

American Institute of
Electrical Engineers

Summer Convention Program



Mayflower Hotel
Washington, D.C.

JUNE 20-24
1938

INDEX

	Page
Schedule of Events.....	2
General Information.....	2, 3
Technical Sessions.....	4-9
Convention Features.....	10
Committees.....	11, 12

For Inspection Trips and
Sports see separate folders

American Institute of
Electrical Engineers



Summer Convention

Program

Washington, D.C.

JUNE 20-24

1938

SCHEDULE OF EVENTS

Eastern Standard Time

Monday, June 20

- 9:00 A.M.—Registration
- 10:00 A.M.—Conference of Officers, Delegates, and Members
- 11:00 A.M.—Separate Conferences
 - (a) Section Delegates
 - (b) Student Branch Counselors
- 2:00 P.M.—Conference of Officers, Delegates, and Members (continued)
 - Inspection Trips
- 7:00 P.M.—Student Branch Dinner

Tuesday, June 21

- 9:30 A.M.—Annual Meeting
- 2:00 P.M.—Technical Sessions
 - Inspection Trips
- 7:30 P.M.—Dinner-Dance at the Congressional Country Club

Wednesday, June 22

- 9:30 A.M.—General Session
- 2:00 P.M.—Inspection Trips
 - Visit to Mount Vernon
- 4:00 to
- 6:00 P.M.—Tea at Dr. McClellan's Burgundy Farm, Alexandria, Va.

Thursday, June 23

- 9:30 A.M.—Technical Sessions
- 12:30 P.M.—Board of Directors Luncheon Meeting
- 2:00 P.M.—Conference Sessions
 - Inspection Trips
- 3:00 P.M.—Conference of Vice-Presidents, District Secretaries, and Counselor Delegates
- 7:00 P.M.—Formal Dinner—Mayflower Hotel
 - President W. H. Harrison, Presiding
 - Address: Dr. William McClellan, President, American Engineering Council
 - Presentation of Gaston Planté Medal to Dr. George W. Vinal by the French Ambassador
 - Greetings by the President-elect
 - Introduction of Past Presidents
 - Award of prizes for sports events

Friday, June 24

- 9:30 A.M.—Technical Sessions
- 2:00 P.M.—Inspection Trips

Note: See separate folders for schedules of sports and inspection trips.

GENERAL INFORMATION

This program contains a schedule of events, a complete list of the technical sessions and papers, as well as the entertainment features. For information regarding inspection trips and sports see separate folders.

Summer Convention

Please register promptly upon arrival at the convention. A registration fee of \$2.00 will be charged all non-members except Enrolled Students and the immediate families of members.

Secure tickets early for the Luncheon Bridge (not later than Monday, 6:00 p.m.), Country Club Dinner-Dance (not later than Tuesday noon), Visit to Mount Vernon and Tea at Burgundy Farm (not later than Wednesday, 10:00 a.m.), and the Dinner at the Mayflower Hotel (not later than Thursday, 10:00 a.m.) so that proper reservations may be made.

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 not staying at the headquarters hotel received during the convention will be held at registration desk until called for; letters undelivered at the close of the meeting will be forwarded to latest mailing address.

Photo-Offset Copies of Authors' Manuscripts may be purchased at the registration desk or at Institute headquarters, price 5c per copy; if ordered by mail from Institute headquarters, price 10c per copy. Coupon books in \$1.00 and \$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. Ten minutes are allowed for the presentation of each paper unless otherwise arranged with 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 for the discussion of a single paper or of several papers on the same general subject. Names and affiliations should be clearly announced from the platform. Discussions 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 9.

PROGRAM

Monday, June 20

9:00 a.m.—Registration

10:00 a.m.—Conference of Officers, Delegates, and Members —Chinese Room

11:00 a.m.—Separate Conferences

(a) Section Delegates

Chinese Room

(b) Student Branch Counselors

Mezzanine "A"

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

Chinese Room

7:00 p.m.—Student Branch Dinner

Tuesday, June 21

9:30 a.m.—Annual Meeting

Main Ball Room

Address of Welcome:

Dr. WILLIAM McCLELLAN, Honorary Chairman

Annual Report of Board of Directors, in abstract,

By H. H. HENLINE, National Secretary

Report of National Treasurer

Report of Committee of Tellers on (a) Constitutional Amendments and (b) Election of Officers

