

*List of Committee Meetings (last page)
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**AIEE WINTER
CONVENTION
January 21-25, 1946**

PROGRAM

ENGINEERING SOCIETIES BUILDING
33 WEST 39TH ST. • NEW YORK 18, N. Y.

GENERAL INFORMATION

A program replete with both technical and social features has been arranged. The new frontiers of electrical engineering will be explored in many of the 29 technical sessions and conferences. A prominent nuclear physicist of broad vision will address the general session on the development of atomic energy. Before a joint session with the IRE some of the electrical engineering and general aspects of the atomic bomb project will be given in an address by the military head of that project. Both the Edison and Hoover Medals will be presented during the convention.

Please register promptly on arrival at the meeting. A registration fee of \$2 will be charged all nonmembers, except Enrolled Students and the immediate families of members. Registration will be strictly enforced by the showing of badges for admission to technical sessions.

Information on all features may be obtained at the registration desk. Press headquarters will be in Room 1007. The Institute rooms and offices on the tenth floor of the Engineering Societies Building are open to members.

Efforts will be made to deliver telegrams and messages promptly. Members who expect to receive mail during the meeting are asked to collect same promptly at mail and telegram desk.

Broadcast Tickets have been obtained for many of the principal broadcasts staged and are available at the entertainment desk covering most of the evenings during the week. Some prior reservations of Theatre Tickets are still available.

Technical Sessions and Discussions are governed by the "Conduct of Technical Sessions" at the discretion of the presiding officer. Usually 10 minutes will be allowed for the presentation of each paper and 5 minutes for each discussion. To receive consideration for publication discussions must be left with the chairman or sent to C. S. Rich, AIEE, 33 West 39th Street, New York 18, N. Y., before Feb. 8. The original, typewritten, double-spaced copy, complete with original illustrations and two carbon copies with photostats or blueprints, should be submitted.

Authors and discussers should make their presentations as effective as possible. Remember the audience. Speak distinctly so as to be heard in the rear of the room. Stress the salient features of the paper which are new or novel, and illustrate the advantages of your methods. When using slides, please turn toward the audience before speaking and raise your voice. Extemporaneous delivery is preferable to reading unless done slowly and emphasis is put in the proper places.

Eta Kappa Nu Dinner in honor of Professor Karapetoff's 70th birthday. The dinner will be held at 6:30 p.m., Monday, January 21, at Rosoff's Restaurant, 147 West 43rd St. **Brown Engineering Association** annual meeting, Friday, January 25, at the Midston House, Madison Avenue and 38th Street. Informal get-together at 6:00 p.m.; dinner at 6:30 p.m.; price \$2.25. Principal speaker, Dr. Bruce Bigelow, Vice-President of Brown University.

SCHEDULE OF EVENTS

Inspection Trips and Ladies Entertainment, Page 17.

MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
<p>9:30 A.M.</p> <p>Protective Devices <i>(Auditorium)</i></p> <p>Communication <i>(Room 501)</i></p> <p>Conference on New Industrial Uses of Elec- tronics Resulting from Wartime Developments <i>(Room 502)</i></p>	<p>9:30 A.M.</p> <p>Radar <i>(Auditorium)</i></p> <p>Protective Devices <i>(Room 501)</i></p> <p>Conference on Industrial Voltage Requirements <i>(Room 502)</i></p>	<p>10:00 A.M.</p> <p>General Session <i>(Auditorium)</i></p> <p>Edison Medal Presentation <i>Address:</i> Professor J. R. Dunning</p>	<p>9:30 A.M.</p> <p>Power Transmission <i>(Auditorium)</i></p> <p>Electric Machinery <i>(Room 502)</i></p> <p>Instruments and Measurements <i>(Room 501)</i></p>	<p>9:30 A.M.</p> <p>Hydroelectric Systems <i>(Room 502)</i></p> <p>Air Transportation <i>(Room 503)</i></p> <p>Symposium on Lighting <i>(Auditorium)</i></p> <p>Symposium on Nuclear Energy <i>(Room 501)</i></p>

