

American Institute of
Electrical Engineers



**SUMMER
CONVENTION
PROGRAM**

CHICAGO, ILLINOIS

June 22-26

1942

Convention Headquarters

THE DRAKE

American Institute of
Electrical Engineers



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Program

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GENERAL INFORMATION

THE PROGRAM, to aid the war effort, has been enlarged to 20 sessions and conferences, in addition to the Annual Meeting and Conference of Officers, Delegates and Members. Fifty-nine papers will be presented which makes this the largest Summer Convention technical program in the history of the Institute. Several sessions and many papers are related to war preparations.

Please register promptly on arrival at the convention. A registration fee of \$2 will be charged all non-members, except Enrolled Students and the immediate families of members.

Get tickets at once for the entertainment, luncheons, dinner-dance, and trips, so that arrangements for the accommodation of everyone may be completed.

Information on all features of the convention may be obtained at the registration desk.

Efforts will be made to deliver telegrams and messages promptly. Any mail for members received at convention headquarters during the meeting will be delivered to the hotel address, if known; otherwise it will be held at the convention registration desk. Letters undelivered at the close of the meeting will be forwarded to latest mailing address.

Advance Copies of Technical Papers may be purchased at the registration desk or at Institute headquarters at prices indicated. 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 in **ELECTRICAL ENGINEERING** and the **TRANSACTIONS**.

Technical Sessions and Discussions are governed by the "Conduct of Technical Sessions" at the discretion of the chairman presiding. The Institute will appreciate your courtesy and cooperation in strictly abiding by the decisions of the chairman in all matters.

In general papers will be presented in abstract, 10 minutes being allowed for each presentation, unless otherwise arranged by the presiding officer.

Preference will be given to those who have explained in advance their intention to discuss papers. Usually 5 minutes are allowed to each discussor. Names and affiliations should be clearly announced from the platform. If discussions are intended for publication in the **TRANSACTIONS** they should be typewritten, double spaced (*original and two carbon copies*), and left with the chairman. Otherwise they should be sent to C. S. Rich, A.I.E.E., 33 West 39th Street, New York, N. Y., before July 10. Written discussions should be brief, without perfunctory commendations, and confined to individual papers rather than groups of papers.

Summer Convention

Schedule of Events

Sunday, June 21

6:15 p.m.—Reception to early convention arrivals. Music and refreshments in Room C—no charge.

Monday, June 22

9:00 a.m.—Registration
10:00 a.m.—Annual Meeting
12:00 m. —Luncheon Conference of Branch Counselors
2:00 p.m.—Conference on Local Engineering Councils
2:00 p.m.—Power Generation Session and Conference
2:00 p.m.—Conference on Lighting Aids to Wartime Production
9:00 p.m.—President's Reception—Dance

Tuesday, June 23

9:30 a.m.—Switching Equipment
9:30 a.m.—Communication
9:30 a.m.—Instruments and Measurements Session and Conference
2:00 p.m.—Conference of Officers, Delegates, and Members
6:30 p.m.—Beaches and Boulevards of Central and South America

Wednesday, June 24

9:30 a.m.—Lightning and Miscellaneous
9:30 a.m.—Overload Operation of Transformers and Rotating Machinery
9:30 a.m.—Conference on Electronic Control of Resistance Welding
12:30 p.m.—Board of Directors' Luncheon Meeting
2:00 p.m.—Protective Relays
2:00 p.m.—Lightning
2:00 p.m.—Electronics and Standards
Evening —Edgewater Beach Hotel
8:15 p.m.—Adler Planetarium Lecture

Thursday, June 25

10:00 a.m.—General Session
2:00 p.m.—Power Transmission and Distribution
2:00 p.m.—Land Transportation
2:00 p.m.—Conference on Educational Matters under War Conditions
7:30 p.m.—Dinner-Dance (summer formal)

Friday, June 26

9:30 a.m.—Mercury-Arc Rectifier Applications
9:30 a.m.—Basic Sciences
2:00 p.m.—Selected Subjects
2:00 p.m.—Cables

See pages 13-14 and separate folder for Inspection Trips. For Ladies' Entertainment and Sports see page 14.