Introduction of and response from President-elect

Presentation of Institute Prizes for Papers

Presentation of Lamme Medal to

Dr. R. E. DOHERTY

Address: "Municipal Planning in Washington"

Colonel DAN I. SULTAN, Engineer Commissioner
District of Columbia

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

R. D. EVANS, Presiding

55. Traveling Waves Initiated by Switching

L. V. BEWLEY, General Electric Co.

75. Application of Large Phase Shifting Transformer on an Interconnected System Loop

W. J. LYMAN, Duquesne Light Co.

J. R. NORTH, Commonwealth and Southern Corp.

61. Tests on Oil-Impregnated Paper—

III—Fluid Flow

H. H. RACE, General Electric Co.

89. Field Testing of Bushings and Transformer Insulation by the Power Factor Method

I. W. GROSS, American Gas and Electric Co.

72. Flashover Characteristics of Transformer Condenser Bushings

H. L. COLE, Westinghouse Electric & Mfg. Co.

Summer Convention

Presentation by title

79. Reactance of Square Tubular Busbars
H. B. DWIGHT and T. K. WANG, Massachusetts
Institute of Technology

2:00 p.m.—Communication

Pan American Room
W. L. EVERITT, Presiding

73. Analysis and Design of Harmonic Generators
F. E. TERMAN, Stanford University
80. A Symbolic Analysis of Relay and Switching
Circuits
C. E. SHANNON, Massachusetts Institute of Technology
81. Instruments for the New Telephone Sets
W. C. JONES, Bell Telephone Laboratories, Inc.
77. Transmission Features of the New Telephone
Sets
A. H. INGLIS, Bell Telephone Laboratories, Inc.

Presentation by title

74. Transmission Theory of Spherical Waves
S. A. SCHELKUNOFF, Bell Telephone Laboratories, Inc.

2:00 p.m.—Symposium on Correlation of Mathematics and Physics with Elec- trical Engineering Subjects

North Room
R. E. DOHERTY, Presiding

67. The Co-ordination of Mathematics and Physics
with Electrical Engineering Subjects
W. A. CURRY, Columbia University
82. A Course to Develop Facility in the Use of
Mathematics and Physics in the Solution of
Engineering Problems
B. R. TEARE, Jr., Yale University
83. Co-ordination of Physics with Electrical En-
gineering
J. M. BRYANT, University of Minnesota
76. Co-ordination of Mathematics and Physics with
Electrical Engineering Subjects
T. H. MORGAN, Worcester Polytechnic Institute
68. Mathematics and Physics in Engineering
M. G. MALTI, Cornell University

2:00 p.m.—Conference on Machines in Mathematical Analysis

Mezzanine "A"
H. L. HAZEN, Presiding

Informal Talks

- Why Machines for Mathematical Analysis?
L. S. DEDERICK, Aberdeen Proving Ground
- The Utility of Machines for Solving Ordinary Differential
Equations
S. H. CALDWELL, Massachusetts Institute of Technology
- Punched Card Machines in Mathematical Analysis
W. J. ECKERT, Columbia University

7:30 p.m.—Dinner-Dance at the Congressional Country Club

Tickets \$2.50 each. Transportation, round trip from the
Mayflower Hotel, 75 cents. Sale closes Tuesday noon.

Wednesday, June 22

9:30 a.m.—General Session

Main Ball Room

President W. H. HARRISON, Presiding

Address of the President

Address: "Progress in Weather Forecasting"

Dr. W. R. GREGG, Chief of the Weather Bureau

Address: "The Present and Future of Commercial Aviation"

Col. J. M. JOHNSON, Assistant Secretary of Commerce

2:00 p.m.—Visit to Mount Vernon

Tickets \$1.55 each including round trip transportation and admission to Mount Vernon. Sale closes Wednesday 10:00 a.m. Visitors making this trip are invited to:

4:00 to

**6:00 p.m.—Tea at Dr. McClellan's
Burgundy Farm, Alexandria, Va.**

Thursday, June 23

9:30 a.m.—Fault Interruption—I

Chinese Room

K. B. McEACHRON, Presiding

65. The Current Limiting Power Fuse
D. C. PRINCE and E. A. WILLIAMS, Jr., Gen'l Electric Co.
62. A New Multibreak Interrupter for Fast-Clearing Oil Circuit Breakers
R. M. SPURCK and H. E. STRANG, General Electric Co.
84. Tests on and Performance of a High-Speed Multibreak 138-Kv Oil-Circuit Breaker
PHILIP SPORN and H. P. ST. CLAIR, American Gas and Electric Service Corp.
85. "De-ion" Air Circuit Breakers for A-C Feeder, Motor Starting and Station Auxiliary Service
R. C. DICKINSON, Westinghouse Electric & Mfg. Co.
86. Enclosed Low-Voltage "De-ion" Air Circuit Breaker of High Interrupting Capacity
JEROME SANDIN, Westinghouse Electric & Mfg. Co.

