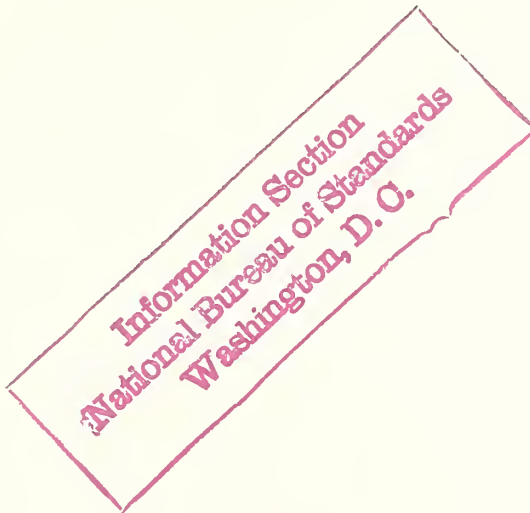


U. S. DEPARTMENT OF COMMERCE
NATIONAL BUREAU OF STANDARDS
WASHINGTON

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LC692



RADIO:

Publications by the Staff of the National Bureau of Standards.

May 19, 1942.

May 19, 1942

RADIO:

Publications by the Staff of the National Bureau of Standards.

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General Information

Some of the publications in this list have appeared in the regular series of publications of the Bureau, and others in various scientific and technical journals. Unless specifically stated, papers are not obtainable directly from the National Bureau of Standards.

Where the price is stated, the publications can be purchased from the Superintendent of Documents, Government Printing Office, Washington, D.C. The prices quoted are for delivery by mail to addresses in the United States and its possessions and in certain foreign countries which extend the franking privilege. In the case of all other countries, one-third the cost of the publication should be added to cover postage. Remittances should be made either by coupons (obtainable from the Superintendent of Documents in sets of 20 for \$1.00 and good until used), or by check or money order payable to the "Superintendent of Documents, Government Printing Office" and sent to him with order, or by cash at the sender's risk.

Publications marked "Free" are mimeographed pamphlets obtainable from the National Bureau of Standards without charge.

Publications marked "OP" are out of print, but, in general, may be consulted at technical libraries.

For papers in outside scientific or technical journals, the name of the journal or the organization publishing the article is given in abbreviated form, with the volume number (under-scored), page, and year of publication, in the order named. The Bureau can not supply copies of these journals, or reprints from them, and it is unable to furnish information as to their availability or price. They, too, can usually be consulted at technical libraries. Inquiries for copies of such papers should be addressed directly to the publisher of the journal at the address given in list below.

This list includes all publications since Jan. 1, 1924, and also the publications earlier than 1924 issued by the Bureau itself of which copies are still available.

The Bureau does not maintain a mailing list for distribution of its radio publications as issued. Persons who wish to keep in touch with the Bureau's radio publications should subscribe to the "Technical News Bulletin", a monthly pamphlet giving news on the Bureau's scientific and engineering work and announcements of all new publications. Subscriptions should be sent to Superintendent of Documents, Government Printing Office, Washington, D.C. The price is 50 cents per year for subscribers in the United States.

The monthly Journal of Research of the National Bureau of Standards contains the Bureau's Research Papers on all subjects.

Subscriptions should be sent to Superintendent of Documents, Government Printing Office, Washington, D.C. The price is \$3.50 per year for subscribers in U.S.A.

All publications of the Bureau on all subjects, including those which are out of print, are listed in Circular C24, "Publications of the National Bureau of Standards", and the supplements thereto. The Circular and the set of supplements can be purchased for 55 cents, from the Superintendent of Documents. Copies may be consulted at technical libraries in the larger cities.

Series letters with serial numbers are used to designate Bureau publications:

- S = "Scientific Paper". S1 to S329 are "Reprints" from the Bulletin of the Bureau of Standards." S330 to S572 were published as "Scientific Papers of the Bureau of Standards". This series was superseded by the "Bureau of Standards Journal of Research" in 1928.
- T = "Technologic Paper". T1 to T370. This series superseded by "Bureau of Standards Journal of Research" in 1928.
- RP = "Research Paper". These are reprints of articles appearing in the "Bureau of Standards Journal of Research" and in the "Journal of Research of the National Bureau of Standards", the latter being the title of this periodical since July 1934 (Volume 13, number 1).
- C = "Circular".
- H = "Handbook".
- M = "Miscellaneous Publication."
- LC= "Letter Circular", a mimeographed pamphlet obtainable from the National Bureau of Standards without charge.

The underlined topics used as center-headings below are not the names of publications; they are general subjects given merely for convenience of classification of the various publications. The numbers under these topics are classification numbers according to the decimal classification system; and are not numbers by which any publications are known or ordered. A complete description of the classification system is given in Bureau Circular No. 385, "Classification of Radio Subjects; An Extension of the Dewey Decimal System," now out of print, but available for consultation in technical libraries; it was reprinted in Proceedings of the Institute of Radio Engineers 18, 1433 (1930).

