

**American Institute of
Electrical Engineers**



**SUMMER
GENERAL
MEETING**

Program

MONTREAL, CANADA

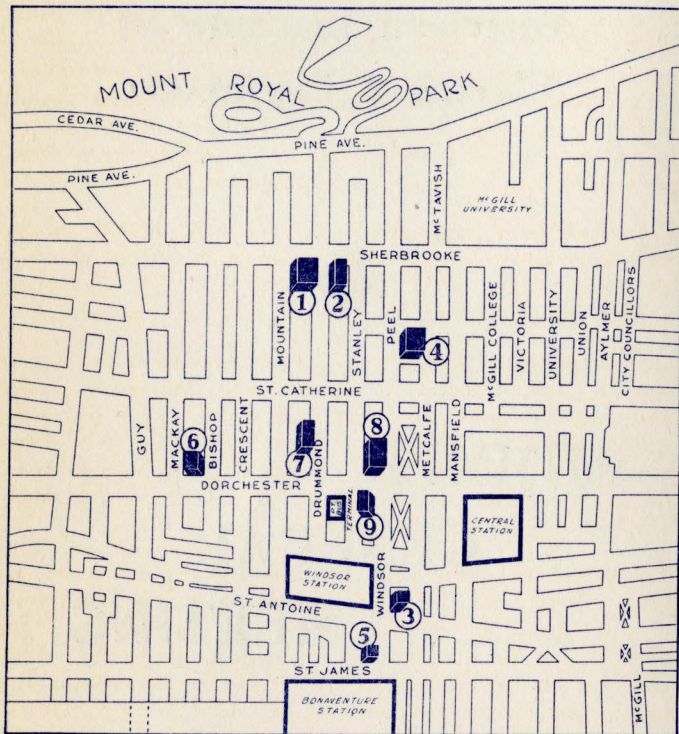
JUNE 9-13

1947

Meeting Headquarters

MOUNT ROYAL HOTEL

GENERAL INFORMATION



LEGEND

- 1) Ritz Carlton Hotel
- 2) Berkeley Hotel
- 3) New Carlton Hotel
- 4) Mount Royal Hotel
- 5) Queens Hotel
- 6) Ford Hotel
- 7) La Salle Hotel
- 8) Windsor Hotel
- 9) Laurentian Hotel (under construction)

Note: The Engineering Institute of Canada is located at 2050 Mansfield Street—about two blocks from the Mount Royal Hotel.

The Program: For the 62nd Annual Summer General Meeting of the AIEE, to be held in Montreal, Quebec, June 9-13, 1947, the Summer Meeting Committee has planned a program of entertainment, inspection trips, and recreation, in addition to the excellent technical sessions, which should make the meeting attractive as a vacation as well as of benefit professionally. See separate booklet for more complete information about the entertainment, golf, and sports.

Please register promptly on arrival at the meeting on the mezzanine floor. A registration fee of \$2.00 will be charged all nonmembers, except Enrolled Students, EIC Members, and the immediate families of AIEE and EIC 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 June 27. The original, typewritten, double-spaced copy, complete with original illustrations and two carbon copies with photostats 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 by members at the registration desk or at Institute headquarters at prices indicated. Nonmember prices 100% more than listed or by mail 100% more than mail price less 5¢ on each paper. 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 as AIEE proceedings and in the TRANSACTIONS.

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SUMMER MEETING COMMITTEE

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Subcommittee Chairmen

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E. Van Koughnet		C. E. Gelinás	
J. L. Clarke, <i>Sports</i>		George Kirlin, <i>Boat Trip</i>	
Henri Gaudefroy, <i>Students</i>		C. A. Laverty, <i>Smoker</i>	
R. H. Hobner, <i>Hotels</i>		L. E. Potvin, <i>Finance</i>	
A. L. Hough, <i>Publicity</i>		H. H. Remine, <i>Ladies</i>	
A. W. Howard, <i>Inspection Trips</i>		J. D. Sylvester, <i>Transportation</i>	
W. R. Way, <i>Meetings and Papers</i>			

ENTERTAINMENT, GOLF, AND TRIPS

(Daylight Saving Time)

Monday, June 9

- 8:30 a.m. Registration (Mezzanine).
9:00 a.m. Ladies' Registration (Mezzanine).
Ladies "Get-Together" (Salon F).
12:30 p.m. Opening Luncheon (Normandie Roof).
Welcome to the City. Mayor Houde.
Welcome to the Meeting and to the Dominion
of Canada. Dr. de Gaspé Beaubien, Chairman,
1947 Summer Meeting Committee. Tickets \$2.00.

Tuesday, June 10

- 12:00 m. Regular Luncheon (Normandie Roof).
12:15 p.m. Busses leave for Golfers.
3:30 p.m. Ladies' Fashion Show and Tea at T. Eaton Co.
Restaurant. No charge.
8:00 p.m. Smoker and Entertainment (Ballroom and Nor-
mandie Roof). Tickets \$6.00.
8:30 p.m. Ladies' Card Party and Entertainment (York
Room—Windsor Hotel). No charge.

Wednesday, June 11

- 10:00 a.m. Laurentian Mountains Tour.
10:15 a.m. Busses Leave for Dorval Airport on Inspection
Trip to Shipshaw. Cost, \$40.00 per person.
12:00 m. Regular Luncheon (Normandie Roof).
12:00 m. Beauharnois Inspection trip. Luncheon at Beau-
harnois Power Plant. No charge.
12:15 p.m. Busses leave for Golfers.
2:00 p.m. Scenic Tour of Montreal. Regular rates.
2:00 p.m. Cyclotron Inspection Trip (5 min. walk).