PROGRAM

Monday, June 22

9:00 a.m.—Registration

French Room

10:00 a.m.—Annual Meeting

Ballroom

Address of Welcome, H. B. Gear, Convention Chairman
Address, "Democracy in Its Struggle Looks to the Engineer." D. D. Ewing, Head of School of Electrical Engineering, Purdue University

PRESIDENT DAVID C. PRINCE, Presiding

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 Harold S. Osborne

Presentation of Prizes for Papers

Presentation of Lamme Medal to Forrest E. Ricketts

President's Address

12:00 m.—Luncheon Conference of Branch
Counselors

Room C

H. W. BIBBER, Presiding

2:00 p.m.—Conference on Local Engineering
Councils

Room G

T. G. LECLAIR, Presiding

This conference is intended to inspire engineers to cooperate with fellow engineers in other branches of the profession and to take a greater part in community civic affairs. Much may be done in the way of appraising local situations, initiating worthwhile projects, and promoting long-range planning during the war and postwar period. It is believed engineers are in a position to render very important public service.

*CP. The Formation, Objectives, and Recent Work of the Illinois Engineering Council. Frank F. Fowle, Chicago, Ill.

*CP. The Co-ordination of Various Groups of Engineers in Massachusetts during the Preparation of a Licensing Law. K. B. McEachron, Pittsfield, Mass.

*CP. The Methods of Co-ordinating the Work of the Engineering Societies in the State of Iowa. K. R. Brown, Des Moines, Iowa.

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

Summer Convention

2:00 p.m.—Power Generation Session and Conference

Ballroom

W. L. CISLER, Presiding

Address, "Power Supply for the War Program."
J. E. Moore, War Production Board

Address, "Power Supply for the War Program."
E. Falck, War Production Board

*CP. "Power Facilities and Problems in South America."
R. P. Crippen, Ebasco Services, Inc.

42-113. Frequency Control of Load Swings. J. E. McCormack and R. J. Lombard, Consolidated Edison Co. of N. Y., Inc. 10 cents (by mail 15 cents).

2:00 p.m.—Conference on Lighting Aids to War-time Production

Tower Room

E. M. STRONG, Presiding

The effect of good industrial illumination on increased production, reduction in waste, and prevention of accidents makes it important to review new data, new standards, and new ideas on the subject at this time when war production must be increased by every means known to the engineer. This program has been arranged to high light the part which engineered industrial lighting can play in winning the war.

*CP. What Engineered Lighting Can Do to Aid War Production. J. O. Kraehenbuehl, University of Illinois.

*CP. Substitute Materials for Industrial Lighting Equipment. E. D. Tillson, Commonwealth Edison Co.

*CP. Maintaining Lighting in War Industries. A. K. Gaetjens, General Elec. Co.

*CP. Good Industrial Lighting and Safety. J. M. Roche, National Safety Council.

*CP. Activities of the Illuminating Engineering Society to Aid War Production. H. B. Dates, Chairman of Light in War-time Committee, Illuminating Engineering Society.

Discussion periods will follow each talk, during which the audience will be invited to present other data and to ask questions.

9:00 p.m.—President's Reception

Tower Room

Following the reception the Chicago Section will sponsor a dance in the Ballroom.

Tuesday, June 23

9:30 a.m.—Switching Equipment

Ballroom

J. R. NORTH, Presiding

- 42-130. Transient Recovery Voltage Characteristics of Electric Power Systems. H. P. St. Clair, American Gas & Electric Service Corp., and J. A. Adams, Philadelphia Elec. Co. 10 cents (by mail 15 cents).
- 42-131. Practical Calculation of Circuit Transient Recovery Voltages. J. A. Adams, Philadelphia Elec. Co., W. F. Skeats, General Elec. Co., R. C. Van Sickle, Westinghouse Elec. & Mfg. Co., and T. G. A. Sillers, Allis-Chalmers Mfg. Co. 25 cents (by mail 30 cents).
- 42-120. Transient Recovery Voltages and Circuit-Breaker Performance. R. C. Van Sickle, Westinghouse Elec. & Mfg. Co. 25 cents (by mail 30 cents).
- 42-119. Tests and Analysis of Circuit Breaker Performance When Switching Large Capacitor Banks. T. W. Schroeder, E. W. Boehne, and J. W. Butler, General Elec. Co. 25 cents (by mail 30 cents).
- 42-114. A Compressed-Air Operating Mechanism for Oil-Circuit Breakers. R. C. Cunningham and A. W. Hill, Westinghouse Elec. & Mfg. Co. 10 cents (by mail 15 cents).

