

American Institute of Electrical Engineers

1884



1930

Summer Convention

Asheville, N. C.

to be held at

TORONTO, CANADA

June 23-27 *22-26*

1930

TORONTO is spread out along the shores of Lake Ontario, which is a link in the great fresh water chain extending from the Atlantic to the heart of the continent; thus it offers much of interest in connection with inland navigation as well as aquatic sports of all kinds. The city is located within convenient traveling distance of the most densely populated portions of the United States, and many members who have not hitherto visited Toronto will find there much of unusual interest.

Make Reservations Now!



Toronto Skyline—Royal York Hotel in Center

THE 1930 A.I.E.E. Summer Convention

SPLendid TECHNICAL PROGRAM AND PLEASANT RECREATION
:: PLANNED FOR THE CONVENTION AT TORONTO, JUNE 23-27 ::



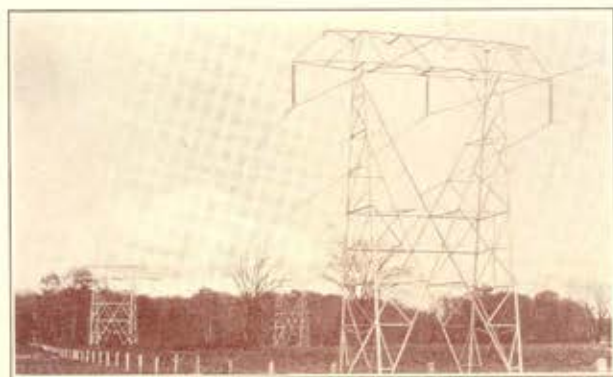
AN excellent technical program, delightful entertainment features, and ample facilities for sports have been arranged for the 1930 Summer Convention, which will be held, with headquarters in the Royal York Hotel at Toronto, Canada, June 23-27.

A selection of excellent technical papers covering various phases of the electrical industry has been made from a wealth of material. This material will be presented in eight technical sessions.

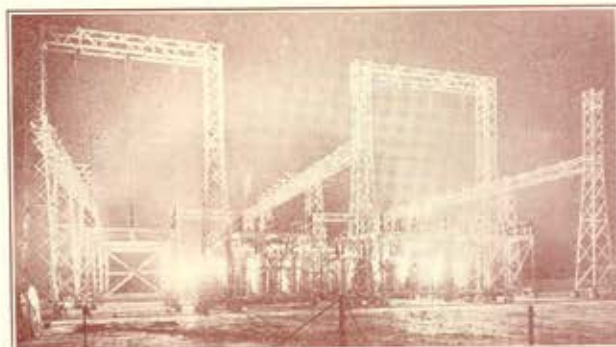
Two of these sessions will be symposiums; one under the auspices of the Protective Devices Committee on Transmission Line Relays, the other under the joint auspices of the Electrical Machinery and Transmission Committees on Coordination of Line, Station, and Apparatus Insulation.

A few of the subjects are: the 220-kv. system of the Hydro-Electric Power Commission; vertical shaft, 25,000-kv-a. synchronous condensers; hydro-power practise in central Europe; control systems for oil and gasoline electric locomotives; a 1000-kw. automatic rectifier; and centralized control of system operation.

The annual reports of the Technical Committees of the Institute will review the advances in theory and practise throughout the year.



220 kv. Line Approaching Toronto



Night View of Leaside Station

The business side of the Convention will include the Annual Meeting of the Institute, a report of the Committee of Tellers on election of officers for 1930-1931, and a report on Constitutional Amendments, the President's Address and presentation of prizes for papers.

The Conference of Officers, Delegates, and Members, under the auspices of the Sections Committee and Committee on Student Branches, constitutes an important feature of the convention.

The Lamme Medal, awarded several months ago, will be presented to Mr. R. E. Hellmund, East Pittsburgh, Pa., "for his contributions to the design and development of rotating machinery."

On Wednesday there will be a Directors' Luncheon and meeting.