Winter Convention

<p>2:00 P.M.</p> <p>Symposium on Sound Recording <i>(Auditorium)</i></p> <p>Power System Relays <i>(Room 501)</i></p> <p>Electric Welding <i>(Room 502)</i></p>	<p>2:00 P.M.</p> <p>Radar <i>(Auditorium)</i></p> <p>Conference on Power Relays <i>(Room 501)</i></p> <p>Industrial Power Applications <i>(Room 502)</i></p> <p>3:00 P.M.</p> <p>Conference on Slow Acting Relays <i>(Room 503)</i></p>	<p>2:00 P.M.</p> <p>Conference on Institute Activities <i>(Auditorium)</i></p> <p>Conference on Standardization Activities of Committee on Air Transportation <i>(Room 502)</i></p> <p>Conference on Mach. Tool and Process Drives <i>(Room 501)</i></p>	<p>2:00 P.M.</p> <p>Board of Directors Mtg. <i>(Room 1001)</i></p> <p>Electric Machinery <i>(Room 502)</i></p> <p>Instruments and Measurements <i>(Room 501)</i></p> <p>Conference on Statistical Methods Applied to Standards <i>(Room 503)</i></p>	<p>2:00 P.M.</p> <p>Excitation Systems <i>(Auditorium)</i></p> <p>Air Transportation <i>(Room 501)</i></p> <p>Conference on Education <i>(Room 502)</i></p>
<p>Evening</p> <p>Radio Broadcasts, Theatres, etc.</p>	<p>6:30 P.M.</p> <p>Smoker <i>(Hotel Commodore)</i></p>	<p>8:00 P.M.</p> <p>Joint Meeting with I.R.E. <i>(Auditorium)</i></p> <p>Hoover Medal Presentation</p> <p style="text-align: right;"><i>Address:</i> Major Gen. Leslie R. Groves</p>	<p>7:00 P.M.</p> <p>Dinner-Dance <i>(Hotel Plaza)</i></p>	<p>6:00-8:00 P.M.</p> <p>IRE Party <i>(Hotel Astor)</i></p>

Monday, January 21

9:00 a.m.—Registration

9:30 a.m.—Protective Devices I

(Auditorium)
H. J. LINGAL, Presiding

- 46-19. Field Tests of Interrupting Capacity of 138-Kv Oil Circuit Breakers. W. B. Buchanan, G. D. Floyd, Hydro-Electric Power Comm. of Ont. 15 cents (by mail 20 cents).
- 46-20. A New Line of High-Voltage Outdoor Tank-Type Oil Circuit Breakers. W. F. Skeats, E. B. Rietz, General Elec. Co. 20 cents (by mail 25 cents).
- 46-21. Dielectric Recovery by an A-C Arc in an Air Blast. T. E. Browne, Jr., Westinghouse Elec. Corp. 25 cents (by mail 30 cents).
- 46-22. Long Sixty-Cycle Arcs in Air. A. P. Strom, Westinghouse Elec. Corp. 15 cents (by mail 20 cents).

9:30 a.m.—Communication

(Room 501)
J. J. PILLIOD, Presiding

- 46-7. Electronic Regeneration of Teleprinter Signals. H. F. Wilder, Western Union Telegraph Co. 10 cents (by mail 15 cents).
- 46-23. A Tunable Rejection Filter. R. C. Taylor, Western Union Telegraph Co. 15 cents (by mail 20 cents).
- 46-10. The Solution of Transmission-Line Problems in the Case of Attenuating Transmission Line. George Glinski, Northern Elec. Co. 10 cents (by mail 15 cents).
- 46-24. Inertia Throat Microphones. E. H. Greibach, Sonotone Corp.; L. G. Pacent, Pacent Engg. Corp. 10 cents (by mail 15 cents).
- 46-25. Laboratory Method for Objective Testing of Bone Receivers and Throat Microphones. E. H. Greibach, Sonotone Corp. 10 cents (by mail 15 cents).
- 46-26. A New Crystal Channel Filter for Broad Band Carrier Systems. E. S. Willis, Bell Telephone Labs., Inc. 10 cents (by mail 15 cents).
- 46-27. Applications of Thin Permalloy Tape in Wide Band Telephone and Pulse Transformers. A. G. Ganz, Bell Telephone Labs., Inc. 20 cents (by mail 25 cents).

