

April 22, 1947

X-RAYS

Publications by the Staff of the National Bureau of Standards.

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 from the National Bureau of Standards.

Where the price is stated, the publication can be purchased from the Superintendent of Documents, Government Printing Office, Washington 25, D. C. The prices quoted are for delivery to addresses in the United States and its territories and 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.

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

For papers in other scientific or technical journals, the name of the journal or of 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 cannot 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.

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

RP = "Research Paper". These are reprints of articles appearing in the "Bureau of Standards Journal of Research" and 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".

Circular C24 and supplements, the complete list of the Bureau's publications (1901-1936), is sold by the Superintendent of Documents for \$1.30. Announcement of new publications is made each month in the Technical News Bulletin which is obtainable by subscription at \$1.00 a year in the United States, Canada, Cuba, Mexico, Newfoundland, and Republic of Panama, other countries at \$1.35.

SUBJECT-MATTER READING

Section Title

<u>Title</u>	<u>Series</u>	<u>Price</u>
Barium sulphite as a protective material against roentgen radiation. Franklin L. Hunt, Am. Jour. Roent. & Rad. Ther. (Chas. C. Thomas, Springfield, Ill.), <u>14</u> , (1925).		
Improved form of gas type X-ray tube. L. F. Curtiss, J. O. S. A. & R. S. I. (George Banta Publishing Co., Menasha, Wisc.), <u>16</u> , 68 (1928).		
X-ray and radium protection. Recommendations of International Congress of Radiology (1929). - - - - -	C374	OP
Cathode ray dosimetry, Lauriston S. Taylor, Radiology (Bruce Publishing Co., St. Paul, Minn.), <u>12</u> , 294 (1929).		
The precise measurement of X-ray dosage. Lauriston S. Taylor. BS J. Research, <u>2</u> , 771 (1929). - - - - - Also in Radiology (Bruce Publishing Co., St. Paul, Minn.) <u>14</u> , 372 (1930).	RP56	10c
Continuous spectrum X-rays from thin targets. W. W. Nicholas. BS J. Research <u>2</u> , 832 (1929). - - - - -	RP60	OP
Roentgen-ray protection. Lauriston S. Taylor. Am. J. Roent. & Rad. Ther. (Chas. C. Thomas, Springfield, Ill.), <u>22</u> , 45 (1929).		
Analysis of diaphragm system for the X-ray standard ionization chamber. Lauriston S. Taylor. BS J. Research, <u>3</u> , 857 (1929) - - - - - Also in Radiology (Bruce Publishing Co., St. Paul, Minn.), <u>15</u> , 49 (1930).	RP119	10c
The relative intensity of X-ray satellites, Science. F. K. Richtmyer and Lauriston S. Taylor. (Science Publishing Co., Lancaster, Pa.), <u>70</u> 616 (1929).		
The problem of international X-ray standardization, Radiology. Lauriston S. Taylor. (Bruce Publishing Co., St. Paul, Minn.), <u>14</u> , 551 (1930).		
The calibration of the "Fingerhut" ionization chamber. Lauriston S. Taylor. BS J. Research <u>4</u> , 631 (1930). - - - - - Also in Radiology (Bruce Publishing Co., St. Paul, Minn.), <u>15</u> , 227 (1930).	RP169	5c
Intensity of X-ray satellites. F. K. Richtmyer and L. S. Taylor. Phys. Rev. (American Institute of Physics, Lancaster, Pa.), <u>36</u> , 1044 (1930).		