9:30 a.m.—Electrical Machinery

Mezzanine "A"

J. L. HAMILTON, Presiding

98. Stability Characteristics of Turbine Generators
C. CONCORDIA, S. B. CRARY, and J. M. LYONS
General Electric Co.

Summer Convention

- 37-58. Double Line-to-Neutral Short Circuit of an Alternator
JAMES B. SMITH, Associated Factory Mutual Fire Insurance Co.
C. N. WEYGANDT, University of Pennsylvania
Elec. Engg., Sept. 1937, p. 1149
69. An Analysis of the Induction Machine
H. C. STANLEY, American Gas & Electric Service Corp.
53. Amplitudes of the Magnetomotive-Force Harmonics for Fractional Slot Windings—I
J. F. CALVERT, Iowa State College
- 37-866. The Cause and Elimination of Noise in Small Motors
W. R. APPLEMAN, Marathon Electric Mfg. Corp.
Elec. Engg., Nov. 1937, p. 1359
87. The Wound-Core Distribution Transformer
E. D. TREANOR, General Electric Co.

9:30 a.m.—Selected Subjects

Pan American Room

J. W. BARKER, Presiding

88. The Economic Status of the Engineer
R. W. SORENSEN, California Institute of Technology
60. A Self-Checking System of Supervisory Control
M. E. REAGAN, Westinghouse Electric & Mfg. Co.
66. Application of Capacitance Potential Devices
J. E. CLEM, General Electric Co.
71. Radio Influence Characteristics of Electrical Apparatus
P. L. BELLASCHI and C. V. AGGERS, Westinghouse Electric & Mfg. Co.
78. Noise Coordination of Rural Power and Telephone Systems
H. W. WAHLQUIST, Edison Electric Institute
T. A. TAYLOR, Bell Telephone Laboratories, Inc.

9:30 a.m.—Electronics and Basic Sciences

Jefferson Room

H. M. TURNER, Presiding

54. Positive-Grid Characteristics of Triodes
R. W. PORTER, General Electric Co.
64. A Position Regulator for Paper Slitters
F. H. GULLIKSEN, Westinghouse Electric & Mfg. Co.
90. Combined Thyatron and Tachometer Speed Control of Small Motors
A. J. WILLIAMS, Jr., Leeds and Northrup Co.
91. A Static Constant Current Circuit
C. M. SUMMERS, General Electric Co.

Presentations by title

59. Graphical Field-Plotting Methods in Engineering
HILLEL PORITSKY, General Electric Co.
92. Basic Equations for Electric and Sound Radiation
L. ALAN HAZELTINE, Stevens Institute of Technology

(Continued on page 8)

THURSDAY—continued

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

**3:00 p.m.—Conference: Vice-Presidents,
District Secretaries and Counselor
Delegates**

**2:00 p.m.—Conference on Electrical
Machinery**

Mezzanine "A"

J. L. HAMILTON, Presiding

2:00 p. m.—Conference on Electronics

Jefferson Room

H. M. TURNER, Presiding

At this conference two phases of the subject of mercury-arc rectifiers will be discussed. The first phase will consider the arc-back in mercury-arc rectifiers. The second will deal with hot-cathode mercury-arc rectifiers versus the tank type.

2:00 p.m.—Conference on Definitions

Pan American Room

M. G. MALTI, Presiding

This second conference on definitions is sponsored by the A.I.E.E. Committee on Basic Sciences under the direction of M. G. Malti, Chairman of the Subcommittee on Definitions. Discussion will cover sections 10 to 21 of Group 05 of the Final Revised Report of Committee 42 (The Sectional Committee on Definitions of Electrical Terms). The object of this series of conferences is to supply Subcommittee 1 of Committee 42 with a set of suggestions which will help it in drafting improved definitions of fundamental terms.

Written discussions have been prepared by the following: A. Boyajian, General Electric Co.; M. G. Malti, Cornell University; K. W. Miller, Utilities Research Commission; S. A. Schelkunoff, Bell Telephone Laboratories, Inc., and Ernst Weber, The Polytechnic Institute of Brooklyn.