Thursday, June 12

- 12:00 m. Regular Luncheon (Normandie Roof).
1:00 p.m. Ladies' Scenic Tour of Montreal and Tea at
Botanical Gardens. No charge.
6:30 p.m. President's Reception (Ballroom).
7:30 p.m. Banquet (Normandie Roof). Tickets \$4.00.
10:00 p.m. Dance (Ballroom). Tickets \$1.50.

Friday, June 13

- 12:00 m. Regular Luncheon (Normandie Roof).
12:00 m. Golf Prizes Luncheon (location to be an-
nounced).
6:00 p.m. Saguenay Trip. Boat leaves Victoria Pier and
returns to Montreal Monday, June 16, at 7:00
a.m. Cost \$40.00 to \$50.00 per person.

TECHNICAL PROGRAM

Monday, June 9

8:30 a.m.—Registration

Mezzanine

9:30 a.m.—Land Transportation

Salon "D"
W. A. BRECHT, Presiding

- 47-153. Modern Railway Passenger-Car Auxiliary-Power Equipment. D. R. MacLeod, Jack Hause, General Elec. Co. 25 cents (by mail 30 cents).
- 47-154. The Design of New York Subway Motors for Dynamic Braking. B. A. Widell, General Elec. Co. 15 cents (by mail 20 cents).
- 47-147. Trolley Coaches and PCC Street Cars Provide Successful City Transit. W. J. Clardy, Westinghouse Elec. Corp. 15 cents (by mail 20 cents).
- 47-155. Proposed Rapid Transit System for Toronto. W. E. P. Duncan, Toronto Transportation Comm. 25 cents (by mail 30 cents).
- 47-148. Motor Control for New N.Y.C.T.S. Subway Cars. L. G. Riley, Westinghouse Elec. Corp. 15 cents (by mail 20 cents).

9:30 a.m.—Conference on Education

Salon "I"
J. G. TARBOUX, Presiding

- CP.** Graduate Work in Electrical Engineering. R. W. Sorensen, California Inst. of Technology.
- CP.** The Five-Year Electrical Engineering Curriculum. E. E. Dreese, Ohio State Univ.
- CP.** Young Engineers in Industry—Their Collegiate Background and Industrial Training. H. N. Muller, Westinghouse Elec. Corp.
- CP.** A Means of Demonstrating the Behavior of Conventional Types of Instruments in Circuits Having Potentials and Currents of Irregular Waveform. E. E. Moyer, General Elec. Co.

9:30 a.m.—Industrial Voltage Requirements

Brittany Room
C. C. WHIPPLE, Presiding

- 47-157. Report on Industrial Voltage Requirements by AIEE AC0.* Committee on Industrial Power Applications. Prepared by Subcommittee on Industrial Voltage Requirements. Presentation by D. L. Beeman. 35 cents (by mail 40 cents).
- 47-122. Data on the High-Frequency Resistance of Coils. W. F. Witzig, Westinghouse Elec. Corp. 25 cents (by mail 30 cents).

- 47-158. Dielectric Heating, The Measurement of Loss under Rising Temperature. J. B. Whitehead, The Johns Hopkins Univ. 15 cents (by mail 20 cents).
- 47-138. Electric Furnace Practice in Canada. J. L. Balleny, Canadian General Elec. Co., Ltd. 25 cents (by mail 30 cents).
- 47-159. High-Frequency Heating in the Radio Spectrum. AC0.* W. C. Rudd, Induction Heating Corp. 20 cents (by mail 25 cents).

10:30 a.m.—Delegates Get-Together

Salon "B"
C. S. PURNELL, Presiding

One of the most important benefits of delegates attending the summer general meeting is the opportunity afforded each delegate to become acquainted personally with all the other delegates, Institute officers, and the members of the sections committee. In the conversations resulting from such acquaintanceships, much information of value is exchanged.

The sections committee members will be on hand to see that all delegates become acquainted at this informal get-together. This new feature for the delegates will enable them to become acquainted early, so that they may reap the benefits of these acquaintanceships during the entire meeting.

2:00 p.m.—Conference on Section Operation and Management

There will be three separate conferences with parallel meetings, one for the larger Sections, one for the intermediate Sections, and one for the smaller Sections. Delegates are requested to attend meeting to which their Section is assigned. There will be no formal presentations at these meetings. Each delegate should come prepared to discuss informally the activities of his Section. The delegates will benefit from these conferences in direct proportion to their participation. Each meeting will be developed by discussion and questions from the floor covering the following subjects:

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| 1. Safety Activity | 3. Student Activities |
| 2. Section Finance | 4. Subsections |

Five-Minute Intermission. Distribution of travel vouchers to delegates.

- 5. Educational Courses and Lectures
- 6. Prize Paper Competition
- 7. Inspection Trips and Social Activities
- 8. Local Councils of Engineering and Technical Societies

Five-Minute Intermission. Collection of signed travel vouchers.

