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Washington, D. C.

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. Remittances should accompany order and 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 him. The prices in this Letter Circular are for delivery by mail to addresses in the United States and its possessions and in certain foreign countries that extend the franking privilege. In the case of all other countries, one-third the cost of the publication should be added to cover postage.

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 (underscored), 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 W. 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, H. 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 Street,  
 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 Street, New York City.  
 National Aeronautical Association Review, 1909 Mass. Ave., N.W.  
 Washington, D.C.  
 Nature, MacMillan Co. Ltd., St. Martin Street, London, W.C.2, England.  
 L'Onde Electrique, La Societe 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 Street,  
 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, 342 Madison Ave., New York City.  
 Radio Engineering, Bryant Publishing Co., 19 E. 47th St., New York City.  
 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 Street, New York City.  
 Terrestrial Magnetism & Atmospheric Electricity, Johns Hopkins Press,  
 Baltimore, Md.  
 Trans. Amer. Geophysical Union, 12th Ann. Meeting, National Academy  
 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 Com- munication Pamphlet No. 40. (Textbook, 619 pages, with 300 illustrations, cover- ing 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. 18, 1433- 1456 (1930).	C385	OP
Electrical interference with radio reception. (1941)	LC660	Free
Sources of radio information. (1943)	LC735	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. 17, 1326-1333 (1929).  
 Radio broadcasting regulation and legislation. J. H. Dellinger.  
 Proc. I.R.E. 17, 2006-2010 (1929).

Radio Research

(R010)

Survey of current progress in radio engineering. J. H. Dellinger.  
 J. Western Soc. Engineers 30, 39-49 (1925)  
 The International Union of Scientific Radio Telegraphy. J. H.  
 Dellinger. Science 64, 638-639 (1926).  
 The International Union of Scientific Radio Telegraphy. J. H.  
 Dellinger. Proc. I.R.E. 16, 1107-1112 (1928).

Some contributions of radio to other sciences. J. H. Dellinger. J. Franklin Institute 228, 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	●P
Some studies of radio transmission over long paths made on the Byrd Antarctic Expedition. L. V. Berkner. ES 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, 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).		

- | <u>Title</u>  | <u>Series</u> | <u>Price</u> |
|---|---------------|--------------|
| 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).   |               |              |
| 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).  |               |              |

Fading  
(R113.1)

- Cooperative measurements of radio fading in 1925.  
J. H. Dellinger, C. B. Jolliffe, and T. Parkinson. Sci. Pap. BS 22, 419-449 (1927).

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Fading (continued)

<u>Title</u>	<u>Series</u>	<u>Price</u>
Some observations of short-period radio fading. T. Parkinson. BS J. Research <u>2</u> , 1057-1075 (1929) Also published in Proc.I.R.E. <u>17</u> , 1042-1061 (1929).	RP70	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	OP
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).		
Results of cooperative measurements of radio fading. J. H. Dellinger, C. B. Jolliffe, and T. Parkinson. Radio News <u>8</u> , 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. <u>12</u> , 389-394 (1924).		
Long-distance receiving measurements in 1924. L. W. Austin. Proc.I.R.E. <u>13</u> , 283-290 (1925). J. Wash. Acad. Sciences <u>15</u> , 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. <u>14</u> , 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. <u>15</u> , 825-836 (1927).		
Long wave radio receiving measurements at the Bureau of Standards in 1927. L. W. Austin. Proc.I.R.E. <u>16</u> , 1252-1257 (1928).		
Long wave radio receiving measurements at the Bureau of Standards in 1928. L. W. Austin. Proc.I.R.E. <u>18</u> , 101-105 (1930).		
Long wave radio receiving measurements at the Bureau of Standards in 1929. L. W. Austin. Proc.I.R.E. <u>18</u> , 1481-1487 (1930).		



Daily and Seasonal Variations - continued  
(R113.2)

<u>Title</u>	<u>Series</u>	<u>Price</u>
Long wave radio receiving measurements at the Bureau of Standards in 1930. L. W. Austin. Proc. I.R.E. <u>19</u> , 1767-1772 (1931).		
A method of representing radio propagation conditions. L.W. Austin. Proc. I.R.E. <u>19</u> , 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. <u>20</u> , 689-698 (1932).		
Low-frequency radio receiving measurements at the Bureau of Standards in 1931 and 1932. E. B. Judson. Proc. I.R.E. <u>21</u> , 1354-1363 (1933).		

Direction Variations

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

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)

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> , 33-46 (1937).	RP913	OP
Sudden disturbances of the ionosphere. J.H. Dellinger. J. Research NBS <u>19</u> , 111-149 (1937). Also published in Proc. I.R.E. <u>25</u> , 1253-1290 (1937).	RP1016	15c
Measurements of ultraviolet solar- and sky-radiation intensities in high latitudes. W.W. Coblentz, F.R. Gracely, and R. Stair. J. Research NBS <u>28</u> , 581-591 (1942).	RP1469	10c
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).		