The program being prepared should leave nothing to be desired, both from the standpoint of professional benefit and of general social enjoyment. The Meetings and Papers Committee have prepared a schedule of papers covering a wide diversity of interest, the local Convention Committee has arranged a series of events which will provide interest and pleasure for all available time throughout the entire Convention. Particularly should it be noted that the following program calls for the Convention to get into full swing on Monday morning; members are urged to arrive early and register promptly.

OUTLINE OF PROGRAM

Eastern Daylight Saving Time is indicated throughout this Program

Monday, June 23

- 9:00 a.m. Registration
- 10:30 a.m. Annual Business Meeting of the Institute
Address of Welcome
Annual Report of Board of Directors (in abstract),
F. L. HUTCHINSON, National Secretary
Report of Tellers' Committee on
(a) Election of Officers; Introduction of and
response from President-Elect
(b) Constitutional Amendments
Presentation of Prizes for Papers
Presidential Address, HAROLD B. SMITH
- 2:00 p.m. Conference of Officers, Delegates, and Members
Qualifying Round for Mershon Trophy
Tennis
Ladies' Drive about City followed by Afternoon
Tea at Granite Club
- 4:30 p.m. Afternoon Tea
- 9:00 p.m. President's Reception—dancing

Tuesday, June 24

- 9:00 a.m. Registration
- 9:30 a.m. Two Technical Sessions: (a) Protective Devices
(Symposium on Transmission Line Relays);
(b) Transportation
- 12:30 p.m. Section and Branch Delegates' Luncheon
- 2:00 p.m. Conference of Officers, Delegates, and Members
—continued
Trips as scheduled
Sports as scheduled—First Round for Mershon
Trophy
Ladies' Trip across Harbor to Luncheon and
Bridge at Royal Canadian Yacht Club
- 4:30 p.m. Afternoon Tea at Royal Canadian Yacht Club
- 7:00 p.m. Get-Together Dinner and Entertainment

Wednesday, June 25

- 9:30 a.m. Three Technical Sessions: (c) Automatic Stations;
(d) Selected Subjects and Technical Committee
Reports; (e) Transmission
- 12:30 p.m. Directors' Luncheon and Meeting
Ladies' Drive to Old Mill for Luncheon, to be fol-
lowed by Golf on miniature course, or Bridge
- 2:00 p.m. Trips as scheduled
Sports as scheduled—Second Round for Mershon
Trophy
- 4:30 p.m. Afternoon Tea
- 7:00 p.m. Convention Banquet
- 8:15 p.m. Medal Presentation
- 9:30 p.m. Dancing—Cards

Thursday, June 26

- 9:00 a.m. Boat leaves for trip to new Welland Canal
Lunch at St. Catharines
- 2:00 p.m. Inspection of Welland Canal
Trips to Queenston and Niagara Falls
Finals—Golf and Tennis
- 9:00 p.m. Dancing on boat

Friday, June 27

- 9:30 a.m. Two Technical Sessions: (f) Electrical Machinery
and Transmission (Symposium on Coordination
of Line, Station, and Apparatus Insulation);
(g) Communication
- 12:30 p.m. Luncheon—Presentation of Prizes
- 2:00 p.m. Technical Session: (h) Electrical Machinery and
Power Generation
- 4:30 p.m. Afternoon Tea

LADIES' PROGRAM

The ladies are invited to all events, the following being listed as of special interest to them.

