9 '42
- Teletrome; electronic colour and stereoscopic television. bibliog Electrician 133:136 Aug 18 '44; Engineering 158:228 Sept 22 '44
- Teletrome tube gives television in color. il Electronics 17:190 Oct '44
- Television in colour; demonstration of Baird 120-line mechanical scanning system. il diag Electrician 120:197 Feb 18 '38
- Television in Great Britain. L. Laden. il diags Radio N 33:33 Jan '45
- Television perks up; changeover of NBC channel; Columbia experiments with color. il Business week p20 Sept 7 '40
- Three-dimension color television. J. L. Baird. diags Electronics 15:76 May '42
- TELEVISION, Foreign**
- Situation de la television en France et a l'etranger. J. Le Duc. il Soc Ing Civils Memoires 90:138 Jan '37
- Television in Europe. M. P. Wilder. il Electronics 10:13 Sept '37
- Television in France. il Elec Rev (Lond) 119:240 Aug 21 '36
- Television in Great Britain. H. M. Lewis and A. V. Loughren. il diags Electronics 10:32 Oct '37
- Television in Great Britain. L. Laden. il diags Radio N 33:33 Jan '45
- Television in Germany. H. Gibas. il Proc Inst Radio Eng 24:741 May '36
- See also*
- Broadcasting, Foreign**
- TELEVISION, Large-Screen**
- Big-screen television pictures: Law kinescope cathode-ray system. il Radio N 19:143 Sept '37
- Film projector for television. H. S. Bamford. il Electronics 11:25 July '38
- Large screen television; abstract. J. H. Jupe. Electronics 18:270 Apr '45
- Reflective optics in projection television. I. G. Maloff and D. W. Epstein. il Electronics 17:98 Dec '44
- System of large-screen television reception based on certain electron phenomena in crystals; possibility of color television by use of alkali halide crystals. A. H. Rosenthal. bibliog il diags Proc Inst Radio Eng 28:203 May '40; Abstract. Electronics 13:75 Nov '40
- Theoretical considerations on a new method of large screen television projection; abstract. F. Fischer and H. Thiemann. Wireless Eng 18:469 Nov '41
- See also*
- Television, Theater**

**TELEVISION, Post-War**

- Objectives for post-war television. W. Miner. *il Electronics* 16:100 Dec '43
- Post-war FM and television. B. Dudley. *il Electronics* 16:94 Nov '43
- Post-war radio sets. *il Electronic Indus* 2:82 Oct '43
- Post-war television. R. R. Beal. *Proc Inst Radio Eng* 31:521 Sept '43
- Post-war television. P. Glanzer. *Radio N* 31:46 Mar '44
- Post-war design for television broadcasting; model of proposed television broadcasting building. *il Eng N* 132:525 Apr 13 '44
- Survey of the problem of post-war television. B. J. Edwards. *bibliog map Jour Inst Elec Eng* 91 pt 3:163 Dec '44; *Abstract. Elec Rev (Lond)* 134:258 Feb 25 '44; *Discussion. Jour Inst Elec Eng* 91 pt 3:170 Dec '44
- Technical plan for post-war television. *maps diags Electronics* 17:92 Aug '44
- Television and FM plans of receiver manufacturers. *Electronic Indus* 3:90 Sept '44
- Television argument; CBS statement on post-war television. *Ptr Ink* 207:23 May 12 '44
- Television industry prepares for postwar. J. H. Carmine. *il Radio N* 33:43 Jan '45
- Television's post-war possibilities. P. Glanzer. *il Radio N* 32:120 July '44
- War facts and post-war fancies; prospects for home radio. FM and television are bright; industrial electronics is the enigma. *il Electronics* 17:92 Feb '44

*See also*

**Postwar Planning****TELEVISION, Theater**

- Film in television. W. Cooper; W. C. Miner. *Soc Motion Picture Eng Jour* 43:73; *Discussion. 85 Aug '44*
- General Electric television film projector. E. D. Cook. *il diags Soc Motion Picture Eng Jour* 41:273 Oct '43
- Le nouveau centre émetteur de télévision de la Tour Eiffel, a Paris. M. Adam. *il diags plan Genie Civil* 112:413 May 14 '38
- Methods of projecting television images; patent. *diag Electronics* 16:184 Sept '43
- New television film projector. H. S. Bamford. *il diag Electronics* 11:25 July '38
- Production of 16-mm motion pictures for television projection. R. B. Fuller and L. S. Rhodes. *diag Soc Motion Picture Eng Jour* 39:195 Sept '42
- Projection systems for theater television. A. H. Rosenthal. *diags Electronics* 18:219 May '45
- Resume of the technical aspects of RCA theatre-television. I. G. Maloff and W. A. Tolson. *bibliog il diag RCA Rev* 6:5 July '41
- Television as good as home movies; demonstration staged in Philadelphia. *il Radio N* 18:265 Nov '36
- Television for theaters. *Barron's* 21:5 May 19 '41
- Television production as viewed by a motion picture producer. W. Cooper. *Soc Motion Picture Eng Jour* 43:73; *Discussions, 85 Aug '44*
- 25 kw. television transmitter at Eiffel tower goes into operation. *Electronics* 11:45 July '38
- See also*
- Television, Large-Screen
- TELEVISION Amplifiers**
- Analysis, synthesis, and evaluation of the transient response of television apparatus. A. V. Bedford and G. L. Fredendall. *Proc Inst Radio Eng* 30:440 Oct '42
- Bell labs test coaxial cable; video signal, produced by scanning film at 240 lines, 24 frames per second, is applied to coaxial system linking New York and Philadelphia. *il Electronics* 10:18 Dec '37
- Broad band amplifiers. Madison Cawein. *il Electronic Indus* 2:92 Oct '43
- Design of wide band amplifiers. Madison Cawein. *il Electronic Indus* 2:70 Sept '43
- Improved high-frequency compensation for wide-band amplifiers. A. B. Bereskin. *diags Inst Radio Eng* 32:608 Oct '44
- Low-frequency characteristics of the coupling circuits of single and multistage video amplifiers. H. L. Donley and D. W. Epstein. *diag RCA Rev* 6:416 Apr '42
- Mathematical appendix to transient response of single-sideband systems. Charles P. Singer. *Proc Inst Radio Eng* 28:561 Dec '40
- Portable equipment for observing transient response of television apparatus. Heinz F. Kallmann. *Proc Inst Radio Eng* 28:351 Aug '40
- Practical design of video amplifiers. Elliott A. Henry. *QST* 29:11, 32 Apr-May '45
- Relaxation response of video amplifiers; abstract. W. H. Huggins. *Proc Inst Radio Eng* 29:357 June '41
- Reproduction of transients by television amplifiers. N. W. McLachlan. *diags Wireless Eng* 13:519 Oct '36
- Resistance-coupled amplifier for television. C. B. Brown. *il Elec* 4:265 Aug '32
- Television intermediate frequency amplifiers. W. T. Cocking. *diags Wireless Eng* 15:358 July '38; *Discussion. 15:499 Sept. '38*
- Transient response. H. E. Kallmann. *Proc Inst Radio Eng* 33:169 Mar '45
- Transient response of single-sideband systems. Heinz E. Kallmann and Rolf E. Spencer. *Proc Inst Radio Eng* 28:557 Dec '40
- Transient response of wide band amplifiers. *il W. W. Hanson. Electronic Indus* 3:80 Nov '44
- Video amplifier design. R. L. Freeman and J. D. Schantz. *diags Electronics* 10:22, 60 '37; *Correction. 10:52 Nov '37*
- Wide-band amplifiers for television. Harold A. Wheeler. *Proc Inst Radio Eng* 27:429 July '39
- Wide-band television amplifiers. F. A. Everest. *il Electronics* 11:16, 24 Jan, May '38
- Ultimate bandwidth in high-gain multistage video amplifiers. W. R. MacLeon. *diag Proc Inst Radio Eng* 32:12 Jan '44
- Wide-band television amplifiers. F. A. Everest. *bibliog diags Electronics* 11:16 Jan 24 May '38
- See also*
- Amplifiers, Video-Frequency

**TELEVISION Antennas**

- Aerial coupling systems for television. W. E. Benham. bibliog diags Wireless Eng 15:555 Oct '38
- Antenna arrays around cylinders. P. S. Carter. bibliog diags Proc Inst Radio Eng 31:671 Dec '43
- Antennas and transmission lines at the Empire state television station. N. E. Lindenblad. Communications 20:13 May '40
- Antennas for television receivers. E. M. Noll. diags Radio N 33:40 May '45
- Biconical electromagnetic horns. W. L. Barrow, L. J. Chu and J. J. Jansen. II diags Proc Inst Radio Eng 27:769 Dec '39
- Empire state television antenna. II Electronics 10:18 Nov '38
- Heat-treated television; electric heater protects antenna. II Gen Elec Rev 44:696 Dec '41
- Mast support for v.h.f. and u.h.f. antennas; suitable for FM and television. H. Cohen. II diags Radio N 31:30 June '44
- Multi-wire dipole antennas. J. D. Kraus. diags Electronics 13:26 Jan '40
- Simple television antennas. P. S. Carter. RCA Rev 4:168 Oct '39
- Television antenna; indoor device. J. F. Rider. Radio N 23:10 Feb '40
- Television reception with built-in antennas for horizontally and vertically polarized waves. W. L. Carlson. II diag RCA Rev 6:443 Apr. '42
- Vertical vs horizontal polarization. G. H. Brown. diags Electronics 13:20 Oct '40

*See also***Antennas****TELEVISION Cameras**

- Electronic view-finder for television camera. II Electronics 14:58 July '41
- Fluctuations in space-charge-limited currents at moderately high frequencies; television camera pick-up tube. B. J. Thompson, D. O. North and W. A. Harris. diags RCA Rev 6:114 July '41
- Focusing view-finder problem in television cameras. G. L. Beers. diags Proc Inst Radio Eng 31:100 Mar '43; Same. Soc Motion Picture Eng Jour 40:181 Mar '43
- Method and equipment for checking television scanning linearity. V. J. Duke. II RCA Rev 6:190 Oct '41
- Mobile television equipment. R. L. Campbell and others. bibliog II diags Proc Inst Radio Eng 30:1 July '42; Same. Soc Motion Picture Eng Jour 39:22 Jan '42
- Orthicon portable television equipment. M. A. Tralner. II diag Proc Inst Radio Eng 30:15 Jan '42
- Some factors affecting the choice of lenses for television cameras. H. B. DeVore and H. Jams. Proc Inst Radio Eng 28:369 Aug '40

*See also***Electron Optics****TELEVISION Pickup Equipment**

- RCA portable television pickup equipment. G. L. Beers, O. H. Schade and R. E. Shelby. II diags Proc Inst Radio Eng 28:450 Oct '40

RCA-NBC television presents a political convention as first long distance pick-up. O. B. Hanson. II diags plan RCA Rev 5:267, 282a Jan '41

Some engineering aspects of portable television pick-ups. H. R. Lubcke. II Soc Motion Picture Eng Jour 39:394 Dec '42

Television pick-up tube. Herbert A. Finke. Proc Inst Radio Eng 27:144 Feb '39

**TELEVISION Receivers**

- An experimental television receiver. S. Van Mierlo and C. A. Pulles. Elec Comm 15:236 '37
- Adapting television receivers to the new standards. Electronics 14:63 Nov '41
- Automatic frequency and phase control of synchronization in television receivers; abstracts. K. R. Wendt and G. L. Fredenall. diags Electronics 15:80 Aug '42; Proc Inst Radio Eng 30:254 May '42
- Brightness of outdoor scenes and its relation to television transmission. Harley Jams, R. B. Janes and W. H. Hickock. Proc Inst Radio Eng 25:1034 Aug '37
- British vision receivers. W. J. Brown. diags Electronics 12:26 Dec '39; 13:26 Mar '40
- Circuit for studying kinescope resolution. C. E. Burnett. II diags Proc Inst Radio Eng 25:902 Aug '37; Abstract. Electronics 10:8 June '37
- Contrast in kinescopes. R. R. Law. Proc Inst Radio Eng 27:511 Aug '39
- Description of experimental television receivers. G. L. Beers. Proc Inst Radio Eng 21:1692 Dec '33
- Design of television receivers. A. D. Sobel. II Radio N 33:35 Mar '45
- Design of television receiving apparatus. B. J. Edwards. bibliog p1 diags Jour Inst Elec Eng pt 3:181; Discussion, 212 Sept '41
- Development of the projection kinescope. V. K. Zworykin and W. H. Painter. II diags Proc Inst Radio Eng 25:937 Aug '37; Abstract. Electronics 10:7 June '37
- Don Lee television receiving set. II diag Radio N 18:649; 19:51 May-July '37
- Experimental television receiver using a cathode-ray tube. M. von Ardenne. bibliog II diags Proc Inst Radio Eng 24:409 Mar '36
- Fine structure of television images. Harold A. Wheeler and Arthur V. Loughren. Proc Inst Radio Eng 26:540 May '38
- Film scanner for use in television transmission tests. A. G. Jensen. II diags Proc Inst Radio Eng 29:243 May '41
- Frequency modulation in television. C. W. Carnahan; A. V. Loughren. diags Electronics 13:26 Feb '40
- General Electric table model receiver with short-wave adapter. II Elec 119:242 Aug 27 '37
- General Electric television receivers. II Electrician 117:311 Sept 11 '36
- Gradation of television pictures. H. E. Kallmann. Proc Inst Radio Eng 28:170 Apr '40
- High current electron gun for projection kinescopes. R. R. Law. II diags Proc Inst Radio Eng 25:954 Aug '37; Abstract. Electronics 10:8 June '37
- High definition photographs of television images. Electronics 11:32 Apr '38
- High frequency, mixing and detection stages of television receivers. M. J. O. Strutt. Wireless Eng 16:174 Apr '39

- Laboratory television receiver. D. C. Fink. il diags Electronics 11:16 July 26 Aug 22 Sept 16 Oct 26 Nov 16 Dec '38
- New developments in television receivers. il diags Electronics 9:46 Feb '36
- New large-screen RCA television receiver. il Radio N 33:98 June '45
- Noise reduction in television receivers by means of photoelectric multipliers. F. Preisach. diag Wireless Eng 16:169 Apr '39
- Optimum efficiency conditions for white luminescent screens in kinescopes; zinc-cadmium sulphide phosphor systems. H. W. Leverenz. bibliog diag Jour Amer Opt Soc 30:309 July '40
- Partial suppression of one side band in television reception. W. J. Poch and D. W. Epstein. Proc Inst Radio Eng 25:15 Jan '37
- Photographic analysis of television images; D. G. Fink. il Electronics 14:24 Aug '41; Abstract. Proc Inst Radio Eng 29:223 Apr '41
- Photographing television images. R. Eichberg. il diags Amer Phot 36:8 Apr; 16 May; 22 June '42
- Picture signal generator. M. P. Wilder and J. A. Brustman. il diags Electronics 13:25 Apr; 26 May; 30 June; 28 July; 30 to Aug '40
- Postwar radio sets. il Electronics Indus 2:92 Oct '43
- Power for television receivers. E. W. Engstrom and R. S. Holmes. il Electronics 12:22 Apr. '39
- Pre-selector circuit for television receivers. B. F. Tyson. il diags Electronics 13:23 Mar '40
- Production alignment apparatus for television receivers; abstract. L. J. Hartley. diag Electronics 12:17 Oct '39
- Production color analysis of kinescope screens. T. B. Perkins. diag Jour Amer Opt Soc 30:295 July '40
- Quality in television pictures. P. C. Goldmark and J. N. Dyer. il diags Proc Inst Radio Eng 28:343 Aug '40
- Radio progress during 1939; television. bibliog Proc Inst Radio Eng 28:122 Mar '40
- Receiver input connections for u-h-f measurements. J. A. Rankin. diags RCA Rev 6:473 Apr '42
- Space-charge limitations on the focus of electron beams. B. J. Thompson and L. B. Headrick. Proc Inst Radio Eng 28:318 July '40
- Subjective sharpness of simulated television images. M. W. Baldwin, pr. bibliog il diags Bell System Tech Jour 19:563 Oct '40; Same. Proc Inst Radio Eng 28:458 Oct '40
- Superheterodyne converter system considerations in television receivers. E. W. Herrold. RCA Rev 4:324 Jan '40
- Superheterodyne first-detector considerations in television receivers; abstract. P. W. Herold. Proc Inst Radio Eng 27:612 Sept '39
- Supersonic light control and its application to television. Elec Eng 59:151 Apr '40
- System of large-screen television reception based on certain electron phenomena in crystals; possibility of color television by use of alkali halide crystals. A. H. Rosenthal. bibliog il diags Proc Inst Radio Eng 28:203 May '40; Abstract. Electronics 13:75 '40
- Television and FM plans of receiver manufacturers. Electronic Indus 3:90 Sept '44
- Television receiver. E. M. Noll. il diags Radio N 33:32 Apr 40 May; 50 June '45
- Television receiver design. M. S. Kiver. il diag Radio N 33:40 Jan '45
- Television receiver for the home. D. G. Fink. il Electronics 12:16 Sept '39
- Television receivers. il Elec Rev (Lond) 119:340 Sept 11 '36
- Television receiver production at the RCA Victor plant. il Electronics 12:36 June '39
- Television receiver. D. G. Fink. il Electronics 11:16, 26, 22, 16, 26, 16 July to Dec '38
- Television receiver's heart—the intermediate frequency amplifier. M. W. Thompson. il diag Radio N 21:18 May '39
- Television receivers. E. W. Engstrom and R. S. Holmes. il diags Electronics 11:28 Apr '38
- Television receivers. Engineering Dept., Aerovox Res W Vol 11 pt 1 to 5, Aug to Dec '39; pt 6 Jan '40
- Television receivers in production. il diags Electronics 12:22 Mar '39
- Television receivers; recommendations for making of controls. Electrician 121:749 Dec 23 '38
- Television receivers using electronic deflection. T. J. Goldsmith, pr. il diag Electronics 13:16 June '40
- Television reception with built-in antennas for horizontally and vertically polarized waves. W. L. Carlson. il diag RCA Rev 6:443 Apr '42
- Television reception. M. von Ardenne. 121p bibliog (p114-15) \$2.75 Van Nostrand '36
- Television signal frequency circuit considerations. G. Mountjoy. diags Electronics 12:58 Dec '39
- Type of light valve for television reproduction; abstract. J. S. Donal, jr. and D. B. Langmuir. Proc Inst Radio Eng 28:246 May '40
- Ultimate bandwidth in high-gain multi-stage video amplifier. W. R. MacLean. diags Proc Inst Radio Eng 32:12 Jan '44
- Use your oscilloscope for television reception. H. C. Lawrence. il diag Radio N 25:28 Jan '41

*See also*

Postwar Planning  
Receiver Manufacture

#### TELEVISION Relay Systems

- National network for television; coaxial cable system and radio relay system; abstract. H. S. Osborne. Science 101:sup10 Jan 12 '45
- New coast-to-coast television network. map Radio N 33:116 June '45
- Radio relays promise farflung television networks after the war. R. R. Beal. il Sci Amer 170:128 Mar '44
- Radio-relay-systems development by the Radio corporation of America. C. W. Hansell. bibliog il map diags Proc Inst Radio Eng 33:156 Mar '45
- Seeing beyond our horizons, with television relay. W. R. G. Baker. il Gen Elec Rev 43:148 Apr '40
- Television equipment in transport plane relays pictures to NBC audience. Electronics 13:70 Apr '40
- Television relay points toward post-war networks; abstract. J. Ballantyne. Sci Amer 171:183 '44
- Television relayed. A. P. Peck, diags Sci Amer 162:282 May '40
- Three years of television relaying. R. L. Smlth. il diags Electronics 16:122 Sept '43



**TELEVISION Relay Systems—Continued**

- VHF network for television relay. *Electronic Indus* 4:86 June '45
- 500-megacycle radio-relay distribution system for television. F. H. Kroger, B. Trevor and J. E. Smith. *bibliog il diags RCA Rev* 5:31 July '40

**TELEVISION Scanning**

- Advantages and disadvantages of various types of focusing and deflection methods used in television. B. J. Edwards. *Radio N* 28:12 Sept '42
- Bell labs test coaxial cable; video signal, produced by scanning film at 240 lines, 24 frames per second, is applied to coaxial system of linking New York and Philadelphia. *il Electronics* 10:18 Dec '37
- Cathode-ray scanner for televising film. M. von Ardenne. *il Electronics* 9:46 July '36
- Determination of optimum number of lines in a television system. R. D. Kell, A. V. Bedford and G. L. Fredendall. *bibliog diag RCA Rev* 5:8 July '40
- Film scanner for use in television transmission tests. A. G. Jensen. *il diags Proc Inst Radio Eng* 29:243 May '41
- Measurement of the slope and duration of television synchronizing impulses. R. A. Monfort and F. J. Somers. *il diags RCA Rev* 6:370 Jan '42
- Method and equipment for checking television scanning linearity. V. J. Duke. *il diags RCA Rev* 6:190 Oct '41
- Scanning in television receivers. F. J. Somers. *diags Electronics* 10:18 Oct '37
- Scanning sequence and repetition rate of television images. R. D. Kell, A. V. Bedford and M. A. Trainer. *Proc Inst Radio Eng* 24:559 Apr '36
- Television film transmitters using apertured scanning discs. D. C. Espley and D. D. Walter. *diags Jour Inst Elec Eng* 88 pt 3:145 *bibliog* (p 168) pl 1-4 June '45
- Television pickup tubes using low-velocity electron beam scanning. A. Rose and H. Iams. *Proc Inst Radio Eng* 27:547 Sept '39
- Television pickup tubes with cathode-ray beam scanning. H. Iams and A. Rose. *il diags Proc Inst Radio Eng* 25:1048 Aug '37
- Television scanning; a survey. R. F. Davis. *il Electronics* 8:444 Nov '35
- Television—the scanning process. Pierre Mertz. *Proc Inst Radio Eng* 25:529 Oct '44
- Television without scanning. *il Electronic Indus* 3:122 Jan '44
- See also*
- Iconoscope
- TELEVISION Standards**
- DuMont proposals; television transmission standards. *il diag Electronics* 13:22 Feb. '40.
- Groundwork laid for commercial television; F. F. C. hearing. *Electronics* 14:18 Apr. '41
- National television system committee proposes television standards *diags map Electronics* 14:17 Feb '41; *Excerpts. Elec Eng* 60:145 Mar '41
- Problems in television image resolution. C. F. Wolcott. *bibliog il diags Soc Motion Picture Eng Jour* 36:65 Jan '41

- Radio manufacturers association completes television standards. A. F. Murray. *diags Electronics* 11:28 July '38
- Standards in television. H. M. Lewis. *diags Electronics* 10:10 July '37
- Television committee organizes to formulate standards. *Electronics* 13:34 Aug '40
- Television payoff; FCC receives proposed standards. *il Business Week* p28 Feb 1 '41
- Television split; struggle over telecasting standards. *il Business Week* p90 May 6 '44
- Television standards; abstract. D. Smith. *Electronics* 17:276 July '44
- Television standards reviewed; abstract. A. F. Murray. *Electronics* 9:13 Dec '36
- See also*
- Standards

**TELEVISION Stations**

- Alexandra palace; London television station. *il Electrician* 117:213 Aug 28 '36
- Amateur television station. R. Maunter and F. J. Somers. *il Electronics* 15:68 Dec '42
- High definition television stations in the U. S.; tabulation. *Electronics* 12:47 Mar '39
- Le nouveau centre emetteur de television de la Tour Eiffel, a Paris. M. Adam. *il diags plan Genie Civil* 112:413 May 14 '38
- Le nouveau emetteur de television parisien installe sur la Tour Eiffel. M. Adam. *il Genie Civil* 107:521 Nov 30 '35
- Le telecinema ou la television pour film intermediaire, systeme des Etablissements Grammont. C. Chouquet. *il diags Genie Civil* 110:484 May 29 '37
- London television-broadcasting station. *il diags Engineering* 142:228 Aug 28 Sept 4 '36; *Engineering* 162:208 Aug 28 '36
- London television service; Baird studio and scanning equipment at the Alexandra Palace. *il Electrician* 117:403 431 Aug 2 '36
- London television service; with station layout. T. C. MacNamara and D. E. Birkinshaw. *diags maps Jour Inst Elec Eng* 83:729 Dec '38
- Marconi-E.M.I. audio-frequency equipment at the London television station. I. L. Turnbull and H. A. M. Clark. *Jour Inst Elec Eng* 84:448 Apr '39
- New studios and a new transmitter employing 441 lines announced by Farnsworth television. *il diag Radio N* 18:654 Mar '37
- Postwar design for television broadcasting; model of proposed television broadcasting building. *il Eng N* 132:525 Apr 13 '44
- Public television commences; transmissions from Alexandra palace. *il Elev Rev (Lond)* 119:271 Aug 28 '36
- RCA describes television system. R. R. Beal. *il diag Electronics* 10:8 Jan '37
- RCA-NBC television presents a political convention as first long distance pick-up. O. B. Hanson. *il diags plan RCA Rev* 5:267 Jan '41
- Schenectady television station joined to New York outlet for rebroadcasting. *il diag Electronics* 13:46 Mar '40
- Television in Great Britain. N. Ashbridge. *il Proc Inst Radio Eng* 25:697 June '37
- Television is coming to the smaller cities. A. C. Lescarbourea. *il Radio N* 33:29 Jan '45

Television preparations in New York. S. Kaufman. Radio N 21:6 Jan '39

Television production at Du Mont television station W2XWV. A. C. Lescarboua. Radio N 30:112 Nov '43

Television station designed for broadcasting studios. Electronics 17:194 Dec '44

Television stations in the U. S. licensed by the FCC; list. Radio N 21:32 May '39

Three years of television relaying. R. L. Smith. il diags Electronics 16:122 Sept '43

25 kw television transmitter at Eiffel Tower goes into operation. Electronics 11:46 July '38

*See also*

#### Broadcasting Stations

#### TELEVISION Studios

Contemporary problems in television sound. C. L. Townsend. il Proc Inst Radio Eng 31:3 Jan '43

Mercury lighting for television studios; abstract. H. A. Breeding. Proc Inst Radio Eng 31:106 Mar '43; Abstract. Electronics 15:86 Aug '23

New designs of television control-room equipment. J. D. Schantz. il diags Proc Inst Radio Eng 29:303 June '41

Television light supplemented with fluorescent tubes. il Sci Amer 166:195 Apr '42

Television studio; working model executed for General Electric. il plans Arch Forum 80:6 May '44

Television studio lighting. il Electronic Indus 3:166 Nov '44

Versatile multichannel television control equipment. D. E. Norgaard and J. L. Jones. il diags plan Proc Inst Radio Eng 29:250 May '41

*See also*

#### Broadcasting Studios

#### TELEVISION Synchronization

Automatic synchronization of television images. R. Barthelemy. diag Electronics 9:42 Apr '36

Frequency multiplication and division; generator circuits synchronizing devices in telecommunication techniques. H. Sterky. bibliog diags Proc Inst Radio Eng 25:1153 Sept '37

Measurement of the slope and duration of television synchronizing impulses. R. A. Monfort and F. J. Somers. il diags RCA Rev 6:370 Jan '42

Paragraphs on television synchronizing. J. R. Duncan. diag Electronics 11:51 Feb '38

Precision television synchronizing-signal generator. A. V. Bedford and J. P. Smith. il diag RCA Rev 5:51 July 11 '40

Problem of synchronization in cathode-ray television. F. J. Bingley. Proc Inst Radio Eng 20:1327 Nov '38

Simple pulse generating circuits. S. P. Sashoff and W. K. Roberts. diags Electronics 13:40 Sept '40

Television without synchronizing signals; new system developed at the Du Mont laboratories. il diags Electronics 11:33 Mar '38

#### TELEVISION Systems

Big-screen television pictures; Law kinescope cathode-ray system. il Radio N 19:143 Sept '37

DuMont's projection tele. Electronic Indus 4:97 June '45

Errors in the deflection of a cathode-ray beam by deflecting systems of single symmetry; abstract. G. Wendt. Wireless Eng 20:91 Feb '43

Experimental television system. E. Mautner and F. Somers. bibliog il diags Electronics 15:68 Dec '42

Factors determining the choice of carrier frequency for an improved television system; discussion. Jour Inst Elec Eng 90 pt 3:147 Sept '43

New television system; Craig system. diags Electronics 17:212 Jan '44

RCA describes television system. R. R. Beal. il diag Electronics 10:8 Jan '37

Resonant-line television system; abstract. W. L. Parker. diag Electronics 10:14 Dec '37

Scophony television. il diags Electronics 9:30 Mar '36

Simple television demonstration system. J. B. Sherman. il diags Proc Inst Radio Eng 30:8 Jan '42

Television Scophony receiving system. diag Electrician 120:515 Apr 22 '38

Television without synchronizing signals; new system developed at the Du Mont laboratories. il diags Electronics 11:38 Mar '38

Wave-slot; an optical television system; Scophony supersonic light control. F. Okolicsanyi. bibliog diags Wireless Eng 14:527 Oct '37

*See also*

Iconoscope

Kinescope

#### TELEVISION Transmission

Audio and video on a single carrier. H. E. Kallman. diags Electronics 14:39 May '41

Brightness distortion in television. D. G. Fink. Proc Inst Radio Eng 29:310 June '41

Brightness of outdoor scenes and its relation to television transmission. H. Iams, R. B. Janes and W. H. Hicke. il diag Proc Inst Radio Eng 25:1034 Aug '37

Broad-band television cables. Wireless Eng 14:111 Mar '37

Cathode luminescence as applied in television. H. W. Leverenz. bibliog il diags RCA Rev 5:131 Oct '40

Cathode ray wave form distortion at ultra high frequencies. R. M. Bowie. diags Electronics 11:18 Feb '38

Coaxial cable system for television transmission. M. E. Strieby. Bell System Tech Jour 17:438 July '38

Coaxial filter for vestigial-sideband transmission in television. H. Salinger. il diags Proc Inst Radio Eng 29:115 Mar '41

Contemporary problems in television sound. C. L. Townsend. il Proc Inst Radio Eng 31:3 Jan '43

Effect of the quadrature component in single sideband transmission. H. Nyquist and K. W. Pfleger. il Bel System Tech Jour 19:63 Jan '40

Electrical vibrations and their application in television. E. W. Marchant. diags Engineering Sept 17 '37

Field-strength survey, 52.75 megacycles from Empire State building. G. S. Wickizer. il maps Proc Inst Radio Eng 28:291 July '40

Film scanner for use in television transmission tests. A. G. Jensen. Proc Inst Radio Eng 20:243 May '41