Addresses of Publishers of Journals

- Aeronautical World, 1709 W. 8th St., Los Angeles, Calif.
 The American Yearbook, The MacMillan Co., New York City.
 Annals of the American Academy of Political and Social Science,
 3457 Walnut St., Philadelphia, Pa.
 Bulletin of the National Research Council, National Academy of
 Sciences, Washington, D.C.
 Bulletin of the American Meteorological Society, Blue Hills
 Observatory, Harvard University, Milton, Mass.
 Electrical World, 330 W. 42nd St., New York City.
 Electronics, McGraw-Hill Bldg., 330 West 42nd St., New York City.
 The Engineering Foundation, 29 West 39th St., New York City.
 Engineers and Engineering, 124 W. Polk St., Chicago, Ill.
 Jahrbuch d. drahtlosen Telegraphie, M. Krayn, Genthiner Strasse,
 32, Berlin, Germany.
 Journal of the Aeronautical Sciences, 5341 RCA Bldg., Rockefeller
 Center, New York City.
 Journal of the Franklin Institute, Franklin Institute of the State
 of Pennsylvania, Philadelphia, Pa.
 Journal of the Optical Society of America and Review of Scientific
 Instruments, American Institute of Physics, 11 E. 38th St.,
 New York City.
 Journal of the Washington Academy of Sciences, Washington Academy
 of Sciences, Washington, D.C.
 Journal of the Western Society of Engineers, 205 W. Wacker Drive,
 Chicago, Ill.
 Mechanical Engineering, 29 W. 39th St., New York City.
 National Aeronautical Association Review, 1909 Mass. Ave., N.W.
 Washington, D.C.
 Nature, MacMillan Co. Ltd., St. Martin St., London, W.C.2, England.
 L'Onde Electrique, La Société des Amis de la TSF, Paris, France.
 Papers of the General Assembly held in Washington, International
 Scientific Radio Union; International Scientific Radio Union,
 Brussels, Belgium.
 Papers of the International Civil Aeronautics Conference, Supt.
 of Documents, Government Printing Office, Washington, D.C.
 Papers of the Seventeenth Annual Safety Congress, National
 Safety Council, Chicago, Ill.
 Physical Review, American Institute of Physics, 11 E. 38th St.,
 New York City.
 Proceedings of the Institute of Radio Engineers, 330 W. 42nd
 St., New York City.
 Proceedings of the National Academy of Sciences, National Academy
 of Sciences, Washington, D.C.
 Proceedings of the Third Pan-Pacific Science Congress, National
 Research Council of Japan, Tokyo, Japan.
 QST, American Radio Relay League, W. Hartford, Conn.
 Radio, 1300 Kenwood, Santa Barbara, Calif.
 Radio Engineering, Bryant Publishing Co., 19 E. 47th St., New York, N.Y.
 Radio News, Ziff-Davis Pub. Co., 608 S. Dearborn St., Chicago, Ill.
 Science, The Science Press, Grand Central Terminal, New York City.
 Scientific American, 24 West 40th St., New York City.
 Terrestrial Magnetism & Atmospheric Electricity, Johns Hopkins
 Press, Baltimore, Md.
 Trans. Amer. Geophysical Union, 12th Ann. Meeting, National Acad.
 of Sciences, Washington, D.C.

Radio (General)
(R000)

<u>Title</u>	<u>Series</u>	<u>Price</u>
The principles underlying radio communication. 2nd ed., 1922. Signal Corps Radio Communication Pamphlet No. 40. (Textbook, 619 pages, with 300 illustrations, covering radio principles and practice).		\$1.00
Classification of radio subjects, an extension of the Dewey Decimal System. (1930). Also published in Proc.I.R.E. <u>18</u> , 1433-1456 (1930).	C385	OP
Electrical interference with radio reception. (1941).	LC660	Free
Sources of radio information. (1940).	LC611	Free
Radio communication, review for year. J. H. Dellinger. The American Yearbook, 1925, 1926, 1927, 1928, 1929.		

Laws; Regulations
(R007)

Engineering aspects of the work of the Federal Radio Commission. J. H. Dellinger. Proc. I.R.E. <u>17</u> , 1326-1333 (1929).		
Radio broadcasting regulation and legislation. J. H. Dellinger. Proc. I.R.E. <u>17</u> , 2006-2010 (1929).		

Radio Research
(R010)

Survey of current progress in radio engineering. J. H. Dellinger. J. Western Soc. Engineers <u>30</u> , 39-49 (1925).		
The International Union of Scientific Radio Telegraphy. J. H. Dellinger. Science <u>64</u> , 638-639 (1926).		
The International Union of Scientific Radio Telegraphy. J. H. Dellinger. Proc. I.R.E. <u>16</u> , 1107-1112 (1928).		
Some contributions of radio to other sciences. J. H. Dellinger. J. Franklin Institute <u>228</u> , 11-42 (1939).		

Radio Wave Transmission Phenomena (General)
(R113)