<u>Title</u>	<u>Series</u>	<u>Price</u>
An improved form of standard ionization chamber. Lauriston S. Taylor and George Singer. BS J. Research, <u>5</u> , 507 (1930) - - - - - Also in Radiology (Bruce Publishing Co., St. Paul, Minn.), <u>15</u> , 637 (1930).	RP211	10c
Absorption measurements of the X-ray general radiation. Lauriston S. Taylor. BS J. Research <u>5</u> , 517 (1930). - - - Also in Radiology (Bruce Publishing Co., St. Paul, Minn.), <u>16</u> , 302 (1931).	RP212	10c
Apparatus for the measurement of high constant or rippled voltages. Lauriston S. Taylor. BS J. Research <u>5</u> , 609 (1930). - - - - - Also in Radiology (Bruce Publishing Co., St. Paul, Minn.), <u>16</u> , 593 (1931).	RP217	<del>10c</del> OP
Efficiency of production of X-rays. Warren W. Nicholas. BS J. Research <u>5</u> , 843 (1930) - - - - -	RP235	<del>10c</del> OP
Recent progress in X-ray standardization, Radiology. Lauriston S. Taylor. (Bruce Publishing Co., St. Paul, Minn.), <u>16</u> , 1 (1931).		
Further studies of the X-ray standard ionization chamber diaphragm system. Lauriston S. Taylor and G. Singer. BS J. Research, <u>6</u> , 219 (1931) - - - - - Also in Radiology (Bruce Publishing Co., St. Paul, Minn.), <u>17</u> , 104 (1931).	RP271	10c
Accurate measurement of small electric charges by a null method. Lauriston S. Taylor. BS J. Research, <u>6</u> , 807 (1931). - - - - - Also in Radiology (Bruce Publishing Co., St. Paul, Minn.), <u>17</u> , 294 (1931).	RP306	<del>10c</del> OP
X-ray protection. (1931) - - - - -	H15	OP
Measurement of Lenard rays. Lauriston S. Taylor. BS J. Research, <u>7</u> , 57 (1931) - - - - - Also in Radiology (Bruce Publishing Co., St. Paul, Minn.), <u>7</u> , 57 (1931).	RP332	10c
X-ray protection. Lauriston S. Taylor. An. Jour. Roent. & Rad. Ther. (Chas. C. Thomas, Springfield, Ill.), <u>26</u> 436 (1931).		
International comparison of X-ray standards. Lauriston S. Taylor. BSJ. Research <u>8</u> , 9 (1932). - - - - - Also in Radiology (Bruce Publishing Co., St. Paul, Minn.), <u>18</u> , 99 (1932).	RP397	10c

Title	-4-	Series	Price
An electrostatic voltmeter. Warren W. Nicholas. BS. J. Research, <u>8</u> , 111 (1932).	-----	RP404	5c
Note on international comparison of X-ray standards. Lauriston S. Taylor. BS J. Research <u>8</u> , 325 (1932) - - - - - Also in Radiology (Bruce Publishing Co., St. Paul, Minn.), <u>8</u> , 325 (1932).	-----	-RP417	5c
Air density corrections for X-ray ionization chambers. Lauriston S. Taylor and George Singer. BS J. Research, <u>8</u> , 385 (1932).	-----	RP424	5c
International comparison of roentgen-ray units. Lauriston S. Taylor. Am. Jour. Roent. & Rad. Ther. (Chas. C. Thomas, Springfield, Ill.), <u>27</u> , 884 (1932). (Semitechnical reprint of RP397, above.)			
Work of the National and International committees on X-ray and radium protection. Lauriston S. Taylor, Radiology (Bruce Publishing Co., St. Paul, Minn.), <u>19</u> , 1 (1932).			
The comparison of high voltage X-ray generators. Lauriston S. Taylor. BS J. Research, <u>9</u> , 333 (1932). - - - - - Also in Am. Jour. Roent. & Rad. Ther. (Chas. C. Thomas, Springfield, Ill.), <u>29</u> , 826 (1933).	-----	RP475	5c
Effective applied voltage as an indicator of the radiation emitted by an X-ray tube. Lauriston S. Taylor, G. Singer and C. F. Stoneburner. BS J. Research, <u>9</u> , 561 (1932). - - - - - Also in Am. Jour. Roentgen & Rad. Ther. (Chas. C. Thomas, Springfield, Ill.), <u>30</u> , 221 (1933).	-----	RP491	<del>5c</del>
The measurement of low voltage X-ray intensities. Lauriston S. Taylor and C. F. Stoneburner. BS J. Research, <u>9</u> , 769 (1932).	-----	RP505	5c
Operation of thick-walled X-ray tubes on rectified potentials. Lauriston S. Taylor and C. F. Stoneburner. BS J. Research, <u>10</u> , 233 (1933) - - - - - Also in Am. Jour. Roent. & Rad. Ther. (Chas. C. Thomas, Springfield, Ill.), 1933.	-----	RP527	<del>5c</del>
A remotely operated switch for roentgen dosage meters. Lauriston S. Taylor and G. A. Rheinbold. Am. Jour. Roent. & Rad. Ther. (Chas. C. Thomas, Springfield, Ill.), <u>29</u> , 416 (1933).			