**TELEVISION Transmission—Continued**

- Fluorescent screens for cathode-ray tubes for television and other purposes. L. Levy and D. W. West. Jour Inst Elec Eng 79:11; Discussion. 25 July '36
- Future of television; findings of Hankey committee; early transmissions recommended. Electrician 134:229 Mar 16 '45
- Les caracteristiques des nouvelles emissions de television de la Tour Eiffel. M. Adam. diags Genie Civil 112:104 Jan 29 '38
- Linear sweep generators used in oscilloscopes and television apparatus. A. Tatz. il diags Radio N 33:52 May '45
- Microwaves useful for television and other applications. G. B. Hoadley. Sci Amer 172:174 Mar '45
- Oscillograph for television development. A. C. Stocker. il diags Proc Inst Radio Eng 25:1012 Aug '37
- Partial suppression of one side band in television reception. W. J. Poch and D. W. Epstein. Proc Inst Radio Eng 25:15 Jan '37
- Phase distortion in television. R. G. Shiffenbauer. bibliog il diags Wirelss Eng 13:21 Jan '36
- Picture transmission using "Time Modulation." Masatsugu Kokayashi. Elec Comm 16:144 '37
- Portable high-frequency square-wave oscillograph for television. R. D. Kell, A. V. Bedford and H. N. Kozanowski. il diags Proc Inst Radio Eng 30:458 Oct '42
- Principles of television engineering. D. G. Fink. 541p \$5 McGraw-Hill '40
- Reflective optics in projection television; aspherical correcting lenses from clear plastics for home receivers. I. G. Maloff and D. W. Epstein, bibliog il diags Electronics 17:98 Dec '44; Abstract. Sci Amer 172:41 Jan '45
- Single-sideband filter theory with television applications. John M. Hollywood. Proc Inst Radio Eng 27:457 July '39
- Single-unit video converter. G. R. Mezger. diags Electronics 11:31 Feb '38
- Special television cable. il Elec Rev (Lond) 120: 889 June 1 '37
- Synchronous motor for television. F. Siemens. il Radio N 18:214 Oct '36
- Television broadcast coverage. A. B. Du Mont and T. T. Goldsmith, jr. il diags map Proc Inst Radio Eng 32:192 Apr '44
- Television detail and selective-sideband transmission. Stanford Goldman. Proc Inst Radio Eng 27:725 Nov '39
- Television; progress towards a regular high definition service. L. E. Hughes. Electrician 116:141 Jan 31. '36
- Television reference data. il Electronics 14:49 June '41
- Television; the electronics of image transmission. V. K. Zworykin and G. A. Morton. 646p \$6 Wiley '40
- Television transmission by coaxial cable. M. E. Strieby and C. L. Weiss. bibliog il diags Elec Eng 57:249 June '38; Same. Bell Sys Tech Jour 17:438 July '38
- Television transmission over wire lines; co-axial cable with repeaters. M. E. Strieby and J. F. Wentz. bibliog il diags Bell System Tech Jour 20:62 Jan '41
- Television transmission; signals transmitted over coaxial cable and other telephone facilities. M. E. Strieby and C. L. Weiss. bibliog il diags plan Proc Inst Radio Eng 29:371 July '41
- Television voice-frequency circuits. E. W. Engstrom and R. S. Holmes. diags Electronics 11:18 Aug '38
- Theoretical analysis of single-sideband operation of television transmitters. Leon S. Negaard. Proc Inst Radio Eng 27:666 Oct '39
- Wide-band oscilloscope for problems in television and other fields. E. D. Cook. il diags Proc Inst Radio Eng 31:410 Aug '43
- 500-megacycle radio-relay distribution system for television. F. H. Kroger, B. Trevor and J. E. Smith. bibliog diags RCA Rev 5131 July '40
- See also*
- Broadcasting  
Transmission
- TELEVISION Transmitters**
- Description of experimental television transmitting apparatus. R. D. Kell. Proc Inst Radio Eng 21:1674 Dec '33
- Empire State television shows marked advance; latest experimental transmissions from the NBC transmitter. il Radio N 19:7 July '37
- Experimental television transmitter. Van Mierlo and P. Gloess. Elec Comm 15:232 '37
- Mobile television equipment. R. L. Campbell, R. E. Kessler, R. E. Rutherford and K. U. Landsberg. Proc Inst Radio Eng 30:1 Jan '42
- New ultra-high-frequency tetrode and its use in a 1-kilowatt television sound transmitter. A. K. Wing, jr. and J. E. Young. il diag Proc Inst Radio Eng 29:5 Jan '41
- Orthicon portable television equipment. Jesse B. Sherman. Proc Inst Eng 30:15 Jan '42
- Television changeover; retuning the transmitter of W2XBS. il Electronics 13:24 Oct '40
- Television in Great Britain. L. Laden. il diags Radio N 33:32 Jan '45
- Television transmitting equipment. E. M. Noll. il diag Radio N 33:46 Mar '45
- Television film transmitters using apertured scanning discs. D. C. Espley and D. O. Walter. diags Jour Inst Elec Eng 88 pt 3:145 bibliog (p168) pl 1-4 June '41
- Transmitters for television. il Electronics 12:26 Mar '39
- 25 kw. television transmitter at Eiffel tower goes into operation. Electronics 11:46 July '38
- See also*
- Television Stations
- TELEVISION Tubes**
- After acceleration and deflection. J. R. Pierce. Proc Inst Radio Eng 29:28 Jan '41
- Calculations of axially symmetric fields. S. Bertram. Jour Applied Phys 13:496 Aug '42
- Cathode-ray control of television light valves. J. S. Donal, Jr. Proc Inst Radio Eng 31:195 May '43
- Cathode ray tube with post acceleration. J. de Geir. Phillips Tech Rev 5:245 Sept '40
- Characteristics of cathode-ray and television picture tubes. diags Electronics 15:88 Feb ; 98 Mar; 110 Apr; 94 May '42

- Course of the ray in electron optical systems. I. Maloff and D. W. Epstein. McGraw-Hill, New York '38
- Design of electron guns. A. L. Samuel. bibliog il diags Proc Inst Radio Eng 33:233, 40 Apr '45
- Effect of the space charge on the sharpness of television cathode-ray tubes; abstract. E. Schwartz. Wireless Eng 22:37 Jan '45
- Electricity writes its own story. A. B. DuMont and the cathode-ray tube. A. C. Lescaboura. il Radio N 20:12 Oct '38
- Electron bombardment in television tubes. I. G. Maloff. il diags Electronics 17:108 Jan '44
- Electron optics in television. I. G. Maloff and D. W. Epstein. McGraw-Hill, New York '38
- Electrostatic electron optics. Frank Gray. Bell System Tech Jour 18:1 Jan '39
- Factors governing performance of electron guns in television cathode-ray tubes. R. R. Law. bibliog diags Proc Inst Radio Eng 30:103 Feb '42
- Fixed-focus electron gun for cathode-ray tubes. Harley Iams. Proc Inst Radio Eng 27:103 Feb '39
- High current electron gun for projection kinescopes. R. R. Law. Proc Inst Radio Eng 25:954 Aug '37
- High-voltage cathode-ray tube for high-definition film scanning. M. von Ardene. il Wireless Eng 13:483 Sept '36
- Improved electron gun for cathode-ray tubes. L. E. Swedlund. diags Electronics 18:122 Mar '45
- Monoscope, a television signal-generating tube; abstract. C. E. Burnett. Electronics 10:11 Dec '37
- New signal converter for television tubes. il Electronics 16:198 Oct '43
- New television amplifier tubes. A. P. Kauzmann. RCA Rev 3:271 Jan '39
- New ultra-high-frequency triode and its use in at 1-kilowatt television sound transmitter. A. K. Wing, pr. and J. E. Young. il diag Proc Inst Radio Eng 29:5 Jan '41
- New vacuum tube for use in television devised by P. T. Fransworth. Science 87:sup 12 Apr '38
- Problems concerning the production of cathode-ray tube screens. H. W. Leverenz. diags Jour Amer Opt Sc 27:25 Jan '37
- Radio progress during 1939; cathode-ray and television tubes. bibliog Proc Inst Radio Eng 28:103 Mar '40
- Radio receiving and television tubes. J. A. Meyer and J. F. Wostrel. 3d ed 635p \$4 McGraw-Hill '36
- Relative sensitivities of television pickup tubes, potographic film, and the human eye. A. Rose. bibliog Proc Inst Radio Eng 30:293 June '42
- Screens for television tubes. I. G. Maloff and D. W. Epstein. il diag Electronics 10:31 Nov '37; Correction 10:54 Dec '37
- Some simplified methods for determining the optical characteristics of electron lenses. K. Spangenberg and L. M. Field. Proc Inst Radio Eng 30:138 Mar '42
- Telechrome tube gives television in color. il Electronics 17:190 Oct '44
- Television. V. K. Zworykin and G. A. Morton. John Wiley & Sons, New York 1940 \$6.00
- Theoretical limitations of cathode-ray tubes. D. B. Langmuir. bibliog Proc Inst Radio Eng Aug '37
- Theory and performance of the iconoscope. V. K. Zworykin, G. A. Morton and L. E. Flory. bibliog il diags Jour Inst Elec Eng 82:105 Jan '38; Discussions. 82:561 May '38
- Unique method of modulation for high-fidelity television transmitters. W. N. Parker. il diags Proc Inst Radio En 26:946 Aug '38
- X-ray tube using an electron gun. J. J. G. McGue. il diag Rev Sci Instr 14:339 Nov '43
- See also*
- Iconoscope  
Kinescope
- TEMPERATURE Control**
- Design of a portable temperature-controlled piezo oscillator. V. E. Heaton and W. H. Brattain. Proc Inst Radio Eng 7:1239 July '30
- Notes on the design of temperature control units. J. K. Clapp. Gen Radio Exp Vol 18 Aug '44
- Quartz plate mountings and temperature control for piezo oscillators. V. E. Heaton and E. G. Lapham. Proc Inst Radio Eng 20:261 Feb '32
- Temperature compensation of condensers. W. H. F. Griffiths. il diags Wireless Eng 19:101, 148 Mar-Apr '42; discussion. 19:199, 253 May-June '42
- Temperature compensation of instruments. J. R. Pattee. il Electronics 16:102 Aug '43
- Temperature compensation; temperature error in variable-frequency tank circuits employing ceramic capacitors. H. Sherman. Electronics 17:125 Apr '44
- Thermal-frequency-drift compensation. T. R. W. Bushby. bibliog diag Proc Inst Radio Eng 30:546 Dec '42
- Variable air condenser with adjustable compensation for temperature. H. A. Thomas. diag Jour Inst Elec Eng 81:277 Aug '37
- See also*
- Photoelectric-Cell Control  
Piezoelectric Crystals
- THYRATRON.** See Rectifiers, Thyatron
- TIME Base**
- Development of time bases; principles of known circuits. O. S. Puckle. Electrician 128:127 Feb 13 '42
- High-speed time bases. William Stewart. il Electronic Indus 3:112 Aug '44
- Inductance linearized time base. F. C. Williams and A. Fairweather. diags Wireless Eng 18:224, 271 June-July '41
- Single-valve time-base circuit, adaptable for sawtooth or rectangular waveforms. B. C. Fleming-Williams. diags Wireless Eng 17:161 Apr '40
- Time bases. O. Puckle. Van Nostrand Co. New York \$2.75
- See also*
- Oscillograph, Cathode-Ray
- TIME-Delay Circuits**
- Delay and timing circuits. R. P. Turner. diags Radio N 30:32 Aug '43

**TIME Delay Circuits—Continued**

Introduction to microwaves. Simon Ramo. Chap. IV. McGraw-Hill, New York '45

Phase compensation; Nyquist method of measuring time delay. E. K. Sandeman and I. L. Turnbull. Elec Comm 7:327 Apr '29

Steady state delay as related to aperiodic signals. R. V. L. Hartley. Bell System Tech Jour 20:222 Apr '41

Time-delay circuits. C. Felstead. diags Electronics 9:38 Mar '36

Time delay circuits. Engineering Dept, Aerovox Res W 9:12 Dec '37

Time delay in resistance-capacity circuits. E. W. Kellogg and W. D. Phelps. diags Electronics 11:26 Feb '38

Time-delay relays. H. Seymour. diags Electrician 129:142 Aug 7 '42

Ultra-high-frequency radio engineering. W. L. Emery. p. 177 Macmillan, New York '44

Vacuum-tube time delay relay. E. J. Serfass. diags Ind & Chem Anal ed 13:1352 May 15 '41

*See also*

**Relays****Transmitters—Protection****TONE Control**

Bass compensation design chart. P. A. D'Orio and R. De Cola. Electronics 10:37 Oct '37

Fundamental bass boost circuits. W. Moody. diags Radio N 30:48 Nov '43

High selectivity tone-corrected receiving circuits. F. M. Colobrook. H. M. Stationery Office. London. 1932

Modern tone control circuits. L. J. Markus. il diags Radio N 28:12 Sept '42

New bass-boosting circuit. L. M. Barcus. diags Electronics 16:216 June '43

Outline of the action of a tone-corrected highly selective receiver. E. B. Moullin. Proc Inst Radio Eng 21:1252 Sept '33

Separate treble and bass amplifiers provide true tone; Dual-channel-audio, Fidel-A-State program expander. P. P. Smith. il diags Radio N 18:291 Nov '36

Single-sideband receiver for short wave telephone service. A. A. Roetken. Proc Inst Radio Eng 26:1455 Dec '38

Tone control by negative feedback. il QST Vol 25 Dec '41

Tone-fidelity switch. A. G. Manke. diags Electronics 10:34 May '37

Volume and bass frequency expansion in phonograph reproducers and radio receivers; abstract. C. M. Sennett. Electronics 9:20 June '36

*See also*

**Receivers, High-Fidelity****TOWERS**

Adjusting unequal-tower broadcast arrays. G. H. Brown and J. M. Baldwin. il diags Electronics 16:118 Dec '43

Cable scheme carries power to radio tower. diag Elec W 106:2090 July 4 '36

Foundations pour pylones metalliques haubanes, de 200 metres de hauteur. diags Genie Civil 107:302 Sept 28 '35

General considerations of tower antennas for broadcast use. H. E. Gihring and G. H. Brown. il Proc Inst Radio Eng 23:311 Apr '35

Mast support for v.h.f. and u.h.f. antennas; suitable for FM and television. H. Cohen. il diags Radio N 31:30 June '44

New transmission system avoids coupling equipment for broadcast tower lighting. Electronics 9:38 July '36

New vertical broadcasting antenna for station WGY. E. G. Semon and others. il Gen Elec Rev 41:134 Mar '38

Plywood masts expedite field radio installation for air force. il Aero Digest 45:118 May 15 '44

Quick process for making stainless alloy steel antennae masts. P. D. White. il Blast F & Steel Pl 32:976 Aug '44; Same. Marine Eng 49:252 Sept '44

Radio; a new architectural problem. D. Purinton. il diags plans Amer Arch 146:68 June '35

Radio towers for Illinois police. A. Benesch. il map Eng N 119:669 Oct 21 '37

Radio towers raised 100 ft. with tubing. il Iron Age 139:81 Feb 4 '37; Steel 100:70 Mar 29 '37; Elec W 107:2046 June 5 '37

Structural aspects of WGY's 625 ft. vertical radiator. E. G. Semon. il diags Civil Eng 8:531 Aug '38

Tallest talking tower; radio station KOA. il Sibley Jour 48:131 Nov '34

Tallest U.S. broadcast tower; WNAX, Yankton, S.D. C. Todd. il Electronics 16:104 Dec '43

WJZ's new tower moves in. il Electronics 10:21 Jan '37

320-ft. timber radio tower a self-supporting structure; station WRVA at Richmond, Va. F. P. Cartwright. il Eng N 114:701 May 16 '35

*See also*

**Antenna Masts****Antennas, Tower****TRANSCEIVERS**

Beer and mug and power transceiver; 112 mc. O. Read. il diags Radio N 24:16 Nov '40

Canadian walkie-talkie; portable communications equipment. il Radio N 31:48 Jan '44

Carrier systems for radio and wire lines. L. G. Erickson and F. W. Lynch. il Electronic Indus 3:96 June '44

Five-meter combination receiver-transmitter for portable and mobile use. N. Bishop. il diags Radio N 18:734 June '37

Kinks for the DK-3 transceiver. il QST 26:43 Feb '42

Midget transceiver. il QST 21:53 June '37

Midget transmitter-receiver. John F. Clemens. il QST 29:38 Jan '45

Modernizing the 56 mc. transceiver. Burke and Leaf. il QST 22:28 Apr '38

Novel transceiver. Mitchell. il QST Apr '44

On the spot with a walkie-talkie. Burkle. il QST 27:23 Nov '43

One pound transceiver. B. F. Meissner. il Electronic Indus 1:75 Nov '32

Portable Learadio transmitter and receiver for field use. il Aviation 36:43 Feb '37

Postwar handie-talkie uses. il Electronic Indus 3:110 Sept '44

Revamping 5-meter transceivers for 2½. il QST 26:70 Oct '42

Revised transceiver circuit. il QST 20:59 Feb '35

- Simple transceiver for two and one-half. il QST 26:46 Apr '42
- Talkie-walkie for civilian defense. K. Kopetsky. il QST 26:9 June '42
- Transceiver for mobile work. Bradley. il QST 27:48 Dec '43
- Transceiver for WERS. George Granimer. il QST 26:11 Oct '42
- Walkie-talkie; portable two-way radios are a boon to the military. Fortune 28:62 Oct '43
- Weather testing walkie-talkies. Radio N 32:32 Aug '44
- 2½ meter transceiver for WERS. H. A. Bowman. il diags Radio N 31:38 Apr '44

*See also*

- Receivers, Portable  
Transmitters, Portable

### TRANSFORMER Design

- Circuit design to improve the frequency response of output transformers. C. A. Moreno. Stanford Univ '40
- Class and B and AB audio amplifiers; output transformer design. G. Koehler. Electronics 9:14 Feb '36
- Design of audio-frequency input and inter-valve transformers. J. G. Story. diags Wireless Eng 15:69 Feb '38
- Design of audio-frequency amplifier circuits using transformers. F. W. Klipsch. diags Proc Inst Radio Eng 24:219 Feb '36
- Design of iron-cored inductance coils and transformers to carry direct current. W. Baggally. Wireless Eng 13:7 Jan '36
- Double-tuned transformer design. D. Espy. Electronics 17:142 Oct '44
- Effect of the detector load on transformer design. F. M. Colebrook. diags Wireless Eng 12:415 Aug '35; Discussion. W. F. Cope. 12:478 Aug '35
- Graphical design of an intermediate-frequency transformer with variable selectivity. C. Baranovsky and A. Jenkins. diags Proc Inst Radio Eng 25:340 Mar '37
- Intermediate-frequency transformer design. F. H. Scheer. il Proc Inst Radio Eng 23:1483 Dec '35
- New photoelectric hysteresigraph. R. F. Edgar. il diags Elec Eng 56:805 July '37
- Note on intermediate transformer design. F. H. Sheer. Proc Inst Radio Eng 23:1483 Dec '35
- Optimum turns ratio for interstage transformers. Robert M. Hanson. il Electronic Indus 2:66 June '43
- Power pack; transformer design. L. J. Gamache and H. H. Kreff. il diags Radio N 20:35 Oct '38
- Power transformer design. W. A. Stocklin. diags Radio N 28:28 Aug '32; Sept '42
- Small power transformer design factors. J. M. Thomson. il Electronic Indus 3:99 Feb '44
- Tuned transformers; design of these electronic units simplified by means of universal performance curves. J. E. Maynard. diags Gen Elec Rev 46:559, 606 Oct-Nov '43
- Transformer design. E. B. Harrison. il diags Electronics 17:106 Feb '44
- Wound-core transformer design. Reuben Lee. il Electronic Indus 3:114 Jan '44

### TRANSFORMER Measurements

- Alternating current impedance of chokes and transformers; measuring instrument. T. J. Rekfisch and H. T. Bissmire. diags Wireless Eng 18:266 July '41
- Coupling coefficient chart; reference sheet. L. E. Pepperberg. diags Electronics 18:144 Jan '45
- Losses in ferromagnetic laminae at radio frequencies. M. Reed. Wireless Eng 15:263 May '38
- Measurement of iron cores at radio frequencies. Dudley E. Foster and Arthur E. Newlon. Proc Inst Radio Eng 29:266 May '41
- Measurements in radio engineering. F. E. Terman. 400p \$4 McGraw-Hill '35
- Measurements pertaining to the coordination of radio reception with power apparatus and systems. C. M. Foust and C. W. Frick. Elec Eng 62:Trans 281 June '43
- Method of measuring the magnetic properties of small samples of transformer laminations. Horatio W. Lamson. Proc Inst Radio Eng 28:541 Dec '40
- Reference data for measurements. il Electronics 14:61 June '41
- Transformer noise level measured. il Electronics 16:134 July '43
- See also*  
Measurements

### TRANSFORMERS

- Auto-transformers in modulation circuits. T. A. Gross. diags Electronics 13:52 Nov '40
- Behaviour of the output circuit to transients. N. W. McLachlan. diags Wireless Eng 13:630 Dec '36
- Cathode follower circuits for coupling high-impedance sources to low-impedance loads. W. Richter. bibliog diags Electronics 16:112 Nov '43
- Coupling coefficient chart; reference sheet. L. E. Pepperberg. diags Electronics 18:144 Jan '45
- Flux balancer for output transformer. E. R. Meissner. il Electronics 8:161 May '35
- Hermetically sealed transformers. R. M. Hanson. il Electronics 18:136 Feb '45
- Improvements in communication transformers. A. G. Ganz and A. G. Laird. bibliog il diags Elec Eng 54:1367 Dec '35; Same. Bell System Tech Jour 15:136 Jan '36
- Inductor with air-gap magnetic circuit. E. V. D. Glazier. Engineering 148:406 Oct 13 '39
- Influences of capacitances between the windings of a transformer on its properties; abstract. H. Knapp. Wireless Eng 21:232 May '44
- Iron-core components in pulse amplifiers. R. Lee. diags Electronics 16:115 Aug '43
- Progress in engineering knowledge during 1944; transformers. P. L. Alger and J. Stokley. Gen Elec Rev 48:27 bibliog Feb '45
- Recent transformer developments. Reuben Lee. il diags Proc Inst Radio Eng 33:240 Apr '45
- Rectifier relay for transformer protection. E. L. Michelson. il diags Elec Eng 64:Trans 252 May '45
- Repairing defective tropically-designed transformers. J. S. Anderson. Radio N 32:45 Dec '44
- Rolled steel cores for radio transformers; Hiper-sil. C. C. Horstman. il diags Electronics 16:110 June '43

**TRANSFORMERS—Continued**

- Silicon steel and other magnetic materials in communication equipment. C. H. Crawford and E. J. Thomas. *Elec Eng* 54:1348 Dec '35
- Simplified calculations on multi-winding transformers. G. H. Browning. *diag Electronics* 12:46 May '39
- Specialty transformers. D. F. Roloff. *il Aero Digest* 49:102 Apr 1 '45
- Theory and practice for correct impedance match. C. A. Johnson. *Radio N* 17:336, 470, 538 Dec '35; Feb-Mar '36
- Three resonant circuit transformer. M. R. Winkler. *il diags Electronics* 16:96 Jan '43
- Transmission line conversion transformers; methods for joining a balanced line to a coaxial line. N. Marchand. *Electronics* 17:142 Dec '44
- Undercoupling in tuned coupled circuits to realize optimum gain and selectivity. J. J. Adams. *diag Proc Inst Radio Eng* 29:277 May '41
- Universal performance curves for tuned transformers. J. E. Maynard. *diag Electronics* 10:15 Feb '37
- Variable selectivity and the intermediate frequency amplifier. W. T. Cocking. *diags Wireless Eng* 13:119 Mar '36
- Voltage regulators using magnetic saturation; saturated transformers and reactors useful in numerous electronic circuits. K. J. Way. *bibliog diags Electronics* 10:14 July '37
- Zero-phase-sequence characteristics of transformers. A. N. Garlin. *Gen Elec Rev* 42:548 Dec '39  
*See also*
- Impedance Matching

**TRANSFORMERS, Audio-Frequency**

- Audio-frequency transformers. E. T. Wrathall. *bibliog diags Wireless Eng* 14:293-363-414 June-Aug '37
- Audio transformers sealed in aluminum cans. R. Lee. *il Electronics* 10:46 Dec '37
- Harmonic distortion in audio-frequency transformers. N. Partridge. *diags Wireless Eng* 19:394-451-503 Sept.-Nov '42
- High fidelity with adjustable transformer. I. A. Mitchell. *il diag Radio N* 16:621 Apr '35
- High power audio transformers; essential characteristics of high power audio transformers for class B amplification; units used in the third and fourth stages of radiobroadcast station WLW. J. F. Peters. *il diags Elec Eng* 55:34 Jan '36; Discussion. 55:889 Aug '36
- Magnetic shielding of transformers at audio frequencies. W. G. Gustafson. *Bell Sys Tech Jour* 17:416 July '38
- Method of measuring the magnetic properties of small samples of transformer laminations. H. W. Lamson. *il diags Proc Inst Radio Eng* 28:451 Dec '40
- Output transformer response. F. E. Terman and R. R. Ingebretsen. *Electronics* 9:30 Jan '36

*See also*

## Shielding

**TRANSFORMERS, Power**

- Alternating current impedance of chokes and transformers; measuring instrument. T. J. Rehfish and H. T. Bissmire. *diags Wireless Eng* 18:266 July '41

- B-H curve tracer for lamination samples; magnetic material used in transformers and chokes. R. Adler. *il diags Electronics* 16:128 Nov '43
- Eddy currents in composite laminations. E. Peterson and L. R. Wrathall. *diags Proc Inst Radio Eng* 24:275 Feb '36
- Experimental investigation of the theory of eddy currents in laminated cores of rectangular section. M. Reed. *Jour Inst Elec Eng* 80:576 '37
- Filament transformer for variable voltage. *diag Elec World* 122:120 Nov 11 '44
- Fuse protection of small power transformers. Robert M. Hanson. *il Electronic Indus* 2:86 Apr '43
- Hermetically sealed transformers. R. M. Hanson. *il Electronics* 18:136 Feb '45
- Power transformers for aircraft use. Harry Holubow. *il Electronic Indus* 1:69 Nov '42
- Superimposed d.c. and a.c. in iron-cored transformers and chokes; investigations with a cathode ray oscillograph. C. R. Cosens. *bibliog il diags Wireless Eng* 12:190 Apr '35

**TRANSFORMERS, Radio-Frequency**

- Fidelity and selectivity with variable intermediate frequency coupling. A. A. Webster. *il Radio N* 16:479 Feb '35
- Intermediate-frequency transformer alignment. R. Nathan. *diags Electronics* 10:33 Feb '37
- Optimum turns ratio for interstage transformers. Robert M. Hanson. *Electronic Indus* 2:66 June '43
- Quarter-wave step-up transformer. H. Salinger. *bibliog Proc Inst Radio Eng* 32:553 Sept '44
- Undercoupling in tuned coupled circuits to realize optimum gain and selectivity. J. J. Adams. *diag Proc Inst Radio Eng* 29:277 May '41
- Use of coaxial and balanced transmission lines in filters and wide-band transformers for high radio frequencies. W. P. Mason and R. A. Sykes. *diags Bell System Tech Jour* 16:275 July '37
- Variable selectivity and the intermediate frequency amplifier. W. T. Cocking. *diags Wireless Eng* 13:119 Mar '36

*See also*Inductors  
Shielding**TRANSIENTS**

- Amplification of transients; discussion of paper by C. H. Smith, G. Builder. *diags Wireless Eng* 12:246 May '35
- Analysis, synthesis and evaluation of the transient response of television apparatus. A. V. Bedford, and G. L. Fredendall. *Proc Inst Radio Eng* 30:440 Oct '42
- Anomalous transmission in filters. J. G. Brainerd. *Proc Inst Radio Eng* 23:781 July '35
- Behaviour of the output circuit to transients. N. W. McLachlan. *diags Wireless Eng* 13:630 Dec '36
- Diplex; arrangement for transmitting two messages simultaneously with one transmitting equipment; developed by Transradio International of Argentina. P. J. Noizeux, H. Krahenbuhl and B. Noviks. *il diags Proc Inst Radio Eng* 29:600 Dec '41
- Electronic device indicates peak transient voltages. T. Offenbacher. *diags Elec World* 123:80 May 26 '45

- Experimental method of studying transient phenomena. H. H. Turner. Proc Inst Radio Eng 19:268 Feb '31
- Hearing, the determining factor for high-fidelity transmission. H. Fletcher. bibliog diags Proc Inst Radio Eng 30:266 June '42
- Industrial oscillograph for impulse testing. O. Ackerman. *il* Electronics 18:154 May '45
- Introduction to transients; non-sinusoidal and transient wave forms used in recent electronic developments. B. Dudley. diags Electronics 17:132 Aug '44
- Judging an amplifier by means of the transient characteristic. J. Haantjes. diags Electronics 15:80 Mar '42
- Mathematical appendix to transient response of single-sideband systems. Charles P. Singer. Proc Inst Radio Eng 28:561 Dec '40
- New method for obtaining transient solutions of electrical networks. W. P. Mason. Bell System Tech Jour 8:109 Jan '29
- Oscillographs for recording transient phenomena. W. A. Marrison. 8:368 Apr '29
- Portable equipment for observing transient response of television apparatus. Heinz E. Kallmann. Proc Inst Radio Eng 28:351 Aug 40
- Quasi transients in class B audio-frequency push-pull amplifiers. A. P. Sah. *il* diags Proc Inst Radio Eng 24:1522 Nov '36
- Reproduction of transients by a horn loudspeaker. N. W. McLachlan. diags Wireless Eng 14:168 Apr '37
- Reproduction of transients by television amplifiers. N. W. McLachlan. diags Wireless Eng 13:519 Oct '36
- Symmetrical electrical systems; method of evaluating the transmission characteristics of four-terminal networks. E. S. Purington. diag Electronics 15:54 Nov '42
- Synchronizing transients and synchronizers for large machines. R. D. Evans, F. H. Gulliken and C. B. Myhre. diags Electronics 13:71 Mar '40
- Transient aspect of wide-band amplifiers; examination with the cathode ray oscillograph. O. S. Puckle. *il* diag Wireless Eng 12:251 May '35
- Transient oscillations in electric wave filters. J. R. Carson and O. J. Zobel. Bell System Tech Jour 2:1 July '23
- Transient response. H. E. Kallmann and others. diags Proc Inst Radio Eng 33:169 Mar '45
- Transient response of controlled rectifier circuits. P. T. Chin and G. E. Walter. bibliog Elec Eng 64:Trans 208 Apr '45
- Transient response of single-sideband systems. H. E. Kallman and R. F. Spencer. Proc Inst Radio Eng 28:557 Dec '40
- Transient response of wide-band amplifiers. *il* W. W. Hansen. Electronic Indus 3:80 Nov '44
- Transients and time constants. A. Tatz. diags Radio N 32:58 Sept '44
- Transients in frequency modulation. H. Salinger. Proc Inst Radio Eng 30:378 Aug '42
- Transients in grounded wires lying on the earth's surface. John Riordan. Bell System Tech Jour 10:420 July '31
- Transients in magnetic systems. C. F. Wagner. diags Elec Eng 53:418 Mar '34; Discussion. 54:557 May '35
- Transients in parallel grounded circuits, one of which is of infinite length. L. C. Peterson. Bell System Tech Jour 9:760 Oct '30
- Transients of resistance-terminative dissipative low-pass and high-pass electric wave filters. Wentworth Chu and Chung-Kwei Chang. Proc Inst Radio Eng 26:1266 Oct '38
- Transmission characteristics of asymmetric-sideband communication networks; investigation primarily of interest in connection with television. E. C. Cherry. bibliog diags Jour Inst Elec Eng 89 pt 3:19-39; Discussion. p.39 Mar '42
- Two aids for transient study. *il* Electronics 15:76 May '42
- Theory of ideal filters; the relation of transient response to an ideally-limited frequency band. D. A. Bell. Wireless Eng 20:323 July '43
- Transient response. H. E. Kallmann. diags Proc Inst Radio Eng 33:169 Mar '45
- Transient response of controlled rectifier circuits. P. T. Chin and G. E. Walter. bibliog Elec Eng 64:Trans208-14 Apr '45
- Use of high-vacuum cathode-ray tube for recording high-speed transient phenomena. D. I. McGillewie. Elec Comm 17:124 '38
- See also*
- Amplifiers**
- TRANSIT Time**
- Effect of space charge and transit time on the shot noise in diodes. A. J. Rack. Bell Sys Tech Jour 17:592 Oct '38
- Electron inertia effects. F. B. Llewellyn. Cambridge (Lond) '41
- Electron transit time; effect in cathode-ray tubes and diodes. W. E. Benham. Wireless Eng 16:593 Dec '39
- Electron transit time effects in multigrid valves. M. J. O. Strutt. diags Wireless Eng 15:315 June '38
- Equivalent networks of negative-grid vacuum tubes at ultra-high frequencies. F. B. Llewellyn. Bell Sys Tech Jour 15:575 Oct '36
- Input resistance of vacuum tubes as u-h-f amplifiers. W. R. Ferris. Proc Inst Radio Eng 24:82 Jan '36
- New type of ultra-short-wave oscillator. I. E. Mourontseff and H. V. Noble. Proc Inst Radio Eng 20:1328 Aug '32
- Operation of ultra-high frequency tubes. F. B. Llewellyn. Bell Sys Tech Jour 14:112 Oct '35
- Phase angle of vacuum tube transconductance at very high frequencies. F. B. Llewellyn. Proc Inst Radio Eng 22:947 Aug '34
- Review of ultra-high frequency vacuum tube problems. B. J. Thompson. RCA Rev 3:146 Oct '38
- Transit-time phenomena in electronic tubes. R. Kompfner. Wireless Eng 19:3 Jan '42
- Transit-time effects in diodes in pictorial form. R. W. Sloan and E. G. James. Jour Inst Elec Eng 79:291 '36; also, Wireless section 1. E.E. 11:247 Sept '36
- See also*
- Vacuum Tubes, Ultra-High-Frequency**
- TRANSMISSION**
- Advances in carrier telegraph transmission. A. L. Matte. Bell System Tech Jour 19:181 Apr '40
- Anomalous transmission in filters. J. G. Brainerd. Proc Inst Radio Eng 23:781 July '35



