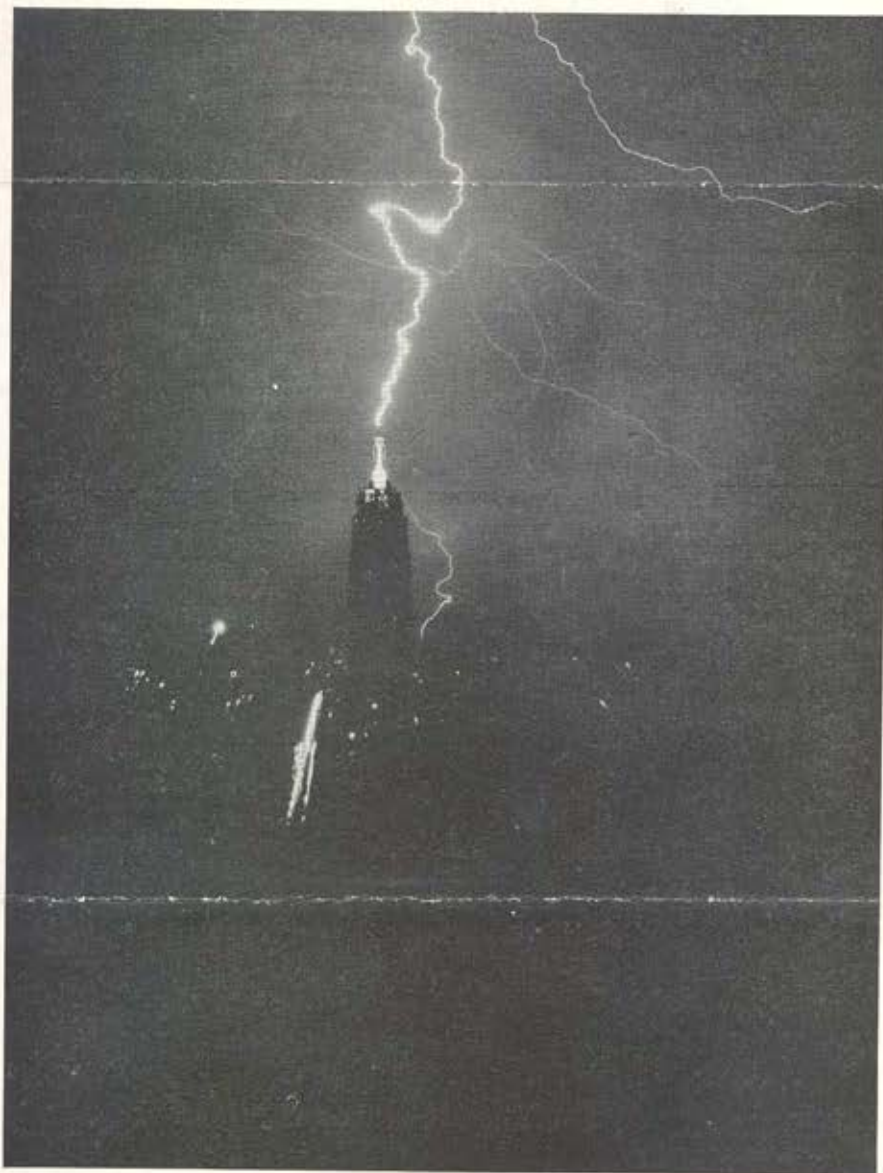


American Institute of Electrical Engineers

WINTER CONVENTION

January 24th to 28th, Nineteen Hundred and Thirty-eight



ENGINEERING
SOCIETIES
BUILDING
33 West 39th Street
NEW YORK, N. Y.