- A basis for the comparison of X-rays generated by voltages of different wave forms. Lauriston S. Taylor, George Singer and C. F. Stoneburner. BS J. Research 11, 293 (1933) RP592 ~~50c~~
- Also in Am. Jour. Roent. & Rad. Ther. (Chas. C. Thomas, Springfield, Ill.), 1933
- Comparison of high voltage X-ray tubes. Lauriston S. Taylor, George Singer and C. F. Stoneburner. BS J. Research, 11, 341 (1933) - - - - - RP595 10c
- Also in Am. Jour. Roent. & Rad. Ther. (Chas. C. Thomas, Springfield, Ill.), 1933.
- Recommendations of the Third-International Congress of Radiology relating to the protection from X-rays and radium, Lauriston S. Taylor. (Bruce Publishing Co., St. Paul, Minn.), 21, 212 (1933).
- Report of committee on the standardization of X-ray measurements. Lauriston S. Taylor. Radiology 22, 289 (1934)
- Standard absorption curves for specifying the quality of X-radiation. Lauriston S. Taylor and George Singer. BS J. Research, 12, 401 (1934) - - - - - RP666 ~~50c~~
- Also Radiology, 22, 445 (1934).
- Radium protection for amounts up to 300 milligrams. Lauriston S. Taylor. (March, 1934). - - - - - H18 10c
- Ionization of liquid carbon disulphide by X-rays. F. L. Mohler and Lauriston S. Taylor. J. Research NBS, 13, 659 (1934). Also Am. J. Roentgenology, 34, 84 (1935).
- A note on the bacteriacidal effect of X-rays. F. L. Mohler and Lauriston S. Taylor. J. Research NBS, 13, 677 (1934). - - - - - RP735 5c
- Also Am. J. Roentgenology 34, 89 (1935).
- Roentgen ray standards and units. Lauriston S. Taylor. Am. J. Roentgenology 31, 815 (1934).
- International recommendations for X-ray and radium protection. Lauriston S. Taylor. Radiology 23, 662 (1934).
- Recommendations of the International Committee for Radiological Units. Lauriston S. Taylor. Radiology 23, 580 (1934).
- Comparison of X-ray and gamma ray dosage. Lauriston S. Taylor and F. L. Mohler. Science 81, 318 (1935).

Title	Series	Price
Report of committee on standardization of X-ray measurements. L. S. Taylor and U. V. Portmann. Radiology <u>26</u> , 634 (1936).		
Determination of the saturation ionization current from high speed electrons in air. L. S. Taylor. Phys. Rev. <u>48</u> , 970 (1935).		
Note on the guarded field X-ray ionization chamber. L. S. Taylor and G. Singer. J. Research NBS <u>16</u> , 165 (1936) - - - - Also Radiology <u>26</u> , 322 (1936).	RP865	5c
Absorption of X-rays by lead glasses and lead barium glasses. George Singer. J. Research NBS <u>16</u> , 233 (1936). - - - - -	RP870	5c
Measurements of X-rays and radium, Chapter II of "Biological Effects of Radiation". Lauriston S. Taylor. Edited by B. M. Luggar (McGraw Hill Book Co., Inc., New York, N. Y.) 1936.		
X-ray protection (Revision of old Handbook 15). Lauriston S. Taylor. (September 1936). - - - - -	H20	5c
The ionization of air by Lenard rays. Lauriston S. Taylor. J. Research NBS <u>17</u> , 983 (1936).. - - - - -	RP924	5c
Time factors in the ionization of liquid carbon bisulphide by X-rays. Lauriston S. Taylor. J. Research NBS <u>17</u> , 557 (1936). - - - - -	RP927	10c
The Determination of X-ray quality by filter methods. Lauriston S. Taylor. Radiology <u>29</u> , 22 (1937). Also see Occasional Publication of the AAAS No. 4, supplement to Science Vol. 85 entitled Some Fundamental Aspects of the Cancer Problem, p. 196 (1937). (Science Press, N. Y.).		
The measurement of X-rays with liquid ionization chambers. Lauriston S. Taylor. Radiology <u>29</u> , 323 (1937).		
Recommendation of the International committee for radiological units. Radiology <u>29</u> , 634 (1937). Also American Journal of Roentgenology and Radium Therapy <u>39</u> , 295 (1938).		
Radium Protection (Revision of old Handbook 18). (April, 1938). - - Also Radiology <u>31</u> , 481 (1938).	H23	5c
International recommendations for X-ray and Radium Protection, Radiology <u>30</u> , 511 (1938). Also American Journal of Roentgenology and Radium Therapy <u>40</u> , 134 (1938).		

