

**American Institute of
Electrical Engineers**



**SUMMER
TECHNICAL
MEETING**

Program

**ST. LOUIS, MO.
JUNE 26-30
1944**

**Meeting Headquarters
HOTEL JEFFERSON**

GENERAL INFORMATION

The Program is the largest in the history of the Institute. It has been expanded to aid the war effort and include new fields of technical activities—industrial control, induction heating, many electronics applications, domestic and commercial applications, and four aircraft sessions. During the general session important anniversaries will be commemorated.

Room Locations are given in the program. The Gold Room, Crystal Room, and Ivory Room are on the mezzanine floor. Rooms 1-9, inclusive, are on the second floor.

Please register promptly on arrival at the meeting. A registration fee of \$2.00 will be charged all nonmembers, except Enrolled Students and the immediate families of members.

Information on all features may be obtained at the Registration Desk. Efforts will be made to deliver telegrams and messages promptly. Any mail received for members will be held at the Registration Desk until called for. Letters undelivered at the close of the meeting will be forwarded to the latest mailing address. Please make a regular practice of observing the bulletin boards.

Technical Sessions and Discussions are governed by the "Conduct of Technical Sessions" at the discretion of the presiding officer. Usually 10 minutes will be allowed for the presentation of each paper and 5 minutes for each discussion. To receive consideration for publication discussions must be left with the chairman or sent to C. S. Rich, AIEE, 33 West 39th Street, New York 18, N. Y., before July 15. The original, typewritten, double-spaced copy, complete with original illustrations and two carbon copies with photostates or blueprints, should be submitted.

Authors and discussers should make their presentations as effective as possible. Remember the audience. Speak distinctly so as to be heard in the rear of the room. Stress the salient features of the paper which are new or novel, and illustrate the advantages of your methods. When using slides, please turn toward the audience before speaking and raise your voice. Extemporaneous delivery is preferable to reading unless done slowly and emphasis is put in the proper places.

Advance Copies of Technical Papers may be purchased at the Registration Desk or at Institute headquarters at prices indicated. Only numbered papers are available. Coupon books in \$5.00 denominations are available for those who wish to avoid remittance by check or otherwise. Most of the papers ultimately will be published in ELECTRICAL ENGINEERING and the TRANSACTIONS.

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Summer Technical Meeting

SCHEDULE OF EVENTS

Monday, June 26

- 9:30 a.m.—Registration
- 10:00 a.m.—Annual Meeting
- 2:00 p.m.—Conference of Officers, Delegates, and Members
- 2:00 p.m.—District (No. 7) Student Conference (Room 2)

Tuesday, June 27

- 9:30 a.m.—Committee on Student Branches (Room 2)
- 9:30 a.m.—Power Generation
- 9:30 a.m.—Aircraft Equipment
- 9:30 a.m.—Basic Sciences
- 9:30 a.m.—Quality Control by Statistical Methods
- 12:15 p.m.—Luncheon Meeting and Address
- 2:00 p.m.—Conferences of Officers, Delegates, and Members
- 2:00 p.m.—Power Transmission
- 2:00 p.m.—Aircraft Ignition and Auxiliaries
- 2:00 p.m.—Electric Welding
- 5:00 p.m.—Meeting of President, President-Elect, Vice-Presidents and Vice-Presidents-Elect (Room 3)
- 6:30 p.m.—Sections Committee Dinner (Room 4)

Wednesday, June 28

- 10:00 a.m.—General Session
- 12:00 m.—Southern District (No. 4) Luncheon (Room 2)
- 2:00 p.m.—Morse Telegraph Centennial
- 2:00 p.m.—Power Cables
- 2:00 p.m.—Aircraft Lighting and Instruments
- 2:00 p.m.—Industrial Control
- 2:00 p.m.—Educational Problems in Engineering Colleges and Their Effects in Industry
- 3:30 p.m.—Clinic on College and High School Student Counseling
- 4:30 p.m.—Research Committee Meeting (Room 4)