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| 9. Section Publicity | 11. Fellowship |
| 10. Section Programs | 12. Other Activities |

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Larger Sections

Brittany Room
R. M. PFALZGRAFF, Presiding
W. F. HENN, Secretary

Intermediate Sections

Salon "D"
G. W. BOWER, Presiding
H. H. SHEPPARD, Secretary

Smaller Sections

Salon "B"
A. C. MUIR, Presiding
JOHN GAMMELL, Secretary

Tuesday, June 10

9:30 a.m.—Conference on Student Branches

Salon "B"
J. F. CALVERT, Presiding

9:30 a.m.—Conference on International Standardization

Salon "D"
W. P. DOBSON, Presiding

This conference is sponsored by the standards committee of the AIEE. The aim will be to collect as much information as possible regarding American and European Standards for switchgear, motors, and transformers, and to obtain discussion by international authorities on standardization directed towards a comparison of present standards. It is hoped that the information obtained will be of value to the International Electrotechnical Commission International Committees in their future work and to the International Organization for Standardization.

- CP.** Address by a representative of the International Organization for Standardization.
- CP.** International Electrotechnical Commission. L. F. Adams, President, United States National Committee.
- CP.** Address. Dr. E. C. Crittenden, Past President, United States National Committee, IEC.
- CP.** Swedish Standards Specifications for High-Voltage Circuit Breakers. Dr. A. U. Lamm, Allmanna Svenska Elektriska Aktiebolaget, Ludvika, Sweden.
- 47-161. On Definitions of Magnitudes Characterizing the Behavior of Circuit Breakers under Abnormal Conditions in American and Other Standards. S. Gerszonowicz, Univ. of Montevideo, Uruguay. 25 cents (by mail 30 cents).

9:30 a.m.—Power Supply in Paper Mills

Brittany Room
L. A. UMANSKY, Presiding

- CP.** Power Tie with Utility. A. P. Schnyder, George F. Hardy and Son.
- CP.** High-Voltage Distribution in Paper Mills. G. H. McHenry, J. L. McKeever, Canadian General Elec. Co.
- CP.** Low-Voltage Power Distribution in Paper Mills. A. C. Bird, Hardy S. Ferguson Co.; W. C. Bloomquist, General Elec. Co.
- 47-129. Automatic Operation of Electric Boilers. M. Eaton, Shawinigan Chemicals, Ltd. 20 cents (by mail 25 cents).
- CP.** Electric Boilers from Utility Point of View. L. B. Stirling, Shawinigan Water Pr. Co.

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

Windsor Hotel—York Room
R. M. PFALZGRAFF, Presiding
A. C. MUIR, Secretary

Opening Remarks by Chairman.

1. Welcome to Canada. F. L. Lawton, Vice-President, Canadian District.
2. Experience Gained in Section Visits. J. Elmer Housley, President, AIEE.
3. An American Engineering Association. B. D. Hull, Nominee for President.
4. AIEE Publications Services. G. Ross Henninger, Editor.
5. Transfers—A Continuing Program. M. J. McHenry, Chairman, Committee on Transfers.
6. The Section of Tomorrow (A review of the Sections Committee program, projected into the future). G. W. Bower, Chairman, Sections Committee.

Ten-minute Intermission.

7. The District of Tomorrow. H. H. Henline, Secretary, AIEE.
8. Section Membership Activity and Its Future Possibilities. Tomlinson Fort, Chairman, Membership Committee.
9. Institute Finance and Its Relation to the Section of Tomorrow. D. A. Quarles, Chairman, Finance Committee.
10. Educational Courses Conducted by the Section of Tomorrow. J. G. Tarboux, Chairman, Committee on Education.

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American Institute of Electrical Engineers

11. Section-Branch Co-operation—Essential to the Institute of Tomorrow. R. G. Porter, Member, Sections Committee.
12. The Institute of Tomorrow. Everett S. Lee, Former Vice-President and Director, AIEE.

2:00 p.m.—Conference on International Standardization

Salon "D"

W. P. DOBSON, Presiding

- CP.** AIEE Standards for Preferred Voltages. C. A. Powel, Westinghouse Elec. Co.
- CP.** Standards for Induction Motors—American and Foreign. W. R. Hough, Reliance Elec. Engg. Co.
- CP.** A Review of International Transformer Standards and Applications. A. Boyajian, H. S. Hubbard, H. M. Jalonack, and V. M. Monstinger, General Elec. Co.

2:00 p.m.—Equipment in Paper Mills

Brittany Room

L. A. UMANSKY, Presiding

- 47-130. The Application of Synchronous and Induction Motors to Chippers. R. R. Baker, M. R. Lory, Westinghouse Elec. Corp. 25 cents (by mail 30 cents).
- CP.** Electrical Equipment for Paper Machines. H. W. Rogers, General Elec. Co.
- 47-167. Electrical Equipment in the Finishing Room. F. ACO.* Winterburn, Howard Smith Paper Mills, Ltd. 15 cents (by mail 20 cents).
- CP.** Electrical Maintenance in a News-Print Mill. John Eyton, Abitibi Power and Paper Co., Ltd.

Wednesday, June 11

10:00 a.m.—Annual Meeting

Cardy Hall

President J. ELMER HOUSLEY, Presiding

1. Report of Board of Directors. H. H. Henline, Secretary.
2. Report of Treasurer, W. I. Slichter.
3. Recognition of individuals who have become Fellows during the past year. President J. Elmer Housley.
4. Reports of Committee of Tellers on votes for nominees for AIEE offices.

