

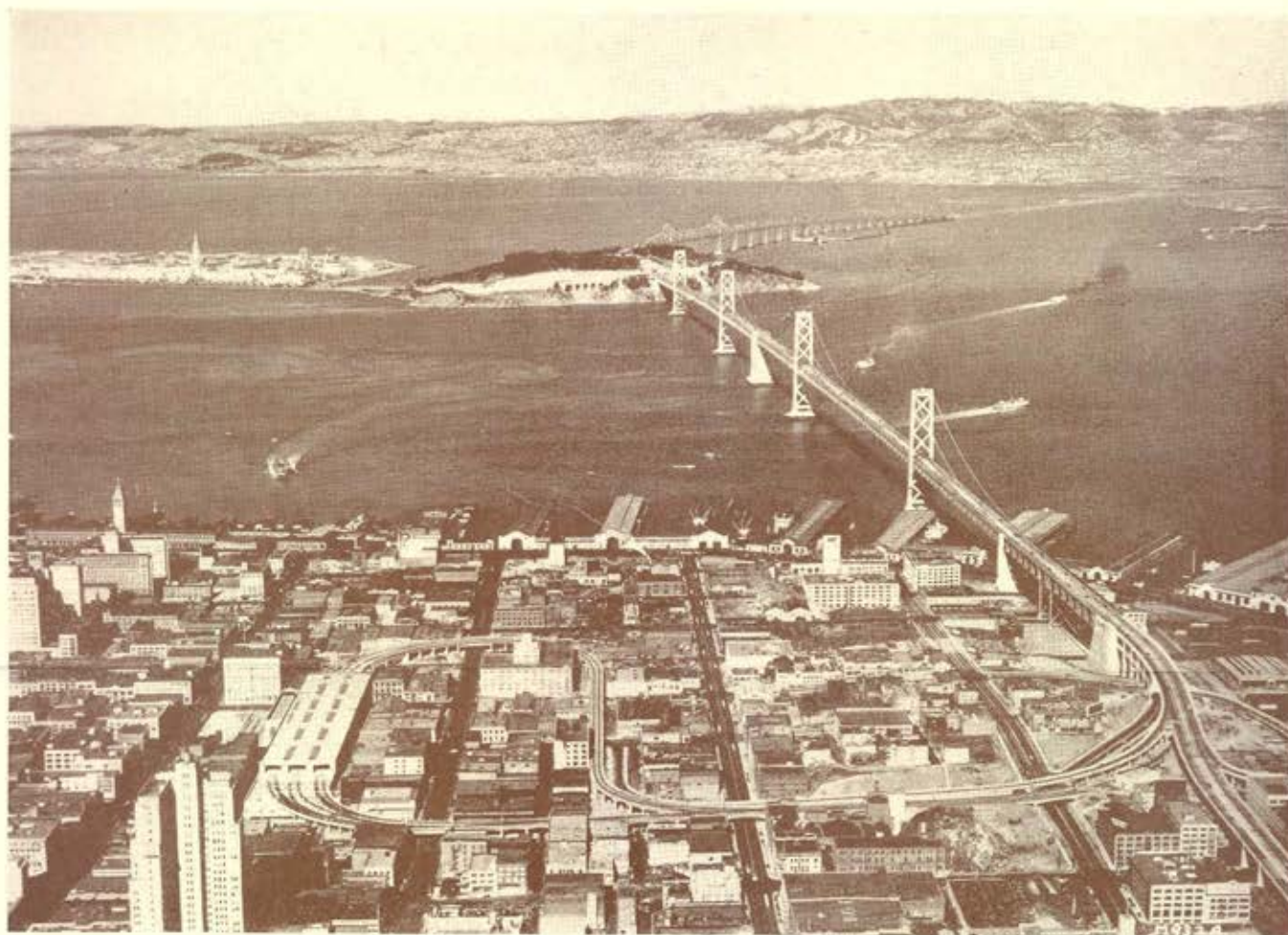
AMERICAN INSTITUTE OF ELECTRICAL ENGINEERS