Thursday, June 29

- 9:30 p.m.—District (No. 7) Executive Committee Meeting (Room 3)
- 9:30 a.m.—Symposium on Electronic Frequency Converters
- 9:30 a.m.—Aircraft Instruments
- 9:30 a.m.—Heating Houses Electrically
- 9:30 a.m.—Temperature Standards
- 12:30 p.m.—Board of Directors' Luncheon and Meeting (Room 4)
- 2:00 p.m.—Temperature Standards—continued
- 2:00 p.m.—Switchgear
- 2:00 p.m.—Electronics and Measurements
- 2:00 p.m.—Experiences with Electric House Heating
- 4:00 p.m.—Open Meeting of Committee on Domestic and Commercial Applications

Friday, June 30

- 9:30 a.m.—Electrochemistry and Electrometallurgy
- 9:30 a.m.—Transformers
- 9:30 a.m.—Industrial Power Applications
- 2:00 p.m.—Relays
- 2:00 p.m.—Land Transportation
- 2:00 p.m.—Motors and Related Subjects

PROGRAM

Monday, June 26

9:30 a.m.—Registration

Mezzanine

10:00 a.m.—Annual Meeting

Gold Room

President NEVIN E. FUNK, Presiding

Address of Welcome: Dr. William McClellan, Past President, AIEE

Board of Directors' Report (in abstract), H. H. Henline, National Secretary

National Treasurer's Report, W. I. Slichter

Committee of Tellers' Report on Election of Officers

Introduction of, and Presentation of President's Badge to Charles A. Powel; Response by Mr. Powel

Report on Institute Prizes for Papers, F. A. Cowan, Chairman, Committee on Award of Institute Prizes

Presentations by President Funk

Presentation of Lamme Medal to Arthur H. Kehoe

Presentation of Faraday Medal of Institution of Electrical Engineers to Dr. Irving Langmuir

Any Other Business that may be presented

President's address, Nevin E. Funk

2:00 p.m.—Conference of Officers, Delegates, and Members—Clinics on Section Operation and Management

There will be three separate clinics with parallel meetings. At each clinic, the meeting will be developed by questions and discussion from the floor, which will be answered and supplemented by an Advisory Panel Group. There will be an informal panel discussion on the following subjects:

1. Meetings and programs
2. Fellowship
3. Student Activities
4. (a) Technical Groups
(b) Subsections
5. General Discussion

Larger Sections Clinic

Room 1

R. M. PFALZGRAFF, Presiding

W. F. HENN, Secretary

Advisory Panel Group

W. R. Clark

R. V. Shepherd

R. C. Gorham

R. G. Warner

Summer Technical Meeting

Smaller Sections (Concentrated Membership) Clinic
Room 3

G. W. BOWER, Presiding
C. S. SCHIFREEN, Secretary

Advisory Panel Group

Walter Criley Everett S. Lee
Frederick Krug E. T. Mahood

Smaller Sections (Scattered Membership) Clinic
Room 4

A. C. MUIR, Presiding
L. E. HOWARD, Secretary

Advisory Panel Group

M. S. Coover G. R. Peirce
V. P. Hessler E. W. Schilling

Tuesday, June 27

9:30 a.m.—Power Generation

Ivory Room

A. C. MONTEITH, Presiding

- 44-98. The Summation of Load Curves, R. F. Hamilton, War Production Board. 20 cents (by mail 25 cents).
44-85. Prevention of Rotor Winding Deformation on Turbo-Generators. J. G. Noest, Consolidated Edison Co. of N. Y., Inc. 20 cents (by mail 25 cents).
44-106. The Effect of Weather on the System Load. H. A. Dryar, Philadelphia Elec. Co. 25 cents (by mail 30 cents).
44-107. Conditions Controlling the Economic Selection of Prime Movers. B. G. A. Skrotzki, Consolidated Edison Co. of N. Y., Inc. 25 cents (by mail 30 cents).
*CP. Progress Report on Turbo-Generator Standardization. AIEE Group of AIEE-ASME Joint Committee on Turbo-Generators

9:30 a.m.—Aircraft Equipment

Crystal Room

Lt. Colonel T. B. HOLLIDAY, Presiding

- 44-89. The Differential Generator Control Relay for D-C Aircraft Electrical Systems. F. E. Crever, General Elec. Co. 15 cents (by mail 20 cents).
44-90. Aircraft Fuses Must Protect. J. C. Lebens, Jr., Bussmann Mfg. Co. 10 cents (by mail 15 cents).
44-108. An Aircraft Differential-Voltage Cutout. O. C. Walley, Westinghouse Elec. & Mfg. Co. 10 cents (by mail 15 cents).
44-88. Alternating-Current Contactors for Aircraft. F. J. Russell and A. P. Charbonneau, Cutler-Hammer, inc. 10 cents (by mail 15 cents).