Lightning Stroke
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Tallest Building—
the Empire State

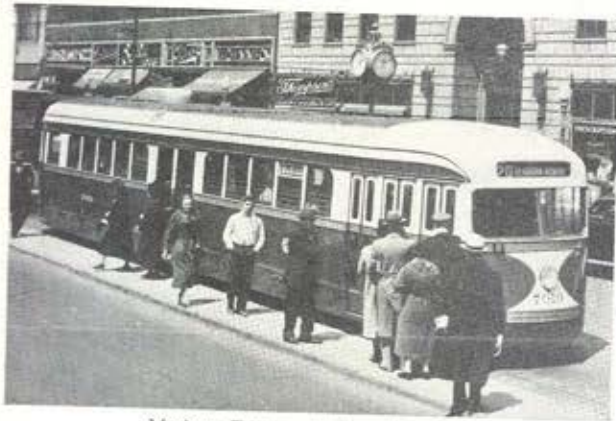
Featuring:

SIXTEEN TECHNICAL SESSIONS
TECHNICAL CONFERENCES
ADDRESS BY DR. H. G. MOULTON

EDISON MEDAL
PRESENTATION

SMOKER
DINNER-DANCE
INSPECTION TRIPS

Reference is given to each paper published in **ELECTRICAL ENGINEERING** in advance. Page numbers for the January issue refer to the **TRANSACTIONS** section. Only papers designated by an asterisk will be available in preprint form. If ordered by mail, price 10c per copy. If purchased at headquarters, price 5c per copy. Please include remittance with order.



Modern Transportation—the Car

MONDAY

9:00 a.m.—Registration

10:00 a.m.—Communication
(In Auditorium)

Coupling between Parallel Earth-Return Circuits under D-C Transient Conditions, K. E. Gould, Bell Telephone Laboratories, Inc. Sept., p. 1159

*Printing Telegraph Operation of Way Wires, G. S. Vernam, Postal Telegraph-Cable Co.

*A System of Electric Remote-Control Accounting, L. F. Woodruff, Massachusetts Institute of Technology

A New Single-Channel Carrier Telephone System, H. J. Fisher, M. L. Almquist, and R. H. Mills, Bell Telephone Laboratories, Inc. Jan., p. 25

10:00 a.m.—Symposium on Modern Electric Vehicles
(Room One, Fifth Floor)

*The P.C.C. Street Car, C. F. Hirshfeld, Transit Research Corp.

Application of Modern Electric Vehicles to Urban Transportation, C. M. Davis, General Electric Co. Jan., p. 57

Electrical Equipment for Modern Urban Surface Transit Vehicles, S. B. Cooper, Westinghouse Electric & Mfg. Co. Jan., p. 50

*Results of Operation of P.C.C. Cars in Pittsburgh, Thomas Fitzgerald, Pittsburgh Railways Co.

*Modern City Transportation, E. J. McIlraith, Chicago Surface Lines

Transportation Luncheon

At the conclusion of the morning session there will be a luncheon at the Engineers' Club for the transportation people only. Tickets at \$1.50 will be available.

2:00 p.m.—Symposium on a New Carrier Telephone System for Toll Cable
(In Auditorium)

Introductory Address: Broad-Band Wire Transmission Systems, H. A. Affel, Bell Telephone Laboratories, Inc.

*A Carrier Telephone System for Toll Cables, C. W. Green and E. I. Green, Bell Telephone Laboratories, Inc.

*Cable Carrier Telephone Terminals, R. W. Chestnut, L. M. Ilgenfritz, and A. Konner, Bell Telephone Laboratories, Inc.

*Crystal Channel Filters for the Cable Carrier System, C. E. Lane, Bell Telephone Laboratories, Inc.

*Crosstalk and Noise Features of Cable Carrier Telephone System, M. A. Weaver, R. S. Tucker, and P. S. Darnell, Bell Telephone Laboratories, Inc.

2:00 p.m.—Symposium on Modern Electric Vehicles—Continued
(Room One, Fifth Floor)

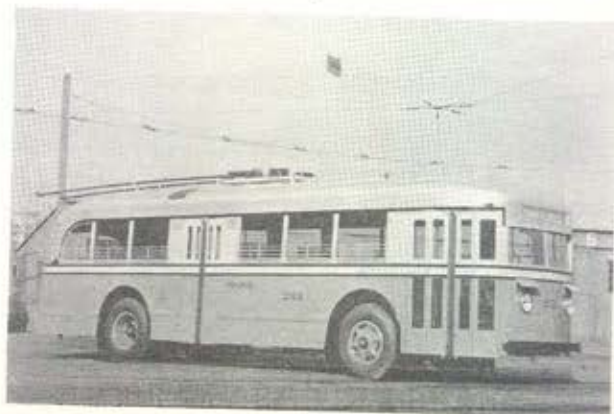
Modern Trolley-Coach Operation, Edward Dana, Boston Elevated Railway. Dec., p. 1461

Modern Trolley-Coach Operation, J. H. Polhemus, Portland Electric Power Co. Dec., p. 1483

*Operating Experience with Gas-Electric and Diesel-Electric Buses, R. H. Stier, Philadelphia Rapid Transit Co.