SUMMER *and* PACIFIC COAST CONVENTION

at SAN FRANCISCO, CALIFORNIA



JUNE 26-30, 1939



San Francisco-Oakland Bay Bridge and Treasure Island

EXPOSITION

SPORTS

CONVENTION FEATURES . . . ANNUAL MEETING . . . CONFERENCE OF
OFFICERS, DELEGATES, AND MEMBERS . . . 9 TECHNICAL SESSIONS . . .
TECHNICAL CONFERENCES . . . STUDENT AND COUNSELOR MEETINGS

SOCIAL FUNCTIONS

TRIPS

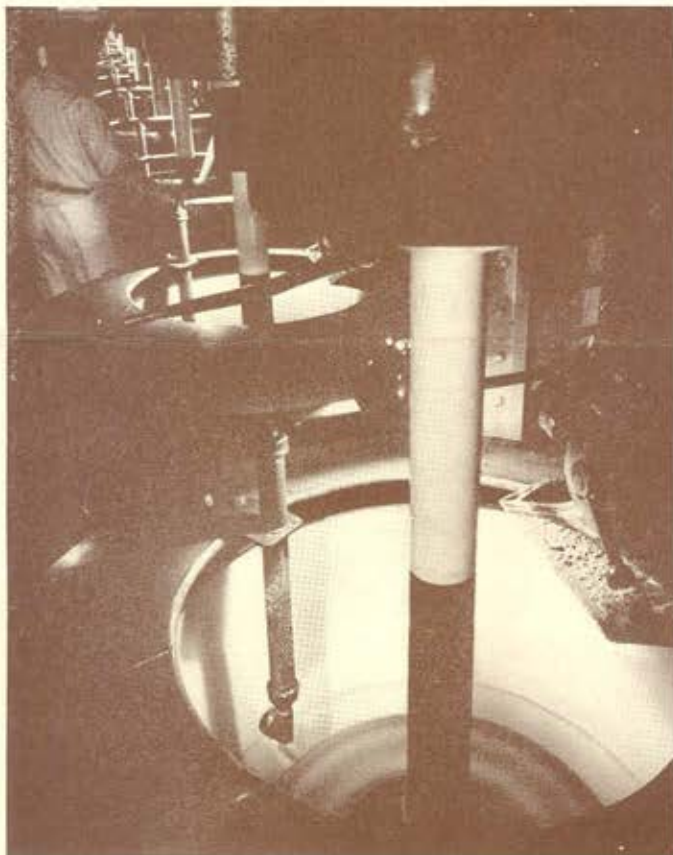
Announcement of A. I. E. E. SUMMER and PACIFIC COAST CONVENTION

at San Francisco

June 26-30, 1939

THIS convention offers members and guests unusual opportunities to combine business and pleasure. The convention program includes outstanding papers on a variety of pertinent subjects, technical conferences, student meetings and related activities. Entertainment will feature the Golden Gate International Exposition, which has designated Tuesday, June 27th, as A.I.E.E. Day. Golf and tennis competition for cups and prizes is planned. A large registration of ladies is anticipated, and extensive plans have been made to entertain them with true California hospitality.

Convention headquarters will be at the Fairmont Hotel atop Nob Hill and overlooking San Francisco Bay and Treasure Island. Accommodations are available at other hotels at a variety of prices. It is extremely important that reservations, if not already made, be made immediately. An application for this purpose is attached to the enclosed circular on Hotel Accommodations.



Washing Raw Sugar. California and Hawaiian Sugar Refining Corporation, Ltd.

Schedule of Events

(All Sessions and Conferences will be held at the Fairmont Hotel)

MONDAY, JUNE 26

- 8:30 a.m.—Registration (also Sunday—2:00 to 8:30 p.m.)
10:00 a.m.—Annual Meeting
Opening of Session, S. J. Lisberger, Chairman, Summer and Pacific Coast Convention Committee
Address of Welcome, P. M. Downing, Past Vice-President, A.I.E.E.
Response, Harry W. Hitchcock, Nominee for Vice-President, A.I.E.E.
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
Presentation of President's Badge and Response from President-elect F. Malcolm Farmer
Presentation of Prizes for Papers
Presentation of Lamme Medal to Marion A. Savage
President's Address, Dr. John C. Parker
Afternoon—Sports
2:00 p.m.—Conference of Officers, Delegates, and Members —San Francisco Bus Trip for Ladies
5:00 p.m.—Informal Reception and Tea for Men and Women, Mark Hopkins Hotel