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Tuesday—continued

9:30 a.m.—Basic Sciences

Room 3

J. D. TEBO, Presiding

- 44-95. Formulas for the Four-Terminal Network Parameters of Uniform Networks. W. R. LePage, The Johns Hopkins Univ. 10 cents (by mail 15 cents).
- 44-109. Formulas for Calculating Short-Circuit Forces between Channels Located Back to Back. T. J. Higgins, Illinois Inst. of Tech. 10 cents (by mail 15 cents).
- 44-110. The Computation of Magnetic Field Strength of Round Coils of Small Cross Section. H. B. Dwight and G. O. Peters, Mass. Inst. of Tech. 10 cents (by mail 15 cents).
- 44-129. Fundamentals of Hearing Aid Design. W. P. Penn, Vacolite Co. 15 cents (by mail 20 cents).

9:30 a.m.—Quality Control by Statistical Methods

Room 1

A. S. LANGSDORF, Presiding

- *CP. Developments in the Control of Quality by Statistical Methods. R. E. Wareham, General Elec. Co.
- *CP. Educational Courses on Quality Control. Paul R. Rider, Washington Univ.
- *CP. Application of Statistical Principles to Acceptance Inspection of Ordnance Materiel. Captain A. R. Burgess
- 44-113. The Application of Statistics to Dielectrics. C. M. Summers and K. E. Ross, General Elec. Co. 10 cents (by mail 15 cents).
- *CP. Statistical Methods for Quality Control. Joseph Manuel, Westinghouse Elec. and Mfg. Co.

12:15 p.m.—Luncheon Meeting — Invitations to St. Louis Electrical Board of Trade

Gold Room

Address, "Aviation and the Electrical Engineer." Lieutenant Colonel T. B. Holliday, U. S. Army Air Forces.

Summer Technical Meeting

2:00 p.m.—Conference of Officers, Delegates, and Members

Gold Room

R. M. PFALZGRAFF, Vice-Chairman, Sections Committee, Presiding

Opening Remarks by Chairman

The Relation of Section and National Activities

Dr. Nevin E. Funk, President, AIEE

Remarks by President-Elect, AIEE

District Activities. H. H. Henline, National Secretary, AIEE

The Enhancement of the Professional Status of the Engineer—"WILL YOU HELP?" Everett S. Lee, Chairman, ECPD

Sections Committee Activities. G. W. Bower, Chairman, Sections Committee

Intermission

Section Finance. T. F. Barton, Chairman, Finance Committee

Discussion by Delegates

Section Membership Activity. J. H. Pilkington, Chairman, Membership Committee

Discussion by Delegates

Section Papers and Prize Awards. F. A. Cowan, Chairman, Committee on Award of Institute Prizes

Discussion by Delegates

General Discussion by Delegates

Intermission

The Rendezvous Arduous. A Portrayal of the Executive Committee in Session, Utopia Section, AIEE. C. S. Schifreen, Chairman

F. J. Berger, Vice-Chairman (Paper & Meetings Committee)

A. C. Muir, Secretary-Treasurer

W. R. Clark, Past-Chairman

Executive Committee and Chairmen

W. F. Henn (Entertainment) G. W. Bower (Membership)

L. E. Howard (Publicity) M. D. Hooven (Sub-Section)

2:00 p.m.—Power Transmission

Ivory Room

H. E. WULFING, Presiding

44-114. The Measurement of Lightning Currents in Direct Strokes. G. D. McCann, Westinghouse Elec. Mfg. Co. 15 cents (by mail 20 cents).