Title	Series	Price
Measurement of supervoltage X-ray with the free air ionization chambers. Lauriston S. Taylor, George Singer and Arvid L. Charlton. - J. Research NBS <u>21</u> , 19 (1938). - - - - - Also American Journal of Roentgenology and Radium Therapy <u>41</u> , 256 (1939).	RP1111	10c
Concrete as a protective material against high voltage X-rays. G. Singer, Lauriston S. Taylor and Arvid L. Charlton. J. Research NBS <u>21</u> , 785 (1938). - - - - - Also Radiology, <u>33</u> , 68-76 (1939).	RP1155	<del>10c</del>
The Economic Features of X-ray Protection. Lauriston S. Taylor. Also Radiology <u>34</u> , 425-437 (1940).		
Measurement, in Roentgens, of the gamma radiation from radium by the free-air ionization chamber. Lauriston S. Taylor and George Singer. J. Research NBS, <u>24</u> , 247 (1940). - - - - - Also American J. Roentgenology.	RP1283	5c
Report of Standardization Committee Radiological Society of North America. Radiology, <u>35</u> , 105-108 (1940).		
X-ray Protection, Lauriston S. Taylor, Journal of American Medical Association, <u>116</u> , 136 (1940).		
New X-ray Laboratory of the National Bureau of Standards, Lauriston S. Taylor, Radiology, <u>37</u> , 79, (1941).		
Physical Foundations of Radiology by Otto Glasser, Edith H. Quimby, Lauriston S. Taylor, and J. L. Weatherwax, (Paul B. Hoeber, Inc., New York and London,) (1944).		
Medical Physics edited by Otto Glasser, (Yearbook Publishers, Inc., Chicago, Illinois), (1944). Article on Roentgen Ray Protection by L. S. Taylor, pp. 1382-1388.		
Medical Physics edited by Otto Glasser, (Yearbook Publishers, Inc., Chicago, Illinois), (1944). Article on Measurement of Quality by Standard Absorption Curves by George Singer, pp. 1364-1366.		
Medical Physics edited by Otto Glasser, (Yearbook Publishers, Inc., Chicago, Illinois), (1944). Article on Measurement of Quantity by Large Air Ionization Chamber by George Singer, pp. 1366-1370.		
American War Standard, April 31, 1945, American Standards Association, Z54.1, Part I, Safety Code for the Industrial Use of X-Rays, G. Singer, Chairman. Other members of the X-ray section, Mr. G. Ferlazzo, Mr. Frank Day, and Mr. A. L. Charlton contributed materially toward preparation of this section of the standard.		

<u>Title</u>	<u>Series</u>	<u>Price</u>
First Safety Standard for Industrial X rays. George Singer. Industrial Standardization (July 1945).		
X-ray and Gamma Ray Protection in Industry. George Singer. National Safety News (August 1945).		
Materials and Methods of X-ray Protection. (Symposium on Protection against X rays and Gamma Rays.) George Singer and George C. Laurence. Industrial Radiography (1945). Also in Radiology, <u>46</u> , 57 - 76 (1946).		
American War Standard for the Industrial Use of X Rays, Z54.1. American Standards Association, Parts I to VI inclusive, (April 1945.) George Singer.		
Absorption Measurements for Broad Beams of 1 MV and 2 MV X Rays. BS J of Research, <u>37</u> , 147 (1946). - - - - - Also in Am. Jour. Roent. & Rad. Ther., <u>LV</u> , 771 (1946).	RP1735	10¢
Ionization Yield of Radiations: Part II - The Fluctuations of the Number of Ions. U. Fano. Physical Review. In press.		
Electric Quadrupole Coupling of the Nuclear Spin with the Rotation of a Polar Diatomic Molecule in an External Electric Field. U. Fano. BS J of Research. In press.		
Note on the Theory of Radiation Induced Lethals in <u>Drosophila</u> . U. Fano. Science. In press.		
Relative Thicknesses of Lead, Concrete, and Steel Required for Protection Against Narrow Beams of X Rays. George Singer, Harold O. Wyckoff and Frank H. Day. BS J of Research. In press.		