*Please Check Mail and Telegram Desk
in Lobby Frequently.*

Winter Convention

9:30 a.m.—Conference on New Industrial Uses of Electronics Resulting from Wartime Developments

(Room 502)

W. C. WHITE, Presiding

- *CP. Hydrogen Thyratrons and Their Applications. H. H. Heins, Sylvania Elec. Products, Inc.
- *CP. Recent Developments of Magnetrons in the Microwave Region. W. C. Brown, Raytheon Mfg. Co.
- *CP. Industrial Heating at Very High Frequencies. I. E. Mouromtseff, Westinghouse Elec. Corp.
- *CP. Progress and Trends in High-Frequency Heating. H. C. Gillespie, Radio Corp. of America.
- *CP. Use of Pulsers of the Radar Type for High-Potential Testing. H. W. Lord, General Elec. Co.

2:00 p.m.—Symposium on Sound Recording and Reproducing

(Auditorium)

I. J. KAAR, Presiding

- *CP. Wire Recording. D. W. Pugsley, General Elec. Co.
- 46-29. A New Wire Recorder Head Design. T. H. Long, C. G. Conn, Ltd. 10 cents (by mail 15 cents).
- 46-30. A B-H Curve Tracer for Magnetic-Recording Wire. T. H. Long, G. D. McMullen, C. G. Conn, Ltd. 10 cents (by mail 15 cents).
- 46-31. Signal and Noise Levels in Magnetic Tape Recording. D. E. Wooldridge, Bell Telephone Labs., Inc. 25 cents (by mail 30 cents).
- 46-32. Phonograph Reproducer Design. W. S. Bachman, General Elec. Co. 10 cents (by mail 15 cents).
- 46-33. Recently Developed Tools for the Study of Disk Recording Performance. H. E. Roys, R.C.A. 15 cents (by mail 20 cents).
- **ACO. 46-34. Sound Recording in Business. L. D. Norton, Dictaphone Corp. 15 cents (by mail 20 cents).
- *CP. Technical Uses of Film Recording. E. M. Honan and C. R. Keith, Western Electric Co.

Advance Copies of Technical Papers may be purchased at the registration desk or at Institute headquarters at prices indicated. Only numbered papers are available. 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**.

American Institute of Electrical Engineers

2:00 p.m.—Power System Relays

(Room 501)
W. A. LEWIS, Presiding

- 46-35. Protection of Pilot Wires from Induced Potentials. R. B. Killen, G. G. Law, The Dayton Pr. & Lt. Co. 10 cents (by mail 15 cents).
- 46-36. Linear Couplers—Field Tests and Experience at York and Middletown, Pa. E. L. Harder, E. H. Klemmer, Westinghouse Elec. Corp.; R. E. Neidig, Metropolitan Edison Co. 15 cents (by mail 20 cents).
- 46-38. Application of the Ohm and Mho Principles to Protective Relays. A. R. vanC. Warrington, General Elec. Co. 20 cents (by mail 25 cents).
- 46-39. The MHO Distance Relay. R. M. Hutchinson, General Elec. Co. 15 cents (by mail 20 cents).