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American Institute of Electrical Engineers

- 44-115. Transmission-Line Electrical Loadings. S. B. Crary, General Elec. Co. 20 cents (by mail 25 cents).
- 44-116. Ring Buses for Generating and Transmission Stations. E. L. Michelson and J. P. Gallassini, Commonwealth Edison Co. 15 cents (by mail 20 cents).
- 44-117. Capacitor Installation at Newport News. V. R. Parrack, Virginia Public Service Co.; E. L. Harder, Westinghouse Elec. and Mfg. Co. 20 cents (by mail 25 cents).
- 44-118. Capacitors, Condensers, and System Stability. J. W. Butler, T. W. Schroeder, W. Ridgway, General Elec. Co. 25 cents (by mail 30 cents).
- 44-119. A Method of Approach to the Consideration of Power Distribution System Costs. O. B. Falls, Jr., General Elec. Co. 15 cents (by mail 20 cents).

2:00 p.m.—Aircraft Ignition and Auxiliaries

Crystal Room

Lt Colonel T. B. HOLLIDAY, Presiding

- 44-112. Aircraft Storage Battery Design. J. L. Rupp, National Battery Co. 10 cents (by mail 15 cents).
- 44-121. Battery Booster Coils for Airplane Engine Ignition Systems. A. V. Alvino, Bendix Aviation Corp. 10 cents (by mail 15 cents).
- 44-123. Dimensional Study of Light-Weight Motors for Aircraft. W. J. Morrill, Electric Motors and Specialties Co. 10 cents (by mail 15 cents).
- 44-124. Auxiliary Power Plant Requirements. L. E. O'Neil, Andover Motors Corp. 10 cents (by mail 15 cents).

2:00 p.m.—Electric Welding

Room 1

J. H. LAMPE, Presiding

- 44-101. Rating of Electric Equipment under Intermittent Load. Myron Zucker, Mackworth G. Rees, Inc. 20 cents (by mail 25 cents).
- 44-125. An Improved Electronic Control for Capacitor Discharge Resistance Welding. H. J. Bichsel, E. T. Hughes, Westinghouse Elec. and Mfg. Co. 20 cents (by mail 25 cents).
- 44-105. The Design of Low-Voltage Welding Power Distribution. C. A. Adams, J. R. Fetcher, A. C. Johnson, E. G. Budd Mfg. Co. 25 cents (by mail 30 cents).
- *CP. Welder Power Supply—A Problem of Coordination. R. O. Askey, E. R. Hendrickson, Public Service Co. of Northern Ill.

Wednesday, June 28

10:00 a.m.—General Session

Gold Room

President NEVIN E. FUNK, Presiding

Commemoration of Important Anniversaries

IEC 40th Anniversary

AIEE 60th Anniversary

Morse Telegraph Centennial

Address: "The Engineer's Present and Future Responsibilities." Dr. William McClellan, Past President, AIEE

2:00 p.m.—Morse Telegraph Centennial

Gold Room

H. A. AFFEL, Presiding

- 44-127. American Telegraphy after 100 Years. F. E. d'Humy, P. J. Howe, Western Union Telegraph Co. 25 cents (by mail 30 cents).
- 44-126. Developments in the Field of Cable and Radio Telegraph Communications. Haraden Pratt, Mackay Radio and Telegraph Co.; J. K. Roosevelt, All America Cables and Radio, Inc. 10 cents (by mail 15 cents).
- 44-128. Telegraphy in the Bell System, J. A. Duncan, American Tel. and Tel. Co.; R. D. Parker, Bell Tel. Labs., Inc.; R. E. Pierce, American Tel. and Tel. Co. 25 cents (by mail 30 cents).