9:30 a.m.—Communication

Tower Room

ARTHUR B. SMITH, Presiding

- 42-95. Regulated Rectifiers in Telephone Offices. D. E. Trucksess, Bell Telephone Laboratories, Inc. 15 cents (by mail 20 cents).
- 42-144. Poles and Pole Treatment. R. H. Colley, Bell Telephone Laboratories, Inc. 15 cents (by mail 20 cents).
- 42-145. The Combination of Probability Curves in Engineering. R. I. Wilkinson, Bell Telephone Laboratories, Inc. 25 cents (by mail 30 cents).

9:30 a.m.—Instruments and Measurements Session and Conference

Gold Coast Room

F. B. SILSBEE, Presiding

- 42-110. Theoretical Possibilities of an Internally Heated Bimetal Type of Thermal Watt Demand Meter. Edward Lynch, General Elec. Co. 20 cents (by mail 25 cents).

Summer Convention

- 42-123. A New Moving Magnet Instrument for Direct Current. H. T. Faus and J. R. Macintyre, General Elec. Co. 10 cents (by mail 15 cents).
- 42-134. A New Jewel for Indicating Instruments. F. K. McCune and J. H. Goss, General Elec. Co. 15 cents (by mail 20 cents).
- *CP. The Inspection of Surface Finishes in Practise. W. Mikelson, General Elec. Co.
- *CP. The Profilometer for Production Measurement of Surface Roughness. J. R. Wieneke, Physicists Research Co.
- *CP. Surface Roughness Measurements. C. K. Gravley, The Brush Development Co.

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

Ballroom
M. S. COOVER, Presiding

6:30 p.m.—Beaches and Boulevards of Central and South America

To be held at the Lake Shore Club, where a large swimming pool and a magnificent lobby and ballroom afford excellent opportunity for portrayal of life South of the Border. Buffet dinner will be served as a preliminary to the evening's performance. Tickets for the evening, including the dinner, \$1.50. No arrangements necessary for transportation, as the Club is within easy walking distance of the Drake Hotel.

Wednesday, June 24

9:30 a.m.—Lightning and Miscellaneous

Ballroom
PHILIP SPORN and T. G. LECLAIR, Presiding

- 42-129. Relative Expense for Service Restoration with Different Types of Overcurrent Protection for Distribution Circuits. G. F. Lincks and C. R. Craig, General Elec. Co. 25 cents (by mail 30 cents).
- 42-96. Modern Impulse Generators for Testing Lightning Arresters. Theodore Brownlee, General Elec. Co. 15 cents (by mail 20 cents).
- 42-108. Modern Cathode-Ray Oscillograph for Testing Lightning Arresters. E. J. Wade, T. J. Carpenter, and D. D. MacCarthy, General Elec. Co. 10 cents (by mail 15 cents).

(Continued on page 8)

9:30 a.m.—Overload Operation of Transformers and Rotating Machinery

Tower Room
C. M. GILT, Presiding

- 42-98. Factors Affecting the Mechanical Deterioration of Cellulose Insulation. F. M. Clark, General Elec. Co. 20 cents (by mail 25 cents).
- 42-93. Application of Apparatus and Conductors under Various Ambient Temperature Conditions. R. E. Hellmund and P. H. McAuley, Westinghouse Elec. & Mfg. Co. 15 cents (by mail 20 cents).
- 42-115. Emergency Overloading of Air-Cooled Oil-Immersed Power Transformers by Hot-Spot Temperatures. V. M. Montsinger and P. M. Ketchum, General Elec. Co. 25 cents (by mail 30 cents).
- 42-101. Emergency Overloads for Oil-Insulated Transformers. F. J. Vogel and T. K. Sloat, Westinghouse Elec. & Mfg. Co. 10 cents (by mail 15 cents).
- 42-124. Motor Insulation, Heat, and Moisture. P. H. McAuley, Westinghouse Elec. & Mfg. Co. 10 cents (by mail 15 cents).

9:30 a.m.—Conference on Electronic Control of Resistance Welding

Room G
S. B. INGRAM, Presiding

The objective of this conference will be to obtain an informal interchange of opinions and experiences on various types of electronic control systems for resistance welding. It is not planned to extend the discussion to control systems for arc welding or to deal in any way with the phenomena of the welding process itself. It is hoped that those taking part will include not only engineers experienced in the manufacture of the control apparatus or the welding equipment itself but also the users of this equipment. The conference will be opened by brief talks by two discussion leaders, G. W. Garman, General Electric Company, and E. H. Vedder, Westinghouse Electric and Manufacturing Company, after which discussion from the floor will be in order.