Summer General Meeting

5. (a) Introduction of, and presentation of President's badge to Blake D. Hull.
(b) Response by Mr. Hull.
6. Report on Institute Prizes for Papers. M. D. Hooven, Chairman, Committee on Award of Institute Prizes.
7. Presentation of Lamme Medal to John B. MacNeill, Manager of the Switchgear and Control Division, Westinghouse Electric Corp., "For his foresight, leadership, and creative contribution in the development of switching equipment."
 - (a) The Establishment of the Medal. Dr. John C. Parker, Chairman, Lamme Medal Committee.
 - (b) The Career of the Medalist. S. M. Dean, Chief Engineer of the System, Detroit Edison Co.
 - (c) Presentation of Medal and Certificate by President Housley.
 - (d) Response by Mr. MacNeill.
8. Any other business that may be presented.
9. President's Address. J. Elmer Housley.

2:00 p.m.—Conference on Technical Group Activities in the Sections

Brittany Room

A. C. MUIR, Presiding
R. G. PORTER, Secretary

1. Opening Remarks by Chairman.
2. The Opportunities of Technical Group Operation. G. W. Bower, Chairman, Sections Committee.
3. Description of Technical Group Operating Plans of Representative Sections and Subsections.
Ten-minute Intermission.
4. Co-operation with Technical Committees of the Institute will be covered by several short talks on the following subjects:
 - (a) Material for Use by Technical Groups and the Sections. C. W. Lethert, Member, Section Committee.
 - (b) Reports of Technical Committee Members at Technical Group or Section Meetings. J. D. Tebo, Chairman, Committee on Basic Sciences.
 - (c) Active Participation of Members of Institute Technical Committees in the Operation of Technical Groups in the Sections. Dr. W. R. Clark, Chairman, Philadelphia Section.
 - (d) Technical Groups As a Source of Additional Technical Papers for the Institute. W. R. Hough, Member, Sections Committee.
 - (e) Technical Groups, a Source for Members for Institute Technical Committees. A. H. Frampton, Member, Section Committee.

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5. Co-operation—A Two-Way Technical Activity. T. M. Linville, Member, Sections Committee.

An open discussion after each presentation will be an important feature of this conference.

In addition to the Delegates, the Section, District, and Institute officers, the chairmen and members of all Institute committees and all other members interested in technical group activities are invited to attend and participate in this discussion.

2:00 p.m.—Power Transmission and Distribution

Cardy Hall
R. J. WISEMAN, Presiding

- 47-162. Electronic Stabilizer for Power Transmission. E. F. W. Alexanderson, D. C. Prince, General Elec. Co. 15 cents (by mail 20 cents).
- 47-164. The Probable Breakdown Voltage of Paper Dielectric Capacitors. Hamilton Brooks, Westinghouse Elec. Corp. 25 cents (by mail 30 cents).
- 47-116. Metering with Transformer-Loss Compensators. G. B. Schleicher, Philadelphia Elec. Co. 30 cents (by mail 35 cents).
- 47-143. Galloping Conductors and a Method for Studying Them. E. L. Tornquist, C. Becker, Public Service Co. of No. Illinois. 30 cents (by mail 35 cents).

**2:00 p.m.—Servomechanisms
(Closed-Cycle Control Systems)**

Salon "B"
GORDON S. BROWN, Presiding

- 47-110. Solution of the General Voltage Regulator Problem by Electrical Analogy. E. L. Harder, Westinghouse Elec. Corp. 30 cents (by mail 35 cents).
- 47-165. The Analysis and an Optimum Synthesis of Linear Servomechanisms. Donald Herr, Irving Gerst, Control Instrument Co., Inc. 35 cents (by mail 40 cents).
- CP.** High Accuracy Electrical Positioning Systems for Industrial Use. D. E. Garr, General Elec. Co.
- CP.** Self-Balancing Recorders As Servomechanisms. A. J. Williams, Jr., Leeds and Northrup Co.

2:00 p.m.—Modulation

Salon "D"
H. M. TURNER, Presiding

- 47-150. Modulation in Communication. Frank A. Cowan, American Tel. & Tel. Co. 15 cents (by mail 20 cents).
- 47-166. Distortion and Bandwidth Characteristics of Pulse Modulation. H. L. Krauss, P. F. Ordung, Yale Uni. 20 cents (by mail 25 cents).

- 47-131. Pulse Code Modulation. H. S. Black, J. O. Edson, Bell Tel. Labs., Inc. 15 cents (by mail 20 cents).
- 47-152. Distortion in a Pulse Count Modulation (P.C.M) System. A. G. Clavier, P. F. Panter, D. D. Grieg, Federal Tel. & Radio Labs. 35 cents (by mail 40 cents).
- CP.** Demonstration of Various Modulation Methods.

Thursday, June 12

9:30 a.m.—Board of Directors' Meeting

Salon "A".

9:30 a.m.—Hydroelectric Power Generation

Ballroom
A. H. FRAMPTON, Presiding

- 47-120. The Maintenance of Hydro-Electric Generating Units. A. S. Robertson, R. O. Standing, The Hydro-Elec. Pr. Comm. of Ont. 20 cents (by mail 25 cents).
- 47-124. Hydroelectric Power Development in Quebec. F. L. Lawton, Aluminum Co. of Canada, Ltd. 35 cents (by mail 40 cents).
- 47-135. The German Electrical Utility Industry during World War II. J. G. Noest, Consolidated Edison Co. of N. Y., Inc. 30 cents (by mail 35 cents).
- 47-168. Factors in the Economic Supply of Energy in Hydroelectric Systems. A. H. Frampton, G. D. Floyd, The Hydro-Elec. Pr. Comm. of Ont. 20 cents (by mail 25 cents).