Monday, June 23

- 10:30 a.m. Opening of Convention
President's Address, Harold B. Smith
- 2:00 p.m. Drive about City followed by Afternoon Tea at
Granite Club
- 9:00 p.m. President's Reception—dancing

Tuesday, June 24

- 2:00 p.m. Trip across Harbor to Luncheon and Bridge at
Royal Canadian Yacht Club
- 7:00 p.m. Get-Together Dinner and Entertainment

Wednesday, June 25

- 12:30 p.m. Drive to Old Mill for Luncheon, to be followed by
Golf on miniature course, or Bridge
- 7:00 p.m. Convention Banquet
- 8:15 p.m. Medal Presentation
- 9:30 p.m. Dancing—cards

Thursday, June 26

- 9:00 a.m. Boat leaves for trip to new Welland Canal
Lunch at St. Catharines
- 2:00 p.m. Drive to Niagara Falls
- 9:00 p.m. Dancing on boat

Friday, June 27

- 12:30 p.m. Luncheon—Presentation of Prizes
- 4:30 p.m. Afternoon Tea

Other entertainment will be announced at the convention.



Scene on Weston Golf Course

TECHNICAL SESSIONS

NOTICE—Discussions at the technical sessions will not be taken down by a reporter. Each discussor should prepare or submit his remarks in writing. Discussion received by the Editorial Department by July 10 will be considered for publication.

TUESDAY, JUNE 24

9.30 a.m.—Parallel Sessions A and B

(A) Protective Devices—Symposium on Transmission Line Relays *Hester*

The Problem of Service Security in Large Transmission Systems
PAUL ACKERMAN
Consulting Electrical Engineer

Transmission System—Relay Protection, No. III
W. W. EDSON
The Edison Electric Illuminating Company of Boston

Modern Requirements for Protective Relays on Important System Interconnections
O. C. TRAVER and L. F. KENNEDY
General Electric Co.

Directional Ground Relays
E. E. GEORGE and R. H. BENNETT
Tennessee Electric Power Co.

High-Speed Protective Relays
L. N. CRICHTON
Westinghouse Electric & Mfg. Co.

(B) Transportation *Withington*

Electric Power Consumption for Yard Switching
P. H. HATCH
N. Y., N. H. & H. R. R. Co.

Control Systems for Oil and Gasoline Electric Locomotives and Cars
N. L. FREEMAN
Westinghouse Electric & Mfg. Co.

Electric Transmission and Control of Power from Internal Combustion Engines for Transportation
S. T. DODD
General Electric Co.

Auxiliaries for High-Voltage Direct-Current Multiple Unit Cars
C. J. AXTEL
General Electric Co.

Auxiliary Circuits for High Voltage D-C. Motor Car Equipments
O. K. MARTI and W. A. GIGER
American Brown Boveri Co., Inc.

Railbonding Practice and Experience on Electrified Steam Railroads
H. F. BROWN
N. Y., N. H. & H. R. R. Co.

WEDNESDAY, JUNE 25

9.30 a.m.—Parallel Sessions C, D and E

(C) Automatic Stations *Zogbaum*

An Electron Tube Telemetering System
A. S. FITZGERALD
General Electric Co.

Development of a Two-Wire Supervisory Control System with Remote Metering
R. J. WENSLEY and W. M. DONOVAN
Westinghouse Electric & Mfg. Co.

Centralized Control of System Operation
J. T. LAWSON
Public Service Electric & Gas Co.

Automatic Power Supply of the Carnegie Steel Company
ROBERT HARRY
Eliance Machine Co.

1000-Kw. Automatic Mercury Arc Rectifier of the Union Railway Company, New York
W. E. GUTZWILLER and OTTO NAEF
American Brown Boveri Co.

Miniature Switchboards
PHILIP SPORN
American Gas & Electric Co.

(D) Selected Subjects and Technical Committee Reports *Kalapatoff*

Rural Line Construction in Ontario
R. E. JONES
Hydro-Electric Power Commission of Ontario

Mutual Impedances of Ground Return Circuits—Some Experimental Studies
H. E. BOWEN
American Telephone & Telegraph Co.
C. L. GILKESON
National Electric Light Association

Theory and Characteristics of Grid-Controlled Glow and Arc Discharge Tubes
D. D. KNOWLES and S. P. SASHOFF
Westinghouse Electric & Mfg. Co.