**TRANSMISSION—Continued**

- Asymmetric-side-band broadcasting. P. P. Eckersley. Proc Inst Radio Eng 26:1041 Sept '38
- Asymmetric side-band broadcast transmission. P. P. Eckersley. diags Jour Inst Elec Eng 77:517 Discussion. 532 Oct '35
- Binaural transmission on a single channel; system employs amplitude and frequency modulated signals simultaneously. A. V. Eastman and J. R. Woodward. diags Electronics 14:34 Feb '41
- Cape Charles-Norfolk ultra-shortwave multiplex system. N. F. Schlaak and A. C. Dickieson. Proc Inst Radio Eng 33:78 Feb '45
- Characteristics of the ionosphere and their application to radio transmission. T. R. Gilliland and others. J Research Nat Bur Stand 18:645 June; Same. Proc Inst Radio Eng 25:823 July '37
- Correlation of radio transmission with solar phenomena. A. M. Skettett. charts Proc Inst Radio Eng 23:1361 Nov '35
- Duplex transmission of frequency-modulated sound and facsimile. M. Artzt and D. E. Foster. diags RCA Rev 6:88 July '41
- Earth's magnetism affects wireless transmission; abstract. J. H. Dellinger. Science 93:sup6 Feb 21 '41
- Equivalent circuits for discontinuities in transmission lines. J. R. Whinnery and H. W. Jamieson. diags Proc Inst Radio Eng 32-98 Feb '44
- Experimental polyphase broadcasting. P. Loyet. il diag Proc Inst Radio Eng 30:215 May '42
- Facsimile transmission in the United States. G. Herrick. il diags Elec Rev (Lond) 126:67 8 Jan 19 '40
- Frequency spectrum; radio broadcasting; television broadcasting; radio communications; color-chart. Gen Elec Rev 47: insert 16b June '44
- Generation of spurious signals by non-linearity of the transmission path. A. V. Eastman and L. C. F. Horle. il map Proc Inst Radio Inst Eng 28:438 Oct '40
- Long-wave radio transmission phenomena associated with a cessation of the sun's rays. A. Bailey and A. E. Harper. maps Bell System Tech Jour 15:1 bibliog (p16-17) Jan '36
- Low-frequency transmission over trans-Atlantic paths. H. H. Beverage and G. W. Kendrick. il Proc Inst Radio Eng 24:472 Mar '36
- Maximum usable frequencies for radio sky-wave transmission, 1933 to 1937. T. R. Gilliland and others. bibliog J Research Nat Bur Stand 20:627 May '38; Same. Proc Inst Radio Eng 26:1347 Nov '38
- More symmetrical Fourier analysis of transmission problems. R. V. L. Hartley. Proc Inst Radio Eng 30:144 Mar '42
- New radio transmission phenomenon. J. H. Dellinger. Phys Rev 48:705 Oct 15 '35
- New transmission measuring systems for telephone circuit maintenance. F. H. Best. bibliog il diags Bell System Tech Jour 17:1 Jan '38
- Oblique-incidence radio transmission and the Lorentz polarization term. N. Smith, bibliog Jour Research Nat Bur Stand 26:105 Feb '41
- Phase and magnitude of earth currents near radio transmitting antennas. G. H. Brown. Proc Inst Radio Eng 23:168 Feb '35
- Pulse-time modulation; new type of radio transmission. E. M. Deloraine and E. Labin. Electronics 18:100 Jan '45
- Radio-telegraphy and radio-telephony. A. S. Angwin. Jour Inst Elec Eng 76:178 Feb. '35
- Radio transmission anomaly; co-operative observations between the United States and Argentina. J. H. Dellinger and A. T. Cosentino. diags Proc Inst Radio Eng 28:431 Oct '40
- Radio transmission survey of Ohio. R. C. Higgy and E. D. Shipley. Ohio State U Eng Exp Sta Bul 92:1 '36 (pa 25c)
- Simultaneous radio range and telephone transmission. W. E. Jackson and D. M. Stuart. diags Proc Inst Radio Eng 25:314 Mar '37
- Single-side-band telephony applied to the radio link between the Netherlands and the Netherlands East Indies. N. Koomans. il diags Proc Inst Radio Eng 26:182 Feb '38; Discussion. 26:1298 Oct '38
- Solution of unsymmetrical-sideband problems with the aid of the zero-frequency carrier. H. A. Wheeler. bibliog diags Proc Inst Radio Eng 29:446 Aug '41
- Some standard solutions of transmission problems. F. Siemens. Radio N 17:594-652 Apr-May '36
- Study of ground-wave radio transmission. R. C. Higgy and E. D. Shipley. Proc Inst Radio Eng 24:483 Mar '36
- Symmetrical electrical systems; method of evaluating the transmission characteristics of four-terminal networks. E. S. Purington. diags Electronics 15:54 Nov '42; 16:69 Jan '43
- Television transmission over wire lines. M. E. Strieby and J. F. Wentz. Bell System Tech Jour 20:62 Jan '41
- Transatlantic long-wave radio telephone transmission and related phenomena from 1923 to 1933. A. Bailey and H. M. Thomson. diag Bell System Tech Jour 14:680 bibliog(p693-4) Oct '35
- Transmission and reception of centimeter radio waves. C. W. Rice. bibliog il diags Gen Elec R 39:362 Aug '36
- Transmission and reception of centimeter waves. I. Wolff, E. G. Linder and R. A. Braden. il diags Proc Inst Radio Eng 23:11 Jan '35
- Transmission characteristics of asymmetric-side-band communication networks. E. C. Cherry. bibliog diags Jour Inst Elec Eng 89 pt 3; 19-90 pt 3:75 Mar '42, June '43; Discussion. 89 pt 3:39 Mar '42
- Transmission of color pictures by facsimile. Electronics 18:236 Apr '45
- Transmission of electromagnetic waves in hollow tubes of metal. W. L. Barrow. bibliog diags Proc Inst Radio Eng 24:1298 Oct '36
- Transmission of radio waves; defects in reception. Electrician 124:94 Feb 2 '40
- Transmission of radio waves; interference and fading. Electrician 123:539 Dec 22 '39
- Transmission of radio waves; the skip distance. Electrician 124:77 Jan 26 '40
- Transmission of radio waves; the range of short waves. diags Electrician 124:43 Jan 19 '40
- Transmission of radio waves through the earth; abstract. D. Silverman and D. Sheffet. Wireless Eng 20:496 Oct '43
- Transmission theory of plane electromagnetic waves. S. A. Schelkunoff. bibliog diags Proc Inst Radio Eng 25:1457 Nov '37
- Ultra-short-wave multiplex transmission. C. R. Burrows and A. Decino. bibliog il diags Proc Inst Radio Eng 33:84 Feb '45

- Ultra-short-wave transmitter for the Cape Charles-Norfolk multiplex system. R. J. Kircher and R. W. Friis. plan bibliog Proc Inst Radio Eng 33:101 Feb '45
- Ultra-short waves; distance reception and theory. Sci Amer 155:48 July '36
- Ultra short waves for air navigation. H. W. Roberts. bibliog il diags Aero Digest 31:66 Nov '37
- Ultra-short wave guide ray beacon and its application. E. Kramer and W. Hahnemann. Proc Inst Radio Eng 26:17 Jan '38. Correction p 276 Mar '38
- Ultra-short-wave refraction and diffraction. T. L. Eckersley. Jour Inst Elec Eng 80:286 Mar '37
- Ultra-short-wave transmission over a 39-mile optical path. C. R. Englund, A. B. Crawford and W. W. Mumford. map Proc Inst Radio Eng 28:360 Aug '40
- Ultra-short-waves in urban territory. C. R. Burrows, L. E. Hunt and A. Decino. bibliog il diag maps Elec Eng 54:115 Jan '35; Same Bell Sys-Tech Jour 14:253 Apr '35; Discussion. Elec Eng Jour 54:749 July '35
- Wide band transmission over balanced circuits. A. B. Clark. Elec Comm 13:348 Apr '35. Same. Bell Sys Tech Jour 14:1 Jan '35
- See also
- |               |                      |
|---------------|----------------------|
| Broadcasting  | Propagation of Waves |
| Communication | Television           |
- TRANSMISSION, Radiotelephone**
- Diplex; arrangement for transmitting two messages simultaneously with one transmitting equipment; developed by Transradio international of Argentina. P. J. Noizeux, H. Krahenbuhl and B. Noviks. il diags Proc Inst Radio Eng 29:609 Dec '41
- Emergency communication by radiotelephone; Southern counties gas co. of California. H. J. Keeling. il diag Amer Gas Assn Mo 25:130 Apr '43
- Engineering acoustics; telephony power levels. Electrician 106:337 Feb 27 '31
- Hawaiian radiotelephone system. W. I. Harrington and C. W. Hansell. Elec Eng 54:822 Aug '35
- La transmission radiotelephonique, a haute frequencias, des emissions, radiodiffuses en Allemagne. diag. H. Genie Civil 116:237 Apr 6 '40
- Low-frequency radio telephone transmitter; constructional details. M. Silver. il diag Radio N 31:28 May '44
- Mobile radiotelephone. F. G. Loring. Elec Comm 11:97 Oct '32
- Mobile radiotelephony. H. H. Buttner. Elec Comm 11:97 Oct '32
- Mobile transmitter for 2½ meters. Chambers. il QST 25:36 Nov '41
- Modern two-way radio system. S. Becker and L. M. Leeds. il diags Proc Inst Radio Eng 24:1183 Sept '36
- Modern systems of multi-channel telephony on cables. A. S. Angwin and R. A. Mack. diag Electrician 118:543; Discussion. p. 544 Apr 23 '37
- Modifying radio equipment for military applications; marine radio telephone as example. C. T. Read. il diags Electronics 17:98 Feb '41
- Multi-band 30 watt transmitter. M. Silver. il diag Radio N 33:48 Feb '45
- New long-wave commercial radio telephone-telegraph transmitters. D. B. Mirk. Elec Comm 9:189 Jan '31
- New 56 mc mobile rig. K. A. Kopetzky and O. Read. il diag Radio N 24:14 Sept '40
- Nine audio channels on single carrier in Scotch-Irish telephone circuit. Electronics 10:52 Dec '37
- Optimum decrement of band-pass filters for the reception of telephony. D. A. Bell. Wireless Eng 12:491 Sept '35
- Portable duplex radio-telephone. W. B. Lewis and C. J. Milner. bibliog diags Wireless Eng 13:475 Sept '36
- Postwar two-way radio systems. S. Freedman. il plan Radio N 31:24, 54 Mar '44
- Radio aids ordnance plant construction; Kingsbury ordnance plant; two-way radio at strategic points and in cars. il Eng N 127:220 Aug 14 '41
- Radio-telegraphy and radio-telephony. A. S. Angwin. Jour Inst Elec Eng 76:177 Feb '35
- Radiotelephone noise reduction by voice control at receiver. C. C. Taylor. il diag Elec Eng 56:971 Aug '37; Same Bell Sys Tech Jour 16:475 Oct '37
- Review of radio communication in the fixed services for the year 1935. C. H. Taylor. Proc Inst Radio Eng 24:390 Mar '36
- Review of radio communications in the mobile services. I. F. Byrnes. Proc Inst Radio Eng 23:422 May '35
- Ship-to-shore communication. R. H. Riddle. bibliog il diags Electronics Sept '37
- Short-wave single sideband radiotelephone system. A. A. Oswald. Proc Inst Radio Eng 26:1431 Dec '38
- Simultaneous radio range and telephone transmission. W. E. Jackson and D. M. Stuart. diags Air Commerce Bul 8:38 Oct '36
- Single-side-band telephony applied to the radio link between the Netherlands and the Netherlands East Indies. N. Koomans. il diags Proc Inst Radio Eng 26:182 Feb '38
- Two-way radio-telephony; a new two-wire, four-wire control terminal. M. G. Marinesco. bibliog diags Wireless Eng 17:97, 164 Mar-Apr '40
- Two-way speech by wireless. M. Marro. diag Electrician 118:5 Jan 1 '37
- Unattended ultra-short-wave radiotelephone system; used as a part of telephone circuit between Boston and Provincetown, N. F. Schlaack and F. A. Polkinghorn. il diags map Proc Inst Radio Eng 23:1275 Nov '35; Same cond. Bell Sys Tech Jour 14:534 July '35
- Vodas; voice-operated switching devices to suppress echoes and singing in telephone-radio-telephone connections. S. B. Wright. bibliog il diags Elec Eng 56:1012 Aug '37; Same. Bell Sys Tech Jour 16:456 Oct '37
- 200-watt stylized phone transmitter. W. A. Woehr. il diag Radio N 23:10 Apr '40
- Highway Department Uses**
- Calling KGHB, calling KGHB, clear slides at airplane curve; short wave radio control in snow removal in Washington. il Roads & Sts 80:74, 76, 78 Oct '37
- Radio keeps 'em plowing; radio transmitters and receivers speed snow removal on California mountain highway. T. M. Dennis. il Radio N 29:14 Feb '43

**TRANSMISSION, Radiotelephone—Continued****In Forestry Service**

- Aircraft radio guards forests against saboteurs. S. R. Winters. *il Aero Digest* 41:101 July '42
- Communication facilities of the U. S. Forest service. A. G. Simson. *il Elec Eng* 60; *Tran* 971 Nov '41
- Equipment for forest defense. S. R. Winters. *il (cover) Radio N* 28:48 Dec '42
- Fire-fighting amplitude modulation network. L. Winner. *il Radio N* 29:11 Apr '43
- Forest protection in Quebec. *Pulp & Pa of Can* 39:350 Apr '38
- Minute men of the fire line. A. R. Boone. *il Sci Amer* 156:362 June '37
- Mobile 30-40 Mc receiver for the U. S. Forest service. H. K. Lawson and L. M. Belleville. *il diag Electronics* 15:22. Jan '42
- Ontario tries radio for forest fire protection. G. D. Mackie. *Pulp & Pa of Can* 37:583 Sept '36
- Radio-equipped smoke jumpers; parachuting forest fire fighters. S. R. Winters. *il Radio N* 27:6 Apr '42
- Radio for forest protection. C. E. Jackson. *il Radio N* 27:46 May '42
- Radio in the forest service. S. R. Winters. *il Radio N* 18:137 Sept '36
- Radiophones; the answer to one of the major problems of forest fire protection; with cost data. P. W. MacKay and K. G. Chisholm. *Pulp & Pa of Can* 38:374 Apr '37
- WSEL protects Blue Ridge parkway. S. R. Winters. *il Radio N* 26:29 Dec '41

**In Harbors**

- Marine radio telephone service for Boston harbor. F. A. Gifford and R. B. Meader. *il Bell System Tech Jour* 14:702 Oct '35
- Radio now brings telephone service to harbor craft. *il Radio N* 18:331 Dec '36
- Ship sets for harbor ship-to-shore service. H. N. Willets. *il Bell System Tech Jour* 14:713 Oct '35
- Two-way radio marine telephone service in New York harbor. *Marine Eng* 41:506 Sept '36; *Sci Amer* 155:294 Nov '36

**On Railroads**

- Electronics in transportation. *il diag Amer* 171:160 Oct '44
- Entertainment train, with radio and loud speaking equipment. Nord railway co. *il Electrician* 117:189 Aug 14 '36
- Les installations radiotelephoniques dans les trains. *il Kenie Civil* 108:564 June 13 '36
- Locomotive to caboose radio communication. S. G. Ellis. *il diag Elec Eng* 55:109 Jan '36
- Pennsylvania railroad installs radio for head to rear-end communication. *il Ry Age* 103:924 Dec 25 '37
- Radio fills gap; short-wave equipment used by railway after storm cuts wire. *Bsns W* p41 May 13 '44
- Radio for railroads. W. S. Halstead. *il Electronics* 17:92 Apr '44
- Review of radio communications in the mobile services. I. F. Byrnes. *Proc Inst Radio Eng* 23:426 May '35

Rio Grande tests radio for train communication; short-wave, frequency-modulation equipment for conversation between locomotive and caboose. W. W. Pulham. *il Ry Age* 116:891 May 13 '44

Santa Fe intra-train radio tests. *il Ry Age* 117:4 July 1 '44

Train communication; summary of recent activities. *il Ry Mech Eng* 118:283, 378 June-Aug '44

Ultra short wave radio for caboose to engine communication. H. A. Sheppard and W. C. Evans. *il Ry Age* 99:104 July 27 '35

**On Fire Boats**

Forest fire patrol; part radio plays in the work of the National park service. S. R. Winters. *il Radio N* 1939 June '38

New York City's fire boat communication system. F. Borsody. *il diag map Electrona* 11:10 Apr '38

**Police Uses**

AM vs. FM in two-way radio as applied to police communications. S. Freedman. *il diags Radio N* 30:42 Dec '43

Border patrol; part radio plays in aiding federal agents. L. White. *il Radio N* 20:15 July '38

Developments in the electrical industry during 1935; equipment for police use. J. Liston. *il Gen Elec Rev* 39:36 Jan '36

Engineering work of the Federal communications commission; police, aviation, and maritime services. W. N. Krebs. *Proc Inst Radio Eng* 32:324 June '44

Field survey for police service in Milwaukee. *Electronics* 9:36 July '36

Fighting crime with two-way radio. V. Hall. *il Radio N* 17:327 Dec '35

Frequency modulation for emergency communication. H. DuVal, Jr. *Electronics* 13:79 Oct '40

Latest in police radio; two-way equipment. *il Sci Amer* 153:77 Aug '35

Military police radio in the European theater of operations. D. Talley. *il Radio N* 31:212 Feb '44

Mobile crime laboratory and emergency truck; Illinois state highway maintenance police. C. H. Nicholson. *il diags Radio N* 29:16 Mar '43

Modern two-way radio system. S. Becker and L. M. Leeds. *il diags Proc Inst Radio Eng* 24:1183 Sept '36

Oakland is prepared. *il Elec West* 89:64 Aug '42

Our police radio telegraph networks. A. A. Curry. *il map Radio N* 27:40 May '42

Planning a V-H-F communications system; with details concerning the Massachusetts state police system. J. A. Doremus. *il plan map Electronics* 16:96 Sept '43

Police radio. W. T. Peterson. *il Radio N* 25:37 Mar '41 (cont monthly)

Police radio nets. L. S. Fetcher. *il Radio N*. 27:74 Jan '42

Police radio now up in the air; radio-police blimp. G. Fraser. *il Radio N* 18:344 Dec '36

Police satellite system; FM signals automatically relayed to central point by two mountain-top stations; design of 60-degree corner reflector receiving antennas. E. S. Naschke. *il diags Electronics* 17:94 May '44

Radio for police use; two-way communication. J. Liston. *il Gen Elec Rev* 38:31 Jan '35

- Review of radio communication in the mobile services. C. N. Anderson. Proc Inst Radio Eng 24:396 Mar '36
- Standby filament saver for police transmitters. J. E. Wagenseller. diag Electronics 15:65 May '42
- State-controlled radio police with description of Indiana system. F. M. McWhirter. il map Banking 28:43, 46 Apr '36
- State-wide frequency-modulation police network; state police of Connecticut. D. E. Noble. il diags map Electronics 13:18 Nov '28, Dec '40
- Two-way police auto radio systems. M. L. Prescott. il Gen Elec Rev 38:178 Apr '35
- Utility radio developments; police, marine and aviation radio. il Radio N 24:18 Aug '40
- See also*
- Police Communication Systems**
- Secrecy Systems**
- Line transmission; secrecy systems. Electrician 117:365 Sept 25 '36
- Speech scrambling methods. W. W. Roberts. il diags Electronics 16:108 Oct '43
- Transoceanic telephone. F. L. Elam. il map Radio N 20:8 Aug '38
- Ship-to-Shore**
- Automatic ship-to-shore radio telephone saves lives. J. Strong. il Radio N 19:77 Aug '37
- Coastal and harbor ship radiotelephone service from Norfolk, Va. W. M. Swingle and Austin Dailey. Proc Inst Radio Eng 27:270 Apr '39
- Marine telephones for coastal vessels. Science 87:sup9 June 24 '38
- Radio extension links to the telephone system. R. A. Heising. bibliog il diags maps Bell Sys Tech Jour 19:611 Oct '40
- Radiotelephone system for harbor and coastal services. C. N. Anderson and H. M. Pruden. Proc Inst Radio Eng 27:254 Apr '39
- Remotely-controlled receiver for radiotelephone systems. H. B. Fischer. Proc Inst Radio Eng 27:264 Apr '39
- Ship-to-shore communication. R. H. Riddle. bibliog il diags Electronics 10:3, 58 Sept '37
- Ship-to-shore radio in Puget Sound area. E. B. Hansen. bibliog diag map Elec Eng 54:828 Aug '35; Excerpts. Bell Sys Tech Jour 14:708 Oct '35
- Vogad for radiotelephone circuits. S. B. Wright, S. Doba, and A. C. Dickenson. Proc Inst Radio Eng 27:258 Apr '39
- Transoceanic**
- America calling; how a transatlantic 'phone call is made; illustrations. A. P. Peck. Sci Amer 158:338 June '38
- Future of transoceanic telephony. O. E. Buckley. Bell System Tech Jour 21:6 June '42; Same. Jour Inst Elec Eng 89 pt 1:456 June '42; Same cond. Engineering 153:377, 384 Oct 8 '42; Abstracts. Electrician 128:415 May I '42; Elec Rev (Lond) 130:559 May 1 '42
- One, two, three, four, five, hello Shreeve; first words spoken across Atlantic; development of world-wide radio telephone service. S. Kent. il map Radio N 17:647 May '36
- Paris-New York radio telephone; the installations at Pontoise and Noisseau. il Electrician 119:753 Dec '37
- Radio extension links to the telephone system. R. A. Heising. bibliog il diags maps Bell System Tech Jour 19:611 Oct '40
- Single sideband music receiving system for commercial operation on transatlantic radio telephone circuits. F. A. Polkinghorn. il diags Bell System Tech Jour 19:306 Apr '40; Same. Proc Inst Radio Eng 28:157 Apr '40
- Single side-band short-wave system for transatlantic telephony. F. A. Polkinghorn and N. Schlaack. il diags Proc Inst Radio Eng 23:701 July '35; Same. Bell System Tech Jour 14:489 July '35
- Single-side-band telephony applied to the radio link between the Netherlands and the Netherlands East Indies. N. Koomans. il diags Proc Inst Eng 26:182 Feb '38; Discussion. 26:129. Oct '38
- Transatlantic long-wave radio telephone transmission and related phenomena from 1923 to 1933. A. Bailey and H. M. Thomson. diag Bell System Tech Jour 14:680 bibliog Oct '35
- Transatlantic telephony; receiving station near Rochester, England. Electrician 121; 339 Sept. 23 '38
- Transoceanic radio telephone circuits operated by the Bell system; map. Bell System Tech Jour 16:123 Apr '37
- Transoceanic radiotelephone development; with fold map and list of international radio-telephone circuits. R. Bown. bibliog diag Proc Inst Radio Eng 25:1124 Sept '37; Same cond. Bell System Tech Jour Oct '37
- Transoceanic telephone. F. L. Elam. il map Radio N 20:8 Aug '38
- See also*
- Broadcasting**
- TRANSMISSION, Ultra-High-Frequency**
- Beyond the ultra-short waves. G. C. Southworth. il diags Proc Inst Radio Eng 31:319 July '43
- Dispersion transmitter; antenna system to eliminate skip distance effects. H. W. Kline. diags Radio N 32:28 Dec '44
- Experimental investigation of the propagation of radiation having wavelengths of 2 and 3 metres. J. S. McPetrie and J. A. Saxton. Jour Inst Elec Eng 87:146 Aug '40; Abstract. Electronics 13:76-7 Mar '40; Discussion. Jour Inst Elec Eng 87:159 Aug '40
- Further results of a study of ultra-short-wave transmission phenomena. C. R. Englund, A. B. Crawford and W. W. Mumford. map Bell Sys Tech Jour 14:369 July '35
- Impetus which aviation has given to the application of ultra-high frequencies. W. E. Jackson. il map Proc Inst Radio Eng 28:49 Feb '40
- Metal triode for ultra-high-frequency operation. N. D. Deviatkov, M. D. Gurevich and N. K. Khokhlov. il diags Proc Inst Radio Eng 32:253 May '44
- Pennsylvania turnpike u-h-f traffic control system. il diags Science Electronics 15:34 May '42
- Precision tuning problem in U-H-F broadcasting. S. Y. White. diags Electronics 16:94 May '43
- Study of propagation over the ultra-short-wave radio link between Guernsey and England on wavelengths of 5 and 8 metres (60 and 37.5 mc./s.). R. L. Smith-Rose and A. C. Stickland. bibliog Jour Inst Elec Eng pt 3:12 Mar '43

**TRANSMISSION, Ultra-High-Frequency—Cont'd**

- Transformation [matching] section for decimetric and centimetric waves, with slight dependence on frequency; abstract. A. Weissfloch. *Wireless Eng* 21:230 May '44
- Transmission of ultra-short radio waves between Buenos Aires and London stations. *Science* 51:sup6-7 Mar 22 '35
- Transmission of ultra-short waves through ionospheric action; abstract. E. Fendler. *Wireless Eng* 18:19 Jan '41
- Trend toward very high frequencies in aviation radio. Le Kashman. *il plan Aero Digest* 48:65 Feb 15 '45
- Vacuum tube electronics at ultra-high frequencies. F. B. Lelewellyn. *diags Proc Inst Radio Eng* 23:112 Feb '35
- UHF repeater station; transmissions from isolated mountain dams relayed to flood-control headquarters; Los Angeles County flood control district. M. E. Kennedy. *flow diags il Electronics* 17:106 June '44
- Ultra-high frequencies. *diags Electrician* 123:425, 441, 470, 489 Nov 10-Dec 1 '39
- Ultra-high frequencies and their application to aeronautics. W. E. Jackson. *Jour Aeronautical Sci* 7:28 Nov '39
- Ultrahigh-frequency domain. A. N. Goldsmith. *Elec Eng* 56:662 June '37
- Ultra-high-frequency propagation through woods and underbrush. B. Trevor. *il RCA Rev* 5:97 July '40
- Ultra-high frequency transmission between the RCA building and the Empire State building in New York City. P. S. Carter and G. S. Wickizer. *il diags Proc Inst Radio Eng* 24:1082 Aug '36
- Ultrahigh-frequency transmission in wave guides. L. A. Ware. *bibliog diags Elec Eng* 61:508 Dec '42
- Ultra-short wave communication. E. H. Ullrich. *Elec Comm* 16:64 '37
- Ultra-short-wave communication between utility company service crews and dispatchers. F. Hartz, Jr. *il Elec W* 105:2832 Nov 23 '35
- Ultra-short waves; distance reception and theory. *Sci Amer* 155:48 July '36
- Ultra short waves for air navigation. H. W. Roberts. *bibliog il diags Aero Digest* 31:66 Nov '37
- Ultra-short wave guide ray beacon and its application. E. Kramer and W. Hahnemann. *Proc Inst Radio Eng* 26:17 Jan '38. Correction p 276 Mar '38
- Ultra short wave radio for caboose to engine communication. H. A. Shepard and W. C. Evans. *il Ry Age* 99:104 July 27 '35
- Ultra-short-wave refraction and diffraction. T. L. Eckersley. *Jour Inst Elec Eng* 80:286 Mar '37
- Ultra-short-wave transmission over a 39-mile optical path. C. R. Englund, A. B. Crawford and W. W. Mumford. *map Proc Inst Radio Eng* 28:360 Aug '40
- Ultra-short-waves in urban territory. C. R. Burrows, L. E. Hunt and A. Decino. *bibliog il diag maps Elec Eng* 54:115 Jan '35; *Same Bell Sys Tech Jour* 14:253 Apr '35; *Discussion. Elec Eng Jour* 54:749 July '35

See also

Microwaves Transmitters, U.H.F.  
Ultra-High Frequencies

**TRANSMISSION Lines**

- Angle of the inverted cone transmission line which simulates the radio waves. G. W. O. Howe. *Wireless Eng* 21:305 July '44
- Antennas and transmission lines at the Empire State television station. N. E. Lindenblad. *Communications* 20:13 May '40
- Applications of concentric transmission lines. V. J. Andrew. *il diag Electronics* 10:40 Mar '37
- Application of transmission-line theory to closed aeriels. F. M. Colebrook. *diags Jour Inst Elec Eng* 83:403 Sept '38
- Artificial delay-line design. J. B. Trevor, Jr. *diags Electronics* 18:135 June '45
- Attenuation of electromagnetic fields in pipes smaller than the central size. E. G. Linder. *Proc Inst Radio Eng* 30:554 Dec '42
- Attenuation of transmission lines. M. J. O. Strutt. *Wireless Eng* 10:139 Mar '33
- Bell labs test coaxial cable; video signal, produced by scanning film at 240 lines, 24 frames per second, is applied to coaxial system linking New York and Philadelphia. *il Electronics* 10:18 Dec '37
- Central antenna system. D. J. Fruin. *Electronics* 12:37 Nov '39
- Characteristics of resonant transmission lines; reference sheets. J. B. Epperson. *Electronics* 16:139 Oct '43
- Coaxial and balanced transmission lines. M. Reed. *diags Wireless Eng* 15:414 Aug '38
- Coaxial cable attenuation measurements at 300 mc. H. H. Race and C. V. Larrick. *il diags Gen Elec Rev* 44:507 Sept '41
- Coaxial cable design. N. D. Kenney. *il Electronics* 18:124 May '45
- Coaxial cable system for television transmission. M. E. Strieby. *Bell Sys Tech Jour* 17:438 July '38
- Coaxial filter for vestigial sideband transmission in television. H. Salinger. *Proc Inst Radio Eng* 29:115 Mar '41
- Coaxial-line discontinuities. J. R. Whinnery and others. *diags Proc Inst Radio Eng* 32:695 Nov '38
- Concentric line as resonator; abstract. F. Borgnis. *Wireless Eng* 18:23 Jan '41
- Concentric narrow-band-elimination filter. Laurence M. Leeds. *Proc Inst Radio Eng* 26:576 May '38
- Concentric-section resonant transmission lines; abstract. L. M. Hollingsworth. *Proc Inst Radio Eng* 29:356 June '41
- Concentric transmission line as harmonic filter. R. E. Snoddy. *Electronics* 15:68 May '42; *Discussion. S. Cutler. 15:156 Nov '42*
- Coupled antennas and transmission lines. R. King. *diags Proc Inst Radio Eng* 31:626 Nov '43
- Crosstalk between coaxial conductors in cable. R. P. Booth and T. M. Odarenko. *Bell Sys Tech Jour* 19:358 July '40
- Crosstalk between coaxial transmission lines. S. A. Schelkunoff and T. M. Odarenko. *Elec Comm* 16:39 '37
- Dielectric constants and power factors at centimeter wave-lengths; measurement by means of resonant lengths of coaxial transmission line. C. R. Englund. *il Bell System Tech Jour* 23:114 Jan '44

- Discontinuities in VHF lines. Electronic Indus 3:124 May '44
- Effect of electron activities on cables. P. Dunsheath. Jour Inst Elec Eng 80:21 Jan '37
- Electromagnetic shielding effect of an infinite plane conducting sheet placed between circular coaxial coils. S. Levy. bibliog Proc Inst Radio Eng 24:923 June '36
- Equivalent circuits for discontinuities in transmission lines. J. R. Whinnery and H. W. Jamieson. diags Proc Inst Radio Eng 32:98 Feb '44
- Equivalent circuits of the electromagnetic field. Electronic Indus 3:131 May '44
- Equivalent T and pi sections for the quarter-wavelength line. C. G. Brennecke. diags Proc Inst Radio Eng 32:15 Jan '44
- Exponential transmission line. Charles R. Burrows. Bell Sys Tech Jour 17:555 Oct '38
- Feeder wire losses. M. Rettinger. Electronic Indus 3:87 Aug '44
- Field-theory approach to nonuniform transmission lines; abstract. S. Ramo. Proc Inst Radio Eng 29:226 Apr '41
- High frequency transmission. D. H. Ray. Jour Inst Elec Eng 92 pt. 1:133 Mar '45
- High frequency transmission line networks. Andrew Alford. Elec Comm 17:301 '39
- Impulse response of electrical networks, with special reference to the use of artificial lines in network design. M. Levy. bibliog il diags Jour Inst Elec Eng 90 pt 3:153 Dec '43
- Installation of coaxial transmission lines. J. B. Epperson. Electronics 12:30 July '31; Aug '39
- Intercoupled transmission lines. Morton Fuchs. Elec Comm 21:248 '44
- Irregularities in telephone and television coaxial cables. L. Brillouin. Elec Comm 17:164 '38
- KMPC's directional array at Beverly Hills. R. M. Pierce and L. C. Sigman. il Electronic Indus 3:72 Feb '43
- Line characteristics. E. W. Greenfield. il Electronic Indus 3:108 Oct '44
- Line equalization by predistortion. Walter J. Creamer. Proc Inst Radio Eng 27:22 Jan '39
- Loading of a lecher-wire line by an inductively coupled load; abstract. J. Gensel. Wireless Eng 22:239 May '45
- Losses in twisted pair transmission lines at radio frequencies. C. C. Harris. diags Proc Inst Radio Eng 24:425 Mar '36
- Low-loss coaxial cable. diags Electrician 127:345 Dec 19 '41
- Measurements of admittances at ultra-high frequencies. J. M. Miller and B. Salzberg. RCA Rev 3:486 Apr '39
- New antenna kit design. W. L. Carlson and V. D. Landon. RCA Rev 2:60 July '37
- New antenna system for noise reduction. V. D. Landon and J. D. Reid. Proc Inst Radio Eng 27:188 Mar '39
- New coaxial transmission line at WTAM. W. S. Duttera. Electronics 12:30 Mar '39
- Occurrence of "tweeks" on a telephone line. Rush F. Chase. Proc Inst Radio Eng 26:1380 Nov '38
- On the pickup of balanced four-wire lines. Charles W. Harrison, Jr. Proc Inst Radio Eng 30:517 Nov '42
- Open-wire radio-frequency transmission lines. E. A. Laport. diags Proc Inst Radio Eng 31:271 June '43
- Phasing networks for broadcast arrays; graphical methods applied. C. R. Cox. diags Electronics 17:120 June '44
- Pickup of balanced four-wire lines. C. W. Harrison, jr. bibliog Proc Inst Radio Eng 30:517 Nov '42
- Polynomial quadripoles (four-terminal networks) with given losses and predetermined frequency-dependence; abstract. W. Bader. Wireless Eng 19:525 Nov '42
- Power efficiency in nonlinear transmission systems. H. Stockman. diags Electronics 17:134-7 July '44
- Principals of short-wave radiation. Ernst Weber. il Electronic Indus 3:69, 76 Jan-Feb '43
- Pulse-time modulation; new type of radio transmission. E. M. Deloraine and E. Labin. il Electronics 18:100 Jan '45
- Q for unloaded concentric transmission lines; alignment chart makes possible rapid determination of Q and sending-end impedance. R. C. Miedke. Electronics 16:139 Sept '43
- Radio-frequency distributing systems. F. X. Rettenmeyer. Proc Inst Radio Eng 23:1286 Nov '35
- Radio progress during 1944; radio wave propagation. bibliog Proc Inst Radio Eng 33:152 Mar '45
- Reflections from unmatched feeder terminals; simple graphical method. G. W. O. Howe. Wireless Eng 20:215 May '43
- Reflector efficiency. G. Reber. il Electronic Indus 3:101 July '44
- Resonant impedance of transmission lines. L. S. Nergaard and B. Salzberg. Proc Inst Radio Eng 27:479 Sept '39
- Resonant lines for frequency control. C. W. Hansell. bibliog il diags Elec Eng 54:852 Aug '35
- Safety relay for transmitters. J. B. Quess. il diag Radio N 23:18 May '40
- Selecting coax cable. Victor J. Andrew. Electronic Indus 4:84 June '45
- Single-sideband filter theory with television applications. John M. Hollywood. Proc Inst Radio Eng 27:457 July '39
- Single sideband transmission. Electronics 18:230 Feb '45
- Suppressor action of concentric lines with longitudinally layered dielectric in the decimetric-wave band; abstract. H. Riedel. Wireless Eng 20:505 Oct '43
- Stroboscopic depiction of electron motion in transmission lines. J. F. Kline. il Electronics 18:258 June '45
- Television transmission by coaxial cable. M. E. Strieby. bibliog il diags Elec Eng 57:249 June '38; Same. Bell System Tech Jour 17:438 July '38
- Television transmission over wire lines; coaxial cable with repeaters. M. E. Strieby and J. F. Wentz. bibliog il diags Bell System Tech Jour 20:62 Jan '41
- Television transmission; signals transmitted over coaxial cable and other telephone facilities. M. E. Strieby and C. L. Weis. bibliog il diags plan Proc Inst Radio Eng 29:371 July '41