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

Room C

2:00 p.m.—Protective Relays

Ballroom
J. R. NORTH, Presiding

- 42-116. Current and Potential Transformer Standardization. Subcommittee on Current Transformers. 25 cents (by mail 30 cents).
- 42-125. A New Single Phase-to-Ground Fault Detecting Relay. W. K. Sonnemann, Westinghouse Elec. & Mfg. Co. 10 cents (by mail 15 cents).
- 42-136. Protection of Pilot Wire Circuits. E. L. Harder and M. A. Bostwick, Westinghouse Elec. & Mfg. Co. 25 cents (by mail 30 cents).

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- 42-90. Factors Which Influence the Behavior of Directional Relays. T. D. Graybeal, University of California. 25 cents (by mail 30 cents).

2:00 p.m.—Lightning

Tower Room
PHILIP SPORN, Presiding

- 42-91. Practical Design of Counterpoise for Transmission-Line Lightning Protection. E. Hansson and S. K. Waldorf, Pennsylvania Water & Pr. Co. 10 cents (by mail 15 cents).
- 42-107. Study of Driven Rods and Counterpoise Wires and High-Resistance Soil on Consumers Power Company 140-Kv System. J. G. Hemstreet, Consumers Pr. Co. and W. W. Lewis and C. M. Foust, General Elec. Co. 20 cents (by mail 25 cents).
- 42-103. Induced Voltages on Transmission Lines. C. F. Wagner and G. D. McCann, Westinghouse Elec. & Mfg. Co. 25 cents (by mail 30 cents).
- 42-109. Abnormal Currents in Distribution Transformers due to Lightning. J. M. Bryant and M. Newman, University of Minnesota. 10 cents (by mail 15 cents).
- 42-104. Effect of Lightning on Thin Metal Surfaces. K. B. McEachron and J. H. Hagenguth, General Elec. Co. 15 cents (by mail 20 cents).

2:00 p.m.—Electronics and Standards

Gold Coast Room
S. B. INGRAM, Presiding

- 42-87. Current Ratings of Electronic Devices for Intermittent Service. R. E. Hellmund, Westinghouse Elec. & Mfg. Co. 10 cents (by mail 15 cents).
- 42-94. Analytical Treatment for Establishing Load-Cycle Ratings of Ignitrons. D. E. Marshall and E. G. F. Arnott, Westinghouse Elec. & Mfg. Co. 10 cents (by mail 15 cents).
- 42-122. Electronics of the Fluorescent Lamp. M. A. Townsend, General Elec. Co. 15 cents (by mail 20 cents).
- 42-106. Sealed-Tube Ignitron Rectifiers. M. M. Morack and H. C. Steiner, General Elec. Co. 15 cents (by mail 20 cents).

Evening—Edgewater Beach Hotel

No definitely planned affairs for the group as a whole. Reservations have been made for approximately 200 convention guests to go to the Marine Dining Room at the Edgewater Beach Hotel. Reservations for these tickets should be made not later than Tuesday noon. Tickets, \$2.50 per person, including dinner and cover charge for the evening's entertainment.

8:15 p.m.—Adler Planetarium Lecture

In addition, reservations for the Adler Planetarium have been made and application for these should be in by Monday evening.

Thursday, June 25

10:00 a.m.—General Session—The Organization and Management of Large-Scale Engineering Work

Ballroom

PRESIDENT DAVID C. PRINCE, Presiding

Address, "The Organization of Large-Scale Engineering Work." M. R. Sullivan, Vice-President, Operating and Engg. Dept., American Tel. & Tel. Co.

Address, "The Engineering Organization of a Large Industrial Business." R. C. Muir, Vice-President, General Elec. Co.

Address, "Engineering As an Implement of Management." H. B. Gear, Vice-President in Charge of Operating and Engineering, Commonwealth Edison Co.

Period for questions and discussion

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

Ballroom

H. E. WULFING, Presiding

- 42-88. Analysis of Short Circuits for Distribution Systems. Charles F. Dalziel, University of California. 15 cents (by mail 20 cents).
- 42-112. Series Capacitors for Transmission Circuits. E. C. Starr, Oregon State College, and R. D. Evans, Westinghouse Elec. & Mfg. Co. 25 cents (by mail 30 cents).
- 42-117. Stability Study of A-C Power-Transmission Systems—I and II. J. M. G. Holm, Boston, Mass. 25 cents (by mail 30 cents).