<u>Title</u>	<u>Series</u>	<u>Price</u>
A statistical study of conditions affecting the distance range of radio telephone broadcasting stations. C. M. Jansky, Jr. Tech. Pap. BS <u>19</u> , 641-650 (1925).	T297	OP
Some studies of radio transmission over long paths made on the Byrd Antarctic Expedition. L. V. Berkner. BS J. Research <u>8</u> , 265-272 (1932)	RP412	10c
Bi-monthly reports, Receiving measurements and atmospheric disturbances at the Bureau of Standards. L. W. Austin. Proc. I.R.E. <u>10</u> , 239, 315, 421 (1922); <u>11</u> , 3, 83, 187, 333, 579 (1923); <u>12</u> , 3, 113, 227 (1924).		
Field intensity measurements in Washington on the Radio Corporation stations at New Brunswick and Tuckerton, N.J. L. W. Austin. Proc. I.R.E. <u>12</u> , 681-692 (1924).		
Some transpacific radio field intensity measurements. L. W. Austin. Proc. I.R.E. <u>13</u> , 151-157 (1925). J. Washington Acad. Sciences <u>15</u> , 139-143 (1925).		
Facts and fallacies of radio wave transmission. J. H. Dellinger. Radio News <u>7</u> , 1139, 1190, 1192, 1194 (1926).		
Application of radio transmission phenomena to the problems of atmospheric electricity. J. H. Dellinger. J. Wash. Acad. Sciences <u>16</u> , 162-167 (1926).		
Apparatus for recording radio phenomena. T. Parkinson. Bul. Nat. Research Council, No. 61, 183-191 (1927).		
Summary of symposium on correlations of various radio phenomena with solar and terrestrial magnetic and electric activities. J. H. Dellinger. Bul. Nat. Research Council, No. 61, 192-197 (1927).		
Report of the Chairman of the Commission of Radio Wave Propagation. International Union of Scientific Radio Telegraphy. L. W. Austin. Proc. I.R.E. <u>16</u> , 348-358 (1928).		
Bibliography on radio wave phenomena and measurement of radio field intensity. Proc. I.R.E. <u>19</u> , 1034-1089 (1931).		
Note on reception of radio broadcast stations at distances exceeding 12,000 km. L. V. Berkner. Proc. I.R.E. <u>20</u> , 1324-1327 (1932).		

Radio Wave Transmission Phenomena (General) (continued)

<u>Title</u>	<u>Series</u>	<u>Price</u>
Report of Committee on Radio Wave Propagation. J. H. Dellinger (co-author). Proc.I.R.E. <u>26</u> , 1193-1234 (1938).		
Report of Commission II - Radio wave propagation, International Scientific Radio Union. J. H. Dellinger. Proc. I.R.E. <u>27</u> , 645-649 (1939).		
The role of the ionosphere in radio wave propagation. J. H. Dellinger. AIEE Trans. <u>58</u> , 803-822 (1939).		
Radio progress during 1938 - Wave propagation. J. H. Dellinger (Co-author). Proc. I.R.E. <u>27</u> , 180-183 (1939).		
Radio progress during 1939 - Wave propagation. J. H. Dellinger (Co-author). Proc.I.R.E. <u>28</u> , 108-112 (1940).		
A radio transmission anomaly; cooperative observations between the U.S.A. and Argentina. J.H.Dellinger and A. T. Cosentino. Proc. I.R.E. <u>28</u> , 431 (1940). Also (in Spanish), Revista Telegrafica <u>29</u> , 633 (1940).		
Radio progress during 1940.- Radio wave propagation. J. H. Dellinger (Co-author). Proc. I.R.E. <u>29</u> , 103 (1941).		
Radio progress during 1941 - Radio wave propagation. J. H. Dellinger (Co-author). Proc. I.R.E. <u>30</u> , 68-69 (1942).		
<u>Fading</u> (<u>PL13.1</u>)		
Cooperative measurements of radio fading in 1925. J. H. Dellinger, C. B. Jolliffe, and T. Parkinson. Sci.Pap. BS <u>22</u> , 419-449 (1927).	S561	OP
Some observations of short-period radio fading. T. Parkinson. BS J. Research <u>2</u> , 1057-1075 (1929) RP70 Also published in Proc.I.R.E. <u>17</u> , 1042-1061 (1929).		OP
A radio method for synchronizing recording apparatus. T. Parkinson and T. R. Gilliland. BS J. Research <u>6</u> , 195-198 (1931). Also published in Proc.I.R.E. <u>19</u> , 335-340 (1931).	RP269	10c
Radio signal fading phenomena. J. H. Dellinger and L. E. Whittemore. J. Wash. Acad. Sciences <u>2</u> , 245-259 (1921). Jahrbuch d. drahtlosen Telegraphie <u>24</u> , 66-70 (1924).		
Concerning the nature of fading. J. H. Dellinger. Radio News <u>7</u> , 270, 390 (1925).		

Fading (continued)

Results of cooperative measurements of radio fading. J. H. Dellinger, C. B. Jolliffe, and T. Parkinson. Radio News 8, 146 (1926).

Daily and Seasonal Variations
(R113.2)

- Long-distance radio receiving measurements at the Bureau of Standards in 1923. L. W. Austin. Proc. I.R.E. 12, 389-394 (1924).
- Long-distance receiving measurements in 1924. L. W. Austin. Proc. I.R.E. 13, 283-290 (1925). J. Wash. Acad. Sciences 15, 227-234 (1925).
- Long-distance radio receiving measurements and atmospheric disturbances at the Bureau of Standards in 1925. L. W. Austin. Proc. I.R.E. 14, 663-673 (1926).
- Long wave radio measurements at the Bureau of Standards in 1926, with some comparisons of solar activity and radio phenomena. L. W. Austin. Proc. I.R.E. 15, 825-836 (1927).
- Long wave radio receiving measurements at the Bureau of Standards in 1927. L. W. Austin. Proc. I.R.E. 16, 1252-1257 (1928).
- Long wave radio receiving measurements at the Bureau of Standards in 1928. L. W. Austin. Proc. I.R.E. 18, 101-105 (1930).
- Long wave radio receiving measurements at the Bureau of Standards in 1929. L. W. Austin. Proc. I.R.E. 18, 1481-1487 (1930).
- Long wave radio receiving measurements at the Bureau of Standards in 1930. L. W. Austin. Proc. I.R.E. 19, 1767-1772 (1931).
- A method of representing radio propagation conditions. L. W. Austin. Proc. I.R.E. 19, 1615-1617 (1931).
- Tables of North Atlantic radio transmission conditions for long wave length daylight signals for the years 1922 to 1930. L. W. Austin. Proc. I.R.E. 20, 689-298 (1932).
- Low-frequency radio receiving measurements at the Bureau of Standards in 1931 and 1932. E. B. Judson. Proc. I.R.E. 21, 1354-1363 (1933).