**TRANSMISSION Lines—Continued**

- Terminating concentric lines; theory and practice of coupling low-impedance concentric transmission lines to antennas. C. G. Dietsch. *Electronics* 9:16 Dec '36
- Theory of non-uniform lines; abstract. K. W. Wagner. *Wireless Eng* 19:522 Nov '42
- Theory of transmission lines. E. N. Dingley, Jr. *Proc Inst Radio Eng* 33:118 Feb '45
- Transmission-line analogies of plane electromagnetic-wave reflections. A. Bronwell. *diags Proc Inst Radio Eng* 32:233 Apr '44
- Transmission line conversion transformers; methods for joining a balanced two-wire line to a coaxial line. N. Marchand. *diags Electronics* 17:142 Dec '44
- Transmission line coupling in u-h-f amplifiers. A. M. Schmelling. *il Electronic Indus* 3:102 Sept '44
- Transmission line theory. H. T. Strandrud. *il Bendix Radio Eng Vol 1, No. 4* p 13 '45
- Transmission line theory applied to wave guides and cavity resonators. D. Middleton and R. King. *bibliog diags Jour Ap Phys* 15:524 July '44; *Abstract. Electronics* 18:246 Apr '45
- Transmission line theory in terms of propagation characteristics and reflection co-efficients. F. M. Colebrook. *Wireless Eng* 21:167 Apr '44
- Transmission lines. J. F. Morrison. *Western Electric Pickups. Dec '39*
- Transmission lines at very high radio frequencies. L. E. Reukema. *bibliog Elec Eng* 56:1002 Aug '37
- Transmission lines with exponential taper. Harold A. Wheeler. *Proc Inst Radio Eng* 27:65 Jan '39
- UHF through pipes. *il Electronic Indus* 3:116 Mar '43
- Ultrashort electromagnetic waves; transmission lines at ultrahigh frequencies. J. R. Ragazzini. *bibliog diags Elec Eng* 62:159 Apr '43
- Unicontrol radio receiver for ultra-high frequencies using concentric lines as interstage couplers. Francis W. Dunmore. *Proc Inst Radio Eng* 24:837 June '36
- Use of coaxial and balanced transmission lines in filters and wide-band transformers for high radio frequencies. W. P. Mason and R. A. Sykes. *Bell Sys Tech Jour* July '37
- Vacuum tube voltmeter for coaxial line measurements. G. L. Usselman. *diags Electronics* 13:32 July '40
- General reciprocity theorem for transmission lines at ultra-high frequencies. Ronald King. *Proc Inst Radio Eng* 28:223 May '40
- Graph of impedance of eccentric conductor cable. W. J. Barclay and K. Spangenberg. *Electronics* 15:50 Feb '42
- Graphs for transmission lines; reference sheet. B. Salzberg. *Electronics* 15:47 Jan '42
- High-frequency coaxial line calculations. H. H. Race and C. V. Larrick. *bibliog Elec Eng* 61:Trans 526 July '42
- Improved transmission-line calculator. P. H. Smith. *diags Electronics* 17:130 Jan '44
- Loss-less transmission lines; analysis by means of two simple diagrams. A. Bloch. *diags Wireless Eng* 21:161 Apr '44
- Measuring characteristic impedance of twisted pairs. A. Alford. *Electronics* 13:48 Aug '40
- Measurement of balanced and unbalanced impedances at frequencies near 500 mc/s, and its application to the determination of the propagation constants of cables. L. Essen. *diags Jour Inst Elec Eng* 91 pt 3:84 June '44
- Measurements of the characteristics of transmission lines. I. G. Easton. *Gen Radio Exp Vol 18* Nov-Dec '43
- Optimum length for transmission lines used as circuit elements. B. Salzberg. *Proc Inst Radio Eng* 25:1561 Dec '37; *Correction. 26:276* Mar '38
- Propagation constant and characteristic impedance of high loss transmission lines. K. Spangenberg. *Electronics* 15:57 Aug '42
- Reactance calculator for transmission lines. William Moulic. *Electronic Indus* 3:78 Aug '43
- Solution of transmission-line problems by use of the circle diagram of impedance. W. Jackson and L. G. H. Huxley. *diags Jour Inst Elec Eng* 91 pt 3:105 Sept '44
- Symmetrical electrical systems; method of evaluating the transmission characteristics of four-terminal networks. E. S. Purington. *diags Electronics* 15:54 Nov '42
- Transmission-line calculator. R. C. Paine. *diags Electronics* 18:140 Mar '45
- Transmission line charts. R. F. Baum. *Electronics* 16:92 July '43
- Transmission loss charts; nomographs. J. G. Roof. *Electronics* 17:130 June '44
- Vacuum-tube voltmeter for coaxial line measurements. G. L. Usselman. *diags Electronics* 13:32 July '40

**Impedance**

- Characteristic impedance of grounded and ungrounded open-wire transmission lines. R. D. Duncan, Jr. *Communications* 18:10 June '38
- Characteristic impedance of parallel wires in rectangular troughs. Sidney Frankel. *Proc Inst Radio Eng* 30:182 Apr '42
- Characteristic impedance of transmission lines. C. C. Eaglesfield. *diags Wireless Eng* 21:222 May '44
- Graphical solution of voltage and current distribution and impedance of transmission lines. R. C. Paine. *bibliog diags Proc Inst Radio Eng* 32:686 Nov '44
- Impedance concept in wave guides. *Electronic Indus* 3:124 Aug '44
- Resonant impedance of transmission lines. L. S. Nergaard and Bernard Salzberg. *Proc Inst Radio Eng* 27:579 Sept '39

*See also*

Antennas	Networks
Coaxial Lines	Transmitters

**Calculations and Measurements**

- Characteristics of resonant transmission lines; reference sheets. J. B. Epperson. *Electronics* 16:139 Oct '43
- Charts for transmission line measurements and computations. P. S. Carter. *RCA Rev* 3:355 Jan '39
- Fresnel's reflection formulae and parallel transmission lines. A. Bloch. *diags Wireless Eng* 21:560 Dec '44
- General amplitude relations for transmission lines with unrestricted line parameters, terminal impedances, and driving point. Ronald King. *Proc Inst Radio Eng* 29:640 Dec '41

Solution of transmission-line problems by use of the circle diagram of impedance. W. Jackson and L. G. H. Huxley. diags Jour Inst Elec Eng 91 pt 3:105; Discussion. 117 Sept '44

Transmission line equation in terms of impedances. J. E. Pierce. diag Bell Sys Tech Jour 22:263 July '43

*See also*

Impedance

### TRANSMITTERS

Application of quartz plates to radio transmitters. O. M. Hovgaard. Proc Inst Radio Eng 20:767 May '32

Development of transmitters for frequencies above 300 megacycles. N. E. Lindenblad. il Proc Inst Radio Eng 23:1039 Sept '35

Enemy radio equipment. (Signal Corps photos.) Electronic Indus 3:78 Feb '44

Experimental FMAM mobile transmitter. K. A. Kopetzky. il diag Radio N 24:16 Dec '40

Flexible beam power transmitter. E. F. Kiernan. il diags Electronics 13:40 Aug '40

High power short-wave transmitter for Italy. Engineering 140-192 Aug 23 '35

KCMO's 5-kw transmitter; problems encountered in installing a modern broadcasting station. L. C. Sigmon. il diags Electrons 14:18 Aug '41

Low-frequency transmitters for arctic use. H. P. Miller, Jr. il Radio N 32:31 Dec '44

Low power all-band transmitter. D Espy. il diag Radio N 26:6 Oct '41

Mackay radio and telegraph company communication system. Milton H. Anderson. Elec Comm 19:81 '41

New unit type multi-frequency 5 kilowatt transmitting equipment. Devereaux Martin. Elec Comm 9:93 '41

Parasitics and instability in radio transmitters. G. W. Fyler. il diags Proc Inst Radio Eng 23:985 Sept '35

Parasitic circuits; source of erratic operation and reduced output in transmitters; remedies found effective. P. A. Ekstrand. diags Electronics 11:26 Oct '38

Radio progress during 1943; transmitters and antennas. (Annual review). bibliog Proc Inst Radio Eng 31:125 Mar '44

Transmitter bias supplies. Engineer dept., Aero-vox Res W. Vol 14 No 4

Unicontrol 5-band transmitter. K. A. Kopetzky and O. Read. il diag Radio N 23:6 Mar 20-Apr '40

60 simple watts; little transmitter. W. D. Haynes. il diag Radio N 24:11 Oct '40

### Manufacture

Ball bearings loaded easily; contact wheel assemblies for radio transmitters. diag Elec W 120:653 Aug 21 '43

Large transmitter construction; Press wireless plant. il Radio N 32:34

Manufacturing tests. il Electronic Indus 1:42 Dec '42

Nine production line shortcuts. il Electronic Indus 4:102 Apr '45

Production tester for transmitting tubes. P. M. Thompson. il Electronics 17:142 Jan '44

Radars in production. il Electronic Indus 2:59 July '43

Recent advances in aircraft radio production. W. D. Van Dyke. il diags Aero Digest 38:69 Mar '41

Transmitter production test. diag Electronics 15:94 Aug '42

*See also*

Manufacturing, Radio

### Parasitics

Method of stabilizing the frequency of a radio transmitter by means of an automatic monitor. H. A. Thomas. diags Jour Inst Elec Eng June '36

Parasitics and instability in radio transmitters. G. W. Fyler. il diags Proc Inst Radio Eng 23:985 Sept '35

Parasitic circuits; source of erratic operation and reduced output in transmitters; remedies found effective. P. A. Ekstrand. diags Electronics 11:26 Oct '38

Parasitic electronic oscillations and coupling frequencies in a power tube. R. King. bibliog diag Jour Ap Phys 11:615 Sept '40

Transmission characteristics of asymmetric-side-band communication networks. E. C. Cherry. bibliog diags Jour Inst Elec Eng 89 pt 3:19; 90 pt 3:75 Mar '42 June '43; Discussion. 89 pt. 3:39 Mar '42

### Protection

Automatic transmitter protection; electronic relay system. F. Marx. diags Electronics 16:98 June '43

Electronic time-delay relay for applying plate voltage to rectifiers. L. Van Arsdale, Jr. il diag Radio N 23:24 Mar '40

Modified protective gap for transmitting antennas. A. Leeman. diags Electronics 16:128 May '43

Photo-cell ham-saver; safety device for transmitter. A. Eidam. il diags Radio N 23:25 Feb '40

Protecting the transmitter from shutdown; equipment developed by Bell telephone laboratories. diags Electronics 11:58 Mar '38

Safety grouping-switch system for radio transmitter. J. Zelle. diag Electronic 17:180 Apr '44

Safety relay for transmitters. J. B. Ouess. il diag Radio N 23:14 May '40

Time-delay circuits. C. Felstead. diags Electronics 9:38 Mar '36

Transmitter breakdown alarm. W. K. Angus. diag Electronics 17:158 Feb '44

*See also*

Relays  
Time-Delay Circuits

### Testing

Distortion tests by the intermodulation method. J. K. Hilliard. diags Proc Inst Radio Eng 29:614 Dec '41

Indirect ray measurements on the Droltwich transmitter. C. H. Smith. Wireless Eng 14:537 Oct '37

Quick neutralizing tests. J. Zelle. diag Electronics 17:188 Aug '44

V-H-F dummy antenna. S. Cutler. il diags Electronics 18:129 May '45



**TRANSMITTERS—Continued****Tuning**

- Automatic control circuits for broadcast transmitters. W. R. Sloat. *il diags Electronics* 16:102 Nov '43
- Automatic transmitter tuning with push buttons. *il Electronics* 16:154 Nov '43
- Broadcast transmitter adjustments. J. G. Sperling. *il Electronics* 9:15 July '36
- Precision tuning problem in ultra-high-frequency broadcasting. S. Y. White. *il Electronics* 16:91 May '43
- Transmitter adjustments. J. G. Sperling. *Electronics* 9:15 July '36; Correction. 10:56 Jan '37

**TRANSMITTERS, Aircraft**

- Aerovoice D-30 transmitter. *il Aviation* 36:54 Aug '37
- Aircraft radio equipment for use on European air lines. A. D. Hodgson. *il plan Proc Inst Radio Eng* 23:979 Sept '35
- Army's SCR-299; mobile radio communications unit. O. Read. *il map Radio N* 30:17 Aug '43
- Battery operated private pilot's transmitter. A. B. Cavendish. *il diag Radio N* 25:13 June '41
- Beacon marker transmitter, installed at WBNS for the benefit of aircraft. L. H. Nafzger. *il Electronics* 9:29 May '36
- Collins aircraft transmitter. *il Aero Digest* 31:60 Oct '37
- Collins dial-tuned transmitter for airliners. *il Aviation* 37:63 Apr '38
- Emergency radio transmitter automatically sends out S O S signals. *il Aero Digest* 43:318 July '43
- Harvey airport transmitter. *il Aero Digest* 30:32 Mar '37
- New enemy radio equipment; analysis of German and Japanese aircraft radio sets manufactured in 1943. J. J. Willig. *il Electronics* 17:132 July '44
- Portable Learadio transmitter and receiver for field use. *il Aviation* 36:43 Feb '37
- Private flyer's radio equipment. D. S. Little. *diags Aero Digest* 38:54 Mar '41
- Radio interference with CAA systems. J. M. Wisenbach. *diag Elec West* 89:45 Aug '42
- Radio network and practice of Pan American airways. H. W. Roberts. *il map Aero Digest* 32:32, 34 Jan; 48, 50 Feb '38
- Radio News private flyer's transmitter. K. A. Kopetzky and O. Read. *il diag Radio N* 23:6 Feb '40
- Radio receptor co. ultra-high frequency transmitters. *il Aero Digest* 37:198 Oct '40
- RCA aeronautical transmitters. *il Aero Digest* 37:175 Sept '40
- RCA transmitter model AVT-7B. *il Aero Digest* 31:81 Nov '37
- RCA transmitters. *il Aviation* 35:36 June '36
- Recent advancements in aircraft radio production. W. D. Van Dyke. *il diags Aero Digest* 38:69. Mar '41
- Stancor transmitter. *il Aero Digest* 31:83 Nov '37
- Two new transmitters; the Shreve-Aero and the AR-30-W for private flyer. *il Aviation* 37:47 Mar '38
- United air lines new 5-kw transmitter. P. C. Saretto. *il Radio N* 26:33 July '41

- Waller communicator aircraft transmitters. *il Aero Digest* 37:154 Aug '40
- Western Electric dial-operated transmitter. *Aero Digest* 26:40 Jan '35
- Western Electric eleven-pound transmitter. *il Aero Digest* 27:54 Aug '35; *Aviation* 34:34 Aug '35
- Western Electric 22-lb. transmitter. *il Aviation* 37:47 Mar '38
- Westinghouse aircraft transmitter. *Aero Digest* 26:48 June '35; *il Sci Amer* 152:268 May '35
- Westinghouse transmitter for private owner aircraft. *il diags Aviation* 35:43 Aug '36
- See also*  
Aeronautical Radio

**TRANSMITTERS, Amateur**

- Automatic tuning for the amateur transmitter. Atkins and Read. *il QST* 24:20 Sept '40
- Apartment-size 100-watt transmitter. Woehr. *il QST* 75:12 July '41
- Compact portable emergency transmitter. Chambers. *il QST* 25:24 Apr '41
- Compactness with economy in an amateur transmitter. Monderer. *il QST* 24:34 Jan '40
- Electron-coupled oscillator, 1940 model. Southworth. *il QST* 24:26 Nov '40
- Ham's national defense portable rig. K. A. Kopetzky. *il diags Radio N* 25:12 Jan '41
- Heterodyne exciter. Bliss and Bailey. *il QST* 24:38 July '40
- Link coupling between transmitter stages. Roberts. *il QST* 24:41 Nov '40
- Medium power transmitter for 7, 14 and 28-mc. George Grammer. *il QST* 20:11 Oct '36
- Model 1 kw rig. O. Read. *il Radio N* 21:28 Apr '29
- Pack set for 112-mc mobile work. Chambers. *il QST* 26:21 Apr '42
- Portable-emergency transmitter for vibrator power supply. Roberts. *il QST* 25:32 Apr '41
- "QSL"-type transmitter with transformerless power supply. Palmer. *il QST* 28:56 July '44; Corrections Aug p 80; Oct p 96
- Traffic transmitter. Baker. *il QST* 24:52 June '40
- Transmitter control circuits. *il QST* 28:60 Feb '44
- Voice-controlled transmitter switching. *il QST* 28:46 Dec '44
- 50-watt CW and phone transmitter and for 220-volt D. C. Mims. *il QST* 21:14 Sept '37
- 56 mc mobile station. A. H. Lynch. *il QST* 24:40 May '40
- 80-watt all-band transmitter. Goodman. *il QST* 25:15 Oct '41
- 160 to 2½ in one transmitter. Tilton. *il QST* 24:23 Apr '40
- See also*  
Transceivers  
Transmitters, Portable

**TRANSMITTERS, Broadcasting**

- Applying feedback to broadcast transmitters. L. G. Young. *il Electronics* 12:20 Aug '39
- Automatic control circuits for broadcast transmitters. W. R. Sloat. *il diags Electronics* 16:102 Nov '43

- British Columbia's broadcast relay system; transmitters installed in local telegraph and telephone offices; wire lines serve as carrier conductors. N. R. Olding. il map diag Electronics 17:92 Sept '44
- Broadcast transmitter features. J. P. Taylor. il Electronics 9:20 Jan '36
- CBS goes to Latin America; short-wave transmitting stations, Brentwood, L. I. for transmission to Central and South America and to Europe. A. B. Chamberlain. diags maps Electronics 14:30 July '41
- Conserving station equipment. A. H. Smith. il Electronics 15:82 Nov '42
- Coupled resonant circuits for transmitters. N. I. Korman. Proc Inst Radio Eng 31:28 Jan '43
- Design and equipment of a fifty-kilowatt broadcast station for WOR. J. R. Poppele, F. W. Cunningham and A. W. Kishpaugh. il diags plan Proc Inst Radio Eng 24:1063 Aug '36
- Eighteen months' experience with WABC's island transmitter. O. W. Read and D. D. Jones. Electronic Indus 2:70 May '43
- Experimental polyphase broadcasting. Paul Loyet. Proc Inst Radio Eng 30:213 May '42
- Fifty kilowatt broadcast station utilizing the Doherty amplifier and designed for expansion to 500 kilowatts. W. H. Doherty and O. W. Towner. Proc Inst Radio Eng 27:531 Sept '39
- High-voltage power supplies. L. J. Gamacke. il Radio N 21:21 June '39
- Hot-cathode mercury rectifier tubes for high power broadcast transmitters; Crosley 500-kilowatt broadcast transmitter. H. C. Steiner. Proc Inst Radio Eng 23:103 Feb '35
- Hot news on the air; special events radio broadcasting; use of portable equipment. A. Schecter. il Radio N 19:12 Apr '38
- Improved design for five-kilowatt broadcast transmitter. R. E. Coram. Bell Lab Record 17:7 Sept '38
- KCMO's 5-kw transmitter; problems encountered in installing a modern broadcasting station. L. C. Sigmon. il diags Electronics 14:18 Aug '41
- KTKC builds a 5-kw transmitter in wartime. B. Williamson. il diags plan Electronics 16:74 May '43
- KWKW one-KW at Pasadena. Paul W. Spargo. Electronic Indus 2:90 Aug '43
- Low frequency unit. il Electronic Indus 3:97 Sept '44
- Method of stabilizing the frequency of a radio transmitter by means of an automatic monitor. H. A. Thomas. diags Jour Inst Elec Eng June '36
- Mobile pickup used by broadcasting stations; illustrations. Radio N 19:30 Apr '38
- Modern control room for a commercial radio transmitter central. L. E. Fletcher and C. L. Kennedy. il diags map RCA Rev 6:202 Oct '41
- Moving a 50-kw transmitter without loss of air time; WJZ moving to new site. il map Electronics 16:100 Oct '43
- New air-cooled 5-kilowatt broadcast and transmitter. F. W. Fischer. il diags Proc Inst Radio Eng 30:72 Feb '42
- New 50-kilowatt CBS international broadcasters. H. Romander. Elec Comm 21:112 '43
- New 50-kw WOR. S. Kaufman. il map Radio N 16:626 Apr '35
- New 10-50 kw KYW. J. Strong. il Radio N 16:626 Apr '35
- New \$350,000 transmitter for KNX. A. B. Cavendish. il Radio N 20:21 Nov '38
- Northern Ireland broadcasting station. il Engineer 161:329 Mar 27 '36; Engineering 141:341:346 Mar 27 '36
- OWI 200 kw west coast transmitter. Robert N. DeHart. il Electronic Indus 4:82 Apr '45
- Parasitics and instability in radio transmitters. G. W. Fyler. id diags Proc Inst Radio Eng 23:985 Sept '35
- Push-button-tuned 50-kw broadcast transmitter. R. J. Rockwell and H. Lepple. il diags Elec Eng 60:Trans 1-3 Jan '41
- Recent developments in radio transmitters. J. B. Coleman and V. A. Trouant. RCA Rev 3:316 Jan '39
- Remote control via 5 meters enables Signal corps to select, start and stop one of several radio transmitters on Bedloe's Island. W. W. Waltz. diags Electronics 9:17 Feb '36
- Remote-controlled radio-frequency booster for a broadcast station. J. H. Hollis. il diags maps Proc Inst Radio Eng 32:525 Sept '44
- Rules and standards for broadcast stations. R. F. Guy. Electronics 12:11 Aug '39
- Selection of a radio broadcast transmitter location. William B. Lodge. Proc Inst Radio Eng 27:621 Oct '39
- Special-events transmitter. D. F. Langham. il Electronics 12:19 Oct '39
- Two kilowatt broadcasters in Bulgaria. I. Gantcheff and G. de Czegledy. Elec Comm 15:308 '37
- United Nations North Africa installation. G. Sonbergh. Electronic Industries 3:100 Feb '44
- WABC, New York. il map Electronics 14:25. Dec '41
- WGY broadcasting station, Schenectady, N. Y.; views, plan and construction outline. Arch Forum 69:272 Oct '38
- Zenneck rotating field in the ground-wave field of a transmitter; abstract. J. Grosskopf. Wireless Eng 19:469 Oct '42

*See also*

#### Broadcasting Stations

#### TRANSMITTERS, Frequency-Modulation

- Commercial 50-kilowatt frequency-modulation broadcast transmitting station. H. P. Thomas and R. H. Williamson. Proc Inst Radio Eng 29:537 Oct '41
- Coupled-circuit frequency modulator; uses condenser microphone to vary reception of oscillator tank circuit. E. J. O'Brien. diags Proc Inst Radio Eng 32:348 June '44
- FM station, WWZR. R. Utter. il Radio N 31:21 June '44
- Frequency modulated transmitters. R. J. Newman. il diags Radio N 33:38 June '45
- Frequency modulation transmitter relays programs from Winston-Salem studios to station. Paul Dillon. il Electronics 17:104 Mar '44
- Grounded plate amplifier for the F-M transmitter. A. A. Skene. diags Electronics 15:106 Nov '42

**TRANSMITTERS, Frequency-Modulation—Cont'd**

- High power frequency modulation, 40-kilowatt, transmitter. *il* Electronics 9:25 May '36
- Modern 10-kw frequency-modulation transmitter. E. S. Winlund and C. S. Perry. *biblog il* *diag* Electronics 15:40 Mar '42
- NBC's new FM transmitter (W2XWG). *il* Electronics Indus 2:60 June '43
- New 41-mc W8XH; does the high-fidelity, high-frequency WBEN transmitter presage a new broadcast service? R. J. Ingsley. *il* Electronics 9:19 Jan '36
- New frequency-modulation broadcasting transmitter. A. A. Skene and N. C. Olmstead. *il* *diag* Proc Inst Radio Eng 30:330 July '42
- Stabilized frequency-modulation system. R. J. Pieracci. *il* *diag* Proc Inst Radio Eng 30:76-151 Feb-Mar '42; Abstract. Electronics 15:34 Feb '42
- Ten kw F-M transmitter; abstract. E. S. Winlund and C. S. Perry. Electronics 15:116 Feb '42
- 50-kw F-M transmitter at WMFM. P. B. Laeser. *il* *diag* Electronics 18:100 Apr '45
- 337-mc fm studio-station link; performance of transmitter relaying programs from Winston-Salem studios of WMIT to f-m station of Clingman's Peak. P. Dillon. *il* Electronics 17:104 Nov '44

*See also*

Frequency Modulation

**TRANSMITTERS, Marine. See Transmitters, Radiotelegraph, Radiotelephone****TRANSMITTERS, Microwave. See Microwaves**

*See also*

Oscillators, Microwave

**TRANSMITTERS, Portable**

- Antics of short waves; NBC has devised a tiny transmitter operating on 300 megacycles. A. L. White. *il* Radio N 19:69 June '38
- Brief case transmitter. J. R. Duncan. *il* Electronic Indus 3:83 Oct '44
- Compact portable transmitter. E. F. Kiernan. *il* *diag* Electronics 14:54 Oct '41
- Effective and inexpensive portable transmitter; GC-2. A. H. Lynch. *il* *diag* Radio 18:210 Oct '36
- Emergency portable for existing channels. O. Read. *il* *diag* Radio N 28:24, 52 Aug '42
- Five-meter combination receiver-transmitter for portable and mobile use. N. Bishop. *il* *diag* Radio N 18:734 June '37
- Improved field day portable station. O. Read. *il* *diag* Radio N 25:9 May '41
- Lear portable station; transmitter, receiver, power, all in one box. *il* Aviation 37:48 Oct '38; Aero Digest 33:96 Oct '38
- Lifeboat transmitters; regulations of the Federal communications commission. Electronics 15:96 July '42
- Pocket-size complete transmitters. Hayes and Laurence. *il* QST 25:12 Jan '41
- Portable 5-meter rig. A. H. Lynch. *il* *diag* Radio N 18:148 Sept '36
- Portable lifeboat transmitter. C. Coleman and J. T. Donnelly. *il* *diag* Radio N 30:35 July '43
- Portable radio station. O. T. Read. *il* *diag* Radio N 19:49 June '38

- Portable 28mc transmitter. H. Burgess. *il* *diag* Radio N 19:37 May '38
- Public utility emergency radio system; Montana power company gas and electric departments. W. H. Blankmeyer. *il* Electronics 15:65 May '42
- Radio transmitter and receiver not much larger than the handset of French telephone; transmitter. *il* Gen Elec R 45:248 Apr '42
- SCR-284; portable and mobile radio station. H. V. Noble. *il* *diag* Radio N 32:38 Sept '44
- Smallest micro-wave transmitter. *il* Sci Am 154:288 May '36
- Tiny tot transmitter for portable-mobile usage. A. J. Haynes; S. G. Taylor. *il* *diag* Radio N 19:214, 282 Oct-Nov '37
- Two-way radios for field emergency. A. O. Mangold. *il* Elec West 81:22 July '38
- Using micro-waves; pocket size transmitter. V. Hall. *il* Radio N 17:657 May '36
- Versatile portable emergency transmitter. Hadlock. *il* QST 25:9 July '41
- Vest pocket transmitter. J. Clemens. *il* *diag* Radio N 19:45 June '38
- 6-8mc. portable transmitter. W. Maron. *il* *diag* Radio N 32:48 Aug '44
- 112-120 mc emergency portable. O. Read. *il* *diag* Radio N 28:26 Dec '42

*See also*

Transceivers

**TRANSMITTERS, Radiotelegraph**

- An electronic keyer. C. Haskins. QST 28:52 Oct '44
- Class C telegraph; the graphical determination of optimum operating conditions for transmitting valves. D. G. Prinz and R. G. Mitchell. Wireless Eng 19:401 Sept '42
- Commercial marine transmitter-receiver. R. J. Higgins and R. E. Samuelson. *il* *diag* Radio N 20:20 Dec '38
- Depth-sounding by radio; coast and geodetic survey uses automatic buoy-transmitters. *il* Electronics 9:20 Oct '36
- Electronic future for telegraphy. Electronic Indus 2:155 Sept '43
- Elevated transmitter for testing direction finders. R. H. Barfield. *il* *diag* Wireless Eng 15:495 Sept '38
- Frequency-shift radiotelegraph and teletype system. R. M. Sprague. *il* *diag* Electronics 17:126 Nov '44
- Graphical method to find the optimal operating conditions of triodes as class C telegraph transmitters. J. C. Frommer. Proc Inst Radio Eng 30:519 Nov '42; Abstract. Wireless Eng 20:267 Nov '43
- High speed recording of radiotelegraph signals. R. B. Armstrong and J. A. Smale. *il* Jour Inst Elec Eng pt 3:194 Dec '44
- H. F. marine radio unit; newly adopted equipment influencing ship design. E. J. Girard. Elec Comm 21:85 '43
- Keying monitors for c-w transmitters. H. Perozzo. *diag* Electronics 10:44 Dec '37
- Marine console radio unit. Joseph H. McDonald and Gordon C. Hopkins. Electronic Indus 3:108 Jan '44