2:00 p.m.—Electric Welding

(Room 502)
G. W. GARMAN, Presiding

- 46-12. Investigation of Arc Starting Characteristics of D-C Welders with Reference to Electrode Freezing. J. M. Tyrner, Air Reduction Sales Co. 10 cents (by mail 15 cents).
- 46-18. Capacitor Stabilization of Arc Welding Transformers. J. H. Blankenbuehler, R. V. Lester, Westinghouse Elec. Corp. 10 cents (by mail 15 cents).
- 46-41. Design and Measurements of Capacitor Discharge Welding Transformers. T. W. Dietz, The Taylor-Winfield Corp.; G. M. Stein, Westinghouse Elec. Corp. 15 cents (by mail 20 cents).
- 46-9. Measurement and Effect of Contact Resistance in Spot Welding. R. A. Wyant, Rensselaer Polytechnic Institute. 10 cents (by mail 15 cents).

Tuesday, January 22

9:30 a.m.—Radar

(Auditorium)
J. J. PILLIOD, Presiding

- 46-46. Radar Systems Considerations. D. A. Quarles, Bell Telephone Labs., Inc. 20 cents (by mail 25 cents).
- 46-47. Marine Radar for Peacetime Use. L. H. Lynn, O. H. Winn, General Elec. Co. 10 cents (by mail 15 cents).
- 46-48. Airborne Radar for Navigation and Obstacle Detection. R. C. Jensen and R. A. Arnett, General Elec. Co. 10 cents (by mail 15 cents).

Winter Convention

9:30 a.m.—Protective Devices II

(Room 501)
H. E. STRANG, Presiding

- 46-11. A New Submersible Network Protector of Higher Rating. G. G. Grissinger, F. D. Johnson, Westinghouse Elec. Corp. 10 cents (by mail 15 cents).
- 46-42. The Development, Design, and Performance of Magnetic-Type Power Circuit Breakers. L. J. Linde, formerly with General Elec. Co.; B. W. Wyman, General Elec. Co. 15 cents (by mail 20 cents).
- 46-43. Metal-Clad, Unit-Type Switchgear for 33-Kv Service. C. H. Kreger, Public Service Co. of Northern Illinois. 20 cents (by mail 25 cents)
- 46-45. New Series Capacitor Protective Device. R. E. Marbury, J. B. Owens, Westinghouse Elec. Corp. 10 cents (by mail 15 cents).
- 46-55. Size Reduction and Rating Extension of Magnetic Air Breakers up to 500,000 Kva, 15 Kv. R. C. Dickinson, Russell Frink, Westinghouse Elec. Corp. 10 cents (by mail 15 cents).

9:30 a.m.—Conference on Industrial Voltage Requirements

(Room 502)
C. C. WHIPPLE, Presiding

- *CP. Preliminary Report on Industrial Voltage Requirements. Messrs. Beeman, Grotzinger, and French.
- *CP. Grounding Industrial Power Systems. L. G. Levoy, General Elec. Co.
- *CP. 2300 Volts Vs. High Voltages for Power Generation and Distribution in Industrial Plants. R. H. Kaufmann, General Elec. Co.
- 45-156. Dielectric Strength and Protection of Modern Dry-Type Air-Cooled Transformers. P. L. Bellaschi, Edward Beck, Westinghouse Elec. Corp. 10 cents (by mail 15 cents).
- *CP. Transformer Ratios and Their Bearing on Industrial Voltage Requirements. W. H. Dickinson. Standard Oil Development Co.; John Parsons, Westinghouse Elec. Corp.; Tom Sweatt, Burns and Roe.
- *CP. Industrial Voltage Requirements from the Utility Viewpoint. R. C. R. Schulze, American Gas & Elec. Service Corp.; S. A. Warner, Consolidated Edison Co. of N. Y., Inc.

over

TUESDAY—Continued

2:00 p.m.—Radar

(Auditorium)

W. R. G. BAKER, Presiding

- 46-49. Shoran Precision Radar. S. W. Seeley, R.C.A. 20 cents (by mail 25 cents).
- 46-50. The SCR-584 and SCR-784 Equipments. M. R. **ACO. Briggs, Westinghouse Elec. Corp. 10 cents (by mail 15 cents).
- †46-40. Techniques and Facilities for Microwave Radar Testing. E. I. Green, H. J. Fisher, J. G. Ferguson, Bell Telephone Labs., Inc. 25 cents (by mail 30 cents).

