



*Where Flowers and Glaciers Meet—Rainier National Park*

# American Institute of Electrical Engineers

## PACIFIC COAST CONVENTION

Seattle, Washington



August 27-30, 1935

### Schedule of Events

#### Monday, August 26

3:00 P. M.—Registration, Olympic Hotel

#### Tuesday, August 27

9:00 A. M.—Registration, Olympic Hotel

10:00 A. M.—Opening of Convention

10:15 A. M.—Technical Session on Power Transmission and Distribution

2:00 P. M.—Technical Session on Electrical Machinery

9:00 P. M.—Reception and Informal Dance

#### Wednesday, August 28

4:00 A. M.—Salmon Fishing Contest

9:00 A. M.—Technical Session on Communication

2:00 P. M.—Student Technical Session

2:00 P. M.—Boat Trip for Ladies

8:00 P. M.—Inspection Trips in City

8:00 P. M.—Conference on Student Activities

#### Thursday, August 29

9:00 A. M.—Technical Session on Electrophysics, Instruments and Measurements

1:00 P. M.—Golf Tournament, Sand Point Golf Club

1:00 P. M.—Bridge Luncheon for Ladies, Sand Point Golf Club

2:00 P. M.—Inspection Trips for Non-Golfers

8:00 P. M.—Banquet. Presentation of Prizes

#### Friday, August 30

9:00 A. M.—Technical Session on Selected Subjects

2:00 P. M.—Student Technical Session

2:00 P. M.—Automobile Tour for Ladies

#### Saturday, August 31

Inspection Trips



**Headquarters:**  
**OLYMPIC HOTEL**

**Reservations**

Reservations should be made in advance by enclosed return post card. The Olympic Hotel rates for delegates are as follows:

- Single Room with Bath, \$3.00 per day.
- Double Room with Bath, \$2.00 per person per day.
- Double Room (Twin Beds), with Bath, \$2.50 and \$3.00 per person per day.
- Students (several per room), \$1.00 per person per day.

A number of other hotels and apartment hotels within walking distance of headquarters are available at approximately the same rates as quoted above. Complete information on all hotels will be available at the information desk. The reduced summer railroad rates are in effect and should be secured.

**Registration**

The registration and information desk will be opened on Monday, August 26, and will be maintained throughout the convention. All members and guests are requested to register promptly upon arrival and receive their badges:

A small fee of \$1.00 for members and 50 cents for students, will be charged to defray a part of the convention expenses. A registration fee of \$2.00 will be charged all non-members except enrolled students and the immediate families of members.

Members and guests are urged to register for banquet and golf tournament as soon as possible and purchase tickets for these events. Those desiring to make inspection trips should register at the information desk where complete information regarding all trips will be available.

**Technical Program**

VENETIAN ROOM—OLYMPIC HOTEL

**TUESDAY, August 27**

10:00 A. M.—Opening of Convention

Address of Welcome

Response

10:15 A. M.—Session on Power Transmission and Distribution. *E. A. Hoover*

Engineering Features of the Boulder Dam Los Angeles Lines

E. F. SCATTERGOOD,  
Bureau of Pr. and Lt., City of Los Angeles, California.

A New Carrier Current Coupling Capacitor

E. B. EBY,  
General Electric Company.

✓ Progress on the Grand Coulee Development to Date\*

ALVIN F. DARLAND,  
Bureau of Reclamation, Coulee Dam, Washington.

✓ Electrical Features of the Bonneville Project\*

L. E. KURTICHANOF,  
U. S. Army Engineering Corps, Portland, Oregon.

2:00 P. M.—Session on Electrical Machinery

✓ Test Values of Armature Leakage Reactance *J. J. Bartholomew*

T. A. ROGERS,  
University of California.

✓ Tests on Armature Resistance of Synchronous Machines

B. L. ROBERTSON,  
University of California.

✓ Steady State Solution of Saturated Circuits.

STERLING BECKWITH,  
Metropolitan Water District of Southern California.

✓ Time-Temperature Tests to Determine Machine Losses

M. D. ROSS,  
Westinghouse Elec. & Mfg. Company.

**WEDNESDAY, August 28**

9:00 A. M.—Session on Communication *J. C. McMillan*

Resonant Lines for Radio Frequency Control

C. W. HANSELL,  
R. C. A. Communications, Incorporated.

✓ The Hawaiian Radio Telephone System

W. I. HARRINGTON,  
Mutual Telephone Company of Hawaii.

C. W. HANSELL,  
R. C. A. Communications, Incorporated.

✓ Ship-to-Shore Radio in the Puget Sound Area

E. B. HANSEN,  
The Pacific Telephone and Telegraph Company, Inc.

2:00 P. M.—Student Technical Session.