Meteorological, Geophysical, and Cosmic Effects - continued

- On the influence of solar activity on radio transmission. L. W. Austin and I. J. Wymore. Proc.I.R.E. 16, 166-173 (1928).
- The relation of radio propagation to disturbances in terrestrial magnetism. I. J. Wymore. Proc.I.R.E. 17, 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 20, 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. 18, 1997-2002 (1930).
- Solar activity and radiotelegraphy. L. W. Austin. Proc.I.R.E. 20, 280-285 (1932).
- 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. Reymer. 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).

Meteorological, Geophysical, and Cosmic Effects - cont'd.

<u>Title</u>	<u>Series</u>	<u>Price</u>
Ionosphere and magnetic storms. S. S. Kirby, N. Smith, T.R. Gilliland, and S. E. Reymer. Phys. Rev. <u>51</u> , 992-993 (1937).		
Radio fadeouts through 1936. J. H. Dellinger. QST <u>21</u> , p.35, 86, 88 of Feb. (1937).		
Sudden ionospheric disturbances. J. H. Dellinger. Ter. Mag. & Atmospheric Elec. <u>42</u> , 49-53 (1937).		
Sudden disturbances of the ionosphere. J. H. Dellinger. J. Applied Physics <u>8</u> , 732 (1937).		
Remark on S. Chapman's "Note on radio fadeouts and the associated magnetic disturbances". S. S. Kirby. Ter. Mag. & Atmos. Elec. <u>42</u> , 420 (1937).		
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).		
<u>Eclipses</u> (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

## Eclipses - continued

(R113.55)

TitleSeriesPrice

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 3, 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, No. 2, 1942.

Ionosphere  
(R113.61)

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

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 7, 783-790 (1931). RP373 10c  
Also published in Proc.I.R.E. 20, 540-547 (1932).

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 7, 1083-1104 (1931). Also published in Proc.I.R.E. 20, 286-309 (1932). RP390 10c

Continuous measurements of the virtual heights of the ionosphere. T. R. Gilliland. BS J. Research 11, 141-146 (1933). RP582 5c  
Also published in Proc.I.R.E. 21, 1463-1475 (1933).

Note on a multifrequency automatic recorder of ionosphere heights. T. R. Gilliland. BS J. Research 11, 561-566 (1933). Also published in Proc.I.R.E. 22, 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, 12, 15-51 (1934). RP632 OP  
Also published in Proc.I.R.E. 22, 481-521 (1934).



Title	Ionosphere - continued (R113.61)	Series	Price
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 OP
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 OP
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
Maximum usable frequencies for radio sky-wave transmission, 1933 to 1937. T. R. Gilliland, S. S. Kirby, N. Smith, and S. E. Reymor. J. Research NBS <u>20</u> , 627-639 (1938). Also published in Proc.I.R.E. <u>26</u> , 1347-1350 (1938).			RP1096 OP
Application of vertical-incidence ionosphere measurements to oblique-incidence radio transmissions. N. Smith. J. Research NBS <u>20</u> , 683-705 (1938).			RP1100 OP
Trends of characteristics of the ionosphere for half a sun- spot 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. E. Mohler. J. Research NBS <u>25</u> , 507-518 (1940). Also published in Physical.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. Bulletin <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

Ionosphere - continued  
(R113.61)

<u>Title</u>	<u>Series</u>	<u>Price</u>
Kenelly-Heaviside layer studies. P.A. DeMars, T. R. Gilliland, and G. W. Kenrick. Proc.I.R.E. <u>20</u> , 106-113 (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).		
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<u>Title</u>	<u>Series</u>	<u>Price</u>
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Design of a portable temperature-controlled piezo oscillator. V. E. Heaton and W. H. Brattain. BS J. Research <u>4</u> , 345-350 (1930). Also published in Proc.I.R.E. <u>18</u> , 1239-1246 (1930).		RP153	OP
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A unicontrol high-frequency radio direction finder. F. W. Dunmore. Sci.Pap. BS <u>21</u> , 25-35 (1926).	S525	OP
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(R382)

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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(R520)

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<u>Title</u>	<u>Series</u>	<u>Price</u>
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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	OP
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	OP
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Aeronautic Radio Beacon Systems - continued

<u>Title</u>	<u>Series</u>	<u>Price</u>
A course indicator of pointer type for the visual radio range-beacon system. F.W. Dunmore. BS J. Research <u>7</u> , 147-170 (1931). Also published in Proc.I.R.E. <u>19</u> , 1579-1605 (1931).	RP336	OP
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(R526.2)

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(R526.3)

<u>Title</u>	<u>Series</u>	<u>Price</u>
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