2:00 p.m.—Land Transportation

Tower Room

E. B. FITZGERALD, Presiding

- 42-137. Electrical Facilities and Operating Plan for the First Chicago Subway. C. E. DeLeuw, Chicago Dept. of Subways & Superhighways. 20 cents (by mail 25 cents).
- 42-121. Sleet Problems on Electrified Railroads. H. F. Brown, New York, New Haven, and Hartford Railroad Co. 15 cents (by mail 20 cents).
- 42-126. Improvements in Preventive Coil Control for A-C Locomotives with Particular Reference to "Resistor Transition." P. H. Hatch, N. Y., New Haven & Hartford R. R. Co., and H. S. Ogden, General Elec. Co. 15 cents (by mail 20 cents).

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42-127. Electric Control for Steam Boilers on Diesel and Straight Electric Locomotives. E. H. Burgess, Vapor Car Heating Co., Inc. 10 cents (by mail 15 cents).

2:00 p.m.—Conference on Educational Matters under War Conditions

Room C

R. W. WARNER, Presiding

7:30 p.m.—Dinner-Dance

Summer Formal
(Tickets \$3.50 each)

Friday, June 26

9:30 a.m.—Mercury-Arc Rectifier Applications

Ballroom

C. M. GILT, J. R. NORTH and J. J. ORR, Presiding

42-138. Electrical Equipment for Large Electrochemical Installations. T. R. Rhea and H. H. Zielinski, General Elec. Co. 25 cents (by mail 30 cents).

42-118. Ignitron Rectifiers in Industry. J. H. Cox and G. F. Jones, Westinghouse Elec. & Mfg. Co. 15 cents (by mail 20 cents).

42-105. Ignitor Excitation Circuits and Mis-Fire Indication Circuits. A. H. Mittag and A. Schmidt, General Elec. Co. 10 cents (by mail 15 cents).

42-139. A New Multiple High-Speed Air-Circuit Breaker for Mercury-Arc Rectifier Anode Circuits and its Relation to the Arc-Back Problem. J. W. Seaman and L. W. Morton, General Elec. Co. 25 cents (by mail 30 cents).

42-99. A 600-Volt Enclosed Limiter for Network Use. P. O. Langguth, H. L. Rawlins, and J. M. Wallace, Westinghouse Elec. & Mfg. Co. 10 cents (by mail 15 cents).

9:30 a.m.—Basic Sciences

Tower Room

W. A. LEWIS, JR., Presiding

42-140. On Eddy Currents in a Rotating Disk. W. R. Smythe, California Institute of Technology. 10 cents (by mail 15 cents).

42-128. The Effect of Initial Conditions on Subharmonic Currents in a Nonlinear Series Circuit. S. J. Angello, Westinghouse Elec. & Mfg. Co. 10 cents (by mail 15 cents).

(Continued on page 12)

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- 42-141. Energy Flow in Electrical Systems. The VI Energy Flow Postulate. Joseph Slepian, Westinghouse Elec. & Mfg. Co. 15 cents (by mail 20 cents).
- 42-142. Formulas for Calculating Short-Circuit Stresses in Bus Supports for Rectangular Tubular Conductors. T. J. Higgins, The Tulane Univ. of Louisiana. 10 cents (by mail 15 cents).

2:00 p.m.—Selected Subjects

Tower Room

C. M. GILT, Presiding

- 42-97. The Carbon Arc—A Valuable Industrial Tool. W. C. Kalb, National Carbon Co. 10 cents (by mail 15 cents).
- 42-143. Electrical Features of Design and Operation of the Plantation Pipe Line. M. A. Hyde, Westinghouse Elec. & Mfg. Co., and H. B. Britton, Plantation Pipe Line Co. 15 cents (by mail 20 cents).
- 42-100. Field Harmonics in Induction Motors. M. M. Liwshitz, The Polytechnic Institute of Brooklyn and Westinghouse Elec. & Mfg. Co. 25 cents (by mail 30 cents).
- 42-132. Precision Speed Control for World's Largest Induction Motor. R. R. Longwell and M. E. Reagan, Westinghouse Elec. & Mfg. Co. 10 cents (by mail 15 cents).
- 42-89. Steady-State Theory of the Amplidyne Generator. T. D. Graybeal, Univ. of California. 15 cents (by mail 20 cents).