2:00 p.m.—Power Cables

Ivory Room

R. J. WISEMAN, Presiding

- 44-130. Impulse Strength of Insulated Power Cable Circuits. Herman Halperin, Commonwealth Edison Co.; G. B. Shanklin, General Elec. Co. 25 cents (by mail 30 cents).
- 44-131. Cyclic Movement of Cable—Its Causes and Effects on Cable Sheath Life. C. S. Schifreen, Philadelphia Elec. Co. 25 cents (by mail 30 cents).
- 44-132. An Investigation of the Relationship between Temperature and Movement of Cables in Ducts. C. T. Nicholson, T. J. Brosnan, Buffalo Niagara Elec. Corp. 10 cents (by mail 15 cents).
- 44-133. Gas-Filled Cable Research and Experience. G. B. Shankin, General Elec. Co. 10 cents (by mail 15 cents).
- 44-134. Operation of Low-Pressure Gas-Filled Cable. C. T. Hatcher, Consolidated Edison Co. of N. Y., Inc. 10 cents (by mail 15 cents).

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American Institute of Electrical Engineers

2:00 p.m.—Aircraft Lighting and Instruments

Crystal Room

F. O. WISMAN, Presiding

- 44-136. Gaseous Discharge Lamps for Airplane Lighting Service. E. W. Beggs, Westinghouse Elec. and Mfg. Co. 10 cents (by mail 15 cents).
- 44-91. Lighting Required for Commercial Airline Aircraft. W. A. Petrasek, American Airlines, Inc. 10 cents (by mail 15 cents).
- 44-138. Aircraft Engine Torque Meters. F. W. Godsey, Jr., B. F. Langer, Westinghouse Elec. Mfg. Co. 10 cents (by mail 15 cents).
- 44-149. Magnesyn Remote Indication. R. S. Childs, Bendix Aviation Corp. 10 cents (by mail 15 cents).

2:00 p.m.—Industrial Control

Room 9

F. E. HARRELL and E. H. ALEXANDER, Presiding

- 44-142. Modern Cargo Winch Control for Use on Victory Ships. F. H. Holt, General Elec. Co. 15 cents (by mail 20 cents)
- *CP. Design Problems and Control Devices to Meet High Intensity Shock. C. C. Wilson, Ward Leonard Electric Co.
- 44-141. Industrial Control: Shunted-Armature Connection for a D-C Shunt Motor. G. F. Leland, L. T. Rader, General Elec. Co. 10 cents (by mail 15 cents).
- *CP. Machine Tool Electrical Standards. D. K. Frost, Mattison Machine Works.
- 44-140. Insulation Temperature Standards for Industrial Control Coils. B. W. Erikson, General Elec. Co. 10 cents (by mail 15 cents).
- 44-139. The Degree of Short-Circuit Protection Afforded Small Low-Voltage A-C and D-C Starters by Means of Fuses and Circuit Breakers. B. W. Jones, General Elec. Co. 10 cents (by mail 15 cents).

2:00 p.m.—Educational Problems in Engineering Colleges and Their Effects in Industry

Room 7

ROBIN BEACH, Presiding

- *CP. Postwar Courses and Curricula in Electrical Engineering. R. G. Kloeffler, Kansas State College.
- *CP. Interpretation of Present Hiatus in Engineering Education on Industrial Postwar Demands for Engineers. J. L. Hamilton, Assistant Vice-President, Century Electric Co.

Summer Technical Meeting

3:30 p.m.—Clinic on College and High School Student Counseling

Room 7

S. L. HENDERSON, Presiding

- *CP. Co-operation of Sections. G. W. Bower, Chairman, Sections Committee
- *CP. Values of Counseling to High School Students. T. L. Jones, Chairman, Educational Committee, St. Louis Section
- *CP. High School Students Counseling in Metropolitan New York Area. S. P. Shackleton, Chairman, Student Guidance Committee, N. Y. Section
- *CP. Ways and Means of Sections Co-operating with College AIEE Branches. R. C. Gorham, Univ. of Pittsburgh