Premier Motion Picture—

Address: Electrically-Propelled Rubber-Tired Highway Vehicles for Mass Transportation, Martin Schreiber, Public Service Co-ordinated Transport.



Modern Transportation—the Trolley Bus

2:00 p.m.—Conference on Radiation Fields

(Room 601)

The following general papers on the physics of radiation are believed to provide a proper background for discussion. The object of the conference is by no means discussion of papers themselves but fundamentally an exchange of newer ideas and research results on these topics.

Electromagnetic Radiation and the Impedance Concept, S. A. Schelkunoff, Bell Telephone Laboratories, Inc.

Sound Production and Collection (emphasizing electrical and acoustical analogies), H. F. Olson, Victor Division, Radio Corporation of America

Elastic Waves in Solids and Surface Waves of Fluids, H. Poritsky, General Electric Co.

TUESDAY

9:30 a.m.—Lightning Protection

(In Auditorium)

Characteristics of the New Station-Type Autovalve Lightning Arrester, W. G. Roman, Westinghouse Electric & Mfg. Co. July, p. 819

***Discharge Currents in Distribution Arresters—Part II**, K. B. McEachron and W. A. McMorris, General Electric Co.

***Distribution Transformer Lightning Protection Practise II**, L. G. Smith, Consolidated Gas, Electric Light & Power Company of Baltimore

Some Engineering Features of Petersen Coils and Their Application, E. M. Hunter, General Electric Co. Jan., p. 11

***Test and Operation of Petersen Coil on 100-Kv System of Public Service Company of Colorado**, W. D. Hardaway, Public Service Company of Colorado, and W. W. Lewis, General Electric Co.

9:30 a.m.—Symposium on Electronics I

(Room One, Fifth Floor)

***Electronic Speed Control of Motors**, E. F. W. Alexander and M. A. Edwards, General Electric Co., and C. H. Willis, Princeton University

The Thyatron Motor at the Logan Plant, A. H. Beiler, American Gas and Electric Co. Jan., p. 19

***Phanotron Rectifiers As a Direct Current Supply for Elevator Motors**, C. C. Clymer and R. G. Lorraine, General Electric Co.

***Thyatron Control of Direct-Current Motors**, G. W. Garman, General Electric Co.

9:30 a.m.—Conference on Education

(Room 601)

2:00 p.m.—Relays and Reactors

(In Auditorium)

A System Out of Step and Its Relay Requirements, L. N. Crichton, Westinghouse Electric & Mfg. Co. Oct., p. 1261

A High-Speed Distance-Type Carrier-Pilot Relay System, E. L. Harder, B. E. Lenehan, and S. L. Goldsborough, Westinghouse Electric & Mfg. Co. Jan., p. 5

***The Application and Performance of Carrier Current Relaying**, Philip Sporn and C. A. Muller, American Gas and Electric Co.

Temperature Limits for Short-Time Overloads for Oil-Insulated Neutral Grounding Reactors and Transformers, V. M. Montsinger, General Electric Co. Jan., p. 39

***Harmonic Current Restrained Relays for Differential Protection**, L. F. Kennedy and C. D. Hayward, General Electric Co.

***Some Schemes of Current-Limiting Reactor Applications**, F. H. Kierstead, General Electric Co.

2:00 p.m.—Symposium on Electronics II

(Room One, Fifth Floor)

***Sharp Cut-Off in Vacuum Tubes, with Applications to the Slide-Back Voltmeter**, C. B. Aiken and L. C. Birdsall, Purdue University.