9:30 a.m.—Instruments and Measurements

Salon "B"
TRUMAN S. GRAY, Presiding

- 47-119. Quantitative Determination of Magnetic Properties by Use of Cathode-Ray Oscilloscope. Joseph Zamsky, Allis-Chalmers Mfg. Co. 15 cents (by mail 20 cents).
- 47-169. Applications of the Electrodynamical Instrument Mechanism. A. J. Corson, N. P. Millar, General Elec. Co. 20 cents (by mail 25 cents).
- 47-136. A Self-Balancing Capacitance Bridge. A. H. Foley, General Elec. Co. 15 cents (by mail 20 cents).
- 47-151. A Simplified Double-Film Klydonograph with an Improved Coupling Method. J. H. Waghorne, The Hydro-Elec. Pr. Comm. of Ont. 15 cents (by mail 20 cents).

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Thursday - continued

9:30 a.m.—Industrial Control Devices

Brittany Room
E. H. ALEXANDER, Presiding

- 47-133. Dynamic Braking of Two D-C Series Motors. J. D. Leitch, The Elec. Controller & Mfg. Co. 15 cents (by mail 20 cents).
- 47-134. Control of Slip Ring Motors by Means of Unbalanced Primary Voltages. N. L. Schmitz, Cutler-Hammer, Inc. 35 cents (by mail 40 cents).
- 47-141. Some Fundamentals of a Theory of the Transductor or Magnetic Amplifier. A. V. Lamm, Allmanna Svenska Elektriska Aktiebolaget. 25 cents (by mail 30 cents).
- 47-128. Rotating Stability Regulators for Synchronous Motor Drives. W. Schaelchlin, Westinghouse Elec. Corp. 15 cents (by mail 20 cents).

9:30 a.m.—Hazards of Static Electricity

Salon "I"
L. F. ADAMS, Presiding

- CP.** Hazards of Static Electricity with Relation to Explosive Vapors. J. T. W. Babcock, Factory Insurance Association.
- 47-172. The Hazards of Static Electricity in Grain Handling and Grain Processing Plants. C. M. Park, Mutual Fire Prevention Bureau. 15 cents (by mail 20 cents).
- 47-170. Hazards of Static Electricity in Hospital Operating Rooms. H. B. Williams, M.D., Columbia Univ. 15 cents (by mail 20 cents).

12:30 p.m.—Board of Directors' Luncheon

Salon "F"

2:00 p.m.—Power Transmission and Distribution

Ballroom
I. W. GROSS, Presiding

- 47-115. Lightning and 60-Cycle Power Tests on Wood-Pole Line Insulation. P. L. Bellaschi, Westinghouse Elec. Corp. 30 cents (by mail 35 cents).
- 47-163. Economics of Long-Distance A-C Power Transmission. S. B. Crary, I. B. Johnson, General Elec. Co. 25 cents (by mail 30 cents).
- 47-114. Lightning Investigation on the 25-Kv System of the West Penn Power Company. W. C. Bowen, West Penn Pr. Co.; Edward Beck, Westinghouse Elec. Corp. 15 cents (by mail 20 cents).
- 47-117. Performance of Tennessee Valley Authority 161-Kv and 115-Kv Transmission Lines. K. E. Hapgood, C. P. Almon, Jr., Tennessee Valley Authority. 20 cents (by mail 25 cents).

2:00 p.m.—Communication

Brittany Room
J. J. PILLIOD, Presiding

- 47-146. An Electronic Regenerative Repeater for Teletypewriter Signals. R. B. Hearn, Bell Telephone Labs., Inc. 20 cents (by mail 25 cents).
- 47-160. An FM Telegraph Terminal without Relays. F. H. Cusack, A. E. Michon, The Western Union Tel Co. 20 cents (by mail 25 cents).
- 47-171. The Application of Heterodyne Modulation to Wide-Band Frequency Modulated Television Relays. W. P. Boothroyd, Philco Corp. 15 cents (by mail 20 cents).
- 47-140. Radio Interference Suppression in Canada. H. O. ACO.* Merriman, Dept. of Transport, Ottawa, Canada. 15 cents (by mail 20 cents).
- CP.** The Telephone System in Canada. J. L. Clarke, The Bell Tel. Co. of Canada, Ltd.

2:00 p.m.—Power Supply for Resistance Welding

Salon "D"
E. H. VEDDER, Presiding

Four papers of the conference type will present the point of view, with respect to this subject, of the utilities, users, control equipment manufacturers, and welding machine manufacturers.

2:00 p.m.—Conference on Electrochemical Conversion Equipment

Salon "B"
T. R. RHEA, Presiding

- CP.** Electrolytic Zinc at Anaconda: Paralleling of Rectifiers and Rotaries. R. J. Kennard, Anaconda Copper Mining Co.
- CP.** Conversion Equipment in the Magnesium Industry. F. L. Glass, Dow Chemical Co.
- CP.** Conversion Equipment in the Chlorine Industry. M. S. Kircher, D. O. Hubbard, Hooker Electrochemical Co.

Friday, June 13

9:30 a.m.—Conference of Vice-Presidents, District Secretaries, and Incoming Presidents

Salon "J"

9:30 a.m.—Electric Machinery and Transformers

Brittany Room
M. S. OLDACRE, Presiding

- 47-132. Silicone Insulation As Applied to Naval Electrical Power Equipment. H. P. Walker, Bureau of Ships, U. S. Navy Dept. 15 cents (by mail 20 cents).