Thursday, June 29

9:30 a.m.—Symposium on Electronic Frequency Converters

Gold Room

JOHN GROTZINGER, Presiding

- 44-143. History and Development of the Electronic Power Converter. E. F. W. Alexanderson, E. L. Phillipi, General Elec. Co. 10 cents (by mail 15 cents).
- 44-144. The Electronic Converter for Exchange of Power. F. W. Cramer, Carnegie-Illinois Steel Corp.; L. W. Morton, A. G. Darling, General Elec. Co. 25 cents (by mail 30 cents).
- 44-145. Design of an Electronic Frequency Changer. C. H. Willis, Princeton Univ.; R. W. Kuenning, E. F. Christensen, B. D. Bedford, General Elec. Co. 20 cents (by mail 25 cents).
- 44-146. Switchgear and Control for an Electronic Power Converter. W. N. Gittings, A. W. Bateman, General Elec. Co. 10 cents (by mail 15 cents).
- 44-147. Pentode Ignitrons for Electronic Power Converters. H. C. Steiner, J. L. Zehner, H. E. Zuvers, General Elec. Co. 20 cents (by mail 25 cents).

9:30 a.m.—Aircraft Instruments

Crystal Room

F. O. WISMAN, Presiding

- 44-148. Totalizing Contents of Aircraft Fuel Tanks. J. R. Macintyre, General Elec. Co. 10 cents (by mail 15 cents).
- 44-151. Electrically Operated Gyroscopic Instruments. H. Konet, Bendix Aviation Corp. 10 cents (by mail 15 cents).

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Thursday—continued

- 44-150. Design Considerations in Aircraft Instruments to Meet War Service. C. F. Savage, J. M. Whittenton, General Elec. Co. 20 cents (by mail 25 cents).
- 44-152. A Unique Moving Magnet Ratio Instrument. F. R. Sias, D. B. Fisk, General Elec. Co. 10 cents (by mail 15 cents).
- 44-153. Recent Advances in Aircraft Tachometer Design. R. G. Ballard, C. P. Hall, General Elec. Co. 10 cents (by mail 15 cents).

9:30 a.m.—Heating Houses Electrically

Ivory Room

W. F. OGDEN, Presiding

- 44-154. Load Calculation Procedure for Electric Panel Space Heating. B. F. Raber, F. W. Hutchinson, Univ. of Calif. 25 cents (by mail 30 cents).
- 44-155. Electrothermal Space Heating and Air Conditioning. G. H. Krueger, Bonneville Power Adm. 10 cents (by mail 15 cents).
- 44-156. Possibilities of Heat Pumps for Heating Homes. R. U. Berry, General Elec. Co. 10 cents (by mail 15 cents).

9:30 a.m.—Conference on Temperature Standards

F. E. HARRELL and C. P. POTTER, Presiding

Room 1

The purpose of the conference sessions is to review temperature standards including hot spot allowances for rotating machines in the fractional and integral horsepower sizes. These sessions represent a continuation of the activity started at the winter technical meeting in New York. There will be a series of conference papers presented giving actual test results of temperature tests on various types and sizes of motors.

Those expected to present conference papers are as follows:

- L. E. Hildebrand, General Elec. Co.
- L. H. Hirsch, Century Elec. Co.
- H. M. Joy, Master Elec. Co.
- T. C. Lloyd, Robbins and Meyers, Inc.
- R. F. Munier, Emerson Elec. Mfg. Co.
- F. D. Phillips, General Elec. Co.
- M. L. Schmidt, General Elec. Co.
- P. H. Trickey, Diehl Mfg. Co.
- C. P. Potter, Wagner Elec. Corp.

2:00 p.m.—Conference on Temperature Standards —continued

Room 1

Summer Technical Meeting

2:00 p.m.—Switchgear

Crystal Room

J. B. MacNEILL, Presiding

- 44-157. Protection of Large D-C Machines by Means of High-Speed Circuit Breakers. J. Elmer Housley, Aluminum Co. of America; Otto Jensen, I-T-E Circuit Breaker Co. 10 cents (by mail 15 cents).
- 44-102. A Pneumatic Mechanism for Outdoor Oil Circuit Breakers. L. J. Linde, E. B. Rietz, General Elec. Co. 10 cents (by mail 15 cents).
- 44-158. Improved Selective Tripping of Low-Voltage Air Circuit Breakers. C. F. West, Westinghouse Elec. and Mfg. Co. 10 cents (by mail 15 cents).
- 44-97. Fusing Practices on Distribution Systems, Part II. J. S. Parsons, J. M. Wallace, Westinghouse Elec. and Mfg. Co. 10 cents (by mail 15 cents).
- 44-159. Fault Protection on Shipboard A-C Power Distributions Systems. H. G. Rickover, P. N. Ross, Bureau of Ships, Navy Department. 25 cents (by mail 30 cents).