***Thyatron Reactor Lighting Control**, E. D. Schneider, General Electric Co.

***An Electronic Arc Length Monitor**, Walther Richter, A. O. Smith Corp.

***A New Type Vacuum Seal**, W. Endres Bahls, Radiatron Division, R.C.A.

2:00 p.m.—Conference on Sound and Vibration Measurement

(Room 601)

This conference will constitute an open meeting on progress in the sound measurement field and related questions. The program tentatively arranged includes the following principal topics.

1. The proposed A.I.E.E. Test Code on Apparatus Noise Measurement will be reviewed, including consideration of changes that have been proposed since its publication; with a view to rendering a final report to the Standards Committee, recommending the publication of the code in pamphlet form.

2. Several speakers will present proposals for the development of noise measurement standards or specifications for particular lines of apparatus, following the general procedure of the A.I.E.E. Test Code. If the interest and the progress shown warrant it, the committee may undertake to organize a formal Institute session on the subject with published papers at the Summer Convention.

3. There will also be a general discussion of methods of measuring vibration, including the velocity and acceleration, as well as the amplitude of the motion. The desirability of the committee's sponsoring definitions and measurement methods in this field to supplement the work on sound measurement will be considered. The meeting will be open to all Institute members or others interested in sound and vibration measurement problems.

Informal Talks

Experiences with the Sound Level Meter Standards, W. S. Barstow, American Telephone & Telegraph Co.

Experiences with Noise Specification Tests, A. P. Fugill, The Detroit Edison Co.

Vibration Measurement Methods, C. W. LaPierre, General Electric Co.

WEDNESDAY

10:00 a.m.—General Session

(In Auditorium)

Economic problems have been proven to be of very great interest and importance to engineers. This was illustrated by the attendance at the "general session" of the last Summer Convention in Milwaukee. The Institute is fortunate in having one so prominent in the economic field as Dr. Moulton, President of The Brookings Institution, Washington, D. C., to address this session. Except for very brief preliminaries, which will take only a few minutes, the entire meeting will be devoted to his address. The ladies are cordially invited to attend.

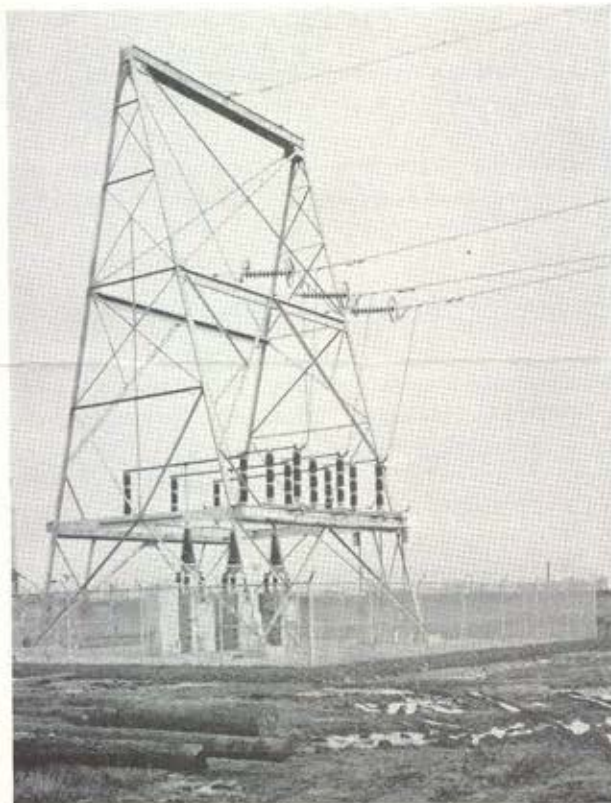
Presiding: W. H. HARRISON, President, A.I.E.E.

Opening Remarks: President Harrison

Convention Activities: J. P. Barton, Chairman, Winter Convention Committee

Presentation of Alfred Noble Prize to Dr. G. M. L. Sommerman

Address: Technological Development in Relation to Economics, Dr. H. G. Moulton, President, The Brookings Institution



Connection between Open Wire and Underground Cable Sections of 132,000-Volt Essex-Metuchen Transmission Circuit—Public Service Electric and Gas Company at Elizabeth, New Jersey

2:00 p.m.—Instruments and Measurements

(In Auditorium)