- Marine radio communication and equipment; abstract and discussion. I. F. Byrnes. *Marine Eng* 45:85 Dec '40
- Master-oscillator, power-amplifier transmitter for 5 and 10 meters. *il diags N* 17:667 May '36
- Method of measuring noise levels on short-wave radiotelegraph circuits. H. O. Peterson. *diags Proc Inst Radio Eng* 28:128 Feb '35
- Multi-frequency marine transmitters. *il Electronics* 12:66 Apr '39
- New electronic key circuits. B. Gardner. *QST* 28:15 Mar '44
- New long-wave commercial radio telephone-telegraph transmitters. D. B. Mirk. *Elec Comm* 9:189 Jan '31
- Radio installation on the Cunard White Star R.M.S. Queen Mary. H. H. Buttner, H. Thorpe-Woods and E. N. Wendell. *Elec Comm* 15:89 p 89 '36
- Radiotelegraph keying transients. Reuben Lee. *Proc Inst Radio Eng* 22:213 Feb '34
- Radio-telegraphy and radio-telephony. A. S. Angwin. *Jour Inst Elec Eng* 76:177 Feb '35
- Researches in radiotelegraphy. R. Bown. *bibliog diags map Jour Inst Elec Eng* 83:395 Sept '38; Same cond. *Electrician* 121:335 Sept 23 '38; Abstract. *Elec Rev (Lond)* 122:640 May 6 '38
- Scientific research applied to the transmitter and receiver. E. H. Colpetts. *Bell Sys Tech Jour* 16:251 July '37
- Sending train orders by facsimile telegraphy. *il diag Electronics* 16:148 Sept '43
- Survey of marine radio progress with special reference to R.M.S. Queen Mary. F. G. Loring, W. L. McPherson and W. H. McAllister. *il diags plans Jour Inst Elec Eng* 81:183 Aug '37; Abstracts. *Elec Rev (Lond)* 120:360 Mar 5 '37; *Elec Eng* 56:593 May '37; Discussion. *Jour Inst Elec Eng* 81-218 Aug '37
- Time-division multiplex in radiotelegraphic practice. J. L. Callahan, R. E. Mathes and A. Kahn. *bibliog il diags Proc Inst Radio Eng* 26:55 Jan '38
- 200-kilowatt radiotelegraph transmitter. C. W. Hansell and G. L. Usselman. *RCA Rev* 2:442 Apr '38
- 500-watt c-w transmitter. W. W. MacDonald. *il diags Electronics* 16:67 Feb '43
- See also*  
Keying, Radiotelegraph  
Marine Radio
- TRANSMITTERS, Short-Wave**
- Calibrated electron coupled oscillator 80-20m. transmitter. K. A. Kopetzky. *il diags Radio N* 25-16 Feb '41
- Design for a continuous wave 20-40 meter transmitter. *il diag Radio N* 18:144 Sept. '36
- Efficient 5-meter transmitter. E. M. Walker. *il diag Radio N* 18:208 Oct '36
- Five-meter master oscillator power amplifier transmitter. C. A. Nuebling. *il diags Radio N* 18:23 July '36
- Low-cost 1.75-mc. 'phone transmitter. Chambers. *il QST* 22:13 July '38
- Master-oscillator, power-amplifier transmitter for 5 and 10 meters. *il diags Radio N* 17:667 May '36
- Measurements of the delay and direction of arrival of echoes from nearby short-wave transmitters. C. F. Edwards and K. G. Jansky. *Proc Inst Radio Eng* 29:322 June '41
- Mobile gear for WERS. Carter. *il QST* 28:9 Dec '44
- New approach to amateur transmitter design. James Millen. *il QST* 22:24 Mar '38
- New 30 kw short wave radio transmitting equipment for South America. R. E. Downing. *Elec Comm* 20:217 '41
- New 41-mc. W8XH; does the high-fidelity, high-frequency WBEN transmitter presage a new broadcast service? R. J. Kingsley. *il Electronics* 9:19 Jan '36
- Ship-shape car transmitter. R. Ames. *il Radio N* 19:91 Aug '37
- Short-wave single-sideband radiotelephone system. A. A. Oswald. *Proc Inst Radio Eng* 26:1431 Dec '38
- Short wave transmitters with spherical circuits. *il diags Wireless Eng* 15:125 Mar '38; Discussion. H. E. Hollmann. 15:369 July '38
- Simple 56-mc transmitter with cathode-bias modulation. Geiger and McGrath. *il QST* 22:44 Feb '38
- Simultaneous radio range and telephone transmission. W. E. Jackson and D. M. Stuart. *diags Proc Inst Radio Eng* 25:314 Mar '37
- Ultra-short-wave transmitter for the Cape Charles-Norfolk multiplex system. R. J. Kircher and R. W. Friis. *bibliog il plan Proc Inst Radio Eng* 33:101 Feb '45
- W2XE—a modern shortwave broadcast station. J. B. Taylor. *il Electronics* 10:23 Dec '37
- WERS master-control transmitter. Philip S. Rand. *il QST* 29:27 Feb '45
- 20-kw tetrode for ultrahigh-frequency transmitters. A. V. Haeff and others. *il diags Elec Eng* 59:107 Mar '40
- 200-kilowatt high frequency transmitter. *il Electronic Indus* 3:90 July '44
- See also*  
Transmission
- TRANSMITTERS, Television**
- Empire State television shows marked advance; latest experimental transmissions from the NBC transmitter. *il Radio N* 19:7 July '37
- Experimental television transmitter. P. Gloess and S. Van Mierlo. *Elec Comm* 15:232 '37
- Mobile television equipment. R. L. Campbell, R. E. Kessler, R. E. Rutherford and K. V. Landsberg. *Proc Inst Radio Eng* 30:1 Jan '42
- New UHF tetrode and its use in a 1-kilowatt television sound transmitter. A. K. Wing, Jr. and J. E. Young. *il diag Proc Inst Radio Eng* 29:5 Jan '41
- Orthicon portable television equipment. Jesse B. Sherman. *Proc Inst Radio Eng* 30:15 Jan '42
- Television changeover; retuning the transmitter at W2XBS. *il Electronics* 13:24 Oct '40
- Television film transmitters using apertured scanning discs. D. C. Espley and D. O. Walter. *diags Jour Inst Elec Eng* 88 pt 3:145 bibliog (p168) pl 1-4 June '41

**TRANSMITTERS, Television—continued**

- Television transmitting equipment. E. M. Noll. il diag Radio N 33:46 Mar '45
- 25-kw television transmitter at Eiffel Tower goes into operation. Electronics 11:46 July '38
- See also*
- Television

**TRANSMITTERS, Ultra-High-Frequency**

- Antics of short waves; NBC has devised a tiny transmitter operating on 300 megacycles. A. L. White. il Radio N 19:60 June '38
- Compact gear on 224-mc. Semel. il QST 28:9 Nov '44
- Crystal-controlled transmitter for WERS. Brooks. il QST 27:36 Apr '43
- De luxe 100-watt cw. and phone transmitter with band-switching exciter. Wunderlich. il QST 21:38 Nov '37
- Development of transmitters for frequencies above 300 megacycles. N. E. Lindenblad. il diags Proc Inst Radio Eng 23:1013 Sept '35
- Drift analysis of the Crosby frequency-modulated transmitter circuit. E. S. Winlund. diags Proc Inst Radio Eng 29:390 July '41
- German VHF command set. R. A. Gordon. il diag Electronics 17:132 Apr '44
- Hochfrequenzmaschinen. E. Ziehl. il diags Electrotech Zeit 47:812 July 8 '26
- Planning a VHF communications system, with details concerning the Massachusetts state police system. J. A. Doremus. il plan map Electronics 16:96 Sept '43
- Receiving tube 112-mc. M. O. P. A. Espy. il QST 28:54 Sept '44
- Self-contained handie-talkie. Haist. il QST 28:28 June '44
- Single-tube transceiver. Abell. il QST 28:11 Oct '44; Correction Dec '44
- Transceiver for mobile WERS work. Bradley. il QST 27:48 Dec '43
- Transmitter-receiver unit using 25-volt tubes. il QST 28:59 July '44
- VHF transmitter for emergency service. Hay and Harpster. il QST 27:48 Sept '43
- Water-cooled resistors for ultra-high-frequencies, television transmitter and other u-h-f services. G. H. Brown and J. W. Conklin. il diags Electronics 14:24 Apr '41
- 100-156 mc. covered with one crystal. il Bendix Radio Eng Vol. 1, No. 3, p 26 '45
- 112-mc. emergency transmitter. George Grammar. il QST 25:14 Dec '41
- 112-mc. mobile transmitter-receiver. R. B. Frank. il diags Radio N 26:18 Nov '41
- 112-mc. transmitter-receiver. Lynch. il QST 27:30 Jan '43
- 337-mc for studio-station link; performance of transmitter relaying programs from Winston-Salem studios of WMIT to FM station of Clingham's Peak. P. Dillon. il Electronics 17:104 Mar '44
- 450-mc microwave transmitter. R. B. Frank. il diag Radio N 33:38 May '45
- See also*
- Oscillators, U.H.F. Radar  
Frequency Modulation Television

**TRANSMITTING Tubes. See Vacuum Tubes****TUNING Indicators**

- Signal-seeking circuits to aid correct tuning. S. Y. White. il Electronics 8:18 Jan '35
- Tuning indicators and circuits for frequency-modulation receivers. J. A. Rodgers. Proc Inst Radio Eng 31:89 Mar '43
- See also*
- Transmitters—Tuning

**U****ULTRA-HIGH Frequencies**

- Air wave bending of ultra-high-frequency waves. Ross Hull. il QST 21:16, 10 May, July '37
- Beyond the ultra-short waves. G. C. Southworth. il diags Proc Inst Radio Eng 31:319 July '43
- Broadcasting of sound and vision on ultra-short waves. G. W. O. Howe. Wireless Eng 12:177 Apr '35
- Butterfly circuit in v-h-f oscillator. diag Electronics 18:216 Feb '45
- Developing UHF technic. Electronic Indus 2:78 Sept '43
- Electrical concepts at extremely high frequencies. S. Ramo. il diags Elec Eng 61:461 Sept '42
- Fields and waves in modern radio. Simon Ramo and John R. Whinnery. 530p John Wiley & Sons New York '44 \$5.00
- Future of u. h. f. A. L. Laden. il Radio N 33:25 June '45
- General reciprocity theorem for transmission lines at ultra-high frequencies. R. King. Proc Inst Radio Eng 28:233 May '40
- Generalized coupling theorem for ultra-high-frequency circuits. R. King. Proc Inst Radio Eng 28:84 Feb '40
- Generation and utilization of ultra-short waves in radio communication. F. A. Kolster. il diags Proc Inst Radio Eng 22:1335 Dec '34
- High frequencies; status of standards and measurements. H. R. Meahl. il Gen Elec Rev 45:617 Nov '42
- High-frequency propagation characteristics. F. Hamburger, jr, C. V. Larrick and M. Jones. diags Proc Inst Radio Eng 28:175 Apr '40
- Hyper and ultrahigh frequency engineering. 644p. R. I. Sarbacher and W. A. Edson. John Wiley & Sons New York '43 \$5.50
- High-frequency thermionic tubes. A. F. Harvey. 244p John Wiley & Sons '40 \$3.00
- Hyperfrequency waves and their practical use; abstract. L. Brillouin, diags Electronics 14:67 Aug '41
- Impetus which aviation has given to the application of ultra high frequencies. W. E. Jackson. Proc Inst Radio Eng 28:49 Feb '40
- Magnetron oscillator for very-high frequency research. Electronics 17:214 May '44
- Observations of frequency-modulation propagation on 26 megacycles. M. G. Crosby. il Proc Inst Radio Eng 29:398 July '41
- On the very highs. QST. 28:56, 43, 41, 40, 42 Jan to July, inc, '44
- Permeability at very high frequencies. G. W. O. Howe. Wireless Eng 16:541 Nov '39
- Planning a VHF communications system, with details concerning the Massachusetts state police

- system. J. A. Doremus. il plan map Electronics 16:96 Sept '43
- Role of u.h.f. after the war. S. Young White. Electronic Indus 2:58 June '43
- Role of ultra-high frequencies in post-war broadcasting. K. I. Jones and D. A. Bell. Jour Inst Elec Eng 91 pt3:11 Mar '44
- Signal generator characteristics at ultra-high frequencies. H. J. Tyzer. Electronic Indus 2:84 July '43
- Signal generator for the ultra-high frequencies. Gen Radio Exp Nov '39
- Some problems of hyperfrequency technique. A. G. Clavier and E. Rostas. Elec Comm 16:254 '38
- Superstability at u.h.f. S. Young White. Electronic Indus 2:84 Sept '43
- Theory and application of u.h.f. M. S. Kiver. bibliog il diags Radio N 30:35 In monthly issues, beginning Dec '43
- Thermionic peak voltmeters for use at very high frequencies. C. L. Fortescue. diag Jour Inst Elec Eng 77:429 Sept '35
- Trend toward very high frequencies in aviation radio. L. Le Kashman. il plan Aero Digest 48:65 Feb 15 '45
- Typography and V.H.F. wave propagation. C. French. il QST Vol 28 Feb '44. Correction Apr '44
- U.H.F. converters and conversion diagrams; abstract. H. Stockman. Electronics 17:212 Nov '44
- U.H.F. radio simplified. M. S. Kiver. 238p Van Nostrand New York '45
- Ultra-high frequencies. diags Electrician 123:489 Dec 1 '39
- Ultrahigh-frequency domain. A. N. Goldsmith. Elec Eng 56:664 June '37
- Ultra-high frequency in aviation. C. J. Schauers. il Radio N 26:12 Oct '41
- Ultra-high frequency oscillography; ultra-dynamic Lissajou's figures. H. E. Hollmann. bibliog il diags Proc Inst Radio Eng 28:215 May '40
- Ultra-high-frequency propagation through woods and underbrush. B. Trevor. il RCA Rev 5:97 July '40
- Ultra-high-frequency radio engineering. W. L. Emery. 296p Macmillan Co. New York '44
- Ultra high frequency technique. A. G. Kandoian and others. bibliog diags Electronics 15:39 Apr '42
- Ultra-high-frequency techniques. J. G. Brainerd and others. 534p \$4.50 Van Nostrand '42
- Ultra-short waves for air navigation. H. W. Roberts. bibliog il diags Aero Digest 31:66, 71 Nov '37
- Very-high-frequency and ultra-high-frequency signal ranges as limited by noise and co-channel interference; abstract. E. W. Allen, jr. and K. A. Norton. Electronics 18:198 Mar '45
- Very-high frequency radio noise elimination. T. B. Owen. diags Elec Eng 63:Trans 949 Dec '44
- VHF behavior of radio components. E. L. Hall. il Electronics 17:115 Mar '44
- VHF communication system. J. A. Doremus. il Electronics 16:96 Sept '43
- VHF dummy antenna. S. Cutler. il diags Electronics 18:129 May '45
- VHF homing device. Electronic Indus 4:104 Mar '45
- VHF ignition noise. G. Sonbergh. Electronic Indus 3:94 Nov '44
- UHF use of oscilloscopes. Stanley Cutter. il Electronics 17:124 Mar '44
- Voltage measurements at very high frequencies. E. C. S. Megaw. bibliog diags Wireless Eng 13:65 201 Feb-Apr '36
- See also*
- |                                |                        |
|--------------------------------|------------------------|
| Antennas, U.H.F. Communication | Reception Transmission |
|--------------------------------|------------------------|
- ULTRA-HIGH-Frequency Amplifiers**
- Analysis and design of video amplifiers. S. W. Seeley and C. N. Kimball. RCA Rev 3:290 Jan '39
- Application of feedback to wide-band output amplifiers. F. A. Everest and H. R. Johnston. diags Proc Inst Radio Eng 28:71 Feb '40
- Broadband amplifiers. Madison Cawein. Electronic Indus 2:92 Oct '43
- Choice of tubes for wideband amplifiers. Dale Pollack. il Electronics 12:38 Apr '39
- Characteristic constants of h.f. pentodes; measurements at frequencies between 1.5 and 300 mc. M. J. O. Strutt. il diags Wireless Eng 14:478 bibliog (73 titles, p487 Sept '37
- Design of broad-band amplifiers. Madison Cawein. Electronic Indus 2:70 Sept '43
- High-frequency correction in resistance-coupled amplifiers. E. W. Herold. Communications. 18:11 Aug '38
- High frequency power amplifiers; calculation of B and C types. F. M. Kosa. Wireless Eng 14:647 Dec '37. Discussion 15:269 May '38
- Improved high-frequency compensation for wide-band amplifiers. A. B. Bereskin. diags Proc Inst Radio Eng 32:608 Oct '44
- Orbital-beam secondary-electron multiplier for ultra-high-frequency amplification. H. M. Wagner and W. R. Ferris. Proc Inst Radio Eng 29:598 Nov '41
- Performance of coupled and staggered circuits in wide band amplifiers. D. Weighton. bibliog diags Wireless Eng 21:468 Oct '44
- Power amplifier for ultra-high frequencies. A. L. Samuel. il diags Bell System Tech Jour 16:10 Jan '37
- Shunt-peaking compensation; graphical method of determining shunt inductance in plate circuit of wide-band video amplifier; reference sheet. W. H. Freeman. diag Electronics 13:35 Jan '40
- Simple television preamplifier. R. Muniz and A. Tait. il diags Electronics 14:39 Apr '41
- Simplified television I-F systems. Garrard Mountjoy. RCA Rev 4:299 Jan '40
- Some notes on video amplifier design. A. Preisman. RCA Rev 2:421 Apr '38
- Theoretical gain and signal-to-noise ratio of the grounded-grid amplifier at ultra-high frequencies. M. Dishal. bibliog diags Proc Inst Radio Eng 32:276 May '44
- Transient response of multistage video-frequency amplifiers. A. V. Bedford and G. L. Fredendall. Proc Inst Radio Eng 27:277 Mar '39
- UHF amplifier. il Electronic Indus 3:136 Jan '44
- UHF power amplifier of novel design. A. V. Haeff. il Electronics 12:30 Feb '39

**ULTRA-HIGH-Frequency Amplifiers—Continued**

Ultimate bandwidths in high-gain multistage video amplifiers. W. R. MacLean. *diag Proc Inst Radio Eng* 32:12 Jan '44

Video output systems. D. E. Foster and J. A. Rankin. *RCA Rev* 5:409 Apr '41

Visual alignment of wide band i-f amplifiers. K. C. Cook and Harold Moss. *il Electronics* 17:130 Oct '44

Video amplifier design. R. L. Freeman and J. D. Schantz. *Electronics* 10:22 Aug '37

Wide band amplifier design. E. J. Bukstein. *diags Radio N* 30:21 Aug '43

Wideband amplifiers and frequency multiplication. D. L. Jaffe. *il Electronics* 15:56 Apr '42

Wide-band inductive-output amplifier. A. V. Haeff and L. S. Nergaard. *il diags Proc Inst Radio Eng* 28:126 Mar '40

Wide-band television amplifiers. F. A. Everest. *Electronics* 11:16 Jan '38

Wide band amplifiers for television. Harold A. Wheeler. *Proc Inst Radio Eng* 27:429 July '39

*See also*

**Amplifiers**

**ULTRA-HIGH-Frequency Antennas**

Antennas at Empire state. N. E. Lindenblad. *Communications* 21:9 May '41

Circular loop antennas at ultra-high frequencies. J. B. Sherman. *bibliog diags Proc Inst Radio Eng* 32:534 Sept '44

Distribution of ultra-high-frequency currents in long transmitting and receiving antennae. L. S. Palmer and K. G. Gillard. *bibliog diag Jour Inst Elec Eng* 83:415 Sept '38

Experimental study of parasitic wire reflectors on 2.5 meters. A. W. Nagy. *bibliog il diags Proc Inst Radio Eng* 24:233 Feb '36

Experiments with underground ultra-high-frequency antenna for airplane landing beam. H. Diamond and F. W. Dunmore. *pl diag Jour Research Nat Bur Stand* 19:1 July '37; *Same. Proc Inst Radio Eng* 25:1542 Dec '37

Half-wave dipole aerial. G. W. O. Howe. *Wireless Eng* 21:557 Dec '44

Loading of a Lecher-wire line by an inductively coupled load; abstract. J. Gensel. *Wireless Eng* 22:239 May '45

Measurements on dipoles in the decimetric-wave region; abstract. P. Lange. *Wireless Eng* 18:465 Nov '41

New U-beam antenna for five meters. R. Ames. *il Radio N* 19:207 Oct '37

Pennsylvania turnpike u-h-f traffic control system; antenna and feeder details. *il diags plans Electronics* 15:40 May '42

Radiation resistance of a half-wave dipole aerial. G. W. O. Howe. *diags Wireless Eng* 22:153 Apr '45

Relative field strength meter for locating interference and to discover the best u-h-f antenna location. T. Chew. *il diag Radio N* 25:19 May '41

Rotary beam for mobile u-h-f relay work. G. Rider. *il Electronics* 14:48 May '41

Rotary beams for the ultra-high frequencies. L. M. Cockaday. *il diags Radio N* 19:266 Nov '37

Some aspects of radio reception at ultra-high frequency; the antenna and the receiver input circuits. E. W. Herold and L. Malter. *diags Proc Inst Radio Eng* 31:423 Aug '43

Turnstile antenna; new ultra-high frequency radiating system. G. H. Brown. *il diags Electronic* 9:14 Apr '36

Ultrahigh frequency antenna coupling unit. R. D. Rietzke. *diag Electronics* 14:74 Nov '41

Ultra-high frequency antenna of simple construction. G. H. Brown and J. Epstein. *Communications*. 20:3 July '40

Ultra-high-frequency dummy antenna. S. Cutler. *il diags Electronics* 18:129 May '45

Ultra high frequency technique; radiating systems and wave propagation. A. G. Kandoian, *bibliog diags Electronics* 15:39 44 Apr '42

Ultrashort electronic waves; design of radiators or antennas for ultrashort waves. A. Alford. *bibliog diags Elec Eng* 62:303 338 July-Aug '43

Utilizing antennas radiating at one-quarter wave length (90 deg.) or less; abstract. G. H. Brown, R. F. Lewis and J. Epstein. *Electronics* 10:11 June '37

10-meter antennas. E. M. Walker. *il diags Radio N* 18:664 May '37

112 mc mobile coaxial antenna; car-mounted transmitting and receiving equipment. S. G. Taylor. *il diags Radio N*. 27:20 June '42

*See also*

**Antennas**

**ULTRA-HIGH-Frequency Broadcasting**

Broadcasting of sound and vision on ultra-short waves. G. W. O. Howe. *Wireless Eng* 12:177 Apr '35

High-fidelity broadcasting at ultra-high frequencies. E. W. Herold. *Proc Inst Radio Eng* 26:383 Mar '38

Role of ultra-high frequencies in post-war broadcasting. K. I. Jones and D. A. Bell. *Jour Inst Elec Eng* 91 pt3:11 Mar '44

Precision tuning problem in ultra-high-frequency broadcasting. S. Y. White. *il Electronics* 16:91 May '43

*See also*

**Broadcasting**

**ULTRA-HIGH-Frequency Measurements**

Design of ultra-short-wave field-strength measuring equipment. F. M. Colebrook and A. C. Gordon-Smith. *diags Jour Inst Elec Eng* 90 pt 3:28 Mar '43

Diffraction measurements at ultra-high frequencies. H. Selvidge. *il diags map Proc Inst Radio Eng* 29:10 Jan '41

High frequency measurements. August Hund. McGraw Hill New York '45

Measurement of interference at ultra-high frequencies. L. H. Daniel and G. Mole. *diag Jour Inst Elec Eng* Mar '41

Receiver input connections for u-h-f measurements. J. A. Rankin. *diags RCA Rev* 6:473 Apr '42

Resonance bridge for frequencies up to 10 mega cycles per second. C. L. Fortescue and G. Mole. *Jour Inst Elec Eng* 82:867 June '38

Resonant cavity method for measuring dielectric properties at ultra-high frequencies. C. N. Works. *Proc Inst Radio Eng* 32:245 Apr '45

Survey of ultra-high frequency measurements. L. S. Nergaard. *RCA Rev* 3:156 Oct '38

Thermionic peak voltmeters for use at very-high frequencies. C. L. Fortescue. Jour Inst Elec Eng 177:429 '35 (Wireless sec I.E.E. 10:262 Sept '35)

Thermocouple ammeters for ultra-high frequencies. J. H. Miller. il diag Proc Inst Radio Eng 24:1567 Dec '36

Two methods of measuring ultra-high frequency electric fields; abstracts. K. R. Makinson and H. D. Fraser. Wireless Eng 21:543 Nov '44; diag Electronics 18:246 Apr '45

Voltage measurements at very-high frequencies. E. C. S. Megaw. Wireless Eng 13:56 Feb '36; p. 135, Mar '36; p. 201 Apr '36

*See also*

Measurements

#### ULTRA-HIGH-Frequency Receivers

Analysis of the signal-to-noise ratio of ultra-high-frequency receivers. E. W. Herold. bibliog diags RCA Rev 6:302 Jan '42

Basic principles of superregenerative reception. F. W. Frink. il diag Proc Inst Radio Eng 26:76 Jan '38

Choice of tubes for wideband amplifiers. Dale Pollack. il Electronics 12:38 Apr '39

German VHF command set. R. A. Gordon. il diag Electronics 17:132 Apr '44

Development of a frequency-modulated police receiver for ultra-high-frequency use. H. E. Thomas. RCA Rev 6:222 Oct '41

Homebuilt 1-10 meter receiver. P. Popenoe, jr. il diag Radio N 23:25 June '40

Measurement of the sensitivity of receivers for short (metric and decimetric) waves; abstract. K. Franz. Wireless Eng 19:529, 574 Nov-Dec '42

Mobile 30-40 Mc receiver for the U. S. Forest service. H. K. Lawson and L. M. Belleville. il diag Electronics 15:22 Jan '42

Sensitivity of ultra-high-frequency receivers, with special attention to the U.H.F. duo-pentode type EFF50; abstract. R. Wilke. Wireless Eng 19:530 Nov '42

Signal generator characteristics at ultra-high frequencies. H. J. Tyzer. Electronic Indus 2:84 July '43

Superregeneration of an ultra-short-wave receiver. H. Ataka. diags Proc Inst Radio Eng 23:841 Aug '35

Superregeneration with particular emphasis on its possibilities for frequency modulation. H. P. Kalmus. diags Proc Inst Radio Eng 32:591 Oct '44

Superregeneration with reference to broadcast receivers. D. Maurice. bibliog diags Wireless Eng 15:4 Jan '38

Super-regenerative receiver. M. G. Scroggie. bibliog diags Wireless Eng 13:581 Nov '36

Super regenerative receivers for the ultra-high frequencies. N. Bishop. il diags Radio N 18:402, 472, 527 Jan-Mar '37

Three-band ultra-high frequency super-regenerative. C. E. Jackson. il diag Radio N 26:18 Sept '41

Tiny tot; 5 meter superregenerative. A. J. Haynes. il diags Radio N 19:152 Sept '37

Ultra high frequency technique; ultra high frequency reception and receivers. B. Dudley. bibliog diags Electronics 15:51 Aug '42

V.H.F. receiver oscillator design. S. Y. White. Electronics 16:96 July '43

130-210 mc. receiver for FM-AM coverage. C. E. Jackson. il diag Radio N 30:23 July '43

*See also*

Receivers, FM; Receivers, Television  
Transceivers

#### ULTRA-HIGH-Frequency Reception

Application of negative feedback to frequency modulation systems. J. A. Chaffe. Proc Inst Radio Eng 27:317 May '39

Basic principles of superregenerative reception. Frederick W. Frink. Proc Inst Radio Eng 26:76 Jan '38

Exalted carrier reception; abstract. M. G. Crosby. diag Electronics 18:296 Mar '45

High quality radio broadcast transmission and reception; the receiving system. S. Ballantine. il diags Proc Inst Radio Eng 23:618 June '35

Impulsive-noise in FM reception. Vernon D. London. Electronics 14:26 Feb '41

Measurements pertaining to the co-ordination of radio reception with power apparatus and systems. C. M. Foust and C. W. Frick. bibliog Elec Eng 62: Trans 284 June '43

Narrow-band vs wide-band reception in FM reception. M. L. Levy. Electronics 13:26 June 3 '40

Panoramic reception applied to aerial navigation. Electronics 13:42 Dec '42

Review of broadcast reception in 1935. R. H. Langley. Proc Inst Radio Eng 24:376 Mar '36

Some aspects of radio reception at ultra-high frequency. E. W. Herold and L. Malter. bibliog diags Proc Inst Radio Eng 31:423, 491, 567 Aug-Oct '43

Transmission and reception of centimeter radio waves. C. W. Rice. bibliog il diags Gen Elec Rev 39:363 Aug '36

Transmission and reception of centimeter waves. I. Wolff, E. G. Linder and R. A. Braden. il diag Proc Inst Radio Eng 23:20 Jan '35

Ultra high frequency technique; ultra high frequency reception and receivers. B. Dudley. bibliog diags Electronics 15:51 Apr '42

Ultrashort electromagnetic waves; reception. B. Trevor. bibliog Elec Eng 62:405 Sept '43

56 megacycle reception via sporadic E-layer reflections. E. H. Conklin. Proc Inst Radio Eng 27:36 Jan '39

*See also*

Reception

#### ULTRA-HIGH-Frequency Transmission

Effect of the troposphere on the propagation of ultra-short waves; abstract. B. A. Vvedenski. Wireless Eng 22:80 Feb '45

Beyond the ultra-short waves. G. C. Southworth. il diags Proc Inst Radio Eng 31:319 July '43

Cape Charles-Norfolk ultra-short-wave multiplex system. N. F. Schlaack and others. bibliog il diags map Proc Inst Radio Eng 33:78 Feb '45; Abstract. Electronics 18:214 Mar '45

Experimental investigation of the propagation of radiation having wavelengths of 2 and 3 metres. J. S. McPetrie and J. A. Saxton. Jour Inst Elec Eng 87:146 Aug '40; Abstract. Electronics 13:76-7 Mar '40; Discussion. Jour Inst Elec Eng 87:159 Aug '40



**ULTRA-HIGH-Frequency Transmission—Cont'd**

- Further results of a study of ultra-short-wave transmission phenomena. C. R. Englund, A. B. Crawford and W. W. Mumford. map Bell Sys Tech Jour 14:369 July '35
- Impetus which aviation has given to the application of ultra-high frequencies. W. E. Jackson. il map Proc Inst Radio Eng 28:49 Feb '40
- Metal triode for ultra-high-frequency operation. N. D. Khokhlov; tr. by A. M. Guerewitsch. il diags Proc Inst Radio Eng 32:253 May '44
- Pennsylvania Turnpike u-h-f traffic control system. il diags plans Electronics 15:34 May '42
- Precision tuning problem in U-H-F broadcasting. S. Y. White. diags Electronics 16:94 May '43
- Study of propagation over the ultra-short-wave radio link between Guernsey and England on wavelengths of 5 and 8 metres (60 and 37.5 mc./s). R. L. Smith-Rose and A. C. Strickland. bibliog Jour Inst Elec Eng pt 3:12 Mar '43
- Transformation (matching) section for decimetric and centimetric waves, with slight dependence on frequency; abstract. A. Weissloch. Wireless Eng 21:230 May '44
- Transmission of ultra-short radio waves between Buenos Aires and London stations. Science 81:sup6-7 Mar 22 '35
- Transmission of ultra-short waves through ionospheric action; abstract. E. Fendler. Wireless Eng 18:19 Jan '41
- Ultra-high frequencies. diags Electrician 123:425, 441, 470, 489 Nov 10-Dec 1 '39
- Ultra-high frequencies and their application to aeronautics. W. E. Jackson. Jour Aeronautical Sci 7:28 Nov '39
- Ultra-high-frequency domain. A. N. Goldsmith. Elec Eng 56:662 June '37
- Ultra-high-frequency transmission between the RCA building and the Empire State building in New York city. P. S. Carter and G. S. Wickizer. il diags Proc Inst Radio Eng 24:1082 Aug '36
- Ultra-short wave communication. E. H. Ullrich. Elec Comm 16:64 '37
- Ultra-short waves; distance reception and theory. Sci Amer 155:48 July '36
- Ultra-short waves for aid navigation. H. W. Roberts. bibliog il diags Aero Digest 31:66 Nov '37
- Ultra-short-wave transmission over a 39-mile optical path. C. R. Englund, A. B. Crawford and W. W. Mumford. map Proc Inst Radio Eng 28:360 Aug '40
- Ultra-short waves in urban territory. C. R. Burrows, L. E. Hunt and A. Decino. bibliog il diag maps Elec Eng 54:115 Jan '35; Same. Bell Sys Tech Jour 14:253 Apr '35; Discussion. Elec Eng 54:749 July '35
- See also*  
 Communication      Transmission  
 Propagation of Waves
- ULTRA-HIGH-Frequency Transmitters**
- Antics of short waves; NBC has devised a tiny transmitter operating on 300 megacycles. A. L. White. il Radio N 19:69 June '38
- Compact gear for 224-mc. Semel. il QST 28:9 Nov '44
- Crystal-controlled transmitter for WERS. Brooks. il QST 27:36 Apr '43
- De luxe 100-watt cw and phone transmitter with band-switching exater. Wunderlich. il QST 21:38 Nov '37
- German VHF command set. R. A. Gordon. il diag Electronics 17:132 Apr '44
- Mass production of u-h-f transmitting tubes. J. Coleman. il Radio N 32:36 Nov '44
- New 41-mc. W8XH; does the high-fidelity, high-frequency WBEN transmitter presage a new broadcast service? R. J. Kingsley. il Electronics 9:19 Jan '36
- Receiving tube 112-mc M.O.P.A. Espy. il QST 28:54 Sept '44
- Self-contained handie-talker. Haist. il QST 28:28 June '44
- Simple 56-mc. transmitter with cathode-bias modulation. Geiger and McGrath. il QST 22:44 Feb '38
- Single-tube transceiver. Abell. il QST 28:11 Oct '44. Corection. Dec '44
- Transceiver for mobile WERS work. Bradley. il QST 27:48 Dec '43
- Transmitter-receiver unit using 25-volt tubes. il QST 28:59 July '44
- Ultra-short-wave transmitter for the Cape Charles-Norfolk multiplex system. R. J. Kircher and R. W. Friie. bibliog il plan Proc Inst Radio Eng 33:101 Feb '45
- VHF transmitter for emergency service. Hay and Harpster. il QST 27:48 Sept '43
- Water-cooled resistors for ultra-high frequencies, television transmitter and other u-h-f services. G. H. Brown and J. W. Conklin. il diags Electronics 14:24 Apr '41
- 20-kw tetrode for ultra-high-frequency transmitters. A. H. Haeff and others. il diags Elec Eng 59:107 Mar '40
- 100-156 mc. covered with one crystal. il Bendix Radio Eng 1:3 p26 '45
- 112-mc. emergency transmitter. George Grammer. il QST 25:14 Dec '41
- 112-mc. transmitter-receiver. A. Lynch. il QST 27:30 Jan '43
- 337-mc fm studio-station link; performance of transmitter relaying programs from Winston-Salem studios of WMIT to f-m station of Clingham's Peak. P. Dillon. il Electronics 17:104 Mar '44
- See also*  
 Ultra-High-Frequencies
- ULTRA-HIGH-Frequency Vacuum Tubes**
- Input and output resistances of mixing diodes, including the case of ultra-high frequencies; abstract. H. F. Matare. Wireless Eng 20:503 Oct '43
- Metal triode for ultra-high frequency operation. N. D. Deviatkov, M. D. Gurevich and N. K. Khokhlov. il diags Proc Inst Radio Eng 32:253 May '44
- Operation of power triodes in u-h-f circuits. W. G. Wagener. Electronics 14:81 Apr '41
- Retarding-field valves with a magnetic field; static characteristics and (ultra) short-wave generation; abstract. F. Hoffmann. Wireless Eng 18:201 May '41
- Review of ultra-high-frequency vacuum tube problems. B. J. Thompson. RCA Rev 3:146 Oct '38