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Friday - continued

- 47-127. Preliminary Report on Laboratory Aging Tests on Class "A" Insulation. Transformer Subcommittee. 15 cents (by mail 20 cents).
- 47-144. High-Voltage Power-Transformer Design, Part II. M. B. Mallett, English Electric Co. of Canada, Ltd. 20 cents (by mail 25 cents).
- 47-139. Typical Transformer Faults and Gas Detector Relay Protection. J. T. Madill, Aluminum Co. of Canada, Ltd. 20 cents (by mail 25 cents).

9:30 a.m.—Power System Applications of Carrier Current

Cardy Hall
PHILIP SPORN, Presiding

- 47-112. A New Single-Sideband Carrier System for Power Lines. B. E. Lenehan, Westinghouse Elec. Co. 15 cents (by mail 20 cents).
- 47-121. TVA Co-ordinated Communication System. T. DeWitt Talmage, Tennessee Valley Authority. 25 cents (by mail 30 cents).
- 47-142. Operation of Power Line Carrier Channels. H. W. Lensner, Westinghouse Elec. Corp. 20 cents (by mail 25 cents).

9:30 a.m.—Conference on Electrochemical Conversion Equipment

Salon "F"
F. L. LAWTON, Presiding

- CP.** Conversion Equipment in the Aluminum Industry in the United States. Joel Tompkins, Aluminum Co. of America.
- CP.** Conversion Equipment in the DuPont Company. Harold Houck, E. I. duPont de Nemours & Co., Inc.

9:30 a.m.—Conference on Large-Scale Computing Devices

Salon "I"
C. CONCORDIA, Presiding

- CP.** The Bell Laboratories' Relay Digital Computer and its Use for Solving Their Engineering Problems. H. W. Bode and E. G. Andrews, Bell Telephone Labs., Inc.
- CP.** Engineering Applications of I. B. M. Equipment. A. W. Rankin, General Elec. Co.

2:00 p.m.—Electric Machinery

Salon "B"
M. S. OLDACRE, Presiding

- 47-123. The Horsepower Output of Polyphase Induction Motors. R. C. Robinson, Elec. Specialty Co. 20 cents (by mail 25 cents).
- 47-126. Interlaminar Eddy Current Loss in Laminated Cores. A. C. Beiler, P. L. Schmidt, Westinghouse Elec. Corp. 15 cents (by mail 20 cents).
- 47-113. Dynamic Brush Characteristics by the Dynamotor Method. C. J. Herman, General Elec. Co. 20 cents (by mail 25 cents).
- 47-125. Hiperco—An Improved Magnetically Soft Iron-Cobalt Alloy. J. K. Stanley, T. D. Yensen, Westinghouse Elec. Corp. 15 cents (by mail 20 cents).

2:00 p.m.—Conference on Telemetering

Brittany Room
G. S. LUNGE, Presiding

- 47-137. Electronic Telemetering System. C. E. Foster, Foster Engg. Co.; W. M. Kiefer, Commonwealth Edison Co. 15 cents (by mail 20 cents).
- CP.** The Electronic Impulse Totalizer. G. E. Foster, Foster Engg. Co.
- CP.** Telemetering Applications on Systems of the Hydroelectric Power Commission of Ontario. C. K. Duff, Hydro-Elec. Pr. Comm. of Ont.
- CP.** The Self-Balancing A-C Bridge in Impulse Duration Telemetering. G. H. Thynell, The Bristol Co.
- CP.** New Devices Derived from a Torque Balance Telemeter. W. H. Burnham, General Elec. Co.
- CP.** A Variety of Telemetering Applications. A. P. Peterson, Control Corp.

2:00 p.m.—Conference on Operation of Mercury-Arc Rectifiers

Salon "I"
L. W. MORTON, Presiding

- CP.** Proposed Design Features of a Rectifier Station. D. I. Bohn, Aluminum Co. of America.
- CP.** Rectifier Operation in the Aluminum Company of Canada. J. W. Ward, Aluminum Co. of Canada.
- CP.** Rectifier Operation in the Carnegie-Illinois Steel Mills. F. W. Cramer, Carnegie-Illinois Steel Corp.
- CP.** Operation of Rectifiers in Mines. Mr. Marshall, Tenn. Coal, Iron and Railroad Co.
- CP.** Rectifier Operation at the Trail Plants of the Consolidated Mining and Smelting Company of Canada, Limited. A. G. Dickinson, Consolidated Mining & Smelting Co. of Canada, Ltd.

Friday - continued

2:00 p.m.—Protective Devices

Cardy Hall
H. W. COLLINS, Presiding

- 47-149. Relay Protection of Power Transformers. Relay Subcommittee. 15 cents (by mail 20 cents).
- 47-118. Selective Tripping of Low-Voltage Air Circuit Breakers. William Deans, I-T-E Circuit Breaker Co. 20 cents (by mail 25 cents).
- 47-156. A Development in 5000-Volt Metal-Clad Switch-ACO.* gear. R. C. Lockett, J. D. Wood, I-T-E Circuit Breaker Co. 15 cents (by mail 20 cents).
- 47-145. An Improved Overcurrent Tripping Device for Low-Voltage Circuit Breakers. H. L. Rawlins, Jerome Sandin, Westinghouse Elec. Corp. 15 cents (by mail 20 cents).
- 47-173. Performance Criteria of D-C Interrupters. E. W. Boehne, Mass. Inst. of Tech.; M. J. Jang, General Elec. Co. 30 cents (by mail 35 cents).