- *A New Alternating Current Network Analyzer, H. P. Kuehni and R. G. Lorraine, General Electric Co.
- *A Stabilized Amplifier for Measurement Purposes, H. A. Thompson, General Electric Co.
- Electrical Studies of Living Tissue—II—Correlation between Tissue Response and Voltage Distribution, A. G. Conrad, H. W. Haggard, and B. R. Teare, Yale University Jan., p. 1
- A New Correlation of Sphere Gap-Data, D. W. Ver Planck, Yale University Jan., p. 45

2:00 p.m.—Electric Welding

(Room One, Fifth Floor)

- Recent Advances in Resistance Welding, A.I.E.E. Resistance Welding Subcommittee, C. L. Pfeiffer, Chairman Jan., p. 37
- Mechanical High-Speed Resistance-Welder Control, F. H. Roby, Square D Co. Sept., p. 1145
- *Interpretation of Oscillograms of Arc-Welding Generators in Terms of Welding Performance, K. L. Hansen, Harnischfeger Corp.
- *The Rating of Resistance Welding Transformers, C. E. Heitman, Edward G. Budd Mfg. Co.

2:00 p.m.—Basic Sciences

(Room Two, Fifth Floor)

- Matrices in Engineering, L. A. Pipes, The University of Wisconsin Sept., p. 1177
- *Resonant Non-Linear Control Circuits, W. T. Thomson, Kansas State College
- *Sub-Harmonics in Circuits Containing Iron, I. A. Travis and C. N. Weygandt, University of Pennsylvania
- *The Properties of Three-Phase Systems Deduced with the Aid of Matrices, M. B. Reed, The University of Texas
- *Critical Conditions in Ferro-Resonance, P. H. Odessy and Ernst Weber, The Polytechnic Institute of Brooklyn

THURSDAY

9:30 a.m.—Power Transmission

(In Auditorium)

- *Transmission Line Transients in Motion Pictures, L. F. Woodruff, Massachusetts Institute of Technology
- *Lightning Strength of Wood in Power Transmission Structures, Philip Sporn, American Gas and Electric Co., and J. T. Lusignan, Jr., Ohio Brass Co.

(Continued on page 5)

THURSDAY (Continued)

*Recovery Voltage Characteristics of Typical Transmission Systems and Relation to Protector-Tube Application R. D. Evans and A. C. Monteith, Westinghouse Electric & Mfg. Co.

Switching Surges with Transformer Load-Ratio Control Contactors, L. F. Blume and L. V. Bewley, General Electric Co. Dec., p. 1464

*Protection Features for the Joint Use of Wood Poles Carrying Communication Circuits and Power Distribution Circuits above 5,000 Volts, J. O'R. Coleman, Edison Electric Institute, and A. H. Schirmer, Bell Telephone Laboratories, Inc.

9:30 a.m.—Conference on Linear Networks

(Room 601)

9:30 a.m.—Electrical Machinery I

(Room One, Fifth Floor)

*Coordination of Power Transformers for Steep-Front Impulse Waves, V. M. Montsinger, General Electric Co.

Corona Voltages of Typical Transformer Insulations under Oil, F. J. Vogel, Westinghouse Electric & Mfg. Co. Jan., p. 34

A Formula for the Reactance of the Interleaved Component, H. B. Dwight and L. S. Dzung, Massachusetts Institute of Technology Nov., p. 1368

9:30 a.m.—Conference on Definitions

(Room 602)

This conference of the Subcommittee on Definitions of the Committee on Basic Sciences will consider the definitions in Group 05 of the Final Revised Report of the Sectional Committee on Definitions of Electrical Terms (C-42). According to present arrangements for the conference each member of the subcommittee will present a set of suggested definitions and after each presentation discussion will be invited.

It is planned to invite to the conference all members of the following committees: Basic Sciences, Sectional Committee on Electric and Magnetic Magnitudes and Units (Committee C-61), Sectional Committee on Definitions of Electrical Terms (Committee C-42), Subcommittees of the Sectional Committee on Electrical Definitions, and any other persons whom Mr. H. E. Farrer and Dr. H. L. Curtis would like to invite.