- Tube performance at ultra-high frequency. F. B. Llewellyn and L. C. Peterson. *il Electronic Indus* 3:88 Nov '44
- Ultra-high frequency diode with movable anode. M. von Ardenne. *Electronics* 10:50 Mar '37
- VHF tetrode; Eimac 4-125A; abstract. C. E. Murdock. *il Electronics* 18:316 Mar '45
- See also*
- |                   |                      |
|-------------------|----------------------|
| Cavity Resonators | Magnetron            |
| Klystron          | Vacuum Tubes, U.H.F. |
- ULTRA-HIGH-Frequency Wave Propagation**
- Air wave bending of ultra-high-frequency waves. Ross Hull. *il Q S T* 21:16,10 May, July '37
- Beyond the ultra-short waves. G. C. Southworth. *il diags Proc Inst Radio Eng* 31:319 July '43; Abstract. *Electronics* 16:296 Mar '43
- Broadcasting of sound and vision on ultra-short waves. G. W. O. Howe. *Wireless Eng* 12:177 Apr '35
- Effect of frequency on the signal range of an ultra-high-frequency radio station. K. A. Norton. FCC Mimeo Rept 48466 Mar 20 '41
- Experimental investigation of the propagation of radiation having wavelengths of 2 and 3 metres. P. S. McPetrie and J. A. Saxton. *Jour Inst Elec Eng* 87:146 Aug '40; Abstract. *Electronics* 13:76 Mar '40; Abstract. *Jour Inst Elec Eng* Aug '40
- Experiments on the propagation of ultra-short radio waves. A. H. Waynick. *il diag Proc Inst Radio Eng* 28:468 Oct '40
- Five meter wave paths. Wilson. *QST* 25:23 Aug '41
- Free space propagation measurements at 75 megacycles. G. L. Haller. *il diags Franklin Inst Jour* 229:165 Feb '40
- Frequency modulation propagation characteristics. Murray G. Crosby. *Proc Inst Radio Eng* 24:898 June '36
- Further results of a study of ultra-short-wave transmission phenomena. Bell Sys Tech Jour 14:369 July '35
- Generation and utilization of ultra-short waves in radio communication. F. A. Kolster. *il diags Proc Inst Radio Eng* 22:1335 Dec '34
- High-frequency propagation characteristics. F. Hamburger, Jr., C. V. Larrick and M. Jones. *diags Proc Inst Radio Eng* 28:175 Apr '40
- High frequencies and measurements. H. P. Meahl. *il Gen Elec Rev* 45:617 Nov '42
- Hyper and ultra-high frequency engineering. R. I. Sarbacher and W. A. Edson. John Wiley & Sons. New York '43
- Observations of frequency-modulation propagation on 26 megacycles. Murray G. Crosby. *Proc Inst Radio Eng* 29:398 July '41
- Observation on sky-wave transmission on frequencies above 40 megacycles. D. R. Goddard. *Proc Inst Radio Eng* 27:12 Jan '39
- Propagation at a wavelength of seventy-three centimeters. B. Treyor and R. W. George. *il Proc Inst Radio Eng* 23:461 May '35
- Study of ultra high-frequency wide-band propagation characteristics. R. W. George. *Proc Inst Radio Eng* 27:28 Jan '39
- Transatlantic reception of London television signals. D. R. Goddard. *Proc Inst Radio Eng* 27:692 Nov '39
- Typography and V. H. F. wave propagation. C. French. *il QST Vol* 28 Feb. Correction Apr '44
- Ultra high frequencies. *diags Electrician* 123:489 Dec 1 '39
- Ultra-high frequency domain. A. N. Goldsmith. *Elec Eng* 56:664 June '37
- Ultra-high-frequency propagation through woods and underbrush. B. Trevor. *il RCA Rev* 5:97 July '40
- Ultra high frequency technique; radiating systems and wave propagation. A. G. Kandoian. *bibliog diags Electronics* 15:39 44 Apr '42
- Ultra-high-frequency wave propagation over plane earth and fresh water. R. C. Colwell and A. W. Friend. *Proc Inst Radio Eng* 25:32 Jan '37
- Ultrashort electronic waves. E. Weber and others. *bibliog il diags Elec Eng* 62:103, 159, 206, 303, 405 Mar-Sept '43
- Ultra-short-wave propagation over land. C. R. Burrows, A. Decino and L. E. Hunt. *il diags Proc Inst Radio Eng* 23:1507 Dec '35
- Ultra-short-wave propagation along the curved earth's surface. P. von Handel and W. Pfister. *diags Proc Inst Radio Eng* 25:346 Mar '37
- Ultra-short-wave refraction and diffraction. T. L. Eckersley. *Jour Inst Elec Eng* 80:286 Mar '37
- Ultra-short waves in urban territory. C. R. Burrows, L. E. Hunt and A. Decino. *bibliog il diag maps Elec Eng* 54:115 Jan '35; Same. *Bell System Tech Jour* 14:253 Apr '35; Discussion. *Elec Eng* 54:749 July '35
- 56 megacycle reception via sporadic E-layer reflections. E. H. Conklin. *Proc Inst Radio Eng* 27:36 Jan '39
- See also*
- Propagation of Waves

## V

## VACUUM-TUBE Characteristics

- Amplification factor chart. E. R. Jervis. (Ref. sheets.) *Electronics* 12:45 June '39
- Analysis of the effects of space charge on grid impedance. D. O. North. *bibliog Proc Inst Radio Eng* 24:108 Jan '36
- Anode to accelerating electrode space in thermionic valves. J. H. O. Harries. *bibliog diags Wireless Eng* 13:190 Apr '36; Discussion. 13:315 June '36
- Calculation of triode constants. J. H. Fremlin. *Elec Comm* 18:39 July '39
- Causes for the increase of the admittances of modern high-frequency amplifier tubes on short waves. M. J. O. Strutt and A. van der Ziel. *bibliog il diags Proc Inst Radio Eng* 26:1011 Aug '38
- Characteristic constants of h.f. pentodes; measurements at frequencies between 1.5 and 300 Mc/s. M. J. O. Strutt. *il diags Wireless Eng* 14:478 bibliog(73 titles, p487-8) Sept '37
- Characteristic curves of the triode. E. L. Chaffee. *bibliog diags Proc Inst Radio Eng* 30:383 Aug '42
- Conditions in the anode screen space of thermionic valves. H. C. Calpine. *diag Wireless Eng* 13:473 Sept '36
- "Critical distance" tubes. J. H. O. Harries. *il Electronics* 9:33 May '36
- Dependence of the inter-electrode capacitances of valves upon the operating conditions. T. I. Jones. *diags Jour Inst Elec Eng* 81:658 Nov '37; Discussion. 82:220 Feb '38

**VACUUM-TUBE Characteristics—Continued**

- Determination of the average life of vacuum tubes. D. K. Gannett. *Electronics* 13:72 Sept '40
- Determination of the quiescent operating point of amplifiers employing cathode bias. J. N. Thurston. *diags Proc Inst Radio Eng* 33:135 Feb '45
- Developmental problems and operating characteristics of two new ultra-high-frequency triodes. W. G. Wagener. *Proc Inst Radio Eng* 26:401 Apr '38
- Dynamic characteristics of glow discharge tubes; abstract. Reich and Depp. *diag Electronics* 11:48 Aug '38
- Electron transit time effects in multigrid valves. M. J. O. Strutt. *diags Wireless Eng* 15:315 June '38
- Emissive power of typical grid and plate surfaces. Raymond Szymanowitz. *il Electronics* 16:93 May '43
- Equivalent characteristics of vacuum tubes operating in feedback circuits. J. H. Pratt. *diags RCA Rev* 6:102 July '41; *Abstract. Electronics* 14:87 Oct '41
- Exact measurement of electron-tube coefficients. R. W. Hickman and F. V. Hunt. *Rev Sci Instr* 6:268 Sept '35
- Filament and heater characteristics. C. E. Haller. *il Electronics* 17:126 July '44
- Fluctuations in space-charge-limited currents at moderately high frequencies. B. J. Thompson, D. O. North and W. A. Harris. *diags RCA Rev* 5:106, 244, 371, 505 6:114 July '40-July '41
- Formulas for the amplification factor for triodes. B. Salzberg. *diags Proc Inst Radio Eng* 30:134 Mar '42
- Grid-current characteristics of typical tubes. L. W. Zabel. *il Electronics* 17:236 Oct '44
- Improved indicator for measuring static and dynamic pressure. C. E. Grinstead and others. *bibliog il diags S A E Jour* 52:534 Nov '44
- Industrial tube characteristics. *diags Electronics* 15:52 June '42
- Input conductance; measurement in high-slope high frequency amplifier valves. F. Preisach and I. Zakarias. *diags Wireless Eng* 17:147 Apr '40
- Input resistance of vacuum tubes as ultra-high-frequency amplifiers. W. R. Ferris. *diags Proc Inst Radio Eng* 24:82; *Discussion.* 105 Jan '36
- Large-signal high-frequency electronics of thermionic vacuum tubes. Chao-chen Wang. *bibliog Proc Inst Radio Eng* 29:200 Apr '41
- Measurement of dynamic characteristics of vacuum tubes. J. R. Maggio. *diag Electronics* 14:73 July '41
- Method of determining the operating characteristics of a power oscillator. E. L. Chaffee and C. N. Kimball. *diags Jour Fr Inst* 221:237 Feb '36
- Operation of ultra-high frequency tubes. F. B. Llewellyn. *Bell System Tech Jour* 15:575 Oct '36
- Oscillographic method of measuring positive grid characteristics. O. W. Livingston. *Proc Inst Radio Eng* 28:267 June '40
- Plate circuit theorem. W. Richter. *diags Electronics* 9:19 Mar '36
- Power tube characteristics; use of cathode ray tube as a means of obtaining graphical plot. E. L. Chaffee. *bibliog diag Electronics* 11:34 June '38
- Power tube characteristics; use of cathode ray tube in rapid method of obtaining tube static characteristics. E. L. Chaffee. *diag Electronics* 10:30 July '37
- Signal-to-noise characteristics of triode input circuits. R. E. Burgess. *diags Wireless Eng* 22:56 Feb '45
- Simplified methods for computing performance of transmitting tubes. W. G. Wagener. *diags Proc Inst Radio Eng* 25:47 Jan '37
- Space-current flow in vacuum-tube structures. B. J. Thompson. *Proc Inst Radio Eng* 31:485 Sept '43
- Technique for tube data; taking tube characteristics as trace on screen of cathode ray oscilloscope. C. C. Street. *diags Electronics* 14:50 Oct '41
- Thermal method for measuring efficiencies at ultra-high frequencies applied to the magnetron oscillator. H. W. Kohler. *il diag Proc Inst Radio Eng* 25:1381 Nov '37
- Tracing valve characteristics, using the cathode-ray oscillograph. G. Bocking. *bibliog diags Wireless Eng* 19:556 Dec '42; *Discussion.* G. N. Patchett. *diag* 20:488 Oct '43
- Tracing tube characteristics on a cathode ray oscilloscope. J. Millman and S. Moskowitz. *il Electronics* 14:36 Mar '41
- Transformation for calculating the constants of vacuum tubes with cylindrical elements. W. V. Roberts. *Proc Inst Radio Eng* 25:1300 Oct '37
- Wave energy and transconductance of velocity-modulated electron beams. W. C. Hahn. *diags Gen Elec Rev* 42:497 Nov '39

*See also***Vacuum-Tube Measurements****VACUUM-TUBE Design**

- Basis for vacuum tube design; abstract. M. A. Acheson. *Electronics* 10:11 June '37
- Cathode design. O. W. Pike. *Communications* 21:4 Oct '41
- Critical distance tubes; increasing the space between anode and cathode. J. H. O. Harries. *il diags Electronics* 9:33 May '36; *Correction.* 9:48 July '36
- Design and construction of experimental vacuum tubes in engineering school laboratories. T. S. Gray. *bibliog Jour Eng Educ* 30:372; *Discussion.* 378 Dec '39
- Design and development of three new ultra-high-frequency transmitting tubes. C. E. Haller. *bibliog il diags Proc Inst Radio Eng* 30:20 Jan '42
- Developmental problems and operating characteristics of two new ultra-high-frequency triodes. W. G. Wagener. *Proc Inst Radio Eng* 26:401 Apr '38
- Development and production of the new miniature battery tubes. N. R. Smith and A. H. Schooley. *RCA Rev* 4:496 Apr '40
- Electron multiplier design; abstract. J. R. Pierce. *diag Electronics* 11:50 July '38
- Filament design for high power transmitting valves. J. J. Vormer. *Proc Inst Radio Eng* 26:1399 Nov '38

- General theory and application of dynamic coupling in power tube design. C. F. Stromeyer. *il diags Proc Inst Radio Eng* 24:1007 July '36
- Graphic aid for the design of degenerative amplifiers. *il Electronics* 12:64 Nov '39
- Modern receiving valves; design and manufacture. M. Benjamin, C. W. Cosgrove and G. W. Warren. bibliog *il diags Jour Inst Elec Eng* 80:401, pl 1 Apr '37; Excerpts. *Electrician* 117:694 Dec 4 '36; *Elec Rev (Lond)* 119:784 Dec 4 '36; Abstract. *Electronics* 10:52 Jan '37; Discussion. *Jour Inst Elec Eng* 80:432 Apr '37
- Review of ultra-high frequency vacuum tube problems. B. J. Thompson. *RCA Rev* 3:146 Oct '38
- Sharp cutoff in vacuum tubes, with applications to the slide-back voltmeter. C. B. Aiken and L. C. Birdsall. bibliog *Elec Eng* 57:Trans 171; Discussion. *Trans* 176 Apr '38
- The development of the receiving valve. S. R. Mullard. *Jour Inst Elec Eng* 76:10 '35; also, *Wireless sec I.E.E.* 10:1 Mar '35
- See also*  
Design, Circuit
- VACUUM-TUBE Manufacture**
- Air conditioning in radar tube plant; National union radio corporation. *Heat & Ven* 40:83 Nov '43
- Applying motion study principles; RCA manufacturing company. *il Factory Management* 100:128 Aug '42
- Automatic production tester. D. A. Griffin and N. B. Smalley. *il diags Electronics* 16:58 Feb '43
- Batalum, a barium getter for metal-tubes; abstract. E. A. Lederer and D. H. Wamsley. *Electronics* 10:48 Sept '37. Same. *RCA Rev* 2:117 July '37
- Bell-jar exhaust, a new metal tube production technique; illustrations. *Electronics* 14:24 Jan '41
- Built a plant around a layout; Hygrade Sylvania Corporation, Salem, Mass. F. J. Healy. *il plan Factory Management* 94:42 Nov '36
- Capacitors help welders service; making radio tubes. *Elec World* 123:138 Feb 17 '45
- Continuous production of large power tubes. *Electronic Indus* 3:88 Aug '44
- Development and production of the new miniature battery tubes. N. R. Smith and A. H. Schooley. *RCA Rev* 4:496 Apr '40
- Ductile zirconium and titanium; corrosion resistance; removal of gases from vacuum tubes, other properties and uses. *il Steel* 107:54 Sept 16 '40
- Electronic requirements develop glass to metal adherence. J. L. Davies. *Glass Ind* 26:302 June '45
- Factory testing of radio equipments; Discussion. *Jour Inst Elec Eng* 90 pt 3:145 Sept '43
- Feedback welding timer; for radio tube manufacture. J. Kurtz. *il diag Electronics* 13:47 Apr '40
- Fluorescent inspection of tungsten; cracks in leads passing through glass arc major cause of gassy electronic tubes; Zyglo inspection method. S. A. Kulln. *il Electronics* 16:95 July '43
- Gas takes its place on electronics production line; abstract. E. G. Bowman. *il Amer Gas Assn Mo* 27:72 Feb '45
- Glass-processing machines for lamp and valve manufacture. R. L. Breadner and C. H. Simms. *Engineering* 158:85-7, 90 Aug 4 '44
- Grid maker; automatic machine makes vacuum tube parts. *il Sci Amer* 164:336 June '41
- High-power valves; construction, testing, and operation. J. Bell, J. W. Davies, and B. S. Gossling. *Jour Inst Elec Eng* 83:176 '38; also, *Wireless sec I.E.E.* 13:177 Sept '38
- Induction heating in radio electron tube manufacture. E. E. Spitzer. *il diag Electrochem Soc Trans* 86 (preprint 27):355 Oct '44
- Iron-glass seal. *Gen Elec Rev* 45:299 May '42
- Low expansion alloys for glass-to-metal seals. W. E. Kingston. bibliog *diags Amer Soc for Metals Trans* 30:47-67 Mar '42; Excerpts. *Metals & Alloys* 16:338 Aug '42
- Making metal tubes. *il Electronics* 8:56 Feb '35
- Mass production of U.H.F. transmitting tubes. J. Coleman. *il Radio N* 32:36 Nov '44
- Materials for vacuum tube manufacture. A. J. Monack. bibliog *il diags Ind & Eng Chem* 32:1028 Aug '40
- Metal in vacuum tubes. J. Delmonte. *il diag Metal Prog* 31:518 May '37
- Metal replaces glass in radio tubes; use of fernico. *il Metal Prog* 28:32 Dec '35
- Modern receiving valves; design and manufacture. M. Benjamin, C. W. Cosgrove, and G. W. Warren. *I.E.E. Wireless Proc* 12:65 June '37
- Nickel in the radio industry. E. M. Wise. bibliog (55 titles) *il Proc Inst Radio Eng* 25:714 June '37
- Noise in radio tubes and its origin in the manufacturing process; abstract. W. L. Krahl. *Electronics* 14:33 Dec '41
- On modernized lighting layout; Hygrade Sylvania corporation's new radio tube factory in Salem, Mass. *il Elec W* 108:1873 Dec 4 '37
- Packaging radio tubes; abstract. K. P. Morehead. *Mod Packaging* 16:71 May '43
- Production of cathode ray tubes. *il Electronic Indus* 3:110 Aug '44
- Production tester for transmitting tubes. R. M. Thompson. *il diags Electronics* 17:142 Jan '44
- Properties of sealing glasses. *Engineering* 158:495 Dec 22 '44
- Puts one best way on paper; RCA follows up work simplification program with instruction sheets. W. A. Hoffman. *il diag Factory Management* 99:111 Aug '41
- Quality control in tube manufacture. E. Goddess. *il Electronics* 18:122 Jan '45
- Radio physics course; manufacture of vacuum tubes. A. A. Ghirardi. *Radio N* 24:44 Oct; 46 Nov '40
- Radio research and production given great impetus by war; with illustrations of manufacture of Westinghouse transmitting tubes. *Steel* 111:78 July 6 '42
- Recent advances in barium getter technique. E. A. Lederer. *RCA Rev* 4:310 Jan '40
- Shrinkage analysis in tube manufacture; procedure for isolating factors responsible for rejected tubes. E. Goddess. *il Electronics* 17:138 Dec '44
- Spectrographic analysis in the manufacture of radio tubes. S. L. Parsons. *il Proc Inst Radio Eng* 32:130 Mar '44

**VACUUM-TUBE Manufacture—Continued**

- Thermionic vacuum tube electrode materials. F. P. Peters. bibliog (52 titles) Electrochem Soc Trans 71 (preprint 29):339 May '37
- Tuning in on the air waves; phenolic radio-tube bases. *il* Mod Plastics 22:112 Dec '44
- Use of ceramics in tube construction; abstract. R. Howard. diags Electronics 14:84 Nov '41
- Vacuum casting of electronic parts. K. Rose. *il* diag Metals & Alloys 21:1324 May '45
- Vacuum in tubes. Electronics 17:248 Mar '44
- Wartime packaging of glass electronic tubes; Tung-Sol lamp works. K. P. Morehead. diags Glass Ind 24:260 June '43
- Westinghouse lamp division finds air conditioning indispensable in manufacture of electronic tubes. *il* Heat & Ven 40:56 Apr '43
- Wireless problems and progress. T. E. Goldup. Jour Inst Elec Eng 91 pt 1:39 Jan '44; Same. Jour Inst Elec Eng 91 pt 3:2 Mar '44
- X-ray exposure in manufacture and operation of certain electronic tubes. A. F. Bush and others. Pub Health Rep 59:1045 Aug 11 '44
- Zirconium and its compounds with a high melting point. J. D. Fast. Phillips Tech Jour (World's Fair issue, 1939)
- See also*  
Manufacturing, Radio  
Receiver Manufacture
- VACUUM-TUBE Measurements**
- Circle diagram for tube circuits. A. A. Nims. *il* Electronics 12:23 May '39
- Characteristic constants of h.f. pentodes; measurements at frequencies between 1.5 and 300 mc. M. J. O. Strutt. *il* diags Wireless Eng 14:478 bibliog (73 titles, p487) Sept '37
- Direct capacity bridge for vacuum tube measurements. Lincoln Walsh. Proc Inst Radio Eng 16:482 Apr '28
- Electrical measurements at wavelengths less than two meters. L. S. Nergaard. Proc Inst Radio Eng 24:1207 Sept '36
- Exact measurement of electron-tube coefficients. R. W. Hickman and F. V. Hunt. Rev Sci Instr 6:268 Sept '35
- Graphical determination of power amplifier performance. R. I. Sarbacher. Electronics 15:52 Dec '42
- Improved inter-electrode capacitance meter. A. A. Barco. *il* diag RCA Rev 6:434 Apr '42
- Input conductance; measurement in high-slope high frequency amplifier valves. F. Preisach and I. Zakarias. diags Wireless Eng 17:147 Apr '40
- Measured input losses of vacuum tubes. C. J. Franks. Electronics 8:222 July '35
- Measurement of dynamic characteristics of vacuum tubes. J. B. Maggio. diag Electronics 14:73 July '41
- Measurement of high vacuums. H. H. Zielinski. *il* diags Electronics 17:112 July '44
- Measurement of secondary emission in valves. L. R. G. Treloar. bibliog diags Wireless Eng 15:535 Oct '38
- Measurements of shot and thermal noise; the linear rectifier as indicator. D. A. Bell. diag Wireless Eng 18:95 Mar '41
- Measuring vacuum tube coefficients. H. S. Polk. *il* Electronics 12:38 July '39
- Method of determining the operating characteristics of a power oscillator. E. L. Chaffee and C. N. Kimball. diags Jour Fr Inst 221:237 Feb '36
- Mutual conductance meter. C. B. Aiken and J. F. Bell. Communications. 18:19 Sept '38
- Oscillographic method of measuring positive grid characteristics. O. W. Livingston. Proc Inst Radio Eng 28:267 June '40
- Power tube characteristics; use of cathode ray tube in rapid method of obtaining tube static characteristics. E. L. Chaffee. diag Electronics 10:30 July '37
- Quantitative study of the dynatron. F. M. Gager and J. B. Russell, jr. diags Proc Inst Radio Eng 23:1536 Dec '35
- Receiver tube measurements at 60 mc. Electronics 9:46 Mar '36
- Some thermal methods of measuring loss of power in vacuum tubes. F. P. Cowan. Rev Sci Instr 7:13 Jan '36
- Space potential plotting in thermionic vacuum tubes. D. E. Kenyon. Rev Sci Instr 11:308 Oct '40
- Survey of ultra-high frequency measurements. L. S. Nergaard. RCA Rev 3:156 Oct '38
- Thermal method for measuring efficiencies at ultra-high frequencies applied to the magnetron oscillator. H. W. Kohler. *il* diag Proc Inst Radio Eng 25:1381 Nov '37
- Tracing tube characteristics on a cathode ray oscilloscope. Jacob Millman and S. Moskowitz. Electronics 14:36 Mar '41
- Transformation for calculating the constants of vacuum tubes with cylindrical elements. W. V. Roberts. Proc Inst Radio Eng 25:1300 Oct '37
- Vacuum tube voltmeter for coaxial line measurements. G. L. Usselman. *il* Electronics 13:32 July '40
- Voltage measurements at very high frequencies. E.C.C. Megaw. Wireless Eng 13:65 Feb '36; p 135 Mar '36; p 201 Apr '36
- See also*  
Vacuum Tube Characteristics
- VACUUM-TUBE Noise**
- Background noise produced by valves and circuits. W. S. Percival and W. L. Horwood. bibliog diags Wireless Eng 15:128, 202 Mar-Apr '38; Discussion. 15:213, 268, 440 Apr-May, Aug '38
- Chart for radio noise. J. M. Sowerby. Wireless Eng 20:327 July '43
- Coexistent thermal and thermionic fluctuations in complex networks. F. C. Williams. bibliog diags Jour Inst Elec Eng 83:76 July '38
- Distribution of amplitude with time in fluctuation noise. V. D. Landon. Proc Inst Radio Eng 29:50 Feb '41; Discussion. 20:425 Sept '42; Correction. 30:526 Nov '42
- Effect of space charge and transit time on the shot noise in diodes. A. J. Rack. Bell Sys Tech Jour 17:592 Oct '38
- Fluctuation noise in vacuum tubes which are not temperature-limited. F. C. Williams. diags

- Jour Inst Elec Eng 78:326 Mar '36; Discussion. 80:564 May '37
- Fluctuation noise in diodes and negative grid triodes. D. O. North. RCA Rev 4:441 Apr '40
- Fluctuation noise in partially saturated diodes. D. A. Bell. Jour Inst Elec Eng 84:723 '39; also Wireless sec I.E.E. 14:177 June '39
- Fluctuations caused by collision ionization. B. J. Thompson and D. O. North. RCA Rev 5:371 Jan '41
- Fluctuations in space-charge-limited currents. D. A. Bell. bibliog Jour Inst Elec Eng 89 pt3:207 Dec '42
- Fluctuations in space-charge-limited currents at moderately high frequencies. B. J. Thompson, D. O. North and W. A. Harris. diags RCA Rev 5:106, 244 July-Oct '40
- Fluctuations induced in vacuum-tube grids at high frequencies. D. O. North and W. R. Ferris. Proc Inst Radio Eng 29:49 '41
- Fluctuations in vacuum tube amplifiers and input systems. W. A. Harris. RCA Rev 5:505 Apr '41
- Form of distortion known as the buzz effect. K. A. Macfadyen. diags Wireless Eng 15:310 June '38
- Measurements of shot and thermal noise; the linear rectifier as indicator. D. A. Bell. diags Wireless Eng 18:95 Mar '41; Discussion. W. H. Aldous and E. G. James. 18:278 July '41
- Multicollectors. D. O. North. RCA Rev 5:244 Oct '40
- Noise of diodes and detectors (pyrite, corborundum) in the static and dynamic regimes; abstract, H. F. Matore. Wireless Eng 20:88 Feb '43
- Noise in radio tubes and its origin in the manufacturing processes; abstract. W. L. Krahl. Electronics 14:33 Dec '41
- Radio tube noise. H. A. Hamilton. il diags Electronics 10:26 Aug '37
- Shot-effect in space-charge-limited diodes. D. M. Surdin. Wireless Eng 20:127 Mar '43
- Shot-effect noise in space-charge-limited vacuum tubes; abstract. B. J. Thompson and D. O. North. Electronics 9:10 Dec '36
- Signal/noise ratio of cathode follower. D. A. Bell. diags Wireless Eng 19:360 Aug '42
- Some aspects of radio reception at ultra-high frequency; admittances and fluctuation noise of tubes and circuits. L. Malter. bibliog diags Proc Inst Radio Eng 31:491 Sept '43
- Theory of fluctuation noise. D. A. Bell. bibliog diags Jour Inst Elec Eng 82:522 May '38; Excerpts. Elec Rev (Lond) 122:20 Jan 7 '38; Discussion. Jour Inst Elec Eng 82:532 May '38
- Theory of noise for electron multipliers. W. Shockley and J. R. Pierce. Proc Inst Radio Eng 26:321 Mar '38
- Transconductance; question as to the proper algebraic sign. H. A. Wheeler; B. J. Thompson. Proc Inst Radio Eng 28:385 Aug '40
- Tube noise between 150 kc. and 15 mc. H. Rothe and G. Plato. Electronics 10:58 Mar '37
- See also*
- Noise
- Characteristics of voltage-multiplying rectifiers. D. L. Waidelich and C. L. Shackelford. bibliog diags Proc Inst Radio Eng 32:470 Aug '44
- Critical inductance and control rectifiers. W. P. Overbeck. Proc Inst Radio Eng 10:655 Oct '39
- Determination of operating data and allowable ratings of vacuum-tube rectifiers. J. C. Frommer. diags Proc Inst Radio Eng 29:481 Sept '41
- Diode as half-wave, full-wave and voltage doubling rectifiers. N. H. Roberts. Wireless Eng 13:351 July '36
- Diode as rectifier and frequency-changer. D. A. Bell. diags Wireless Eng 18:395 Oct '41
- External characteristic of thermionic rectifier. E. B. Moullin. Jour Inst Elec Eng 80:553 '37. Also, Wireless section I.E.E. 12:156 June '37
- Full wave rectifier analysis. C. M. Wallis. diags Electronics 13:19 Mar '40
- Full-wave voltage-doubling rectifier circuit. D. L. Waidelich. diags Proc Inst Radio Eng 29:554 Oct '41
- Grid control of radio rectifiers. S. R. Durand and O. Keller. bibliog il diags Proc Inst Radio Eng 25:570 May '37
- Half-wave rectifier circuits. C. M. Wallis. Electronics 11:12 Oct '38
- Half-wave voltage-doubling rectifier circuit. D. L. Waidelich and C. H. Gleason. bibliog diags Proc Inst Radio Eng 30:535 Dec '42
- High voltage mercury-pool tube rectifiers. C. B. Foss and W. Lattemann. Proc Inst Radio Eng 24:977 July '36
- Hot-cathode mercury rectifier tubes for high power broadcast transmitters; Crosley (WLW) 500-kilowatt broadcast transmitter. H. C. Steiner. il diags Proc Inst Radio Eng 23:103 Feb '35
- Mercury rectifier for plate supply for four large high-power vacuum tube transmitters. G. T. Royden. il Elec W 105:2690 Nov 9 '35
- Modulation response and selectivity curves of a resonant circuit loaded by a diode rectifier. F. C. Williams. bibliog diags Wireless Eng 15:189 Apr '38
- Operation of a thyratron as a rectifier. L. A. Ware. diags Proc Inst Radio Eng 30:500 Nov '42
- Response of rectifiers to fluctuation voltages. F. C. Williams. bibliog diags Jour Inst Elec Eng 80:218 Feb '37
- Steel-cylinder grid-controlled mercury-arc rectifiers in radio service. S. R. Durand. il Proc Inst Radio Eng 23:372 Apr '35
- Surface-controlled mercury-pool rectifier. T. M. Libby. il diags Proc Inst Radio Eng 28:52 Feb '40
- Tabulation of rectifier tubes; vacuum, gas-filled, and grid-controlled types, for purposes other than radio receiving circuits; reference sheet. diags Electronics 9:35 Oct '36
- Thermionic rectifier circuits. R. C. Hitchcock. bibliog il diags Electronics 17:102 Feb '44
- Vacuum rectifiers working with condenser input; graphical assessment of their performance. R. G. Mitchell. diags Wireless Eng 20:414 Sept '43
- See also*
- Power Supply Systems  
Rectifiers

#### VACUUM-TUBE Testing

- Cathode ray oscillograph applications; tracing of vacuum tube characteristics. H. F. Mayer. diags Electronics 11:14 Apr '38

#### VACUUM-TUBE Rectifiers

- Characteristics of thermionic rectifiers. W. H. Aldous. Wireless Eng 13:576 Nov '36