Direction Variations
(R113.3. See also R325.31, R526.1, and R526.2)

- | <u>Title</u> | <u>Series</u> | <u>Price</u> |
|--|---------------|--------------|
| A suggestion for experiments on apparent radio direction variations.
L. W. Austin. Proc.I.R.E. <u>13</u> , 3-4 (1925). | | |
| A new phenomenon in sunset radio direction variations. L.W.Austin.
J. Wash. Acad. Sciences <u>15</u> , No. 14, 317-319 (1925).
Proc.I.R.E. <u>13</u> , 409-412 (1925). | | |
| Apparent night variations with crossed-coil radio beacons.
H. Pratt. Proc.I.R.E. <u>16</u> , 652-657 (1928). | | |

Meteorological, Geophysical, and Cosmic Effects
(R113.5)

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|--|--------|-----|
| Comparison of data on the ionosphere, sunspots and terrestrial magnetism. E. B. Judson. J. Research NBS <u>17</u> , 323-330 (1936).
Also published in Proc.I.R.E. <u>25</u> , 38-46 (1937). | RP913 | 5c |
| Sudden disturbances of the ionosphere. J. H. Delinger. J. Research NBS <u>19</u> , 111-149 (1937).
Also published in Proc.I.R.E. <u>25</u> , 1253-1290 (1937). | RP1016 | 15c |
| Radio signal strength and temperature. L. W. Austin and I. J. Wymore. Proc.I.R.E. <u>14</u> , 781-784 (1926). | | |
| The relations between radio and other natural phenomena. L. W. Austin. Proc. of the Third Pan-Pacific Science Congress <u>2</u> , 1257-1263 (1926). | | |
| On the influence of solar activity on radio transmission. L. W. Austin and I. J. Wymore. Proc.I.R.E. <u>16</u> , 166-173 (1928). | | |
| The relation of radio propagation to disturbances in terrestrial magnetism. I. J. Wymore. Proc.I.R.E. <u>17</u> , 1206-1213 (1929). | | |
| Note on a comparison of sunspot numbers, terrestrial magnetic activity, and long wave radio signal strength. L. W. Austin. J. Wash. Acad. Sciences <u>20</u> , 73-74 (1930). | | |
| Solar and magnetic activity and radio transmissions. L. W. Austin, E. B. Judson, and I. J. Wymore-Shiel. Proc.I.R.E. <u>18</u> , 1997-2002 (1930). | | |
| Solar activity and radiotelegraphy. L. W. Austin. Proc.I.R.E. <u>20</u> , 280-285 (1932). | | |

Meteorological, Geophysical, and Cosmic Effects (continued)

- Observations on long-delay radio echoes. J. H. Dellinger. QST 18, pp.42,88 of August (1934).
- The ionosphere, sunspots and magnetic storms. S. S. Kirby, T. R. Gilliland, E. B. Judson, and N. Smith. Phys. Rev. 48, 849 (1935).
- A new cosmic phenomenon. J. H. Dellinger. Science 82, 351 (1935).
- A new radio transmission phenomenon. J. H. Dellinger. Phys. Rev. 48, 705 (1935).
- A new radio transmission phenomena. J. H. Dellinger. QST 19, pp.21, 29 of Dec. 1935.
- Confirmation of cosmic phenomenon. J. H. Dellinger. Science 82, 548-549 (1935).
- The ionosphere, solar eclipses, and magnetic storms. S.S.Kirby, T. R. Gilliland, N. Smith, and S. E. Reyner. Phys. Rev. 50, 258-259 (1936).
- A new solar radio disturbance. J. H. Dellinger. Electronics 9, pp.25, 34 of Jan. (1936).
- New cosmic phenomena. J. H. Dellinger. QST 20, pp.8, 79 of Jan. (1936).
- High-frequency fadeouts continue. J. H. Dellinger. QST 20, p.37 of June (1936).
- Direct effects of particular solar eruptions on terrestrial phenomena. J. H. Dellinger. Phys. Rev. 50, 1189 (1936).
- Ionosphere and magnetic storms. S. S. Kirby, N. Smith, T. R. Gilliland, and S. E. Reyner. Phys. Rev. 51, 992-993 (1937).
- Radio fadeouts through 1936. J. H. Dellinger. QST 21, pp.35, 86, 88 of Feb. (1937).
- Sudden ionospheric disturbances. J. H. Dellinger. Ter. Mag. & Atmos. Elec. 42, 49-53 (1937).
- Sudden disturbances of the ionosphere. J. H. Dellinger. J. Applied Physics 8, 732 (1937).
- Remark on S. Chapman's "Note on radio fadeouts and the associated magnetic disturbances". S. S. Kirby. Ter. Mag. & Atmos. Elec. 42, 420 (1937).