2:00 p.m.—Cables

Ballroom

R. J. WISEMAN, Presiding

- 42-111. Load Ratings of Cable—II. Herman Halperin, Commonwealth Edison Co. 25 cents (by mail 30 cents).
- 42-102. Low-, Medium-, and High-Pressure Gas-Filled Cable. G. B. Shanklin, General Elec. Co. 20 cents (by mail 25 cents).
- 42-133. 120-Kv Compression-Type Cable. I. T. Faucett and R. W. Atkinson, General Cable Corp., and L. I. Komives and H. W. Collins, The Detroit Edison Co. 15 cents (by mail 20 cents).
- 42-135. 120-Kv High-Pressure Gas-Filled Cable. I. T. Faucett and R. W. Atkinson, General Cable Corp., and L. I. Komives and H. W. Collins, The Detroit Edison Co. 20 cents (by mail 25 cents).
- 42-92. The Dielectric Strength and Life of Impregnated-Paper Insulation—III. J. B. Whitehead, The Johns Hopkins University. 10 cents (by mail 15 cents).

Inspection Trips

Many trips are of a scientific and educational nature. Some may be cancelled if transportation facilities are curtailed. The majority are limited to U. S. citizens. For the latest information see *separate folder on Inspection Trips*.

Tuesday, June 23

12:00 m. Mill Road Gardens. There are 90 acres of landscaped gardens surrounding a typical old French manor house. A large topiary garden of dwarfed Chinese elms is of particular interest. This trip is principally for the women guests. Private autos will leave The Drake at 12:00 m.

1:30 p.m. The Museum of Science and Industry. Here may be seen, by means of ingenious machines and accurate scale models, a surprisingly true conception of manufacturing processes, mining methods, transportation and power production as well as the technique of scientific research.

2:00 p.m. The Lakeside Press of R. P. Donnelley and Sons Company. Visitors will see the printing in black and white and color of "Life" and "Time," as well as interesting electrical control mechanisms and large presses in operation.

2:00 p.m. The Clarence Buckingham Fountain. Not to mention the spectacle, the features of operation, automatic lighting, and hydraulic pumping to force the central jet skyward 135 feet above the lower basin are of interest.

Wednesday, June 24

1:30 p.m. Technological Institute—Northwestern University. Here there are extensive modern facilities for instruction and research in chemical, civil, electrical, and mechanical engineering, and the allied sciences. Among the many laboratories the high-voltage laboratory for testing under artificial weather conditions, a totally shielded radio room, and a floating sound-proof room will be of special interest.

2:00 p.m. Commonwealth Edison Company Calculating Board. This a-c network analyzer has been of invaluable assistance in solving complex problems of power flow, short circuits, and stability in a large metropolitan system. The board will be on display and its operation will be demonstrated in the solution of an actual problem.

2:00 p.m. Commonwealth Edison Company Drafting Room. This single room of 12,000 square feet exemplifies the modern trend in high-intensity illumination. It is the result of a thorough research and experimentation by the engineers of the company on various types of lamps, tubes, reflectors, and diffusers conducted in close cooperation with the men actually engaged in drafting work.

8:00 p.m. Adler Planetarium and Astronomical Museum. Here may be seen a miniature universe—the sun, moon, and planets threading their ways among the stars with the days and years shortened into minutes and seconds. Antique astronomical instruments are on display as well as a portrayal of modern astronomical methods and equipment.

(Continued on page 14)

Inspection Trips—Continued

Thursday, June 25

10:00 a.m. Stock Yards. By special dispensation for those who register in advance the Swift and Company packing plant may be inspected. The inspection will include the complete process of converting hogs into dressed meat. A demonstration in Martha Logan's kitchen will include instruction by the chef and home economist. The trip is being arranged especially for the women but men may attend.

2:00 p.m. Cermak Pumping Station. Here may be seen the motors, pumps, and metal-clad switchgear of a station, which has a total installed pumping capacity of 300,000,000 gallons per day.

2:00 p.m. Underwriters' Laboratories, Inc. Approximately 5,500 manufacturers making some 35,000 different types of products submit their materials for test and inspection according to the safety standards set up by the Underwriters' Laboratories. A large part of the work is the testing of electrical materials, devices, and domestic electrical appliances.