TUESDAY, JUNE 27

- 9:00 a.m.—Three parallel Technical Sessions
Afternoon—Sports
—A.I.E.E. Day at Golden Gate International Exposition, Treasure Island
6:00 p.m.—Treasure Island—Dinner at Yerbabuena Club

WEDNESDAY, JUNE 28

- 9:00 a.m.—General Session
Afternoon—Sports
2:00 p.m.—Conference of Officers, Delegates, and Members —Student Technical Sessions
7:00 p.m.—Student Branch Dinner, followed by Joint Conference of Student Delegates and Counselors of 8th and 9th Districts

THURSDAY, JUNE 29

- 9:00 a.m.—Three parallel Technical Sessions
11:30 a.m.—Peninsula Bus Trip and Tea for Ladies (return by 5:30 p.m.)
Afternoon—Sports
2:00 p.m.—Student Technical Sessions
—Two Technical Conferences
—Bridge at Hotel (alternative)
7:00 p.m.—Convention Banquet — (Awarding of Sports Prizes) — Hotel Fairmont
9:00 p.m.—Dancing

FRIDAY, JUNE 30

- 9:00 a.m.—Three parallel Technical Sessions
Afternoon—Inspection Trips

(See pages 5 and 6 for *Social Events, Ladies Entertainment, and General Information*)

Partial Program of Technical Papers -

ADVANCE COPIES OF PAPERS

For the convenience of those who wish to obtain preprints in advance of the meeting, an order form is enclosed. If ordered by mail, price 10c per copy; if purchased at Institute headquarters or at the meeting, price 5c per copy. Coupon books in \$1.00 and \$5.00 denominations are available for those who wish to avoid remittance by check or otherwise. Papers not mentioned by number on the order blank will not be available in advance copy form. Most of the papers ultimately will be published in ELECTRICAL ENGINEERING or the TRANSACTIONS.

Tuesday, June 27

9:00 a.m.—Power Generation and Transmission

- 39-119. Mingled Hydro and Steam Power Production in California—Past, Present, and Future, A. H. Markwart, Pacific Gas and Electric Company
- 39-120. The Use of Multi-Winding Transformers with Synchronous Condensers for System Voltage Regulation, H. P. St. Clair, American Gas and Electric Service Corporation
- 39-121. Wave Shape of 30- and 60-Phase Rectifier Groups, O. K. Marti, Allis-Chalmers Manufacturing Company, and T. A. Taylor, Bell Telephone Laboratories, Inc.
- 39-122. Lightning Investigation on Transmission Lines—VII, W. W. Lewis and C. M. Foust, General Electric Company

9:00 a.m.—Communication, Electronics, and Basic Sciences

- 39-146. Recent Developments in Telegraph Switching, F. E. d'Humy, Western Union Telegraph Company
- 39-116. Ionization Time of Thyratrons, A. E. Harrison, California Institute of Technology
- 39-117. Transformation Theory of General Static Polyphase Networks, Louis A. Pipes, Harvard University

9:00 a.m.—Instruments and Measurements and Automatic Stations

- 39-124. A High Gain Direct-Current Amplifier for Bioelectric Recording, Harold Goldberg, University of Wisconsin
- 39-115. Surge Voltage Breakdown Characteristics for Electrical Gaps in Oil, R. W. Sorensen, California Institute of Technology

- 39-114. The Anomalous Behavior of the Moving Systems of Single-Phase Alternating Current Watthour Meters at No Load, F. C. Holtz, Sangamo Electric Company
- 39-125. Some Practical Measuring Devices, Lloyd F. Hunt, Southern California Edison Company
- 39-93. Carrier Current Losses Measured, and Interference Minimized on Boulder-Los Angeles Transmission Lines, J. D. Laughlin, Bureau of Power and Light, City of Los Angeles, and W. E. Pakala and M. E. Reagan, Westinghouse Electric and Manufacturing Company
- 39-126. A New Time Standard, Henry E. Warren, Warren Telechron Company

Wednesday, June 28

9:00 a.m.—General Session

An address by a nationally-known speaker will be arranged.