Meteorological, Geophysical, and Cosmic Effects (continued)

<u>Title</u>	<u>Series</u>	<u>Price</u>
Discussion of S. Chapman's "Note on radio fadeouts and associated magnetic disturbances." J. H. Dellinger. Ter. Mag. & Atmos. Elec. <u>43</u> , 179 (1938).		
The nature of the ionosphere storm. S. S. Kirby, N. Smith, T. R. Gilliland. Phys. Rev. <u>54</u> , 234 (1938).		
The sun and the ionosphere. J. H. Dellinger. Fifth Report of Commission on Solar and Terrestrial Relationships, p. 72 (1939).		

Eclipses
(R113.55)

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. BS J. Research <u>11</u> , 829-845 (1933). Also published in Proc. I.R.E. <u>22</u> , 247-264 (1934).	RP629	5c
Ionosphere studies during partial solar eclipse of Feb. 3, 1935. S. S. Kirby, T. R. Gilliland, and E. B. Judson. J. Research NBS <u>16</u> , 213-225 (1936). Also published in Proc. I.R.E. <u>24</u> , 1027-1040 (1936).	RP868	5c
Predictions of normal radio critical frequencies related to solar eclipses in 1940. N. Smith. J. Research NBS <u>24</u> , 225-228 (1940).	RP1279	5c
Observations radiotelegraphiques pendant l'eclipse du soleil du 10 septembre, 1923. (Radio observations during the eclipse of the sun, Sept. 10, (1923). L. W. Austin. L'Onde Electrique <u>3</u> , 591-594 (1924).		
Radio observations of the ionosphere (at the 1940 solar eclipse in Brazil). T. R. Gilliland. Monograph of the National Geographic Society, Solar Eclipse Series, Number 2, 1942.		

Ionosphere
(R113.61)

Kennelly-Heaviside layer height observations for 4045 and 8650 kc. T. R. Gilliland. BS J. Research <u>5</u> , 1057-1061 (1930). Also published in Proc. I.R.E. <u>19</u> , 114-119 (1931).	RP246	10c
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Ionosphere (continued)

<u>Title</u>	<u>Series</u>	<u>Price</u>
Preliminary note on an automatic recorder giving a continuous height record of the Kennelly-Heaviside layer. T. R. Gilliland and G. W. Kenrick. BS J. Research <u>7</u> , 783-790 (1931). Also published in Proc.I.R.E. <u>20</u> , 540-547 (1932).	RP373	10c
Investigations of Kennelly-Heaviside layer heights for frequencies between 1600 and 8650 kc per second. T. R. Gilliland, G. W. Kenrick, and K. A. Norton. BS J. Research <u>7</u> , 1083-1104 (1931). Also published in Proc.I.R.E. <u>20</u> 286-309 (1932).	RP390	10c
Continuous measurements of the virtual heights of the ionosphere. T. R. Gilliland. BS J. Research <u>11</u> , 141-146 (1933). Also published in Proc. I.R.E. <u>21</u> , 1463-1475 (1933).	RP582	5c
Note on a multifrequency automatic recorder of ionosphere heights. T. R. Gilliland. BS J. Research <u>11</u> , 561-566 (1933). Also published in Proc.I.R.E. <u>22</u> , 236-246 (1934).	RP608	5c
Studies of the ionosphere and their application to radio transmission. S. S. Kirby, L. V. Berkner, and D. M. Stuart. BS J. Research <u>12</u> , 15-51 (1934). Also published in Proc.I.R.E. <u>22</u> , 481-521 (1934).	RP632	OP
Multifrequency ionosphere recording and its significance. T. R. Gilliland. J. Research NBS <u>14</u> , 283-303 (1935). Also published in Proc.I.R.E. <u>23</u> , 1076-1101 (1935).	RP769	5c
Recent studies of the ionosphere. S. S. Kirby and E. B. Judson. J. Research NBS <u>14</u> , 469-486 (1935). Also published in Proc.I.R.E. <u>23</u> , 733-751 (1935).	RP780	5c
Characteristics of the ionosphere and their application to radio transmission. T. R. Gilliland, S. S. Kirby, S. E. Reymor and N. Smith. J. Research NBS <u>18</u> , 645-667 (1937) Also published in Proc.I.R.E. <u>25</u> , 823-840 (1937).	RP1001	10c

Ionosphere (continued)