2:00 p.m. Chicago Lighting Institute. A stage lecture-demonstration dealing with the trinity of light; namely, production control, and the application of light will be given by Mr. Carl W. Zersen, manager. A tour also will be made of the industrial lighting laboratory, modern store, fluorescent clinic, modern classroom and office, as well as an all-electric five-room home.

Ladies' Entertainment

In addition to the foregoing social program in the evenings, special entertainment for the visiting ladies has been arranged by a Ladies' Committee, Mrs. L. R. Mapes, Chairman. Attention is called to the trip to Mill Road Gardens on Tuesday and the trip to the Stock Yards on Friday. Both are especially for ladies and listed under trips.

A luncheon and bridge will be held at the Edgewater Beach Hotel, 1:00 p.m., Wednesday, June 24.

Sports

The only sports' events will be the annual competition for the Mershon cup and the W. S. Lee trophy. The tournament for the Mershon cup will be match play handicap, the 16 lowest scores to qualify on Monday, June 22. Matches will then be played, first round on Tuesday, second round on Wednesday, with semi-finals and finals played on Thursday.

For the W. S. Lee trophy, handicap medal play tournament, 36 holes, the competition will run concurrently on Monday and Tuesday with the Mershon cup tournament.

Competition for both trophies will be played on courses 1, 3, or 4 at the Olympia Fields Country Club—greens fee, \$2.00. The club can be reached directly by frequent electric train service from the Randolph Street Station, not far from the Drake Hotel.

Summer Convention

OFFICERS OF A.I.E.E. 1941-1942

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1942 SUMMER CONVENTION COMMITTEES

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T. K. Phares

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American Institute of Electrical Engineers

Hotel

	A. M. Jackson, <i>Chairman</i>	
R. E. Anderson	U. Davis	H. S. Patton
	T. O. Millard	

Registration

	Frank V. Smith, <i>Chairman</i>	
S. D. Apostol	F. J. Jirka	E. C. Minter
F. H. Carlton	A. B. Johnson	E. O. Neubauer
J. W. Clarke	A. J. Krupy	A. G. Olson
J. I. Davis	N. G. Larson	A. D. Pettee
J. P. Galassini	W. J. Lempke	H. V. Schofield
K. V. Glentzer	W. A. Lindberg	H. G. Schultz
J. W. Hieronymus	J. M. Livingston	Burke Smith
L. R. Janes	E. L. Michelson	Earle Wild

Trips and Transportation

	Dwight L. Smith, <i>Chairman</i>	
	E. A. Armstrong, <i>Vice-Chairman</i> in Charge of Trips	
	F. W. Peters, <i>Vice-Chairman</i> in Charge of Transportation	

Subcommittee on Trips

A. H. Brolly	J. F. Calvert	W. P. Monroe
Arthur Bronwell	E. H. Freeman	F. D. Wyatt
	J. T. Hawley	

Subcommittee on Transportation

H. Buchanan	J. Hagan	C. A. Nordquist
H. M. Essington	W. P. Helmer	R. W. T. Purchas

Ladies

	Mrs. L. R. Mapes, <i>Chairman</i>	
Mrs. R. E. Anderson	Mrs. A. M. Jackson	Mrs. C. J. Schaus
Mrs. D. L. Bement	Mrs. P. B. Juhnke	Mrs. W. F. Sims
Mrs. H. W. Eales	Mrs. F. H. Lane	Mrs. D. L. Smith
Mrs. J. A. Fitts	Mrs. T. G. LeClair	Mrs. F. V. Smith
Mrs. K. V. Glentzer	Mrs. N. C. Percy	Mrs. H. E. Wulfin
Mrs. K. L. Hansen		Mrs. H. W. Young

Dinner and Dance

	L. R. Mapes, <i>Chairman</i>	
	F. H. McMahon, <i>Vice-Chairman</i>	
A. M. Jackson	F. H. Lane	C. J. Schaus
J. F. Kennett	G. W. Pendell	H. V. Schofield
	W. F. Sims	

Sports

	H. W. Eales, <i>Chairman</i>	
D. L. Bement	H. L. Martin	C. B. Owen
M. R. Gowing		D. S. Young

Special Events

	J. A. Fitts, <i>Chairman</i>	
H. A. Cornelius	H. M. Craig	M. S. Oldacre
	F. E. Keith	