Thursday, June 29

9:00 a.m.—Protective Devices

- 39-132. High-Capacity Hydro-Blast Circuit Breaker for Central Station Service, W. F. Skeats and W. R. Saylor, General Electric Company
- 39-128. "Magne-Blast" Air Circuit Breaker for 5000-Volt Service, E. W. Boehne and L. J. Linde, General Electric Company
- 39-130. Transient and Steady State Performance of Potential Devices, E. L. Harder, P. O. Langguth, and C. A. Woods, Jr., Westinghouse Electric and Manufacturing Company



Union Pacific Steam-Electric Locomotive to be described in one of the papers in the Transportation and Lighting Session

Only papers which have been approved at the date of going to press

San Francisco, Calif., June 26-30, 1939

9:00 a.m.—Joint Communication Session

{I.R.E./The Technical Framework of Our Television, E. W. Engstrom, R.C.A. Manufacturing Company

{I.R.E./The Klystron as a Generator of Very Short Waves, W. W. Hansen, R. H. Varian, D. L. Webster, and J. R. Woodyard, Stanford University

39-144. Instruments and Methods of Measuring Radio Noise, C. V. Aggers, Westinghouse Electric and Manufacturing Company, Dudley E. Foster, R.C.A., and C. S. Young, Pennsylvania Power and Light Company

39-145. Methods of Controlling Radio Interference, C. V. Aggers, Westinghouse Electric and Manufacturing Company

9:00 a.m.—Electrical Machinery

39-105. The Hydrogen-Cooled Turbine Generator, D. S. Snell, General Electric Company

39-97. Hydrogen-Cooled Turbine Generators, M. D. Ross and C. C. Sterrett, Westinghouse Electric and Manufacturing Company

39-106. Some Factors in the Mechanical Design of High-Speed Turbo-Generators, S. H. Mortensen, Allis-Chalmers Manufacturing Company, and J. J. Ryan, University of Minnesota

39-107. Special Problems of Two-Pole Turbine Generators, C. M. Laffoon and B. A. Rose, Westinghouse Electric and Manufacturing Company

39-133. The Direct-Acting Generator Voltage Regulator, W. K. Boice, S. B. Crary, G. Kron and L. W. Thompson, General Electric Company

39-134. Fractional-Slot and Dead-Coil Windings, Michel G. Malti and Fritz Herzog, Cornell University (*Presentation by title*)

39-135. Report of Progress of the Art in Electrical Machinery, Committee on Electrical Machinery

2:00 p.m.—Conference on Teaching of Communication and Electronics

2:00 p.m.—Conference on Sensitive Ground Protection

Friday, June 30

9:00 a.m.—Transportation and Lighting

39-138. Signal System, Interlocking Plants, and Automatic Train Control on the San Francisco-Oakland Bay Bridge Railway, C. R. Davis, Public Works Department, State of California

39-139. Electrical Equipment of the Union Pacific Steam-Electric Locomotive, M. R. Hanna and J. F. Trittle, General Electric Company



Oil Circuit Breaker Assembly Floor of Pacific Electric Manufacturing Company

39-137. New Type of D-C to A-C Vibrator Inverter, O. Kiltie, General Electric Company

39-136. Painting the Golden Gate International Exposition with Light, A. F. Dickerson and H. E. Mahan, General Electric Company

9:00 a.m.—Research and Cables

39-111. The Dielectric Strength and the Life of Impregnated Paper—The Influence of the Density of the Paper, J. B. Whitehead, The John Hopkins University

39-112. Dielectric Strength of Insulating Liquids in a Continuously Circulating System, H. H. Race, General Electric Company

39-113. Tests on Oil Impregnated Paper—IV—Mechanism of Breakdown, H. H. Race, General Electric Co.

39-140. A New Technique for Lead Cable Sheathing, B. B. Reinitz and R. J. Wiseman, The Okonite-Callender Cable Company

9:00 a.m.—Industrial Power Applications

39-141. Temperature Survey of the United States, J. J. Smith, General Electric Company, and H. W. Tenney, Westinghouse Electric and Manufacturing Company

39-118. Capacitor Relay Timing in Industrial Control, Carroll Stansbury and T. B. Jochem, Cutler-Hammer, Inc.