<u>Title</u>	<u>Series</u>	<u>Price</u>
Maximum usable frequencies for radio sky-wave transmission, 1933 to 1937. T.R.Gilliland, S.S. Kirby, N.Smith, and S.E.Reymer. J. Research NBS <u>20</u> , 627-639 (1938). Also published in Proc.I.R.E. <u>26</u> , 1347-1350 (1938).	RP1096	5c
Application of vertical-incidence ionosphere measurements to oblique-incidence radio transmissions. N. Smith. J.Research NBS <u>20</u> , 683-705 (1938).	RP1100	10c
Trends of characteristics of the ionosphere for half a sunspot cycle. N.Smith, T.R.Gilliland, and S.S.Kirby. J.Research NBS <u>21</u> , 835-845 (1938).	RP1159	5c
Recombination and electron attachment in the F layers of the ionosphere. F. L. Mohler. J. Research NBS <u>25</u> , 507-518 (1940). Also published in Phys. Rev. <u>57</u> , 1071 of June 1, 1940.	RP1342	5c
Radio transmission and the ionosphere. (1940). Earlier edition republished in QST <u>24</u> , p.32 of March (1940); and in T. & R. Bull. <u>16</u> , 405; 28; 34-35; 69-70 (1940).	LC614	Free
Oblique-incidence radio transmission and the Lorentz polarization term. N. Smith. J. Research NBS <u>26</u> , 105-116 (1941).	RP1363	5c
Field equipment for ionosphere measurements. T.R.Gilliland and A.S.Taylor. J.Research NBS <u>26</u> , 377-384 (1941).	RP1384	15c
Kennelly-Heaviside layer studies. P. A. DeMars, T. R. Gilliland, and G. W. Kenrick. Proc.I.R.E. <u>20</u> , 106-115 (1931).		
Ionospheric investigations. T. R. Gilliland. Nature (London) <u>134</u> , 379 (1934).		
Averages of critical frequencies and virtual heights of the ionosphere observed by the National Bureau of Standards, Washington, D.C., 1934-1936. T. R. Gilliland, S. S. Kirby, N. Smith, and S. E. Reymer. Ter. Mag. & Atmos. Elec. <u>41</u> , 379-388 (1936).		
Averages of critical frequencies and virtual heights of the ionosphere observed by the National Bureau of Standards, Washington, D.C. Published quarterly in Ter. Mag. & Atmos. Elec., March 1937 to March 1942.		

Ionosphere (continued)

<u>Title</u>	<u>Series</u>	<u>Price</u>
Critical frequencies of low ionosphere layers. N. Smith and S. S. Kirby. Phys. Rev. <u>51</u> , 890-891 (1937).		
Characteristics of the ionosphere at Washington, D.C., Jan. to May 1937. T. R. Gilliland, S. S. Kirby, N. Smith, and S. E. Reymer. Proc.I.R.E. <u>25</u> , 1174-1184 (1937).		
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<u>Transmission Formulas; Distance Range</u> (R113.7. See also R113, R120).		
Radio field intensity measurements at frequencies from 285 to 5400 kilocycles per second. S. S. Kirby and K. A. Norton. BS J. Research <u>8</u> , 463-479 (1932). Also published in Proc.I.R.E. <u>20</u> , 841-862 (1932).	RP429	5c
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Transmission Formulas; Distance Range (continued)

<u>Title</u>	<u>Series</u>	<u>Price</u>
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| Report of Committee on Radio Propagation Data. J. H. Dellinger, S. S. Kirby, and others. Proc. I.R.E. <u>21</u> , 1419-1438 (1933). | | |
| Skip distance calculation. N. Smith. QST <u>21</u> , 47-48 of May (1937). | | |
| The relation of radio sky-wave transmission to ionosphere measurements. N. Smith. Proc. I.R.E. <u>27</u> , 332-347 (1939). | | |

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(R114)

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| Our present knowledge concerning the atmospheric disturbances of radio telegraphy. L. W. Austin. Bul. Nat. Research Council, No. 41, 127-130 (1924). | | |
| The present status of radio atmospheric disturbances. L.W. Austin. Proc. I.R.E. <u>14</u> , 133-138 (1926). | | |
| Direction determinations of atmospheric disturbances on the Isthmus of Panama. L. W. Austin. Proc. I.R.E. <u>14</u> , 373-376 (1926). | | |
| Radio atmospheric disturbances and solar activity. L. W. Austin. Proc. I.R.E. <u>15</u> , 837-842 (1927). | | |

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(R120. See also R325.31 and R525).

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| Methods, formulas and tables for the calculation of antenna capacity. F. W. Grover. Sci. Pap. BS <u>22</u> , 569-629 (1928). | S568 | OP |
| Graphical determination of polar pattern of directional antenna systems. G.L. Davies and W.H. Orton. BS J. Research <u>8</u> , 555-569 (1932). | RP435 | 5c |
| Radio field intensity and distance characteristics of a high vertical broadcast antenna. S. S. Kirby. J. Research NBS <u>16</u> , 289-300 (1936). | RP874 | 5c |
| The possibilities of directional radio transmission. J.H. Dellinger. J. Franklin Inst. <u>204</u> , 239-243 (1927). | | |

Radio Measurements and Standardization (General)
(R200)

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| Radio instruments and measurements. 2nd ed. (1924, reprinted 1937). | C74 | 60c |
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(R210. See also R555)

<u>Title</u>	<u>Series</u>	<u>Price</u>
Primary radio-frequency standardization by use of the cathode-ray oscillograph. Grace Hazen and Frieda Kenyon. Sci. Pap. BS <u>19</u> , 445-461 (1924).	S489	10c
Theory of determination of ultra-radio frequencies by standing waves on wires. A. Hund. Sci. Pap. BS <u>19</u> , 487-540 (1924).	S491	OP
An improved type of wavemeter resonance indicator. M. S. Strock. Sci.Pap. BS <u>20</u> , 111-118 (1925)	S502	OP
Establishment of radio standards of frequency by the use of a harmonic amplifier. C. B. Jolliffe and Grace Hazen. Sci.Pap. BS <u>21</u> , 179-189 (1926)	S530	OP
Method and apparatus used in testing piezo oscillators for broadcasting stations. E.L.Hall. BS J. Research <u>4</u> , 115-130 (1930). Also published in Proc.I.R.E. <u>18</u> , 490-509 (1930).	RP135	OP
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Harmonic method of intercomparing the oscillators of the National Standard of Radio Frequency. E.G.Lapham. J. Research NBS <u>17</u> , 491-496 (1936).	RP925	5c
Production of accurate one-second time intervals. W.D.George. J.Research NBS <u>21</u> , 367-373 (1938).	RP1136	10c
Correction factor for the parallel wire system used in absolute radio-frequency standardization. A. Hund. Proc.I.R.E. <u>12</u> , 817-821 (1924).		
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<u>Title</u>	<u>Series</u>	<u>Price</u>
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RP153 OP

New piezo oscillations with quartz cylinders cut along the optical axis. A.Hund and R.B.Wright. BS J. Research 4, 383-394 (1930). Also published in Proc.I.R.E. 18, 741-761 (1930).