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

CP**.: Conference paper; no advance copies are available; not intended for publication in TRANSACTIONS.

MEETING FEATURES

ENTERTAINMENT: Excellent programs for both men and women have been planned by the Hospitality and Sports Committees. Among the hospitality features planned for the men are the President's Reception and cocktail hour, a Smoker with refreshments and entertainment, and for both men and women is the famous Saguenay Boat Trip.

SPECIAL—SAGUENAY BOAT TRIP will leave Victoria Pier, Montreal, on Friday, June 13, at 6:00 p.m., arriving at Bagotville on the Saguenay River at 5:00 p.m., Saturday, June 14. The scenery on this trip is some of the most impressive in the world. On arrival at Bagotville a trip to the Shipshaw Power Development has been arranged for through the courtesy of the Aluminum Company of Canada. The boat will sail from Bagotville on Sunday morning at 1:00 a.m. and on the return trip arrangements have been made for stopovers at beautiful Murray Bay for three and one-half hours and also at Quebec City from 3:30 p.m. until eight o'clock. Passengers will thus have an opportunity to visit this historic city during daylight hours. The boat will dock in Montreal at 7:00 a.m., Monday, June 16.

The boat leaving on Friday, June 13, has been completely reserved for members attending the AIEE meeting. In addition, arrangements have been made to take care of any overflow on the regular trip sailing from Montreal Saturday afternoon, June 14, and returning to Montreal on Tuesday morning, June 17.

THE SMOKER starting at 8:30 p.m., Tuesday, June 10, will use both the Ballroom and the Normandie Roof on the ninth floor of the Mount Royal Hotel. There will be two continuous shows, one on the Normandie Roof, where tables will be provided, and food will be served from 8:30 to 11:00 p.m. An orchestra will be pro-

vided during the evening and there will be a continuous floor show, including dancing teams, vocalists, sleight-of-hand and other acts. At the same time a carnival type of show will be in continuous operation in the ballroom. Beer will be available at a bar in this room and there will be continuous orchestra music, boxing matches, games of chance, tumbling acts, juggling and other entertainment. Accommodation will be limited to 900 and it is suggested that reservations should be made at the earliest possible date.

LADIES' ENTERTAINMENT: An interesting program has been prepared for the ladies. Open house will be held all day Monday, June 9, for the ladies in one of the Mount Royal Hotel salons, where they may avail themselves of the opportunity to meet old friends and to make new ones. On the following day, there will be a fashion show and tea at one of the leading Montreal department stores at 3:30 p.m. In the evening a card party will be held at the Mount Royal Hotel. A light supper will be served and prizes will be distributed.

One of the features of the ladies' entertainment will be a Laurentian Mountains tour. On Wednesday, June 11, busses will leave the Mount Royal Hotel at 10:00 a.m. and return towards 5:00 p.m. This tour presents an excellent opportunity to secure a view of the playground of eastern Canada. The tour consists of a 100-mile trip through a region covered with lakes and rivers in a mountainous setting. This area has long been a paradise for the hunter and fisherman in the summer and is, in addition, a very famous resort in the winter for the skier. Lunch will be served at the Alpine Inn, where an opportunity will be given the guests to walk about and view the exceptional scenery at this point.

On Thursday afternoon, June 12, arrangements have been made for a sightseeing tour of Montreal, ending with a visit to the Botanical Gardens. Busses will leave the Mount Royal Hotel at 1:00 p.m. and return at 4:30 p.m. During the tour there will be an opportunity to visit many of the main points of interest within the city, such as, St. Joseph's Shrine, the Notre Dame Cathedral, the old business area with its narrow streets, the city buildings, the Chateau de Ramezay, constructed between the years 1705 and 1723 and now being used as a museum, the markets, harbor, parks, and residential areas, etc. Towards the end of the tour, tea will be served at the Botanical Gardens as guests of the City of Montreal.

GOLF

Only two scheduled golf events will take place, namely, competition for the Mershon Trophy and the Lee Trophy. These two events will be held at the Whitlock Golf Course on Tuesday and Wednesday afternoons, starting at 1:30 p.m. Transportation will be provided to the course. Busses to leave Mount Royal at 12:15 p.m.

Mershon Trophy: The four men having the lowest net scores on the first eighteen holes of play will qualify for the final round. Memento will be given to the winner and a prize for the runner-up.

Lee Trophy: Players will be allowed to use their scores for the first eighteen holes of this competition as the qualifying round for the Mershon Trophy.

Early registration for golf is requested so that the committee may make proper arrangements for transportation. Green fees will be \$2.00 per day per player. Playing rights have been granted for a limited number of players at each of seven other golf clubs. The final round of the Mershon Trophy can be played at any of the clubs at which playing privileges have been obtained. There will be a golf registration desk on the Mezzanine Floor of the Mount Royal Hotel. Complete and detailed information will be available at the desk on all matters concerning the golfing program.

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INSPECTION TRIPS

BEAUHARNOIS POWER PLANT: Members are invited to inspect the Beauharnois Power Development. This development is one of Canada's largest hydroelectric installations and is located on the shores of Lake St. Louis, some 22 miles west of Montreal. The power house is over 1,000 feet long and contains fourteen generating units, aggregating 650,000 hp. The development utilizes the normal drop of 82 feet between Lake St. Francis and Lake St. Louis on the St. Lawrence River.