Effects of the Magnetic Field on Lichtenberg Figures
C. E. MAGNUSSON
University of Washington

A Survey of Room Noise in Telephone Locations
W. J. WILLIAMS
National Electric Light Association
R. G. McCURDY
American Telephone & Telegraph Co.

Reports of Technical Committees reviewing the advances in theory and practise throughout the year in various fields of the electrical industry are listed as follows. These reports will not be presented but copies will be available and they may be discussed during this session.

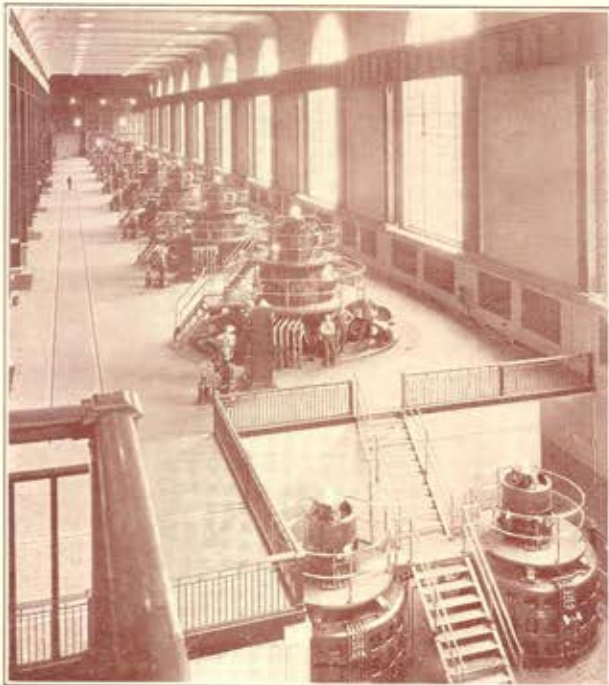
AUTOMATIC STATIONS	F. Zogbaum, Chairman
COMMUNICATION	G. A. Kositzky, Chairman
EDUCATION	Edmond Bennett, Chairman
ELECTRICAL MACHINERY	P. L. Alger, Chairman
ELECTRIC WELDING	A. M. Candy, Chairman
ELECTROCHEMISTRY AND ELECTROMETALLURGY	P. H. Brace, Chairman
ELECTROPHYSICS	O. E. Buckley, Chairman
GENERAL POWER APPLICATIONS	J. F. Gaskill, Chairman
INSTRUMENTS AND MEASUREMENTS	E. S. Lee, Chairman
APPLICATIONS TO IRON AND STEEL PRODUCTION	M. M. Fowler, Chairman
PRODUCTION AND APPLICATION OF LIGHT	G. S. Merrill, Chairman
APPLICATIONS TO MARINE WORK	W. E. Thau, Chairman
APPLICATIONS TO MINING WORK	Carl Lee, Chairman
POWER GENERATION	F. A. Allner, Chairman
POWER TRANSMISSION AND DISTRIBUTION	H. R. Woodrow, Chairman
PROTECTIVE DEVICES	E. A. Hester, Chairman
TRANSPORTATION	Sidney Withington, Chairman

(E) Transmission *Woodrow*

The 220,000-Volt System of the Hydro-Electric Power Commission of Ontario
E. T. J. BRANDON
Hydro-Electric Power Commission of Ontario

The Analytics of Transmission Calculations
T. R. ROSEBRUGH
University of Toronto

TECHNICAL SESSIONS



Queenston Power House, Hydro-Electric Power Commission of Ontario

Study of the Effect of Short Lengths of Cable on Traveling Waves

K. B. McEACHRON
General Electric Co.
J. G. HEMSTREET
Consumers Power Co.
H. P. SEELYE
Detroit Edison Co.

Buried Distribution Type Transformers

C. E. SCHWENGER
Toronto Hydro-Electric System

Dancing Conductors

A. E. DAVISON
Hydro-Electric Power Commission of Ontario

FRIDAY, JUNE 27

9.30 a.m.—Parallel Sessions F and G

(F) Electrical Machinery and Transmission— Symposium on Coordination of Line, Station, and Apparatus Insulation

Rationalization of Station Insulating Structures with Respect to Insulation of Transmission Lines

C. L. FORTESCUE
Westinghouse Electric & Mfg. Co.

The Effect of Transient Voltages on Dielectrics—IV; Law of Impulse Sparkover and Time Lag

F. W. PEEK, JR.
General Electric Co.

Rationalization of Transmission Insulation Strength, II

PHILIP SPORN
American Gas and Electric Co.