RP156 OP

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RP356 20c

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RP576 5c

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| Uses and possibilities of piezoelectric oscillators. A. Hund. Proc.I.R.E. <u>14</u> , 447-469 (1926). | | |
| Notes on quartz plates, air gap effect, and audio-frequency generation. A. Hund. Proc.I.R.E. <u>16</u> , 1072-1076 (1928). | | |

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| Precision condenser calibration at radio frequencies. E. L. Hall and W. D. George. Electronics <u>7</u> , 318-320 (1934). | | |
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(R240)

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| Resistance of conductors of various types and sizes as windings of single-layer coils at 150 to 6000 kilocycles. E.L.Hall. Tech.Pap. BS <u>21</u> , 109-119 (1926). | T330 | OP |
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| The use of the electron tube peak voltmeter for the measurement of modulation. C.B.Jolliffe. J.Optical Soc. Am. and Rev. Sci. Inst. <u>9</u> , 701-704 (1924). Proc.I.R.E. <u>17</u> , 660-663 (1929). | | |

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| Electrical resistance and magnetic permeability of iron wire at radio frequencies. G. R. Waite, F.G.Brickwedde, and E.L. Hall. Phys. Rev. <u>32</u> , 967-973 (1928). | | |
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(R270)

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| A continuous recorder of radio field intensities. K.A.Norton and S.E.Reymer. BS J. Research <u>11</u> , 373-378 (1933). | RP597 | OP |
| On the accuracy of radio field-intensity measurement at broadcast frequencies. H.Diamond, K.A.Norton and E.G.Lapham. J.Research NBS <u>21</u> , 795-818 (1938). | RP1156 | 10c |
| A method of measuring radio field intensities and atmospheric disturbances. L.W.Austin and E.B.Judson. Proc.I.R.E. <u>12</u> , 521-532 (1924). | | |

Measurement of Field Intensity, Noise, etc. (continued)

<u>Title</u>	<u>Series</u>	<u>Price</u>
An automatic recorder for measuring the strength of radio signals and atmospheric disturbances. E.B.Judson. Proc.I.R.E. <u>16</u> , 666-670 (1928).		
Experiments in recording radio signal intensity. L.W.Austin. Proc.I.R.E. <u>17</u> , 1192-1205 (1929).		

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A study of the seasonal variation of radio-frequency phase difference of laminated phenolic insulating materials. J.L.Preston and E.L.Hall. Tech.Pap. BS <u>19</u> , 225-235 (1925).	T284	OP
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. BS J.Research <u>7</u> , 403-418 (1931)	RP347	OP
Radio-frequency properties of insulating materials. J.L.Preston and E.L.Hall. QST <u>2</u> , pp.26-28 of Feb. (1925).	J.L.Preston	

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(R325.31. See also R113.3 and R526.2)

The radio direction finder and its application to navigation. F. A. Kolster and F. W. Dunmore. Sci.Pap. BS <u>17</u> , 539-566 (1922).	S428	15c
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A portable radio direction finder for 90 to 7700 kilocycles. F.W.Dunmore. Sci.Pap. BS <u>21</u> , 409-430 (1926).	S536	OP

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(R350)

A generator for audio currents of adjustable frequency with piezoelectric stabilization. A. Hund. Sci.Pap. BS <u>22</u> , 631-637 (1928).	S569	10c
Note on a piezoelectric generator for audio frequencies. A.Hund. BS J. Research <u>2</u> , 355-358 (1929).	RP40	OP

Radio Transmitters and Generators (continued)

<u>Title</u>	<u>Series</u>	<u>Price</u>
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A quantitative study of regeneration by inductive feedback. C.B.Jolliffe and J.A.Rodman. Sci. Pap.DS <u>19</u> , 419-428 (1924).	S487	OP
Some methods of testing radio receiving sets. J.L.Preston and L.C.F.Horle. Tech.Pap.DS <u>18</u> , 203-228 (1924).	T256	OP
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A method of studying electrode potentials and polarization. (Use of electron tube amplifier). H.D.Holler. Sci.Pap.DS <u>20</u> , 153-166 (1925).		
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<u>Title</u>	<u>Series</u>	<u>Price</u>
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(R365)

Note on telephone receiver impedance. E.Z.Stowell. Proc.I.R.E. <u>13</u> , 245-249 (1925).		
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Radio-frequency resistance and inductance of coils used in broadcast reception. A.Hund and H.B. DeGroot. Tech.Pap.BS <u>19</u> , 651-668 (1925).	T298	OP
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A directive type of radio beacon and its application to navigation. F.H.Engel and F.W.Dunmore. Sci.Pap.BS <u>19</u> , 281-295 (1924).	S480	5c
Uses of radio as an aid to air navigation. J.H. Dellinger. Papers of International Civil Aeronautics Conference (Government Printing Office, Washington, D.C.), pp.595-604, Dec. 12-14, 1928. Also published in J.Am.Inst.Electrical Engineers <u>48</u> , 105-109 (1929).	-	\$1.00
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Applications of radio in air navigation. J.H.Dellinger. Engineers and Engineering <u>43</u> , 301-306 (1926). Mech.Eng. <u>49</u> , 29-32 (1927).		