2:00 p.m.—Electronics and Measurements

Gold Room

C. L. Dawes, Presiding

- 44-78. Development of Excitron-Type Rectifier. H. Winograd, Allis-Chalmers Mfg. Co. 25 cents (by mail 30 cents).
- 44-11. Analysis of Rectifier Circuits. E. F. Christensen, C. C. Herskind, General Elec. Co.; C. H. Willis, Princeton Univ. 25 cents (by mail 30 cents).
- 44-160. Operation of Rectifiers under Unbalanced Conditions. E. F. Christensen, M. M. Morack, General Elec. Co. 10 cents (by mail 15 cents).
- 44-161. A Resonant Cavity Method for Measuring Dielectric Properties at Ultrahigh Frequencies. C. N. Works, T. W. Dakin, F. G. Boggs, Westinghouse Elec. and Mfg. Co. 20 cents (by mail 25 cents).
- *CP. The Design and Testing of Radio Frequency Coaxial Cables Parts I and II. N. D. Kenney and P. H. Ware, Simplex Wire & Cable Co.

2:00 p.m.—Conference on Experiences with Electric House Heating

Ivory Room

W. F. OGDEN, Presiding

- *CP. Electrical Heating of Small Homes in the Tennessee Valley. B. H. Martin, Tennessee Valley Authority.
- *CP. Reverse Refrigeration Applied to a New Haven Office Building. E. H. Walton; C. A. Williams, United Illuminating Co.

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American Institute of Electrical Engineers

4:00 p.m.—Open Meeting of Committee on Domestic and Commercial Applications

Ivory Room

W. F. OGDEN, Chairman

- *CP. Report of Subcommittee on Farm Application. C. H. Leatham, Monongahela West Penn Public Serv. Co.
- *CP. Report of Subcommittee on Hazards to Farm Animals. W. B. Buchanan, Hydro-Electric Power Comm. of Ont.
- *CP. Report of Subcommittee on Wiring Matters. Wesley Weinerth, Philadelphia Elec. Co.

Friday, June 30

9:30 a.m.—Electrochemistry and Electrometallurgy

Gold Room

W. C. KALB, Presiding

- 44-163. The Copper Oxide Rectifier in Electrochemical Work. I. R. Smith, Westinghouse Elec. and Mfg. Co. 15 cents (by mail 20 cents).
- 44-164. Electronic Regulator for Arc Furnaces. J. E. Reilly, C. E. Valentine, Westinghouse Elec. and Mfg. Co. 10 cents (by mail 15 cents).
- 44-165. Characteristics of Chlorinated Impregnants in D-C Paper Capacitors. L. J. Berberich, C. V. Fields, R. E. Marbury, Westinghouse Elec. and Mfg. Co. 20 cents (by mail 25 cents).
- 44-100. Treatment and Casting of Metals by Electromagnetic Forces. W. W. Hoke, Garden City, N. Y. 15 cents (by mail 20 cents).
- 44-166. Induction Heating—Selection of Frequency. N. R. Stansel, General Elec. Co. 15 cents (by mail 20 cents).
- 44-167. Application of Industrial Generators to Induction Heating. E. H. Browning, Westinghouse Elec. and Mfg. Co. 10 cents (by mail 15 cents).
- 44-168. Surface Heating by Induction. H. F. Storm, Allis-Chalmers Mfg. Co. 20 cents (by mail 25 cents).
- 44-99. Voltage Transients in Arc-Furnace Circuits. Subcommittee on Transient Voltages in Arc Furnace Circuits. 15 cents (by mail 20 cents).