Torque in a Bipolar Induction Type Instrument

RALPH MORTON,  
University of British Columbia, Vancouver, B. C.

Taxation of Private and Municipal Power Systems in Washington and Idaho

CLEMENT STREFIUS,  
University of Idaho, Moscow, Idaho.

Vacuum Tube Voltmeter for Measurement of High Voltage

E. C. RYAN,  
University of California, Berkeley, California.

High-Capacity Low-Voltage Bus-Bar Design

PRESTON L. ADKINS,  
Oregon State College, Corvallis, Oregon.

Precise Speed Control of a Direct Current Motor

EDWARD SIMMONS,  
California Institute of Technology, Pasadena, California

A Laboratory Beat-Note Oscillator

STEPHEN S. STEVENS,  
University of Southern California, Los Angeles, Calif.

8:00 P. M.—Student Conferences

Conference on Student Activities by Officers and Counselor and Student Delegates of Districts 8 and 9

\*Informal paper. Will not be published in ELECTRICAL ENGINEERING.



## THURSDAY, August 29

### 9:00 A. M.—Session on Electrophysics, Instruments and Measurements

#### The Sparkless Sphere Gap Voltmeter

R. W. SORENSON, J. E. HOBSON and SIMON RAMO,  
California Institute of Technology.

#### Spark Lag of the Sphere Gap

ABE TILLES,  
University of California.

#### Direct Measurement of Surge-Currents

C. M. FOUST and J. T. HENDERSON,  
General Electric Company.

#### An Instrument for Measuring Radio Interference, Crest Field Strength

F. O. McMILLAN and H. G. BARNETT,  
Oregon State College.

## FRIDAY, August 30

### 9:00 A. M.—Session on Selected Subjects

#### Lighting Currents—In Field and Laboratory

P. L. BELLASCHI,  
Westinghouse Electric & Mfg. Company.

#### Diesel Electric Motive Power for Railroads

A. H. CANDEE,  
Westinghouse Electric & Mfg. Co.

#### Production of Steam from Electric Energy

C. R. REID,  
Shawinigan Water and Power Co.

#### Off-Peak Control of Water-Heater Load

F. M. STARR,  
General Electric Company.

### 2:00 P. M.—Student Technical Session

#### Stereophonic Phonograph Recording

JOHN T. MULLIN,  
University of Santa Clara, Santa Clara, Calif.

#### Polarity Characteristics of Sphere Gap Spark-overs

JAMES BIELE and DON PUGSLEY,  
University of Utah, Salt Lake City, Utah.

#### Experimental Study of Resonant Lines as Radio Circuit Elements

L. M. HOLLINGSWORTH,  
Stanford University, California.

#### Five Meter Transceivers

HAROLD BACKEN and AUSTIN NELSON,  
Montana State College, Bozeman, Montana.

#### Ultra-Short-Wave Communication

GORDON CLOTHIER and GILBERT C. LARSON,  
University of Washington, Seattle, Washington.

## Entertainment

### Tuesday, August 27

#### 9:00 P. M.—Reception and Informal Dance

Junior Ball Room, Olympic Hotel

## Wednesday, August 28

### 4:00 A. M.—Salmon Fishing Contest

Contestants will leave the Olympic Hotel one hour before sunrise as the guests of the *Mystic Knights of the Sea*. Boats and tackle will be furnished. A capital prize will be awarded for the largest salmon. Contestants will return to the Olympic Hotel at 8:00 A. M.

## Thursday, August 29

### 1:00 P. M.—Golf Tournament

Sand Point Golf and Country Club

The annual Golf Tournament for the John B. Fisken cup will be held at the Sand Point Golf Course overlooking Lake Washington. Competition will be medal play on handicap in foursomes. Competition for the John B. Fisken cup is open to members only. Other prizes will be awarded and competition for these prizes is open also to non-members. All players must be registered for the Convention. Transportation will be supplied and the autos will leave the Olympic Hotel from 12:00 noon till 1:00 P. M. A tournament score card showing the make-up of foursomes, handicaps and starting times, will be on display at the registration desk. Green Fees \$1.00.

### 8:00 P. M.—Banquet

Spanish Ball Room, Olympic Hotel

Special entertainment will feature the Annual Banquet for Institute members and friends. Following the banquet, district paper prizes, golf prizes and fishing contest prizes will be awarded. Tickets \$1.50 per plate.