Recommendations on Balancing Transformer and Line Insulation on Basis of Impulse Voltage Strength

V. M. MONTSINGER
General Electric Co.

W. M. DANN
Westinghouse Electric & Mfg. Co.

Coordination of Insulation as a Design Problem

G. D. FLOYD
Hydro-Electric Power Commission of Ontario

Standards of Insulation and Protection for Transformers

J. A. JOHNSON
Buffalo, Niagara and Eastern Power Corp.

E. S. BUNDY
Niagara, Lockport & Ontario Power Co.

Essential Factors in the Coordination of Line, Station, and Apparatus Insulation

A. E. SILVER and H. L. MELVIN
Electric Bond and Share Co.

(G) Communication

Long Distance Cable Circuit for Program Transmission

A. B. CLARK
American Telephone & Telegraph Co.

C. W. GREEN
Bell Telephone Laboratories, Inc.

Transmission Characteristics of Open-Wire Telephone Lines

E. I. GREEN
American Telephone & Telegraph Co.

Study of Telephone Line Insulators

L. T. WILSON
American Telephone & Telegraph Co.

General Switching Plan for Telephone Toll Service

H. S. OSBORNE
American Telephone & Telegraph Co.

Long Telephone Lines in Canada

J. L. CLARKE
Bell Telephone Company of Canada

Two-Way Television

H. E. IVES
Bell Telephone Laboratories, Inc.

2 p.m.—Session H

(H) Electrical Machinery and Power Generation

Effects of Lightning Voltages on Rotating Machines and Methods of Protecting against Them

F. D. FIELDER and E. BECK
Westinghouse Electric & Mfg. Co.

(continued on next page)



Leaside Station—25,000 kv-a. Outdoor Condensers

TECHNICAL SESSIONS—Continued

Effect of Voltage Surges on Rotating Machinery

E. W. BOEHNE
General Electric Co.

Vertical Shaft 25,000 Kv-a. Synchronous Condensers

H. A. RICKER, J. R. DUNBAR and R. E. DAY
Canadian Westinghouse Co.

Metal-Clad, Gum-Filled Switching Equipment

L. B. CHUBBUCK
Canadian Westinghouse Co.

East River Generating Station of the New York Edison Company

C. B. GRADY, W. H. LAWRENCE and
R. H. TAPSCOTT
New York Edison Co.

Hydro Power Practise in Central Europe

A. V. KARPOV
Aluminum Company of America

ENTERTAINMENT

The principal entertainment features are shown in the foregoing program. It is expected that these events will be outstanding for their respective kinds. In general, the Committee is leaving no stone unturned in its efforts to make this Convention a memorable one.

LADIES—The ladies attending the Convention should have a particularly interesting time, as the Committee has arranged a very attractive program for their entertainment. In addition to the all day trip by boat across Lake Ontario, to view the Welland Canal, there will be two different drives covering points of interest in and about the city. An afternoon of golf has been arranged preceded by luncheon at the Mississauga Golf Club,—there will be a bridge game arranged for those not playing golf.

On another afternoon it has been planned to take the ladies for launch rides along the lake shore, in the vicinity of the harbor and have tea served afterwards at the Royal Canadian Yacht Club. There will be two dances during the Convention, in the evening.

A large local Committee of Ladies will do everything possible to look after the comfort and pleasure of visiting ladies, both individually and collectively.