39-143. Electrical Engineering and the Petroleum Refiner, G. R. Weeks and H. W. Giesecke, Standard Oil Development Company

39-142. Variable Voltage Equipment for Rotary Drilling Rigs, E. H. Lamberger, Westinghouse Electric and Manufacturing Company

are announced. Others will be added to the program, as approved.

SUMMER AND PACIFIC COAST CONVENTION

SOCIAL EVENTS

On Monday afternoon an informal reception and tea for members and guests at five o'clock at the Hotel Mark Hopkins, directly across the street from the Fairmont Hotel, will give everyone a chance to get acquainted. Tickets, which are free, must be secured at the registration desk by two o'clock Monday, to permit the hotel to make proper arrangements.

Tuesday is A.I.E.E. Day at the Exposition, and it is expected that everyone will want to visit it during the afternoon. No technical papers or conferences are scheduled at that time. The afternoon will be followed by an informal dinner at the Yerbabuena Club. The lounge will be open for refreshments after five, and the dinner will be served at six-thirty. Tickets will be \$2.00 per plate, and must be obtained at the registration desk, Fairmont Hotel, not later than eight o'clock Monday evening.

Wednesday has been set aside for further visits to the Exposition, shopping, sight-seeing and inspection trips. No organized entertainment is planned.

The Convention Banquet (black tie optional), entertainment, and dancing will be held at the Fairmont Hotel Thursday evening at seven. Sport prizes will be awarded. All members and guests should attend this closing entertainment feature of the convention.

LADIES ENTERTAINMENT

On Monday at two o'clock busses will leave the Fairmont Hotel on a trip to outstanding points of interest around San Francisco. It will follow to a large extent the celebrated "45-Mile Scenic Drive" and take about two hours. Men are invited. Tickets will be free for out-of-town members and guests, and one dollar each for residents of the Bay Area. All tickets must be obtained in advance at the registration desk.

A trip for ladies through San Mateo County will leave the Fairmont Hotel at eleven-thirty Thursday morning. Luncheon will be served in Palo Alto at the Allied Arts, which is noted for its handicraft arts, its fine cuisine, and beautiful surroundings. After lunch the Stanford University grounds will be visited, and the return to San Francisco will be through the many attractive suburban communities which dot the peninsula. Tickets must be obtained at the Fairmont Hotel by eight o'clock Wednesday evening.

SPORTS

Excellent facilities for golf and tennis abound in San Francisco and the Bay Area. Swimming may also be enjoyed in a pool of large size, and open to the public, located in the Fairmont Hotel. Golden Gate Park contains many miles of bridle trails.

The Mershon tennis tournament for men, and other matches for both men and women will be played at the

California Tennis Club in San Francisco. Play will commence Monday afternoon.

The qualifying round, eighteen holes, for the Mershon golf trophy, and the first eighteen holes medal play for the Lee trophy will be played at the Claremont Country Club in Oakland Monday afternoon. The last eighteen holes for the Lee trophy, and the John B. Fischen cup competition, which is open only to members of the eighth and ninth districts on the Pacific Coast, will be played on this course Thursday afternoon.

Play at other times and on other courses may be arranged by request to members of the Sports Committee.

SCENIC ATTRACTIONS

The Bay Area, California, and the entire Pacific Coast abound with natural attractions of infinite variety. Members and guests from near and far will want to visit as many as possible on their journeys to and from the convention.

Near San Francisco are Muir Woods, Mt. Tamalpais, and the ocean beaches. Within an easy one-day drive are Carmel, Monterey, Del Monte, Santa Cruz, and Big Basin. Slightly farther away are the Redwood Empire, Yosemite National Park, Lassen Park, General Grant, and Sequoia Parks, and Lake Tahoe.

In Southern California the many beaches, the movie studios, and other attractions lure many tourists. Oregon, Washington and British Columbia, likewise contain many points of interest. Visitors from east of the Rockies may well include Grand Canyon, Boulder Dam, Grand Coulee, Glacier Park or Yellowstone in their itineraries.



El Capitan, Yosemite Valley, California. This giant shaft of stone rises a sheer 3,604 feet above the floor of the Valley.