**VACUUM-TUBE Testing—Continued**

- Full floating 1940 tube tester. R. K. Wheeler. il diags Radio N 23:14 Apr '40
- High-power valves; construction, testing, and operation. J. Bell, J. W. Davies, and B. S. Gossling. Jour Inst Elec Eng 83:176 '38; also Wireless sec I.E.E. 13:177 Sept '38
- Improved vacuum tube microammeter. A. W. Vance. il diags Rev Sci Instr 7:489 Dec '36; Abstract. Electronics 10:58 Feb '37
- Mutual conductance meter. C. B. Aiken and J. F. Bell. Communications. 18:19 Sept '38
- Simple methods for checking radio frequency distortion or cross-modulation of pentode amplifier tubes. E. W. Herold. Electronics 13:82 Apr '40
- Tests to insure tube quality. H. F. Dart. il Electronics 9:32 Feb '36
- Thyratron tube tester. V. P. McKinney. diag Electronics 16:128 July '43
- Thyratron tube tester. W. D. Stewart. il diag Radio N 29:20 Mar '43
- See also*
- Vacuum Tube Measurements
- VACUUM TUBES**
- Air cooling applied to external-anode tubes. E. M. Ostlund. il diags Electronics 13:36 June '40
- Application of conventional vacuum tubes in unconventional circuits. F. H. Shepard, jr. diags Proc Inst Radio Eng 24:1573 Dec '36
- Applications of visual-indicator type tubes. L. C. Waller. RCA Rev 1:111 Jan '37
- Behind the all-metal radio tube. A. W. Hull. il Gen Elec Rev 40:65 Jan '37
- Circle diagrams for tube circuits. A. A. Nims. il Electronics 12:23 May '39
- Classification of electron tubes for industry; tabular summary. Power 88:222 Apr '44
- Contribution to tube and amplifier theory. W. E. Benham. bibliog chart(insert) Proc Inst Radio Eng 26:1093 Sept '38; Correction. 26:1429 Dec '38
- Demountable high-vacuum tubes. il Proc Inst Radio Eng 28:sup2 Apr '40
- Dependence of the inter-electrode capacitances of valves upon the operating conditions. T. I. Jones. diags Jour Inst Elec Eng 81:658 Nov '37; Discussion. 82:220 Feb '38
- Development of electronic tubes. I. E. Mouromtseff. bibliog il diags Proc Inst Radio Eng 33:223 Apr '45
- Discharge tubes in radio sets. W. Heinze, W. Pohle and P. Miram. diags Electronics 9:42 Jan '36
- Distortion in valves with resistive loads; graphical methods for its determination. A. Bloch. Wireless Eng 16:592 Dec '39
- Electron tubes and their application. J. H. Morecroft. 458p \$4.50 Wiley '36
- Electron tube relationships and definitions. Electronic Indus 1:85 Nov '42
- Electronic method for determining distribution curves. L. A. Ware. il Electronics 13:36 Oct '40
- Electronic tubes for ultraviolet radiation. J. H. Laub. il diags Electronics 16:80 May '43
- Electron microscope tube. il Electronics 9:52 Dec '36
- Electron trajectories in multi-grid valves; abstract. J. H. L. Jonker. Electronics 14:77 Feb '41
- Electron transit time effects in multigrid valves. M. J. O. Strutt. diags Wireless Eng 15:315 June '38
- Electron tube development. il Electronic Indus 3:81 Dec '44
- Electron tubes; their principles and their instrumentation applications. A. W. Kramer. diags Instruments 16:258, 602 May-Aug '43
- Emissive power of typical grid and plate surfaces. Raymond Szymanowitz. il Electronics 16:93 May '43
- Equivalent electrostatic circuits for vacuum tubes. W. G. Dow. diags Proc Inst Radio Eng 28:548 Dec '40
- Evolution of tantalum tubes. W. G. Wagener. il Electronic Indus 3:108 June '44
- Factors influencing the useful life of vacuum tubes. T. H. Briggs. Electronics 9:39 Dec '36
- Filament and heater characteristics. C. E. Haller. il Electronics 17:126 July '44
- Filament currents of direct current valves; method of eliminating variations. il Electrician 121:438 Oct 14 '38
- Further extensions of the theory of multielectrode vacuum tube circuits. S. A. Levin and L. C. Peterson. bibliog diags Bell System Tech Jour 14:666 Oct '35
- Gaseous tubes and how to treat them. W. W. Waltrous and D. E. Marshall. il Electronics 15:42 Jan '42
- Glass strain; method for determining and analyzing strains in electronics tubes and other glass forms. H. J. Nolte. diags Gen Elec Rev 46:275 May '43; Abstract. Electrician 131:31 July '43
- Grid temperature as a limiting factor in vacuum tube operation. I. E. Mouromtseff and H. N. Kazanowski. Proc Inst Radio Eng 24:447 Mar '36
- High-power valves; construction, testing, and operation. J. Bell, J. W. Davies and B. S. Gossling. bibliog pls Jour Inst Elec Eng 83:176 Aug '38; Abstract. Electronics 11:52 May '38; Discussion. Jour Inst Elec Eng 83:198 Aug '38
- Index of tubes published since January 1942; characteristics of industrial tubes. Electronics 15:130 June '42
- Industrial tubes; characteristics. diags Electronics 15:86 July '42
- Influence of grid focusing effect on plate dissipation limit of a vacuum tube. I. E. Mouromtseff. Communications 18:9 Dec '38
- Institute of radio engineers session on large vacuum tubes. Electronics 13:76 July '40
- Investigation of the behaviour of a hexode. H. O. Walker. diags Wireless Eng 14:430 Aug '37
- Junction analysis in vacuum-tube circuits. J. W. Miles. diags Proc Inst Radio Eng 32:617 Oct '44
- Magnetically focused radial beam vacuum tube. A. M. Skellett. il diag Bell System Tech Jour 23:190 Apr '44; Abstract. Electronics 17:214 Aug '44
- Mixing tube ambiguity. K. Wilhelm. Electronics 9:50 July '36

- Movable anode tubes. E. D. McArthur. *il Electronics* 10:16 Mar '37
- New converter valve. J. L. H. Jonker and A. J. W. M. van Overbeek. *bibliog il diags Wireless Eng* 15:423 Aug '38
- New developments in tubes; abstracts of I.R.E. papers. *diags Electronics* 14:24 Feb '41
- New metal for grids; Hastelloy. B. R. K. Kennedy. *Electronics* 11:54 Sept '38
- New, sensitive, and inexpensive gas control tubes. W. E. Bahls and C. H. Thomas. *il diags Electronics* 14:33 Sept '41
- New tube for use in superheterodyne frequency conversion systems. C. F. Nesslage, E. W. Herold and W. A. Harris. *diags Proc Inst Radio Eng* 24:207 Feb '36
- Obtaining long tube life. *Electronics* 13:63 Aug '40
- On tube circuits. *il Electronic Indus* 3:121 Feb '44
- Open-grid tubes in low-level amplifiers. R. J. Meyer. *bibliog Electronics* 17:126 Oct '44
- Operation of frequency converters and mixers for superheterodyne reception. E. W. Herold. *bibliog (54 titles) diags Proc Inst Radio Eng* 30:84 Feb '42
- Parasitic electronic oscillations and coupling frequencies in a power tube. R. King. *bibliog diag Jour Ap Phys* 11:615 Sept '40
- Physics and the static characteristics of hard vacuum valves. J. H. Fremlin. *Elec Comm* 21:167 '43
- Power-saving tubes with copper cathodes. *Electronics* 9:44 June '36
- Principles of electron tubes. H. J. Reich. 398p \$3.50 McGraw-Hill '41
- Radiation instruments using Geiger-Muller tubes. Paul Weisz. *il Electronics* 15:44 Oct '42
- Rating tube performance. *Electronic Indus* 3:103 May '44
- Reactance tubes in F-M applications. A. Hund. *diags Electronics* 15:68 Oct '42
- Receiver tube operation in aircraft. J. E. M. Lagasse and W. W. H. Dean. *Electronics* 14:56 Nov '41
- Recent electron-tube developments; used in transmission and nontransmission parts of telephone plants. S. B. Ingram. *bibliog il Elec Eng* 64:22 Jan '45
- Rules for prolonging tube life. H. J. Dailey. *il Electronics* 16:76 Apr '43
- Sharp cutoff in vacuum tubes, with applications to the slide-back voltmeter. C. B. Aiken and L. C. Birdsall. *bibliog Elec Eng* 57:Trans 171 Apr '38; Discussion. 57:Trans 176, 432 Apr, Oct '38
- Similar electromagnetic fields in tubes. *il Electronic Indus* 3:123 Jan '44
- Some characteristics of hollow-cathode discharge tubes. C. C. Van Voorhis and A. G. Shenstone. *Rev Sci Instr* 12:257 May '41
- Some general relations of vacuum tube electronics. W. E. Benham. *bibliog diags Wireless Eng* 13:406 Aug '36
- Starting characteristics of a trigger tube with a radioactive cathode; Westinghouse WL-759 designed to operate small relays. W. B. Nottingham. *diags Rev Sci Instr* 11:2 Jan '40
- Steel-clad tube for schools; a 10-kw. mercury tube of the metal-enclosed type which can be taken apart and put back together by students. S. R. Durand. *il Electronics* 9:18 Feb '36 6
- Tensor analysis of multielectrode-tube circuits. G. Kron. *diags Elec Eng* 55:1222 Nov '36
- Theoretical limitation to transconductance in certain types of vacuum tubes. J. R. Pierce. *diags Proc Inst Radio Eng* 31:657 Dec '43
- Theory of multi-electrode vacuum tubes. H. A. Pidgeon. *Bell Sys Tech Jour* 14:44 Jan '35
- Theory of space charge between parallel plane electrodes. C. E. Fay, A. L. Samuel and W. Shockley. *bibliog il Bell System Tech Jour* 17:49 Jan '38
- Theory of tubes with two control grids. A. H. Wing. *bibliog Proc Inst Radio Eng* 29:121 Mar '41
- Tube characteristics. *Electronic Indus* 4:88 May '45
- Tube performance at ultra-high frequency. F. B. Llewellyn and L. C. Peterson. *il Electronic Indus* 3:88 Nov '44
- Tube substitution chart. R. W. Crane. *Radio N* 33:51 Apr '45
- Tubes and their functions; tubes at work. *bibliog diags Electronics* 15:61 June '42
- Tubes for high-power short-wave broadcast stations; their characteristics and use. G. Chevigny. *Elec Comm* 21:143 '43
- Tubes in meteorology. Gilbert Sonberg. *Electronic Indus* 2:62 Aug '43
- Type of light valve for television reproduction. J. S. Donal, jr. and D. B. Langmuir. *diags Proc Inst Radio Eng* 31:208 May '43
- Über eine neuere anordnung zur untersuckung von fluorescenzmaterialien für elektromenstrakbwhween. M. von Ardonne. *il Agneu Chemie* 50:905 Dec 4 '37
- Use of vacuum tubes as variable impedance elements. H. J. Reich. *bibliog diags Proc Inst Radio Eng* 30:288 June '42
- Vacuum in tubes. *Electronics* 17:248 Mar '44
- Vacuum-tube alternating-voltage compensator. I. L. Cooter, F. Wenner and C. Peterson. *diags Jour Research Nat Bur Stand* 25:41 July '40
- Vacuum tube current integrator. G. J. Perlow. *diags Rev Sci Instr* 12:412 Aug '41
- Vacuum tube inverter circuit. W. E. Kock. *diags Rev Sci Instr* 12:510 Oct '41
- Vacuum tube reconditioning; abstract. C. W. Singer. *diag Electronics* 14:84 Jan '41
- Vacuum type trigger tube using secondary emission. *il Electronics* 15:100 Oct '42
- Various circuits for vacuum tubes and photoelectric cells. F. H. Shepard. *diags Electronics* 9:34, 36, 38, June '36
- Water and forced-air cooling of vacuum tubes. I. E. Mourontseff. *il diags Proc Inst Radio Eng* 30:190 Apr '42

*See also*

Vacuum Tube Manufacture

#### Beam Power

- Beam power output tube. 6L6. J. F. Dreyer, jr. *bibliog il diags Electronics* 9:18 Apr '36



**VACUUM TUBES, Beam Power—Continued**

- Beam power tubes. O. H. Schade. *il diags Proc Inst Radio Eng* 26:137 Feb '38
- Beam tubes as ultra-high frequency generators. R. King. *diags Electronics* 13:68 Jan '40
- Radial beam tubes. *il Electronics* 17:214 Aug '44
- Voltage-stabilized bias supply for power tubes. *il Electronics* 16:160 Sept '43

**Cold-Cathode**

- Cold cathode rectification. A. E. Shaw. *Proc Inst Radio Eng* 17:849 May '29
- Cold cathode tube developed for telephone service. *il diag Electronics* 10:36 Feb '37
- Cold cathode tubes used on relays. E. C. Schurch. *Elec W* 119:468, 980 Feb 6-Mar 20 '43
- Current rating and life of cold-cathode tubes. G. H. Rockwood. *Elec Eng* 60:Trans 901 Sept '41
- Gas-filled electronic tubes. O. W. Livingston and N. J. Walker. *bibliog il diag Gen Elec Rev* 41:354 Aug '38
- New cold-cathode gas-triode, OA4G. W. E. Bahls and C. H. Thomas. *il diags Electronics* 11:14 May '38
- New, sensitive and inexpensive gas control tubes. W. E. Bahls and C. H. Thomas. *il diags Electronics* 14:33 Sept '41
- Portable instrument for measuring insulation resistance at high voltage; use of new cold-cathode rectifier tube. F. W. Atkinson and R. B. Taylor. *bibliog Elec Eng* 64:Trans 164 Apr '45
- Production of ultra-short-wave oscillations with cold-cathode discharge tubes. K. Okabe. *Proc Inst Radio Eng* 21:1593 Nov '33
- Strobotron; a new cold-cathode gas-filled control tube capable of carrying large peak currents. K. J. Germeshausen and H. E. Edgerton and others. *bibliog il diags Electronics* 10:12 Feb 18-Mar '37

**Diode**

- Behaviour of mixing diodes at low and high frequencies; abstract. H. Meinke. *Wireless Eng* 20:502 Oct '43
- Design formulas for diode detectors. H. A. Wheeler. *bibliog diags Proc Inst Radio Eng* 26:745 June '38
- Diode as a frequency-changer. F. M. Colebrook and G. H. Aston. *Wireless Eng* 20:5 Jan '43
- Diode as half-wave, full-wave and voltage-doubling rectifier; with special reference to the voltage output and current input. N. H. Roberts. *diags Wireless Eng* 13:351 423-30 July-Aug '36
- Diode as rectifier and frequency-changer. D. A. Bell. *diags Wireless Eng* 18:395 Oct '41
- Diode frequency changers. M. J. O. Strutt. *diags Wireless Eng* 13:73 Feb '36
- Diode frequency changers. E. G. James and J. E. Houldin. *Wireless Eng* 20:15 Jan '43
- Diode modulation. A. D. Bailey and G. H. Fett. *diags Proc Inst Radio Eng* 33:254 Apr '45
- Diode operating conditions. W. P. N. Court. *diags Wireless Eng* 16:548 Nov '39; Discussion. K. R. Sturley. 17:19 Jan '40
- Electron transit time; effect in cathode-ray tubes and diodes. W. E. Benham. *Wireless Eng* 16:598 Dec '39

- Fluctuation noise in diodes and negative grid triodes. D. O. North. *RCA Rev* 4:441 Apr '40
- Fluctuation noise in partially saturated diodes. D. A. Bell. *Jour Inst Elec Eng* 84:723 '39. Also, *Wireless Section I. E. E.* 14:177 June '39
- Fluctuations of space-charge-limited currents in diodes. F. C. Williams. *bibliog diag* 88 pt 3:219; Discussion. 229 Dec '41
- Fluctuation voltage in diodes and in multi-electrode valves. F. C. Williams. *bibliog diags Jour Inst Elec Eng* 79:349 Sept '36
- Generation of decimetric waves with diodes; abstract. J. Menke. *Wireless Eng* 21:490 Oct '44
- Noise of diodes and detectors in the static and dynamic regimes; abstract. H. F. Matare. *Wireless Eng* 20:85 Feb '43
- Shot-effect in space-charge-limited diodes. D. M. Surdin. *Wireless Eng* 20:127 Mar '43
- Theory of the thermionic diode. E. L. E. Wheatcroft. *Jour Inst Elec Eng* 86:473 May '40; Discussion 87:691 Dec '40
- Three halves power law of the diode. E. B. Moulain. *Wireless Eng* 14:193 Apr '37; Discussion. J. Greig. 14:317 June '37
- Transit time effects in diodes, in pictorial form. R. W. Sloane and E. G. James. *Jour Inst Elec Eng* 79:291 Sept '36. Discussion. 80:103 Jan '37
- See also*

**Detection****Pentode**

- Characteristic constants of h.f. pentodes; measurements at frequencies between 1.5 and 300 Mc/s. M. J. O. Strutt. *il diags Wireless Eng* 14:478 bibliog Sept. '37
- Distribution of current in pentodes and hexodes; abstract. H. Rothe and W. Kleen. *Electronics* 10:53 Feb '37
- Emissive plates for pentodes. *Electronics* 16:202 Sept '43
- Experimental duo-pentode. M. K. Goldstein. *bibliog il diags Electronics* 14:34 May '41
- Pentode amplification chart. *Radio N* 31:45 Apr '44
- Pentodes for high frequency operation. *il diag Electronics* 9:60 Nov '36
- Power tube characteristics; use of cathode ray tube as a means of obtaining graphical plot. E. L. Chaffe. *bibliog diag Electronics* 11:34 June '38
- Power tube performance in class C amplifiers and frequency multipliers as influenced by harmonic voltage. R. I. Sarbacher. *il diags Proc Inst Radio Eng* 31:607 Nov. '43
- Simple methods for checking radio frequency distortion or cross-modulation of pentode amplifier tubes. E. W. Herold. *Electronics* 13:82 Apr '40
- Single-ended radio-frequency pentodes. R. L. Kelley and J. F. Miller. *diags Electronics* 11:26 Sept '38

*See also***Amplifiers, Power****Tetrode**

- Control circuits for industry; applications of the gas tetrode, type 2050 or 2051. G. Smiley. *il diags Electronics* 14:29 Jan '41
- Electron tubes; principles and applications; screen grid tubes. A. W. Kramer. *il diags Power Pl Eng* 41:166 Mar '37

- Inductively compensated tetrode amplifiers. D. M. Johnstone. diags Wireless Eng 15:208 Apr '38
- Neutralization of screen-grid tubes to improve the stability of intermediate-frequency amplifiers. C. A. Hultberg. diags Proc Inst Radio Eng 31:663 Dec '43
- New ultra-high-frequency tetrode and its use in a one-kilowatt television sound transmitter. A. K. Wing, jr. and J. E. Young. Proc Inst Radio Eng 29:5 Jan '41
- 20kw tetrode for ultrahigh-frequency transmitters. A. V. Haeff and others. il diags Elec Eng 59:107 Mar '40  
*See also*
- Neutralization
- Triode
- Calculation of triode constants. J. H. Fremlin. Elec Comm 18:39 July '39
- Cavity resonators in decimetric-wave triode generators; abstract. P. L. Bargellini. Wireless Eng 21:187 Apr '44
- Characteristic curves of the triode. E. L. Chaffee. bibliog diags Proc Inst Radio Eng 30:383 Aug '42
- Current division in plane-electrode triodes. K. Spangenberg. bibliog Proc Inst Radio Eng 28:226 May '40
- Developmental problems and operating characteristics of two new ultra-high-frequency triodes. W. G. Wagener. bibliog il diags Proc Inst Radio Eng 26:401 Apr '38
- Electronic oscillations in positive-grid triodes, and resonance oscillations in magnetron generators. J. S. McPetrie. diags Jour Inst Elec Eng 80:84 Jan '37
- Formulas for the amplification factor for triodes. Proc Inst Radio Eng 30:134 Mar '42
- Graphical method of finding the optimal operating conditions of triodes as class C telegraph transmitters. J. C. Frommer. Proc Inst Radio Eng 30:519 Nov '42
- Inverted triodes for industrial measurements. il Electronics 17:176 Dec '44
- Negative grid triode oscillator and amplifier for ultra-high frequencies. A. L. Samuel. bibliog il diag Proc Inst Radio Eng 25:1243 Oct '37; Abstract. Bell System Tech Jour 16:568 Oct '37
- Operation of power triodes in u-h-f circuits. W. G. Wagner. Electronics 14:81 Apr '41
- Production of relaxation oscillations; some experiments with a soft triode. S. Byard. bibliog diags Wireless Eng 15:252 May '38
- Signal-to-noise characteristics of triode input circuits. R. E. Burgess. diags Wireless Eng 22:56 Feb '45
- Theory of the practical triode. I. A. Harris. bibliog diags Wireless Eng 18:45 Feb '41; Correction. 18:153 Apr '41
- Three new ultra-high-frequency triodes. K. C. Dewalt. il diags Proc Inst Radio Eng 29:475 Sept '41
- Triodes with square mesh grids; calculating the amplification factor. C. C. Eaglesfield. diags Wireless Eng 19:447; Discussion (Equivalence of parallel wire and square mesh grids). G. W. O. Howe. 443 Oct '42
- Triode vacuum tube scale-of-two circuit. H. Lifschutz and J. L. Lawson. bibliog diags Rev Sci Instr 9:83 Mar '38
- Volume expansion with a triode; 6K7 tube. C. G. McProud. diags Electronics 13:17 Aug '40  
*See also*
- Oscillators
- VACUUM TUBES, Dynatron
- Clarification of average negative resistance with extensions of its use. C. Brunetti. bibliog il diags Proc Inst Radio Eng 25:1595 Dec '37
- Electron beams and their application in low voltage devices. H. C. Thompson. Proc Inst Radio Eng 24:1276 Oct '36
- Impedance properties of electron streams. L. C. Peterson. Bell Sys Tech Jour 18:465 July '39
- Negative resistance and devices for obtaining it. E. W. Herold. Proc Inst Radio Eng 23:1201 Oct '35
- New electron tube having negative resistance. J. Groszkowski. diags Proc Inst Radio Eng 24:1041 July 36
- Quantitative study of the dynatron. F. M. Gager and J. B. Russell, jr. diags Proc Inst Radio Eng 23:1536 Dec '35
- Some applications of negative feedback with particular reference to laboratory equipment. F. E. Terman and others. Proc Inst Radio Eng 27:647 Oct '39
- The dynatron; a vacuum tube possessing negative resistance. Albert W. Hull. Proc Inst Radio Eng 6:5 '18  
*See also*
- Oscillators, Dynatron
- VACUUM TUBES, Electron-Multiplier
- Behaviour of electrostatic electron multipliers as a function of frequency. L. Matter. Proc Inst Radio Eng 29:587 Nov '41
- Electron multiplier design; abstract. J. R. Pierce. diag Electronics 11:50 July '38
- Electron multipliers. G. Weiss and others. diag Electronics 9:60 Sept '36
- Electrostatic electron multiplier. V. K. Zworykin and J. A. Rajchman. Proc Inst Radio Eng 27:558 Sept '39
- Orbital beam secondary-electron multiplier for ultra-high-frequency amplification. H. M. Wagner and W. R. Ferris. Proc Inst Radio Eng 29:598 Nov '41
- Rival of the vacuum tube; electron multiplier. V. K. Zworykin. il diag Sci Amer 154:68 Feb '36
- Secondary emission multiplier; a new electronic device. V. K. Zworykin, G. A. Morton and L. Malter. il diags Proc Inst Radio Eng 24:351 Mar '36
- Theory of noise for electron multipliers. W. Shockley and J. R. Pierce. Proc Inst Radio Eng 26:321 Mar '38
- Voltage-controlled electron multipliers. B. J. Thompson. Proc Inst Radio Eng 29:583 Nov '41  
*See also*
- Electron Multipliers (main entry)
- VACUUM TUBES, Klystron. See Klystron
- VACUUM TUBES, Magnetron
- Action and output of the split-plate magnetron. Electronics 9:42 Aug '36

**VACUUM TUBES, Magnetron—Continued**

- Action of a split-anode magnetron. E. W. B. Gill and K. G. Britton. diags Jour Inst Elec Eng 78:461 Apr '36; Discussion. 79:224 Aug '36
- Characteristics of the negative-resistance magnetron oscillator. H. Chang and E. L. Chaffee. bibliog diags Proc Inst Radio Eng 28:519 Nov '40
- Description and characteristics of the end-plate magnetron. E. G. Linder. il diags Proc Inst Radio Eng 24:633 Apr '36
- Effects of high energy electron random motion upon the shape of the magnetron cutoff curve. E. G. Linder. Jour App Phys 9:331 May '38
- Electronic oscillations in positive-grid triodes, and resonance oscillations in magnetron generators. J. S. McPetrie. diags Jour Inst Elec Eng 80:84 Jan '37
- Generation and amplification of microwaves. F. Cox. Electrician 128:73 Jan 30 '42; abstract. Elec Rev (Lond) 130:115 Jan 23 '42
- Impedance of the magnetron in different regions of the frequency spectrum. A. F. Harvey. bibliog Jour Inst Elec Eng 86:297 Mar '40
- Magnetron and the generation of ultra-short waves. il diags Wireless Eng 15:1 Jan '38
- Magnetron oscillators for the generation of frequencies between 300 and 6600 mc. G. R. Kilgore bibliog il diags Proc Inst Radio Eng 24:1140 Aug '36
- The magnetron. Albert W. Hull. A.I.E.E. Jour Comm Vol 20, No. 2, p. 112, '41
- Theory of the magnetron. Leon Brillouin. Elec Comm 40:715 '21
- Tungsten cathode for magnetrons. Electronics 16:164 May '43
- Ultra-high-frequency technique; ultra-high-frequency generators. I. E. Mourontseff, R. C. Retherford and J. H. Findley. bibliog diags Electronics 15:45 Apr '42

*See also*

**Oscillators, Magnetron****VACUUM TUBES, Miniature**

- Acorn tube on  $\frac{1}{4}$  meter. E. Glaser. il diags Radio N 16:733; 17:30, 93 June-Aug '35
- Development and production of the new miniature battery tubes. N. R. Smith and A. H. Schooley. RCA Rev 4:496 Apr '40
- Hearing aid tubes. il Electronics 13:66 Sept '40
- Miniature battery tubes. K. G. Bucklin. il Electronics 12:27 Nov '39
- Miniature electron tubes. Science 101:sup 10 Mar 2 '45
- Miniature tubes; abstract. R. L. Kelly and N. H. Green. Electronics 18:338 Mar '45
- Multi-purpose midget tubes. il Electronics 12:48 June '39
- Recent developments in miniature tubes. B. Sayzberg and D. G. Burnside. il diags Proc Inst Radio Eng 23:1142 Oct '35
- Super-midget tubes. il Electronics 14:67 Feb '41

*See also*

**Vacuum-Tube Manufacture****VACUUM TUBES, Receiving**

- Change in maximum ratings of receiver tubes. Electronics 12:48 Dec '39
- Development of the receiving valve. S. R. Mullard. diags pl Jour Inst Elec Eng 76:10 Jan '35

- Modern receiving valves; design and manufacture. M. Benjamin, C. W. Cosgrove, and G. W. Warren. I.E.E. Wireless Proc 12:65 June '37
- Receiver tube measurements at 60 mc. Electronics 9:46 Mar '36
- Receiver tube operation in aircraft. J. E. M. Lagasse and W. W. H. Dean. Electronics 14:56 Nov '41
- The development of the receiving valve. S. R. Mullard. Jour Inst Elec Eng 76:10 '35; also Wireless sec I.E.E. 10:1 Mar '35
- Thermionic valves in modern radio receivers; a handbook on theory and practice. A. T. Witts. 192p \$4.20 Pitman '37

*See also*

**Receivers, Reception****VACUUM TUBES, Transmitting**

- Analysis of the operation of vacuum tubes as class C amplifiers. I. E. Mourontseff and H. N. Kozanowski. il Proc Inst Radio Eng 23:752 July '35
- Characteristic constants of h.f. pentodes; measurements at frequencies between 1-5 and 300 Mc/s. M. J. O. Strutt. il diags Wireless Eng 14:478 bibliog (73 titles, p487) Sept '37
- Design and development of three new ultra-high-frequency transmitting tubes. C. E. Haller. bibliog il diags Proc Inst Radio Eng 30:20 Jan '42
- Development of wireless transmitting valves. W. J. Picken. Jour Inst Elec Eng 88 pt 3:2, pl Mar '41
- Filament design for high-power transmitting valves. J. J. Vormer. Proc Inst Radio Eng 26:1397 Nov '38
- Filaments replaceable in new transmitting tubes. il Gen Elec Rev 42:369 Aug '39
- Hard-to-get tube data; transmitting tube and socket connections charts. il diags Radio N 19:71 Aug '37
- Impulse generator for testing high-power tubes. J. H. O. Harries. il Electronics 16:136 Dec '43
- Industrial type building heated by waste heat; General electric company broadcasting stations WGY, W2XAF, W2XAD, and state police transmitter WPGC uses heat from transmitter tubes. W. J. Purcell and D. M. Dart. Heat & Ven 32:31 Dec '35
- Marconi transmitting valves; three new designs developed for broadcasting service. il Electrician 114:137 Jan 25 '35
- Mass production of u.h.f. transmitting tubes. J. Coleman. il Radio N 32:36 Nov '44
- New ultra-high-frequency tetrode and its use in a one kilowatt television sound transmitter. A. K. King, jr. and J. E. Young. Proc Inst Radio Eng 29:5 Jan '41
- Production tester for transmitting tubes. P. M. Thompson. il diags Electronics 17:142 Jan '44
- Ratings increased for RCA transmitting tubes. Electronics 12:64 Nov '39
- Recent developments of the class B audio- and radio-frequency amplifiers. L. E. Barton. diags Proc Inst Radio Eng 24:985 July '36
- Simplified methods for computing performance of transmitting tubes. W. G. Wagener. diags Proc Inst Radio Eng 25:47 Jan '37



**VACUUM TUBES, Velocity-Modulation—Cont'd**

Theory of klystron oscillations. David L. Webster. Jour Ap Phys 10:864 Dec '39

Theory of velocity-modulated transit-time valves; abstract. H. Doring. Wireless Eng 21:339 July '44

Tubes employing velocity modulation. R. I. Sarbacher and W. A. Edson. bibliog diags Proc Inst Radio Eng 31:439 Aug '43

Velocity-modulated beams; the electron density distribution. D. M. Tombs. diags Wireless Eng 17:54 Feb '40; Discussion. 17:110, 202, 262 Mar, May-June '40

Velocity-modulated beams. Rudolf Kompfner. Wireless Eng 17:262 June '40

Velocity modulating grids; investigation of their action by means of analysis and graphical methods. R. Kompfner. Wireless Eng 19:158 Apr '42

Velocity modulated tubes. W. C. Hahn and G. F. Metcalf. Proc Inst Radio Eng 27:106 Feb '39

Velocity-modulation currents. D. L. Webster. Jour Ap Phys 13:786 Dec '42

*See also*

Klystron

Velocity Modulation

**VELOCITY Microphones.** See Microphones

**VELOCITY Modulation**

A high frequency oscillator and amplifier. Russell H. Varian and Sigurd F. Varian. Jour Applied Phys 10:321 May '39

Cathode-ray bunching. David L. Webster. Jour Applied Phys 10:501 July '39

Electronic-wave theory of velocity-modulation tubes. S. Ramo. diags Proc Inst Radio Eng 27:757 Dec '39

Graphical method of analysis of velocity-modulation bunching. A. E. Harrison. bibliog diags Proc Inst Radio Eng 33:20 Jan '45

Klystron characteristics. William Moulic. il Electronic Indus 3:90 June '44

Klystron characteristics; abstracts. C. Dodd. diags Electronics 18:250 Mar '45

Klystron equipment. Jesse B. Sherman. Electronic Indus 4:88 Jan '45

Klystron oscillators. A. E. Harrison. il Electronics 17:100 Nov '44

Measuring klystron amplifier features. Coleman Dodd. Electronic Indus 4:76 Feb '45

Phase focusing of electron beams traveling in a straight line (velocity-modulated oscillators and amplifiers) abstract. F. Borgnis and E. Lednegg. Wireless Eng 18:247 June '41

Principles of klystron amplifiers; abstract. R. O. Haxby. Electronics 17:204 Nov '44

Sensitivity of velocity-modulated valves used for reception; abstract. J. Muller. Wireless Eng 16:34 Jan '43

Theory and application of u.h.f.; cavity resonators as tuning units of klystron and magnetron oscillators. M. S. Kiver. diags Radio N 32:5. Dec '44

Theory of klystron oscillations. David L. Webster. Jour Applied Phys 10:864 Dec '39

Theory of velocity-modulated transit-time valves; abstract. H. Doring. Wireless Eng 21:339 July '44

Tubes employing velocity modulation. R. I. Sarbacher and W. A. Edison. bibliog diags Proc Inst Radio Eng 31:439 Aug '43

Ultra-high frequency oscillations of cylindrical cavity resonators containing two and three dielectric media. D. Middleton. bibliog diag Phys Rev 63:343 May '43

Velocity-modulated beams. Rudolf Kompfner. Wireless Eng 17:262 June '40

Velocity-modulated beams; the electron density distribution. D. M. Tombs. diags Wireless Eng 17:54 Feb '40; Discussion. 17:110, 202, 232 Mar-May-June '40

Velocity modulated tubes. W. C. Hahn and G. F. Metcalf. Proc Inst Radio Eng 27:106 Feb '39

Velocity modulating grids; investigation of their action by means of analysis and graphical methods. R. Kompfner. Wireless Eng 19:158 Apr '42

Velocity modulation; results of further considerations. R. Kompfner. bibliog diags Wireless Eng 17:478 Nov '40

Velocity modulation currents. D. L. Webster. Jour Ap Phys 13:786 Dec '42

Wave energy and transconductance of velocity-modulated electron beams. W. C. Hahn. diags Gen Elec Rev 42:497 Nov '39

*See also*

Cavity Resonators

Vacuum Tubes, Velocity-Modulation

**VIBRATION**

Aircraft radio vibration. L. B. Hallmann, jr. Communications 20:5 May '40

Aircraft vibration analyzer. F. G. Marble. il Electronics 17:98 Oct '44

Electromechanical analogies and their use for the analysis of mechanical and electromechanical systems; application to vibration absorbers. A. Block. Jour Inst Elec Eng 92 pt 1:1666 Apr '45

Electronic apparatus for vibration testing. R. O. Fehr and C. Shabtach. il diags Electronics 16:94 June '43

Measurement of vibration with electronic instruments. il Power Pl Eng 46:82 Dec '42

Modern vibration control installations for aircraft radio and instruments. il Aero Digest 49:89 June 1 '45

Modes of vibration of piezo-electric crystals. N. H. Williams. Proc Inst Radio Eng 21:990 July '33

Modulated-beam cathode-ray phase meter; measuring characteristics of amplifiers used in vibration measurement. A. Watton, jr. bibliog Proc Inst Radio Eng 32:268 May '44

Oscilloscope patterns of damped vibrations of quartz plates and Q measurements with damped vibrations. H. A. Brown. Proc Inst Radio Eng 29:195 Apr '41