## Ladies' Entertainment

### Wednesday, August 28

#### 2:00 P. M.—Boat Ride

The ladies will be entertained by a boat ride on the SIGHTSEER leaving Pier 3 at 2:00 P. M. The boat makes a trip around Elliott Bay, through the Government Locks into Lake Washington and along the shores of the lake to Leschi Dock. Here automobiles will meet the boat and return the guests to the Olympic Hotel.

### Thursday, August 29

#### 1:00 P. M.—Bridge Luncheon

Sand Point Golf and Country Club

Automobiles will leave the Olympic Hotel from 12:00 noon to 1:00 P. M. for the Sand Point Club overlooking Lake Washington where the ladies will be entertained at a bridge luncheon while the men play golf. Prizes will be awarded.

### Friday, August 30

#### 2:00 P. M.—Automobile Drive

Automobiles will leave the Olympic Hotel at 2:00 P. M. for a twenty-five mile drive around Seattle's scenic boulevards. The trip will include the Government Locks, the University of Washington, the Seattle Art Museum and City Parks.



# Inspection Trips

Inspection trips in the City have been scheduled for 8:00 P. M. Wednesday, August 28, and for 2:00 P. M. Thursday, August 29. Other trips will be arranged to industrial and utility plants at the convenience of the guests. The committee will also assist in arranging for trips outside of the city. Complete information regarding time and cost of outside trips will be furnished at the information desk.

## Suggested City Trips

- The University of Washington.
- Automatic Telephone Exchange, The Pacific Telephone and Telegraph Company.
- 8000 KW Electric Boilers, Puget Sound Power and Light Company.
- Electrification Facilities, Chicago, Milwaukee and St. Paul Ry.
- Ship-to-Shore Radio Station, The Pacific Telephone and Telegraph Company.
- Boeing Airplane Plant.
- Government Locks connecting Puget Sound and Lake Washington.
- Distribution Facilities, City of Seattle, Lighting Department.
- General Electric Co. 800 KV X-ray Tube, Tumor Institute, Swedish Hospital.

## Suggested Trips Outside the City

- Mount Rainier National Park.
- Bremerton, U. S. Navy Yard.
- Snoqualmie Falls and Power Plant of the Puget Sound Power and Light Company.
- Cedar Falls Power Plant of the City of Seattle Lighting Department.
- Lake Cushman Development of the City of Tacoma Lighting Department.
- Victoria, British Columbia.
- Skagit River Development of the City of Seattle Lighting Department.
- Baker River Development of the Puget Sound Power and Light Company.
- Rock Island Development of the Puget Sound Power and Light Company.
- Grand Coulee Project on the Columbia River.
- Bonneville Project on the Columbia River.

# PACIFIC COAST CONVENTION COMMITTEE

## General Committee

- E. A. Loew, *Chairman*
- L. B. Robinson, *Vice Chairman*
- G. H. Walker, *Secretary*
- E. B. Hansen
- G. L. Hoard
- R. E. Kistler
- F. O. McMillan
- R. U. Muffley
- E. O. Osburn
- G. E. Quinan
- C. E. Rogers
- Wellington Rupp
- F. J. Bartholomew
- A. M. Bohnert
- Walter Brenton
- Fred Garrison
- R. H. Hull
- F. C. Lindvall
- H. T. Plumb
- R. W. Sorensen
- J. A. Thaler

## Meetings and Papers Committee

- G. L. Hoard, *Chairman* W. W.
- Reinier Beeuwkes
- Joe Hellenthal
- K. L. Howe
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## Finance Committee

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- C. E. Rogers
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## Publicity Committee

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- A. I. Launder
- C. M. Lubcke
- J. H. Kelley
- Ray Rader

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- E. B. Hansen, *Chairman*
- H. O. Blair
- M. T. Crawford
- E. R. Hannibal
- W. S. Hill
- C. A. Lund
- G. R. Shuck

## Trips and Transportation Committee

- Wellington Rupp, *Chairman*
- R. O. Bach
- Chas. Cross
- W. E. Conroy
- W. S. McCrea
- E. L. White
- Laurence Wylie

## Golf Committee

- G. E. Quinan, *Chairman*
- E. L. Crider
- E. J. Descamp
- R. W. Mastick
- T. S. Wood

## Fishing Contest Committee

- C. E. Rogers, *Chairman*
- G. O. Cranmer
- C. A. Foley
- Ray Hasselo
- C. L. Johnson

## Entertainment Committee

- R. U. Muffley, *Chairman*
- F. W. Carlson
- E. S. Code
- C. J. Hawkes
- C. H. Hoge
- G. Smith
- C. R. Wallis