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Design of tuned Reed course indicators for aircraft radio beacon. F.W.Dunmore. BS J. Research <u>1</u> , 751-769 (1928).	RP28	OP
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A course shift indicator for the double modulation type radio beacon. H. Diamond and F.W. Dunmore. BS J. Research <u>3</u> , 1-10 (1929).	RP77	5c

Aeronautic Radio Beacon Systems (continued)

<u>Title</u>	<u>Series</u>	<u>Price</u>
Applying the visual double-modulation type directive radio beacon to the airways. H. Diamond. BS J. Research <u>4</u> , 265-287 (1930). Also published in Proc.I.R.E. <u>17</u> , 2158-2184 (1929).	RP148	10c
A 12-course radio range for guiding aircraft with tuned reed visual indication. H. Diamond and F.G.Kear. BS J. Research <u>4</u> , 341-369 (1930). Also published in Proc.I.R.E. <u>18</u> , 939-962 (1930).	RP154	OP
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Development of the visual type airway radio beacon system. J.H.Dellinger, H.Diamond, and F.W. Dunmore. BS J. Research <u>4</u> , 425-459 (1930). Also published in Proc.I.R.E. <u>18</u> , 796-839 (1930).	RP159	OP
A tuned reed course indicator for the 4 and 12-course aircraft radio range. F.W.Dunmore. BS J. Research <u>4</u> , 461-474 (1930). Also published in Proc.I.R.E. <u>18</u> , 963-982 (1930).	RP160	OP
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Phase synchronization in directive antenna arrays with particular application to the radio range beacon. F. G. Kear. BS J. Research <u>11</u> , 123-139 (1933).	RP581	OP

Aeronautic Radio Beacon Systems (continued)

<u>Title</u>	<u>Series</u>	<u>Price</u>
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Field intensity characteristics of double-modulation type directive radio beacon. H.Pratt. Proc.I.R.E. <u>17</u> , 873-878 (1929).		
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Aeronautic Direction Finders
(R526.2)

A radio direction finder for use on aircraft. W.S.Hinman, Jr. BS J. Research <u>11</u> , 733-741 (1933).	RP621	OP
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(R526.3)

A radiobeacon and receiving system for blind landing of aircraft. H. Diamond and F.W. Dunmore. BS J. Research <u>5</u> , 897-931 (1930). Also published in Proc.I.R.E. <u>19</u> , 585-626 (1931).	RF238	OP
Performance tests of radio system of landing aids. H.Diamond. BS J. Research <u>11</u> , 463-490 (1933).	RF602	OP
Experiments with underground ultra-high-frequency antenna for airplane landing beam. H.Diamond and F.W.Dunmore. J.Research NBS <u>19</u> , 1-20 (1937).	RF1006	10c
A radio system for flying and landing aircraft in fog. H. Diamond. Proc. Nat. Acad. Sciences <u>16</u> , 678-685 (1930).		
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Radio system for landing aircraft during fog. H. Diamond. Electronics <u>6</u> , 158-161 (1933).		

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(R539.1)

<u>Title</u>	<u>Series</u>	<u>Price</u>
A method for the investigation of upper-air phenomena and its application to radio meteorography. H. Diamond, W.S. Hinman, Jr., and F.W. Dunmore. J. Research NBS <u>20</u> , 369-392 (1938). Also published in Proc. I.R.E. <u>26</u> , 1235-1265 (1938).	RF1082	10c
An electric hygrometer and its application to radio meteorography. F.W. Dunmore. J. Research NBS <u>20</u> , 723-744 (1938). Also published in Bul. Am. Met. Soc. <u>19</u> , 225-243 (1938).	RF1102	15c
Electrolytic resistors for direct-current applications in measuring temperatures. D. N. Craig. J. Research NBS <u>21</u> , 225-233 (1938).	RF1126	10c
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An automatic weather station. H. Diamond and W. S. Hinman, Jr. J. Research NBS <u>25</u> , 133-148 (1940).	RF1318	10c
An improved radio sonde and its performance. H. Diamond, W. S. Hinman, Jr., F. W. Dunmore, and E. G. Lapham. J. Research NBS <u>25</u> , 327-367 (1940).	RF1329	10c
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Development of a radio meteorograph system for the Navy Department. H. Diamond, W. S. Hinman, Jr., and F. W. Dunmore. Bul. Amer. Meteorol. Soc. <u>18</u> , 73-99 (1937).		

Aerological Radio Sounding (continued)

<u>Title</u>	<u>Series</u>	<u>Price</u>
Simplified radio meteorograph for determining cloud height and thickness. H. Diamond, W. S. Hinman, Jr., and F. W. Dunmore. Bul. Am. Meteorol. Soc. <u>18</u> , 189-181 (1937).		
A radio meteorograph system with special aeronautical applications. H. Diamond, W. S. Hinman, Jr., and F. W. Dunmore. J. Inst. Aero. Sciences <u>4</u> , 241-243 (1937).		
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