T R I P S

WELLAND CANAL—The outstanding trip will be an all-day outing, crossing Lake Ontario to visit the new Welland Canal, which embraces some features excelling anything hitherto undertaken in canal construction. Those desiring to do so will be able to spend the afternoon at the Queenston Plant of the Hydro-Electric Power Commission or at various power plants at Niagara Falls. Special entertainment features are being arranged in connection with this trip in a way that will ensure a day of general relaxation and enjoyment.

LEASIDE STATION—The Leaside Station of the Hydro-Electric Power Commission on the outskirts of Toronto is Canada's first 220-kv. receiving station. It has many interesting features, including two 25,000-kv-a. outdoor synchronous condensers.

OTHER POWER STATIONS

H. E. P. C.—Bridgeman—110-kv. Station,
Wiltshire—110-kv. Station,
Strachan Ave.—110-kv. Station and
Laboratories

Toronto Hydro-Electric System

Automatic High Power Mercury Arc Rectifier
Railway Station.
Supervisory Control Substations.
Local Dispatching Office in Duncan Street
Station.

ELECTRIC MANUFACTURING PLANTS

Davenport Works—Canadian General Electric Co.
Hamilton Works—Canadian Westinghouse Co.
Mount Dennis Plant—Ferranti Electric Limited.

POINTS OF INTEREST

Hillcrest Shops—Toronto Transportation Commission.
Toronto Harbor Development.
University of Toronto Buildings.
Royal Ontario Museum.

There are also many manufacturing plants to which trips will be arranged as desired.



Welland Canal at Lift Bridge

S P O R T S

GOLF—The main event for golfers will be the annual tournament for Mershon Trophy, which will be played over the course of the Weston Golf and Country Club.

As it is proposed to present the prizes at the luncheon on Friday, and as the match play in this competition will consume all other available time, it is essential that the qualifying round be completed on Monday. This will mean that guests arriving after Monday will be unable to enter the Mershon Cup competition.

The competition will consist of a qualification round (handicap medal play) of eighteen holes, followed by match play (handicap).

The sixteen low net scores will qualify for the match play rounds, which will be played on Tuesday p. m., Wednesday p. m., and Thursday, a. m. and p. m.

Arrangements will be made by the Committee so that officers, section delegates, et. al., may play their qualification rounds at any particular time on Monday, so as to avoid missing their scheduled meetings.

The Committee are also arranging other events, the details of which will be given out at registration. These events will not be confined to the course of the Weston Golf & Country Club, as arrangements are being made to allow members and registered guests to play over a number of courses in the Toronto vicinity, and all scores will count in these competitions.

It is hoped that the chief among these additional events will be an International Team Competition for the American Canadian Team championship of the Institute, arrangements for which are now being worked out.

No greens fees will be charged members or registered guests for any play during the Convention, and transportation to and from all courses will be provided.

TENNIS—The annual Mershon Trophy competition in Men's Singles will be played, together with Men's Doubles, and, if sufficient entries can be secured, Ladies' Singles and Mixed Doubles will also be arranged.

The courts on which these events will be played will be announced later, but tennis players can be assured that excellent courts (probably clay) will be available for all who wish to use them.