Between Montreal and Beauharnois visitors are afforded an excellent view of rural Quebec, its winding roads, miles of beautiful scenery and quaint habitant farms. On the trip one of the points of interest will be the Indian village of Caughnawaga, founded in 1716, and still retaining many features of its early atmosphere.

SCENIC TOUR OF MONTREAL: Montreal is the largest city in Canada, with a population of over one million. It is the third largest French speaking city in the world and truly named the Paris of America. Gracing the banks of the St. Lawrence, with its quaint historic structures reminiscent of the days of Jacques Cartier, magnificent churches, significant of the faith of its French-Canadian citizens, Montreal offers to the visitor a treasure of scenic interest. A tour has been arranged, exceeding two hours in length, in which members and guests will see Montreal at its best. During the tour, the delegates will visit the unequalled Notre Dame Cathedral, the Chateau de Remezey, built in 1705 as the Governor's Residence, St. Joseph's Oratory (a world famous shrine), McGill University, Montreal's beautiful residential areas, factory districts, financial centres, the old French district and many scenic subjects of the historic city.

McGILL CYCLOTRON: For members and guests interested in nuclear research, an inspection trip has been arranged to the cyclotron laboratory at McGill University. At the time of its undertaking this cyclotron was of unique design and the largest of its type. Much of Lord Rutherford's early work in nuclear physics was done at McGill and since then the university has contributed many prominent names connected with the developments leading to the atomic bomb. It is not expected that the cyclotron will be completed at the time of the meeting but the delegates will be able to see many components of this highly complex machine in a state of assembly.

INSPECTION OF THE SHIPSHAW POWER DEVELOPMENT: To those delegates taking the boat trip from Montreal to the Saguenay, the Inspection Trip Committee has arranged a special side journey of outstanding engineering interest. Members and guests will be taken from the boat side to the Shishaw development of the Aluminum Company of Canada. This development comprises two generating stations with a total installed capacity of 1,500,000 hp. The first stage was begun about 1926 and completed in 1931 with an installed capacity of 300,000 hp. The second stage was commenced in 1941 and in the remarkably short time of 18 months the first generator was running. This project is believed to be one of the most monumental construction jobs ever undertaken and tangible evidence of Canadian hydroelectric engineering. The No. 2 power house has twelve 100,000 hp generators installed, making it the greatest power house in the world.

In addition to the above trip, the Inspection Trips Committee has arranged for limited accommodation on a commercial airline on June 11 for members who, by force of circumstances, are unable to spare the time for the boat trip. This trip can accommodate only 28 persons and those wishing to take advantage are cautioned to request space well in advance. Accommodation will not be held later than 10 a.m., June 10.

COMMITTEE MEETINGS

Monday, June 9

- 9:30 a.m.—Subcommittee on Metallic Rectifiers
Reading Room, E.I.C.
- 2:00 p.m.—Land Transportation Salon A
- 2:00 p.m.—General Systems Subcommittee Salon C
- 2:00 p.m.—Education Salon E
- 2:00 p.m.—NEMA Codes and Standard Committee Salon I
- 2:00 p.m.—Subcommittee on Metallic Rectifiers
Reading Room, E.I.C.
- Evening—NEMA Codes and Standard Committee Salon I

Tuesday, June 10

- 9:30 a.m.—Automatic Stations Salon A
- 9:30 a.m.—Joint Subcommittee on Servomechanisms Salon C
- 9:30 a.m.—Transformer Subcommittee Salon E
- 9:30 a.m.—Subcommittee on Metallic Rectifiers
Reading Room, E.I.C.
- 2:00 p.m.—Transformer Subcommittee Salon E
- 2:00 p.m.—Subcommittee on Metallic Rectifiers
Reading Room, E.I.C.

Wednesday, June 11

- 2:00 p.m.—Induction Machinery Subcommittee Salon A
- 2:00 p.m.—Standards Salon I
- 2:30 p.m.—Co-ordinating Committee of Industry Group Salon C
- 2:30 p.m.—Lightning and Insulator Subcommittee
Reading Room, E.I.C.

Thursday, June 12

- 9:00 a.m.—Electric Welding Salon C
- 9:00 a.m.—Electronic Power Converter Subcommittee Salon D
- 9:00 a.m.—Communication Salon E
- 9:30 a.m.—Board of Directors Salon A
- 9:30 a.m.—Electric Machinery Salon F
- 9:30 a.m.—Power Transmission & Distribution Salon J
- 9:30 a.m.—Electronics Auditorium, E.I.C.
- 10:00 a.m.—Nucleonics Reading Room, E.I.C.
- 12:30 p.m.—Power Generation Luncheon Salon J
- 12:30 p.m.—Board of Directors' Luncheon Salon F
- 2:00 p.m.—Board of Directors Salon A
- 2:00 p.m.—Joint Subcommittee on Telemetering
Reading Room, E.I.C.
- 2:15 p.m.—Sectional Committee C42 Salon F

Friday, June 13

- 9:30 a.m.—Industrial Control Devices Salon A
- 2:00 p.m.—Subcommittee No. 1-C42, Basic Sciences Salon A
- 3:30 p.m.—Subcommittee on Electrolytic Processes
Reading Room, E.I.C.

MEMORANDA