Summer Technical Meeting

9:30 a.m.—Transformers

Crystal Room

F. E. HARRELL and M. S. OLDACRE, Presiding

- 44-169. Progress in Impulse Testing of Transformers. J. H. Hagenguth, General Elec. Co. 25 cents (by mail 30 cents).
- 44-170. High-Voltage, Compressed-Gas Power Transformers. H. M. Hobart, Consulting Engineer. 10 cents (by mail 15 cents).
- 44-171. The Design and Operating Characteristics of Modern Dry-Type Air-Cooled Transformers. W. W. Satterlee, Westinghouse Elec. and Mfg. Co. 10 cents (by mail 15 cents).
- 44-103. Hot-Spot Temperatures in Dry-Type Transformer Windings. H. C. Stewart, L. C. Whitman, General Elec. Co. 20 cents (by mail 25 cents).
- *CP. Standard Current Transformers with One-Ampere Secondary. L. F. Hunt, J. H. Vivian, Southern Calif. Edison Co., Ltd.

9:30 a.m.—Industrial Power Applications

Room 1

JOHN GROTZINGER, Presiding

- 44-178. Extending the Use of Shunt Capacitors by Means of Automatic Switching. W. H. Cuttino, Westinghouse Elec. and Mfg. Co. 15 cents (by mail 20 cents).
- 44-173. Automatic Control and Switching Equipment for Capacitor Banks and Its Application. T. W. Schroeder, W. C. Bloomquist, General Elec. Co. 15 cents (by mail 20 cents).
- *CP. Electric Power Distribution for Industrial Plants. Report of Committee on Industrial Power Applications
- *CP. Dodge Chicago Plant's Electric Power Distribution Scheme with Airplane Engine Testing Power Recovery Circuits. E. L. Bailey, Chrysler Corp.

2:00 p.m.—Relays

Gold Room

J. B. MacNEILL, Presiding

- 44-104. Bibliography of Relay Literature 1940-1943. Working Group on Relay Bibliography, Relay Subcommittee. 25 cents (by mail 30 cents).
- 44-172. A New Frequency Relay for Power System Applications. H. J. Carlin, J. L. Blackburn, Westinghouse Elec. and Mfg. Co. 15 cents (by mail 20 cents).
- 44-93. Current Transformer Output and Application Charts. R. Koller, Pacific Elec. Mfg. Corp. 10 cents (by mail 15 cents).

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Friday—continued

- 44-94. The Evolution of Standard Lines of Current Transformers for High Overcurrent Capacity. E. C. Wentz, Westinghouse Elec. and Mfg. Co. 20 cents (by mail 25 cents).
- 44-135. A New Carrier Relaying System. T. R. Halman, A. F. Drompp, Detroit Edison Co.; S. L. Goldsborough, H. W. Lensner, Westinghouse Elec. and Mfg. Co. 10 cents (by mail 15 cents).

2:00 p.m.—Land Transportation

Ivory Room

A. G. OEHLER, Presiding

- 44-92. Modern Motive Power for the Sorocabana Railway. R. L. Chapman, O. K. Kjolseth, General Elec. Co. 10 cents (by mail 15 cents).
- 44-96. Economics of Trolley Coach Operation. G. M. Woods, Westinghouse Elec. and Mfg. Co. 10 cents (by mail 15 cents).
- *CP. A New Development in Dynamic Braking for PCC Cars. H. G. Moore, General Elec. Co.

2:00 p.m.—Motors and Related Subjects

Room 1

J. F. CALVERT, Presiding

- 44-174. Interlamination Resistance. J. F. Barton, Carnegie-Illinois Steel Corp. 10 cents (by mail 15 cents).
- 44-175. Transient Performance of Induction Motors. F. J. Maginniss, N. R. Schultz, General Elec. Co. 20 cents (by mail 25 cents).
- 44-176. Differential Leakage with Respect to the Fundamental Wave and to the Harmonics. M. M. Liwschitz, Westinghouse Elec. and Mfg. Co. 25 cents (by mail 30 cents).
- 44-177. The Nature of Vibration in Electrical Machinery. T. D. Graybeal, Univ. of Calif. 15 cents (by mail 20 cents).

*CP.: Conference presentation; no advance copies of papers available; not intended for publication in TRANSACTIONS.

†ACO.: Advance copies only available; not intended for publication in TRANSACTIONS.