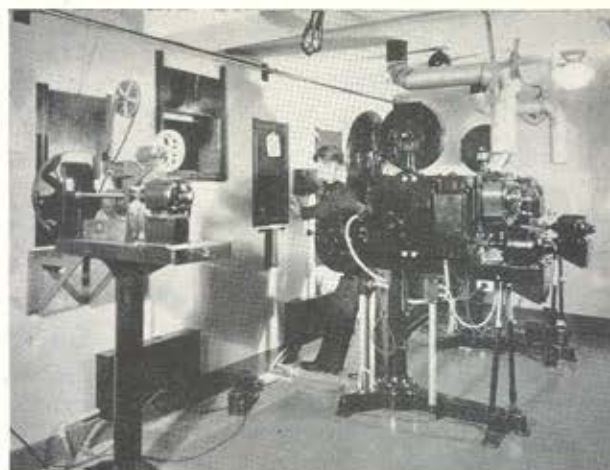
The personnel of the Subcommittee on Definitions of the Committee on Basic Sciences is: M. G. Malti, Chairman; Leigh Page, and Ernst Weber.

2:00 p.m.—Television

(In Auditorium)

Address: Current Field Work in Television, Ralph R. Beal, Radio Corporation of America

Address: The Coaxial Cable System for Telephone Transmission, M. E. Strieby, Bell Telephone Laboratories, Inc.



Television Motion Picture Scanning Room of the National Broadcasting Company—Radio City Studios—to be visited during the Winter Convention

2:00 p.m. Cables and Research

(Room One, Fifth Floor)

Oil Oxidation in Impregnated Paper, J. B. Whitehead, The Johns Hopkins University, and T. B. Jones, Bell Telephone Laboratories, Inc. Dec., p. 1492

*Mechanical Uniformity of Paper-Insulated Cable, K. S. Wyatt, D. L. Smart, and J. M. Reynar, The Detroit Edison Co.

*The Current Carrying Capacity of Rubber Insulated Conductors, S. J. Rosch, Anaconda Wire and Cable Co.

Short-Circuit Protection of Distribution Networks by the Use of Limiters, C. P. Xenis, Consolidated Edison Company of New York, Inc. Sept., p. 1191

2:00 p.m.—Electrical Machinery II

(Room Two, Fifth Floor)

Stray-Load Losses of D-C Machines, E. W. Schilling, Michigan College of Mining and Technology, and R. W. Koopman, University of Kansas Dec., p. 1487

D-C Machine Stray-Load-Loss Tests, Victor Siegfried, Worcester Polytechnic Institute Oct., p. 1285

Unsymmetrical Short-Circuits on Water-Wheel Generators under Capacitive Loading, C. F. Wagner, Westinghouse Electric & Mfg. Co. Nov., p. 1385

*Overvoltages Caused by Unbalanced Short Circuits (Effect of Amortisseur Windings), Edith Clarke and C. Concordia, General Electric Co., and C. N. Weygandt, University of Pennsylvania

Alternator Short-Circuit Currents under Unsymmetrical Terminal Conditions, A. R. Miller and W. S. Weil, Jr., Lehigh University Oct., p. 1268

SMOKER

An evening amidst comfortable surroundings with an opportunity to chat with friends, enjoy a good supper, and see an excellent show is in store for all who will attend the smoker. The facilities of the Hotel Commodore, the Grand Ballroom and West Ballroom with its lounge and service bar have been reserved. The supper served by the experienced Commodore staff needs no recommendation. The seating will be at tables of 10 with ample space to move around. All tables reserved. Tickets will be \$3.50 per person. Please send your reservations to the A.I.E.E. Smoker Committee, 33 West 39th Street, New York, N. Y., at an early date. Attend the smoker at the Commodore, Tuesday evening, January 25, at 8:30 p.m.

EDISON MEDAL PRESENTATION

Presentation of the Edison Medal to Mr. Gano Dunn will take place at a special session of the convention in the Engineering Auditorium, Wednesday evening, January 26, at 8:00 p.m. The medal was awarded to Mr. Dunn "for distinguished contributions in extending the science and art of electrical engineering, in the administration of great engineering works, and for inspiring leadership in the profession."

DINNER-DANCE

The outstanding social event of the convention, the annual dinner-dance, will be held in the Grand Ball Room of the Hotel Plaza on Thursday evening, January 27. A buffet supper will be served at midnight. Lounging rooms adjacent to the ballroom will be reserved for Institute members and their guests.

