

13. ELECTRIC SERVICE DISTURBANCES AND PROTECTION

UNDERGROUND ELECTRICAL SYSTEMS

Sydney F. Shelbourne

Vol. iii—1886, pp. 31-48

General discussion of the problems involved in the operation of the electric circuits underground. Description of the properties of various duct materials. Explanation of the relation between specific capacity and insulation materials. Account of troubles with corrosion of lead sheaths. Suggested methods of avoiding inductive disturbances on arc lighting cables and particularly telephone and telegraph lines.

Discussion, pp. 49-66, by Messrs. Frank L. Pope, W. D. Lockwood, T. D. Lockwood, C. O. Mailloux, G. C. Maynard, Sydney F. Shelbourne, ——— Young, Ralph W. Pope and O. E. Michaelis.

Experience with lead covered cables underground. Explanation of the corrosion of lead.

LIGHTNING ARRESTERS AND THE PHOTOGRAPHIC STUDY OF SELF-INDUCTION

F. G. Acheson

Vol. vi—1889, pp. 74-98

Experimental study of the effect of discharge of spark gap lightning arresters upon insulation stresses. Investigation of the effects of various arrangements of ground connection. Photographic records of spark discharges under various circuit conditions exposed through revolving perforated disk.

Discussion, pp. 98-106, by Messrs. Otto A. Moses, E. G. Acheson, E. T. Birdsall, Leonidas Le C. Hamilton, Lemuel W. Serrell, Joseph Wetzler, William E. Geyer, Charles Cuttriss, Allan V. Garratt and Holbrook Cushman.

LIGHTNING ARRESTERS AND THE PHOTOGRAPHIC STUDY OF SELF-INDUCTION

Joseph Stanford Brown and Charles T. Child

Vol. iv—1889, pp. 135-143

Detailed analysis and criticism of Mr. Acheson's paper. Circuit diagrams redrawn to bring out more clearly the electrical relations. Consideration of the condenser action of the cable upon the spark gap arrester performance.

Discussion, pp. 143-155, by Messrs. J. S. Brown, C. O. Mailloux, Ralph W. Pope and ——— Abdank.

Replies to criticisms of Mr. Acheson's paper.

DISCRIMINATING LIGHTNING ARRESTERS, AND RECENT PROGRESS IN MEANS FOR PROTECTION AGAINST LIGHTNING

Alexander Jay Wurts

Vol. xi—1894, pp. 337-377

General requirements of a lightning arrester. Description of multi-gap arrester used with choke coils and account of experiments with 3,000-volt installation. Mode of operation and tests on condenser type and enclosed high resistor type discriminating lightning arrester.

Discussion, pp. 378-405, by Messrs. Joseph Sachs, A. J. Wurts, William

Stanley, Charles Hewitt, W. E. Harrington, A. E. Kennelly, C. P. Steinmetz, W. J. Jenks, A. V. Abbott, Ludwig Gutmann, C. C. Haskins, George M. Mayer and Carl K. MacFadden.

General remarks on lightning protection, arresters and grounded overhead wires. Description of Lodge's experiment on "Recoil Kick." Experience with lightning disturbances.

ALTERNATING CURRENTS AND FUSES

Dugald C. Jackson and R. J. Ochsner

Vol. xi—1894, pp. 430-439

Experimental investigation of the effects of prolonged application of alternating current to samples of commercial fuse wires.

Discussion, pp. 439-440, by Messrs. Leonard Waldo, J. P. Jackson and David Salomons.

Qualities of ideal fuse metal.

SOME TELEPHONE DISTURBANCES FROM ELECTRICAL GENERATORS

George D. Shepardson

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Account of qualitative investigation of telephone disturbances caused by direct commutation in neighboring systems, Bibliography of telephone line disturbances from other circuits.

No discussion.

THE PROTECTION OF SECONDARY CIRCUITS FROM FIRE RISKS

Cary T. Hutchinson

Vol. xvi—1899, pp. 407-417

Discussion of various methods of protecting secondary circuits in alternating current distribution system. Recommendation that the Institute pass a resolution favoring permission to ground the neutral of secondary circuits.

Discussion, pp. 417-430, by Messrs. Elihu Thomson, C. M. Goddard, W. E. Goldsborough, C. P. Steinmetz, Louis Bell, James I. Ayer, William Brophy, W. L. Puffer, C. W. Rice, W. J. Hammer and A. E. Kennelly.

Advantages of grounding secondary of distribution system.