GENERAL INFORMATION

EXPOSITION

A word about the Golden Gate International Exposition, aptly termed "Gem of the Pacific." The Exposition is located on man-made Treasure Island in the middle of San Francisco Bay, easily accessible by auto, taxi or ferry, and it is winning the admiration of all who see it. Compactly designed, all of its many features are within easy walking distance of each other. Old masters, including priceless works loaned by the Italian Government, and modern painting feature an exceptional exhibit of art.

Florescent tube lighting is employed extensively. Exterior flood lighting of buildings, trees, shrubs and flowers is particularly good. The total electrical load is equal to the demands of a city of fifty thousand.

INSPECTION TRIPS

STANFORD UNIVERSITY

A half-day trip to this noted institution of learning will include a special demonstration at the Ryan High Voltage Laboratory.

UNIVERSITY OF CALIFORNIA

A trip across the San Francisco Bay Bridge to the University campus will include a visit to the recently completed cyclotron.

STATION "A", SAN FRANCISCO

Largest steam plant of the Pacific Gas and Electric Company with two 50,000-kw turbines operating at 1,400 pounds steam pressure.

STERLING SUBSTATION

Located at the San Francisco terminus of the Bay Bridge, this station contains 600-volt and 1300-volt rectifiers supplying the two interurban railway systems using third rail and trolley. The train control and signal system across the bridge, one of the busiest of double track interurban railways, may also be inspected.

NEWARK SUBSTATION

This station is the terminus of two 220-kv, sixteen 110-kv, and three 60-kv lines, with 227,500-kva transformer and 75,000-kva synchronous condenser capacity.

HOTELS

The Fairmont Hotel, convention headquarters, and a number of other conveniently located hotels have guaranteed to reserve space for a sufficiently long period to assure accommodations for *all who apply promptly*. See the enclosed circular on Hotel Accommodations for further particulars and rates. Please fill in and mail *promptly* to the hotel of your choice the application attached thereto.

REDUCED RAILROAD RATES

The railroads and busses are offering special reduced fares to San Francisco because of the Exposition. It is suggested that you consult your local ticket agent for detailed information and alternate routings. For those who prefer to motor, highways to California are numerous and high-class. For those traveling from New England and the Atlantic Seaboard region special accommodations with connections at Chicago, Ill., and St. Louis, Mo., offered by the New York Central System, were given in *ELECTRICAL ENGINEERING* for April 1939, p. 177.

REGISTRATION

Members who will attend the convention should promptly fill in and mail the enclosed advance registration card. This will permit the committee to make advance arrangements and minimize congestion at the registration desk. Registration fees will be payable upon arrival: Non-members, \$3.00; Members, \$2.00; Enrolled Students and immediate families of members, no charge.

COMBINED SUMMER AND PACIFIC COAST CONVENTION COMMITTEE

S. J. LISBERGER, *General Chairman*
D. I. CONE, *Vice-Chairman*
GEORGE C. TENNY, *Secretary*
R. O. BROSEMER, *Treasurer*

Members and Subcommittee Chairmen

M. S. Barnes
Registration

R. J. Cobban
Sports

E. A. Crellin
Hotel

Howard Flye
Entertainment and Reception

F. R. George
Trips and Local Transportation

J. S. Moulton
Publicity

Stanley Rapp
Transportation

H. H. Skilling
Student Activities

W. C. Smith
Program

Mrs. S. J. Lisberger
Ladies Entertainment

Members-at-Large

F. S. Benson

A. M. Bohnert

C. F. Bowman

C. B. Carpenter

O. B. Coldwell

P. M. Downing

C. E. Fleager

L. F. Fuller

L. R. Gamble

David Hall

N. B. Hinson

J. P. Jollyman

R. E. Kistler

H. J. MacLeod

J. A. McDonald

P. J. Ost

G. E. Quinan

C. E. Rogers

E. F. Scattergood

R. W. Sorensen

H. A. Stingle

F. E. Terman

H. H. HENLINE, *National Secretary*

Issued by
AMERICAN INSTITUTE OF ELECTRICAL ENGINEERS
33 West 39th Street, New York, N. Y.