Piezo-electric vibration meter; its use for the detection of bearing vibration. C. A. Mason and B. B. Ray. bibliog il diags Electrician 117:565 Nov 6 '36

Response of elastically-mounted bodies to rapid accelerations. R. G. Manley. diags Engineering 159:321 Apr 27 '45

Suspension mount controls instrument vibration. il diags Aviation 43:139 Nov '44

Vibration insulation and structural rubber. J. A. Connon. il diags Elec Eng 64:Trans 324 June '45

Vibration meter; a new electronic tool for industry. H. H. Scott. Gen Radio Exp Vol 16 June '41

**VIBRATRON**

The vibratron. *il* Electronics Indus 4:79 Apr '45

**VIBRATORS**

Vibrators; power supply from batteries by vibrators made auto radio possible; circuits, materials, construction. *il* diags Electronics 9:25 Feb '36

Vibrator operates aircraft fluorescents from battery. *il* Electronics 16:114 Jan '43

*See also*

Receiver Power Supplies  
Receivers, Automobile

**VIDEO Amplifier.** *See* Amplifiers, Wide-Band

**VISUAL Indicators**

Applications of visual-indicator type tubes. L. C. Waller RCA Rev 1:111 Jan '37

Visual selectivity meter with a uniform decibel scale. K. R. Sturley and R. P. Shipway. *il* diags Jour Inst Elec Eng 87:189 Aug '40

Visual null indication; instrument for cable measurements. C. F. Brockelsby. *il* diags Elec Rev (Lond) 128:829 July 18 '41

Visual alignment generator. H. F. Mayer. Electronics 13:39 Apr '40

Visual test device. Guenther Ullbricht. Proc Inst Radio Eng 22:89 Jan '34

*See also*

Oscillograph

**VOICE-Operated Relay**

Overseas radio extensions to wire telephone networks. L. Espenschied and William Wilson. Proc Inst Radio Eng 19:282 Feb '31

The vodas. S. B. Wright. Elec Eng 56:1012 Aug '37. Same. Bell Sys Tech Jour 16:456 Oct '37

Two-way radiotelephone circuits. S. B. Wright and D. Mitchell. Proc Inst Radio Eng 20:1117 July '32

Vogad for radiotelephone circuits. S. B. Wright, S. Doba and A. C. Dickieson. Proc Inst Radio Eng 27:254 Apr '39

*See also*

Relays

**VOLTAGE Doublers.** *See* Rectifiers, Voltage-Doubling

**VOLTAGE Measurements.** *See* Measurements

**VOLTAGE Regulators**

A-C voltage regulator. G. F. Lampkin. 10:30 Aug '37

Automatic compensation for class B bias and plate voltage regulation. R. J. Rockwell and G. F. Platts. Proc Inst Radio Eng 24:553 Apr '36

Alternator-voltage regulator utilizing a non-linear circuit. H. W. Mayne. diags Elec Eng 56:462 Apr '37

Amplifier theory applied to regulators. J. M. Cage. bibliog diags Electronics 18:140 Jan '45

Analysis of voltage-regulator operation. W. R. Hill, jr. diags Proc Inst Radio Eng 33:38 Jan '45

Ballast tubes as automatic voltage regulators. S. G. Taylor. *il* diags Electronics 15:26-30 Jan '42

Electronic voltage stabilizer for 1 to 50 kv and 20 to 500 ma. L. G. Parratt and J. W. Trischka.

diags Rev Sci Instr 13:17 Jan '42; Abstract. Electronics 15:88 May '42

Electronic alternating-current power regulator. L. B. Cherry and R. F. Wild. Proc Inst Radio Eng 33:262 Apr '45

Electronic voltage stabilizers. R. W. Hickman. Rev Sci Instr 10:6 Jan '39

Five-ampere electronic d-c regulator for cinema integrator, developed at M. I. T. J. N. Coombs and P. T. Nims. diags Electronics 13:40 Jan '40

Sensitive valve voltmeter relay. S. S. Orlov and A. A. Pirogov. diags Wireless Eng 19:347 Aug '42; abstract. Electronics 15:102 Nov '42

Simple a-c voltage regulator. G. F. Lampkin. diags Electronics 10:30 Aug '37

Stable power supplies for electron microscopes. A. W. Vance. RCA Rev 5:293 Jan '41

Synchronized voltages for bioelectric research. Harold Goldberg. *il* Electronics 14:30 Aug '41

Vacuum-tube alternating-voltage compensator. I. L. Cooter, F. Wenner and C. Peterson. diags Jour Research Nat Bur Stand 25:41 July '40

Voltage control with a non-linear Wheatstone bridge; incandescent lamp forms basis of circuit. W. Richter. diags Electronics 13:20 June '40

Voltage regulator for d-c power supplies. RCA Mfg Co. application note 96 Aug 24 '38

Voltage regulators using magnetic saturation; saturated transformers and reactors useful in numerous electronic circuits. K. J. Way. bibliog diags Electronics 10:14 July '37

Voltage stabiliser; new electronic regulator. G. N. Patchett. diags Elec Rev (Dond) 134:602 Apr 28 '44

Voltage-stabilized bias supply for power tubes. G. E. Pihl. diags Electronics 16:150 Sept '43

Voltage surges in audio-frequency apparatus. E. H. Fisher. Proc Inst Radio Eng 17:841 May '29

*See also*

Power Supply Systems

**VOLTMETERS**

Audio-frequency voltmeter. H. C. Likel. *il* Electronics 18:32 Dec '40

Frequency compensation of moving-iron voltmeters. Wireless Eng 17:429 Oct '40

Multirange rectifier instruments having the same scale gradation for all ranges. F. E. Terman. Proc Inst Radio Eng 23:234 Mar '35

Negative plate voltmeter. *il* Electronics 17:152 Jan '44

Thermocouple used in low voltage tube voltmeter. Charles Murray. *il* Electronics 8:190 June '35

Transient peak voltmeter. *il* Electronics 15:104 Oct '42

Use of copper-oxide rectifier for instrument purposes. J. Sahagen. Proc Inst Radio Eng 19:233 Feb '31

Voltmeter with 5-ma meter. E. M. Yard. *il* Electronics 17:169 July '44

*See also*

Measurements, Voltage, Current, and Power  
Voltmeters, Vacuum-Tube

**VOLTMETERS, Cathode-Ray**

Cathode ray tube voltmeter. *il* Electronic Indus 3:124 Jan '44.

**VOLTMETERS, Cathode-Ray—Continued**

Measuring peak voltages by magnetic oscillograph. C. S. Smith. *il diags Gen Elec Rev* 44:121 Feb '41

Sensitive cathode-ray voltmeter. *il Electronics* 17:254 Feb '44

*See also*

Cathode-Ray Tube

**VOLTMETERS, Logarithmic**

Acoustic testing of high-fidelity receivers. A. A. Wheeler and V. E. Whiteman. *Proc Inst Radio Eng* 23:610 June '35

DC amplifier for logarithmic recording. John P. Taylor. *il Electronics* 10:24 Mar '37

High quality broadcast transmission and reception. S. Ballantine. *Proc Inst Radio Eng* 23:618 June '35

Logarithmic electronic voltmeter. P. J. Selgin. *il Electronics* 13:40 Nov '40

Visual selectivity meter with uniform decibel scale. K. R. Sturley and R. P. Shipway. *Jour Inst Elec Eng* 87:189 '40; also *Wireless sec I.E.E.* 15:215 Sept '40

Vacuum-tube voltmeter with logarithmic response. F. V. Hunt. *Rev Sci Inst* 4:672 Dec '33

Vacuum tube circuit to measure the logarithm of a direct current. R. E. Meagher and E. P. Bentley. *Rev Sci Inst* 10:336 Nov '39

**VOLTMETERS, Vacuum-Tube**

An a-c operated vacuum tube voltmeter. J. N. Thurston. *il Electronics* 16:102 Oct '43

An electronic potentiometer. M. A. Honnell. *Proc Inst Radio Eng* 40:433 Oct '42

Cathode-ray tube voltmeter. *il Electronic Indus* 3:124 Jan. '44

D-c vacuum-tube voltmeter. A. G. Bousquet. *il Gen Radio Exp Vol* 19 Dec '44

Direct reading vacuum tube millivoltmeter. W. Lyons and R. E. Heller. *il Electronics* 12:25 Nov '39

Double tube vacuum tube voltmeter. W. C. Michels. *il diag Rev Sci Instr* 9:10 Jan '38

Duo-triode bridge voltmeter. R. E. Vollrath. *diag Rev Sci Inst* 10:361 Dec 139; abstract. *Electronics* 12:62 Feb '40

Electrical measurements at wavelengths less than 2 meters. L. S. Nergaard. *Proc Inst Radio Eng* 24:1207 Sept '36

Electronic voltmeter for d-c arc welding. *il Electronics* 8:82 Mar '35

Electronic voltmeter using feedback. Stuart Ballantine. *il Electronics* 11:33 Sept '38

Flexible vacuum tube voltmeter. H. G. Boyle. *il Electronics* 9:32 Aug '36

Improvement in vacuum-tube voltmeters. R. M. Somers. *Proc Inst Radio Eng* 21:56 Jan '33

Low frequency vacuum tube voltmeter. C. Van Rensselaer. *il Electronic Indus* 3:110 June '44

Measurement of peak voltages in high voltage testing, with particular reference to a modified diode peak voltmeter. R. N. Buttrey. *bibliog diags Jour Inst Elec Eng* 90 pt 2:186 June '43

Measurements of voltages and currents down to a wavelength of 20 centimeters. M. J. O. Strutt and K. S. Knol. *Proc Inst Radio Eng* 27:782 Dec '39

Multiplying the range of a vacuum tube voltmeter. G. R. Chinski. *il Electronics* 11:42 May '38

New type of electron-optical voltmeter. L. Jacobs. *il diags Jour Inst Elec Eng* 91 pt 2:512 Dec '44; Abstract. *Electrician* 132:365 Apr 28 '44; Discussion. *Jour Inst Elec Eng* 91 pt 2:515 Dec '44; *Electrician* 132:365 Apr 28 '44

New vacuum tube voltmeter. J. H. Potts. *il diags Radio N* 17:84 Aug, Oct-Nov '35, Mar '36

Pocket vacuum-tube voltmeters. R. P. Turner. *diags Radio N* 29:32 Mar '43

Portable vacuum-tube voltmeter. *il Electronics* 15:104 July '42

Proposed wattmeter using multielectrode tubes. J. R. Pierce. *Proc Inst Radio Eng* 24:577 Apr '36. Discussion. 25:515 Apr '37

Push-pull stabilized triode voltmeters. C. Williamson and J. Nagy. *Rev Sci Instr* 9:270 Sept '38

Screen-grid voltmeter without external leak. Ronald King. *Proc Inst Radio Eng* 22:771 June '34

Self-checking vacuum tube voltmeter. R. C. Paine. *il Electronics* 12:60 June '39

Sensitive feedback voltmeter with rugged milliammeter indicator. Lawrence Fleming. *il Electronics* 15:88 Apr '42

Sensitive valve voltmeter relay. S. S. Orlov and A. A. Pirogov. *diags Wireless Eng* 19:347 Aug '42; abstract. *Electronics* 15:102 Nov '42

Sensitive voltmeter for ac, dc and radio frequency. R. P. Turner. *il diags Radio N* 28:18 Aug '42

Sharp cut-off in vacuum tubes; slide-back voltmeter. C. B. Aiker and L. C. Birdsall. *Trans A.I.E.E.* 57:171 Apr '38

Some applications of negative feedback with particular reference to laboratory equipment. F. E. Terman, R. R. Buss, W. R. Hewlett and F. C. Cahill. *Proc Inst Radio Eng* 10:649 Oct '39

Theory of the diode voltmeter. Charles B. Aiken. *Proc Inst Radio Eng* 26:859 July '38

Thermonic peak voltmeters for use at very high frequencies. C. L. Fortescue. *Jour Inst Elec Eng* 177:429 '35 (*Wireless sec I.E.E.* 10:262 Sept '35)

Transient peak voltmeter. *il Electronics* 15:104 Oct '42

Triode vacuum tube scale-of-two circuit. H. Lifschutz and J. L. Lawson. *bibliog diags Rev Sci Instr* 9:83 Mar '38

Tubeless probe for vacuum-tube voltmeters. H. L. Daniels. *diag Electronics* 18:125 Feb '45

Vacuum tube circuit to measure the logarithm of a direct current. R. E. Meagher and E. P. Bentley. *Rev Sci Instr* 10:336 Nov '39

Vacuum-tube voltmeter. W. N. Tuttle. *il Gen Radio Exp Vol* 16 May '42

Vacuum tube voltmeter for A.C. and D.C. G. Mayo. *il QST* 27:36 Nov '43

Vacuum-tube voltmeter for audio frequencies. H. C. Likel. *il diags Electronics* 13:32 Dec '40.

Vacuum tube voltmeter for coaxial line measurements. G. L. Usselman. *il Electronics* 13:32 July '40

Vacuum-tube voltmeter for measuring high negative potentials. M. Kupferberg. *diag Rev. Sci Inst* 14:254 Aug '43

Vacuum tube voltmeters. J. F. Rider. 179p *bibliog* J. F. Rider, New York '41

- Vacuum-tube voltmeters. Engineering Dept., Aerovox Res W Vol 10 Nos 819 Aug '38
- Vacuum-tube voltmeters at ultra high frequencies. Arnold Peterson. *il Gen Radio Exp Vol 19 May '45*
- Valve voltmeter for audio frequencies calibrated by direct current. *il diags Wireless Eng 10:310 June '33*
- Valve-voltmeter with retroactive direct-voltage amplification. F. M. Colebrook. *il diags Wireless Eng 15:138 Mar '38*
- Visual selectivity meter with uniform decibel scale. K. R. Sturley and R. P. Shipway. *Jour Inst Elec Eng 87:189 '40 (Wireless sec I.E.E. 15:215 Sept '40)*
- Voltage measurements at very-high frequencies. E. S. S. Megaw. *bibliog diags Wireless Eng 13:65, 201 Feb, Apr '36*
- Voltage multiplier for use with the vacuum-tube voltmeter at radio frequencies. D. B. Sinclair. *il Gen Radio Exp Vol 14 May '40*
- Wide range vacuum-tube voltmeter. K. Kelley. *QST 25:32 Feb '41*  
*See also*
- Measurements, Voltage, Current, and Power
- VOLUME Control.** *See Automatic Volume Control*
- VOLUME Compressor**
- Effect of volume compression on the tolerable noise level in electrical communication systems. E. L. E. Pawley. *Wireless Eng 14:12 Jan '37*
- Compression with feedback. H. H. Stewart and H. S. Pollock. *Electronics 13:19 Feb '40*
- Practical volume compression for use in broadcast stations. L. B. Hallman, jr. *diags Electronics 9:15 June '36*
- Volume compressor for radio stations; used on programs passing through the new master control center of Office of war information. G. Q. Herrick. *diags Electronics 16:136 Dec '43*
- VOLUME Expander**
- Automatic volume expander noise silencer unit. M. Silver. *il diag Radio N 19:46 May '38*
- Crosley contrast expander; an analysis of the circuit. S. W. Amos. *diags Wireless Eng 18:237 June '41*
- Expanding volume amplifiers. T. S. E. Thomas. *diags Wireless Eng 12:493 Sept '35*
- Getting better quality with an expander. *il diag Radio N 18:92 Aug '36*
- Light-bulb volume expander. *il diags Electronics 9:9 Mar '36*
- Low distortion limiting amplifier. E. G. Cook. *il Electronics 12:38 June '39*
- Low distortion volume expansion using negative feedback. B. J. Stevens. *Wireless Eng 15:143 Mar '38*
- New circuit for volume expansion. J. P. Hollister. *diag Radio N 18:409 Jan '37*
- Practical volume expansion. C. M. Sinnott. *Electronics 8:14 Nov '35*
- Public address AVC. Harry Para. *Electronics 10:24 July '37*
- Simple expander. W. Bacon. *diags Electronics 14:50 Dec '41*
- Suggestions for design of volume expanders. R. W. Crane. *Electronics 18:236 May '45*
- Volume expansion amplifier. C. G. McProud. *il Electronics 13:17 Aug '40*
- Volume expansion devices. *il Sci Amer 154:223 Apr '36*
- Volume expander for phonograph or radio receiver. J. M. Borst. *diag Radio N 17:663 May '36*
- Volume expansion. Engineering Dept., Aerovox Res W 8:12 Dec '36
- Volume expansion with a triode; 6K7 tube. C. G. McProud. *diags Electronics 13:17 Aug '40*  
*See also*
- Automatic Volume Control  
Public Address Systems
- VOLUME Indicators**
- American standard: volume measurements of electrical speech and program waves; 1942. 8p  
Institute of Radio Engineers. New York. 20c
- Compact telephone and volume indicator set. G. Chinski. *il diag Electronics 13:46 Jan '40*
- New standard volume indicator and reference level. H. A. Affel, H. A. Chinn and R. M. Morris. *il Electronics 12:28 Feb '39*
- New standard volume indicator and reference level. H. A. Chinn, D. K. Gannett and R. M. Morris. *il diags Proc Inst Radio Eng 28:1 Jan '40; Same. Bell System Tech Jour 19:94-137 Jan '40*
- Single-tube floating needle volume indicator. H. C. Likel. *diags Electronics 11:38 Aug '38*
- Volume indicator; attenuator for measurements on high-gain amplifiers and transmitters. S. G. Carter. *il diags Electronics 11:22 July '38*
- Volume indicator with linear DB scale. F. G. Albin. *diag Electronics 11:58 Jan '38*  
*See also*
- Broadcasting Station Control Equipment  
Decibel

## W

**WALKIE-Talkie.** *See Transceivers*

**WATTMETERS**

- Direct-reading wattmeters for use at radio frequencies. G. H. Brown, J. Epstein and D. W. Peterson. *il diags Proc Inst Radio Eng 31:403 Aug '43*
- Electron tube wattmeter and voltmeter and a phase-shifting bridge. H. M. Turner and F. T. McNamara. *Proc Inst Radio Eng 18:1743 Oct '30*
- Electronic watt-hour meter tester. *il Electronics 15:82 Apr '42*
- Electronic wattmeter examines power wave. *diag Elec W. 113:15 Jan 13 '40*
- High-frequency wattmeter; abstract. E. Mittelman. *diag Electronics 18:324 Mar '45*
- Low-level wattmeter. Arthur L. Albert and H. P. Beckendorf. *il Electronics 9:28 Mar '36*
- Measurement of harmonic power output of a radio transmitter. P. M. Honnell and E. B. Ferrell. *Proc Inst Radio Eng 22:1181 Oct '34*
- Measurement of radio-frequency power. A. Hoyt Taylor. *Proc Inst Radio Eng 24:1342 Oct '36*
- Power indicator diagram for high tension circuits. H. J. Ryan. *Trans A.I.E.E. 30:1089 '41*



**WATTMETERS—Continued**

Proposed wattmeter using multielectrode tubes. John R. Pierce. Proc Inst Radio Eng 24:577 Apr '36

Thermionic wattmeter. R. J. Wsey. Wireless Eng 14:490 Sept '37

*See also*

Measurements, Power

**WIDEBAND Transmission.** See Propagation of Waves

**WAVE Filters**

Applications of the method of alignment to reactance computations and simple filter theory. W. A. Barclay. diag Exp Wireless 7:59 Feb '30

Crystal channel filters for the cable carrier system. C. E. Lane. Bell Sys Tech Jour 17:125 Jan '38

Electrical wave filters employing crystals with normal and divided electrodes. W. P. Mason and R. A. Sykes. diags Bell System Tech Jour 19:221 Apr '40

Electromagnetic filters; study of the problems of filter action inside wave-guides with conducting walls; abstract. H. Gutton and J. Ortusi. Wireless Eng 21:486 Oct '44

Extensions to the theory and design of electric wave filters. O. E. Zobel. Bell System Tech Jour 10:284 Apr '31

General theory of electric wave filters. H. W. Bode. Bell Sys Tech Jour 14:211 Apr '35

Ideal wave filters. H. W. Bode and R. L. Dietzold. Bell Sys Tech Jour 14:215 Apr '35

Impedance of smooth lines and design of simulating networks. Roy S. Hoyt. Bell System Tech Jour 2:1 Apr '23

Line filter for program system. H. S. Hamilton. Bell System Tech Jour 13:382 Jan '34

Mutual inductance in wave filters with an introduction on filter design. K. S. Johnson and T. E. Shea. Bell System Tech Jour 4:52 Jan '25

Physical theory of electric wave filter. G. A. Campbell. Bell System Tech Jour 1:1 July '22

Precision methods used in constructing electric wave filters for carrier systems. G. R. Harris. Bell System Tech Jour 11:264 Jan '32

Theory and design of composite electric wave filters. O. J. Zobel. Bell System Tech Jour 2:1 Jan '23

Theory of electrical artificial lines and filters. A. C. Bartlett. pp53-58. John Wiley & Sons, N. Y. 1931

Transient oscillations in electric wave filters. J. R. Carson and O. J. Zobel. Bell Sys Tech Jour 2:1 July '23

Transmission characteristics of electric wave filters. O. J. Zobel. Bell System Tech Jour 3:567 Oct '24

Transmission of pictures over telephone lines. H. E. Ives, J. W. Horton, R. D. Parker and A. B. Clark. Bell System Tech Jour 4:187 Apr '25

Transmission networks and wave filters. T. E. Shea. D. Van Nostrand Co., N. Y. 1929

Use of coaxial and balanced transmission lines in filters and wide-band transformers for high radio frequencies. W. P. Mason and R. A. Sykes. Bell Sys Tech Jour 16:275 July '37

*See also*

Filters  
Networks  
Transmission Lines

**WAVE Form Analysis**

Analyzer for complex electric waves. A. G. Landeen. Bell Sys Tech Jour 6:230 Apr '27

Analyzer for the voice frequency range. C. R. Moore and A. S. Curtis. Bell Sys Tech Jour 6:217 Apr '27

Cathode ray wave form distortion at ultra high frequencies. R. M. Bowie. diags Electronics 11:18 Feb '38

Electrical wave analyzers for power and telephone systems. R. G. McCurdy and P. W. Blye. Trans A.I.E.E. 48:1167 Oct '29

Fundamental suppression type harmonic analyzer. J. H. Piddington. Proc Inst Radio Eng 24:594 Apr '36

More symmetrical Fourier analysis applied to transmission problems. R. V. L. Hartley. bibliog Proc Inst Radio Eng 30:144 Mar '42

New type of selective circuit and some applications. H. H. Scott. Proc Inst Radio Eng 26:226 Feb '38

Note on the fundamental suppression in harmonic measurements. H. M. Wagner. Proc Inst Radio Eng 23:85 Jan '35

Some applications of negative feedback with particular reference to laboratory equipment. F. E. Terman, R. R. Buss, W. R. Hewlett, and F. C. Cahill. Proc Inst Radio Eng 10:644 Oct '39

Theory of wave analyzers. R. P. Turner. il diags Radio N 32:44 Oct '44

Wave analysis. L. B. Arguimbau. Gen Radio Exp 7:12 June '33

Wave analysis by cathode-ray oscilloscope. il Electronics 15:84 Jan '42

Waveform analysis. Electronic Indus 2:122 Nov '43

Wave form circuits for cathode ray tubes. H. M. Lewis. il Electronics 15:44, 48 July-Aug '42

*See also*

Fourier Analysis  
Measurements, Wave Form and Phase

**WAVE Guides**

Calculation of the radiation properties of hollow pipes and horns. L. J. Chu. Jour Applied Phys 11:603 Sept '40

Circular wave guide fields. G. R. Cooper. Electronics 18:106 Feb '45

Damped electromagnetic waves in hollow metal pipes. A. W. Melloh. Proc Inst Radio Eng 28:179 Apr '40

Electromagnetic waves in conducting tubes. L. Page and N. I. Adams, jr. Phys Rev 52:647 Sept 15 '37

Electromagnetic waves in elliptic hollow pipes of metal. L. J. Chu. Jour Applied Phys 9:583 Sept '38

Electromagnetic waves in a hollow guide with tapering cross section; abstract. N. N. Malow. Wireless Eng 21:129 Mar '44

- Electromagnetic waves in hollow metal tubes of rectangular cross section. L. J. Chu and K. L. Barrow. Proc Inst Radio Eng 26:1520 Dec '38
- Electromagnetic waves in metal tubes of rectangular cross-section. J. Kemp. bibliog diags Jour Inst Elec Eng 88 pt 3:213 Sept '42; Abstract. Wireless Eng 19:93 Mar '42
- Experimental researches on the propagation of electromagnetic waves in dielectric (cylindrical) guides. V. Altovskiy and A. G. Clavier. Elec Comm 18:81 '39
- Fundamentals of electric waves. H. H. Skilling. 186p John Wiley & Sons New York '42
- Hyper-frequency wave guides; mathematical theory. J. R. Carson, S. P. Mead and S. A. Schelkunoff. Bell System Tech Jour 15:310 Apr '36
- Hyper-frequency wave guides; general considerations and experimental results. G. C. Southworth. Bell Sys Tech Jour 15:284 Apr '36
- Measurement of the electric field in the interior of an electromagnetic guide; abstract. G. Gutton and J. Ortusi. Wireless Eng 21:484 Oct '44
- Metal horns as directive receivers of ultra-short waves. G. C. Southworth and A. P. King. Proc Inst Radio Eng 27:95 Feb '39
- Multiuunit electromagnetic horns. W. L. Barrow and Carl Shulman. Proc Inst Radio Eng 28:130 Mar '40
- Natural oscillations of electrical cavity resonators. W. L. Barrow and W. W. Micker. Proc Inst Radio Eng 28:184 Apr '40
- On resonators suitable for klystron oscillators. W. W. Hansen and R. D. Richtmyer. Jour Applied Phys 10:189 Mar '39
- Physical behavior of wave guides. H. Skilling. bibliog il diags Electronics 16:76 Mar '43
- Propagation of electric waves in a rectangular wave guide. E. B. Moullin. Jour Inst Elec Eng Mar '45
- Propagation of electromagnetic wave in a tube. L. Brillouin. il Gen Elec Rev 40:227 Aug '36
- Propagation of electric waves through a metallic tube and between two parallel metallic plates; abstract. K. F. Lindman. Wireless Eng 19:467 Oct '42
- Rectangular hollow-pipe radiators. W. L. Barrow and F. M. Greene. Proc Inst Radio Eng 26:1498 Dec '38
- Resonant frequency of closed concentric lines. W. W. Hansen. Jour Applied Phys Vol 10, No. 1 Jan '39
- Some fundamental experiments with wave guides. G. C. Southworth. bibliog il diags Proc Inst Radio Eng 25:807 July '37
- Transmission line theory applied to wave guides and cavity resonators. D. Middleton and R. King. bibliog diags Jour Applied Phys 15:524 July '44
- Transmission of electromagnetic waves in hollow tubes of metal. W. L. Barrow. bibliog diags Proc Inst Radio Eng 24:1298 Oct '36
- UHF through pipes. Electronic Indus 2:116 Mar '43
- Transmission theory of plane electromagnetic waves. S. A. Schelkunoff. Proc Inst Radio Eng 25:1457 Nov '37
- Ultrashort electromagnetic waves; guided propagation. S. A. Schelkunoff. bibliog diags Elec Eng 62:235 June '43
- Ultrahigh-frequency transmission in wave guides. L. A. Ware. bibliog diags Elec Eng 61:598 Dec '42
- Universal wave guide chart. A. Bronwell. Electronics 16:147 Dec '43
- Wave guides in electrical communication. John Kemp. Elec Comm 21:247 '44. Same. Jour Inst Elec Eng 90 pt 3:90 Sept '43
- Wave guides; theory and application as used in conjunction with u.h.f. equipment. J. Williams. diags Radio N 30:24 Oct '43
- Wave propagation along tubular guide lines; abstract. G. C. Southworth. Science 83:sup12 May 8 '36
- See also*
- |                   |                    |
|-------------------|--------------------|
| Cavity Resonators | Magnetron          |
| Klystron          | Transmission Lines |
- WAVE Meters**
- General purpose wavemeter. E. Karplus. Gen Radio Exp 16:24 Sept '42
- Direct-reading wavemeter for ultra-high frequencies. E. Karplus. Gen Radio Exp 15:1 Aug '40
- Precision wavemeter and frequency-deviation measuring apparatus for frequency modulation investigations; abstract. A. Weissflock. Wireless Eng 20:567 Nov '43
- Superregenerative wavemeter for ultra-short waves. H. Ataka. Proc Inst Radio Eng 21:1590 Nov. '33
- Temperature-compensated wavemeter coil. E. O. Thompson. il Electronics 16:148 Sept '43
- See also*
- Measurements, Wave Form and Phase
- WAVE Propagation.** See Propagation of Waves
- WEATHER**
- Automatic weather station. H. Diamond and W. S. Hinman, jr. bibliog diags 8 pls Jour Research Nat Bur Stand 25:133 Aug '40
- Correlation of long-wave radio field intensity with passage of storms. I. J. Wymore-Shield. Proc Inst Radio Eng 19:1675 Sept '31
- Cyclones and the Kennelly-Heaviside layer. Robert C. Colwell. Proc Inst Radio Eng 21:721 May '33
- Fading curves and weather conditions. R. C. Colwell. Proc Inst Radio Eng 17:143 Jan '29
- List of U. S. time-signal and weather forecast transmissions. R. Hertzberg. il Radio N 16:627 Apr '35
- New weather maps for making DX predictions. QST 28:21 Nov '44
- Robot weather observer developed by H. Diamond and W. S. Hinman, jr. of the National bureau of standards. Science 92:sup6 July 26 '40
- Some correlations of radio reception with atmospheric temperature and pressure. Greenleaf W. Pickard. Proc Inst Radio Eng 16:765 June '28
- Upper-air weather soundings by radio. H. Diamond and others. il diags Elec Eng 59: Trans 321 June '40
- Weather maps for radio broadcast. F. W. Reichelderfer. il map Radio N 31:21 Apr '44
- Weather testing walkie-talkies; illustrations with text. Radio N 32:32 Aug '44
- See also*
- Meteorographs  
Propagation of Waves

**WHEATSTONE Bridge**

- Electronics applied to heat transfer tests; circuits employ Wheatstone bridge and photoelectric relay. R. V. Brown. *il* Electronics 6:113 July '43
- New treatment of the Wheatstone bridge network. R. J. Wey. *diags* Wireless Eng 21:308 July '44
- Voltage control with non-linear Wheatstone bridge. Walter Richter. *il* Electronics 13:20 June '40
- Wide-range Wheatstone bridge. Jade Avins. *il* Electronics 12:38 July '39

*See also*

Bridges  
Measurements

**WIDE-Band Amplifiers.** *See* Amplifiers, Wideband

- Mobile industrial X-ray unit. E. E. Charlton and W. F. Westendorp. *il* *diags* Electronics 17:128 Dec '44
- Nouveau tubes a rayons X a cathode incandescente. *diags* Genie Civil 116:90 Feb 3 '40
- PE tube X-ray timer. H. D. Moreland. *Electronic Indus* 4:96 Jan '45
- Television scanning technique applied to X-ray diagnosis. *Electronics* 7:253 Aug '34
- X-ray for aircraft carriers. *il* *Electronics* 17:184 Feb '44
- X-rays in vacuum tube manufacture. W. T. Gibson and G. Rabuteau. *Elec Comm* 15:223 '37
- X-ray tubes in industry. Gilbert Sonbergh. *Electronic Indus* 2:80 Nov '43
- 2,000,000-volt X-ray tube. *il* *Electronics* 17:198 Dec '44

**X****X-RAYS**

- Applied X-rays. G. L. Clark. 3d ed 674p \$6. McGraw-Hill, New York '40
- Automatic electronic exposure control provides uniform X-ray exposures. H. D. Moreland. *il* *diag* Steel 116:98 Jan 8 '45
- Barium, a new lubricant for use in X-ray tubes. *il* *Gen Elec Rev* 43:471 Nov '40
- Electrical developments of 1944: X-ray equipment. G. Bartlett. *il* *Gen Elec Rev* 48:48 Jan '45
- Electronic control of X-ray tubes. *Iron Age* 155:56 Jan 11 '45
- Electronics and the chemical industry. J. A. Hutcheson. *Chem & Eng N* 22:2171 Dec 25 '44
- Equipment for X-raying quartz plates; abstract. C. Roddy. *il* *Electronics* 18:270 Mar '45
- Field emission applied to ultra speed X-ray technique; abstract. C. M. Slack and E. R. Thilo. *diag* *Electronics* 17:217 Nov '44
- Industrial X-rays for examining metal. *Electronics* 6: Feb '33
- Measurement of radio-frequency power; cathode ray wattmeter. *il* *Electronic Indus* 3:124 Jan '44

**Y****YAGI Array**

- Beam transmission of ultra-short waves. H. Yagi. *Proc Inst Radio Eng* 16:715 June '28
- Experimental study of parasitic wire reflectors on 2.5 meters. *Proc Inst Radio Eng* 24:233 Feb '36
- See also*
- Antennas, Directional

**Z****ZIRCONIUM**

- Recent advances in barrium getter technique; Zirconium and its compounds with a high melting point. J. D. Fast. *Phillips Tech Jour. World's Fair Issue* '39
- See also*
- Manufacturing, Radio  
Vacuum-Tube Manufacture

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