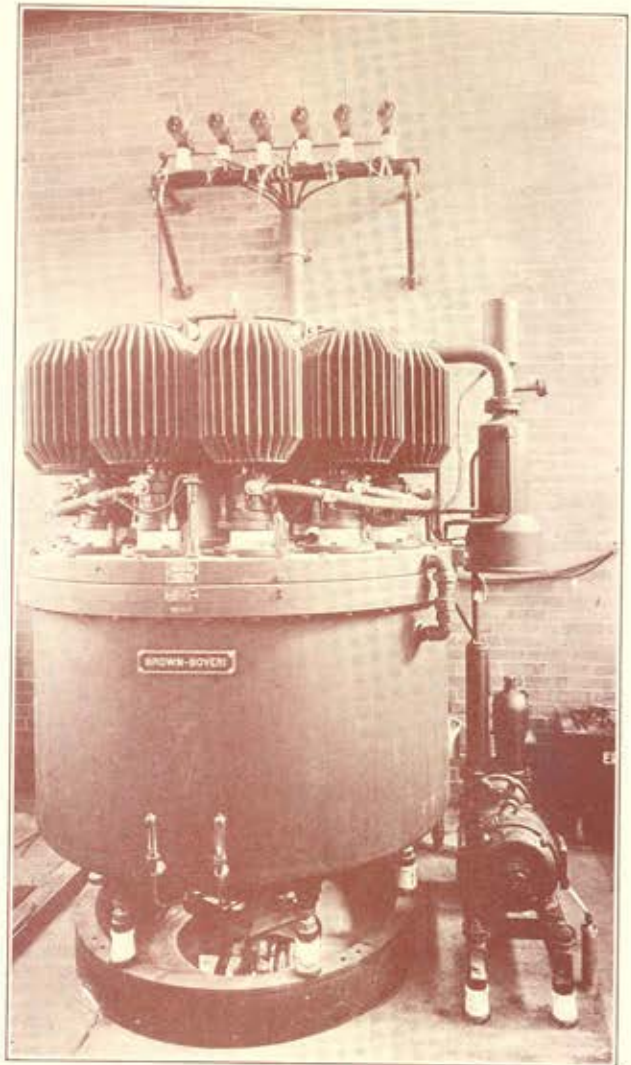
Entries for all these events should be in the hands of the Committee not later than Monday afternoon.

H O T E L S

The Royal York Hotel, which will constitute convention headquarters, has been operating just about one year. It compares favorably not only in all general particulars with the latest and best of new hotels anywhere, but has a whole floor devoted to special convention rooms. It is in direct communication with the Union Station and overlooks the Harbor and Lake Ontario.

Following is a list of hotels, their rates and distances from the headquarters hotel. Reservations should be made by communicating directly with the hotel selected.

Hotels	Single Room Running Water	Single Room with Bath	Double Room without Bath	Double Room with Bath	Distance from Headquarters
Royal York	—	\$4-\$8	—	\$8-\$9-\$10	Headquarters
King Edward	—	\$3.50-\$8	—	\$6-\$12	1/2 mile
Prince George	—	—	\$5-\$7	\$7-\$10	3 blocks
Walker House	\$4-\$5	—	—	—	across street
Carls-Rite	\$4-\$5	—	—	—	1 block
Hotel Waverly	\$2-\$3	\$3-\$4	\$4-\$5	\$5-\$8	1 mile
Westminster	—	\$3	—	\$6	1 mile
Ford Hotel	\$1.50	\$2-\$2.50	\$2.50	\$3-\$4.50	3/4 mile



Mercury Arc Rectifier Installation,
Toronto Hydro-Electric System

Railroad Rates

It has been ascertained that in nearly all cases the Summer Tourist rates are lower than those offered by the Convention Certificate plan. On this account certificate rates are not being arranged and members are advised to purchase Summer tourist tickets.

F. L. HUTCHINSON,
National Secretary

General Convention Committee



C. E. Sisson	Chairman
A. H. Huff	Vice-Chairman
W. L. Amos	Secretary
A. E. Knowlton	Meetings and Papers
W. P. Dobson, Local Representative	Meetings and Papers
W. B. Kouwenhoven	Sections
W. A. Bucke	Finance
H. U. Hart	Finance
F. R. Ewart	Publicity
A. B. Cooper	Entertainment
H. C. Don Carlos	Sports
J. F. Neild	Transportation
M. B. Hastings	Trips
F. F. Ambuhl	Hotel and Registration
H. C. Barber	Ladies

W. C. Adams	J. A. Johnston
C. V. Christie	H. Milliken
J. L. Clarke	J. Morse
J. R. Cowley	W. F. McKnight
E. P. Fetherstonhaugh	J. Teasdale
J. B. Woodyatt	

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