The Plaza, located on Fifth Avenue between 58th and 59th Streets, is known for its sparkling atmosphere and the excellence of its cuisine. The spacious and luxurious surroundings provide an ideal setting for meeting friends and acquaintances.

Music will be rendered by George Ellner and his inimitable orchestra during both the dinner and the dance. Encores will be limited to provide the maximum number of dances during the evening and the dinner hour has been advanced to permit dancing to start promptly. The program is as follows:

Dinner	Dancing	Buffet Supper
7:00 p.m.	9:30 to 2:00 a.m.	12:00 to 2:00 a.m.
Tickets will be sold on the following plans:		
Dinner and dance.....\$5.00 per person		
Dinner, dance, and buffet supper...\$6.50 per person		
Dance and buffet supper.....\$3.00 per person		

To assist the committee an early purchase of tickets is requested. Dinner reservations should include names of guests and desired seating arrangements. Tables will be laid for 8 or 10 places and every effort will be made to satisfy your wishes.

Reservation requests should be sent to the A.I.E.E. Dinner-Dance Committee, 33 West 39th Street, New York, N. Y., checks being made payable to "Special Account, A.I.E.E."

LADIES' ENTERTAINMENT

In addition to the Edison Medal presentation ceremonies and the dinner-dance the Ladies' Entertainment Committee, under the chairmanship of Mrs. George Sutherland, is arranging a very interesting series of events for the ladies. A special notice of great interest to the ladies is included with this mailing. Attention also is called to the general session, 10:00 a.m., Wednesday, in which Dr. H. G. Moulton, President of The Brookings Institution, Washington, D. C., will deliver an address, "Technological Development in Relation to Economics." The ladies are cordially invited to attend.

INSPECTION TRIPS

During the week of the convention a number of interesting inspection trips will be arranged. Some of these will include subjects related to the technical papers and others will be of general interest and education.

The tentative list of inspection trips which are under consideration is as follows:

- Photo Engraving
- Sponsored Broadcast
- Automobile Assembly Plant
- Vehicular Tunnel
- Sewerage Treatment Plant
- Stainless Steel Streamlined Train
- Grid-Controlled Rectifier
- High Pressure Turbine Unit
- Radio Tube Manufacturing
- Stock Exchange
- New York City Fire College
- Cable Manufacturing Plant
- Copper Refining Plant
- Bell Telephone Laboratories
- Television Studios

Through the courtesy of the General Electric Company it is expected that a limited number of tickets will be available for their sponsored broadcast on Monday evening. The General Electric Company "Hour of Charm" is a broadcast featuring Phil Spitalny and his all-girl orchestra. It is suggested that out-of-town members indicate their desire for tickets with their advance registration.

POST-CONVENTION CRUISE

In view of the success of last year's post-convention cruise another cruise to Bermuda has been arranged. The "Monarch of Bermuda" sails from New York at 3:00 p.m., Saturday, January 29, and returns February 4 about 9:00 in the morning. See enclosed circular and for reservations and further information write to Leon V. Arnold, 36 Washington Square West, New York City.

HOTEL RESERVATIONS

Members are requested to make their hotel reservations by writing directly to the hotel of their preference. For convenience, the room rates of a few of the hotels will be listed in the January issue of ELECTRICAL ENGINEERING, p. 34.

REGISTER IN ADVANCE

Please fill in and return promptly the enclosed Mail Registration Card. This will permit the committee to have badges ready and prevent congestion at the registration desk upon arrival. A registration fee of \$2 will be charged all non-members, except Enrolled Students and the immediate families of members.

H. H. HENLINE, National Secretary.

Winter Convention Committee

T. F. Barton, Chairman

- | | | |
|-----------------|---------------|-------------------|
| C. R. Beardsley | A. F. Dixon | C. S. Purnell |
| O. B. Blackwell | E. E. Dorting | George Sutherland |
| G. E. Dean | H. S. Osborne | F. P. West |

Chairmen of Subcommittees

- | | |
|--|---------------------------|
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| E. R. Thomas (Inspection Trips) | |
| Mrs. George Sutherland (Ladies' Entertainment) | |

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