**7:00 p.m.—Formal Dinner—Mayflower
Hotel**

President W. H. HARRISON, Presiding

Address: Dr. William McClellan, President,
American Engineering Council

Presentation of Gaston Planté Medal to Dr.
George W. Vinal by the French Ambassador

Greetings by the President-elect

Introduction of Past Presidents

Award of prizes for sports events

Tickets \$3.00 each. Sale closes Thursday 10:00 a.m.

Friday, June 24

9:30 a.m.—Symposium on Fluorescent Lighting —Main Ball Room

ROBIN BEACH, Presiding

57. The Fundamental Principles of Fluorescence
G. R. FONDA, General Electric Co.
93. Low-Voltage Fluorescent Lamps
G. E. INMAN and R. N. THAYER, General Electric Co.
94. High-Voltage Gaseous and Fluorescent Tubes for Advertising and Architectural Lighting Effects
J. A. McDERMOTT, Claude Neon Lights, Inc.
- Demonstration Lecture: "Penny Wise Pound Foolish—How to Get the Most for Your Lighting Dollar"
A. L. POWELL, General Electric Co.

9:30 a.m.—Fault Interruption—II—and Lightning Protection —Chinese Room

K. B. McEACHRON, Presiding

70. Remote Control of Network Protectors
W. R. BROWNLEE and W. E. DENT, Jr., Tennessee Electric Power Co.
63. System Analysis for Petersen Coil Application—Part I, Operating Features and Basic Calculations—Part II, System Analysis and Computations
W. C. CHAMPE and F. VON VOIGTLANDER
The Commonwealth and Southern Corp.
58. Lighting Protection of 22-Kv Substations
E. R. WHITEHEAD, Duquesne Light Co.
56. Line-Type Lightning-Arrester Performance Data
LIGHTNING ARRESTER SUBCOMMITTEE

9:30 a.m.—Instruments and Measurements —Pan American Room

H. C. KOENIG, Presiding

95. A Memory Attachment for Oscilloscopes
W. E. PAKALA, Westinghouse Electric & Mfg. Co.
96. Absolute Power Factor of Air Capacitors
W. B. KOUWENHOVEN and E. L. LOTZ,
The Johns Hopkins University
97. The Electric Strain Gauge
M. A. RUSHER and A. V. MERSHON, General Elec. Co.

9:30 a.m.—Conference on Power Requirements in Electrochemical and Allied Industries —North Room

F. O. SCHNURE, Presiding

Address: "Power Requirements in the Electrochemical, Electrometallurgical, and Allied Industries"
J. V. ALFRIEND, Jr., Federal Power Commission

Discussions by:

- M. E. STONE, United Engineering & Foundry Co., Ltd.
E. E. MERRICK, General Electric Co.
HERBERT SPEIGHT, Westinghouse Electric & Mfg. Co.

CONVENTION FEATURES

Sports and social activities will center at the beautiful Congressional Country Club situated in Maryland, near the banks of the Potomac and almost in sight of the Capitol dome.

Golf tournaments for the Mershon and Lee trophies will be held with the qualifying round scheduled for 1:00 p.m., Monday, June 20. A tournament for the Mershon tennis trophy also will be held as well as a variety of men's and ladies' single and double tennis events. See separate folder for a schedule of sports events.

Entertainment features include a dinner-dance at the Congressional Country Club on Tuesday evening, a tea at Burgundy Farm, Alexandria, Va., on Wednesday afternoon, and a final social gathering, a formal dinner on Thursday evening, which will be the occasion of the presentation of the Gaston Planté Medal to Dr. George W. Vinal by the French Ambassador, and the presentation of prizes for the sports events.

Ladies' Entertainment, in addition to the foregoing entertainment features, includes visits to places of interest in Washington and a bridge-luncheon at the Congressional Country Club preceding the dinner-dance in the evening. The ladies of the local Section will provide transportation and personally conduct individual tours that the visiting ladies may wish to take.

Inspection Trips to many points of interest in Washington and in the near vicinity have been arranged for during the week. On Friday and Saturday out-of-town trips have been scheduled and arrangements will be made for several very interesting post-convention tours, provided a sufficient number register for the purpose. See separate folder on inspection trips for all information and prices.

Summer Convention

1938 SUMMER CONVENTION

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