†This paper is subject to special clearance requirements; hence copies may not be available and price is subject to change.

2:00 p.m.—Conference on Power Relays

(Room 501)

W. A. LEWIS, Presiding

This conference will consider the relay protection of power-house auxiliaries and relay protection of transformers.

A preliminary report summarizing information obtained from representative power companies, covering practices and experience on the protection of power-house auxiliaries, will be presented by E. L. Michelson, sponsor of the working group. The report covers types of supply systems, their protection, protection of 2300-volt and lower voltage motors, and experience with protection systems. Preliminary to the preparation of a formal report it is hoped that discussion in the conference from other companies will bring out operating experiences with protection schemes now used, new developments in motor protection, differences in protection between essential and nonessential motors, etc.

With respect to the relay protection of power transformers a questionnaire to determine both existing and preferred practices has been circulated to a number of representative companies. The investigation covers types of protection customarily used with various sizes and kinds of transformers, with detailed analysis of differential protection, gas-accumulator and gas-pressure protection, thermal protection, fuse protection, and special applications.

*CP. Summary of Answers to the Questionnaire and Review of Available Protective Equipment. W. R. Brownlee, Chairman of the Working Group

*CP. Clearing of Faults Involving Power Transformers. W. E. Marter, Duquesne Light Company

Discussion is desired regarding such topics as: the value of gas-accumulator protection, importance of the magnetizing-inrush-current problem, advantages of gas-pressure relays, and adequacy of available thermal protection devices.

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2:00 p.m.—Industrial Power Applications

(Room 502)

H. SPEIGHT and J. J. ORR, Presiding

- *CP. A Modern Industrial Network Installation. K. A. Fahse, International Harvester Co.
- 46-52. Combined Light and Power Systems for Industrial Plants. D. L. Beeman, General Elec. Co.
10 cents (by mail 15 cents).
- 46-53. Induction Heating of Long Cylindrical Charges. H. F. Storm, Allis-Chalmers Mfg. Co.
25 cents (by mail 30 cents).
- 46-54. Application of the Betatron to Practical Radiography. J. P. Girard, Allis-Chalmers Mfg. Co.; G. D. Adams, University of Illinois. 15 cents (by mail 20 cents).

3:00 p.m.—Conference on Slow Acting Relays

(Room 503)

H. M. TURNER, Presiding

- *CP. Historical Aspects. Arthur Bessey Smith, Automatic Elec. Co.
- *CP. Underlying Electromagnetic Concepts. H. A. Frederick, Bell Telephone Labs, Inc.
- *CP. Operational Features. Andrew Vincent, Stromberg-Carlson Co.
- *CP. Limitations of Relays in Power Communication. E. E. George, Ebasco Services, Inc.

6:30 p.m.—Smoker—Hotel Commodore

Tickets, \$6.50 each. Tables accommodate 6, 8, and 10.

Wednesday, January 23

10:00 a.m.—General Session

(Auditorium)

President W. E. WICKENDEN, Presiding

Edison Medal Presentation to Philip Sporn.

Address: "Development of Atomic Energy." Dr. J. R. Dunning, Director, Division of War Research, Columbia University; Technical Advisor, The Kellogg Corp.

over

WEDNESDAY—Continued

2:00 p.m.—Conference on Institute Activities

(Auditorium)
J. F. FAIRMAN, Presiding

M. D. HOOVEN
Technical Activities

T. G. LE CLAIR
Professional Activities

The Institute is confronted by problems of growing urgency both in its relations to the engineering profession at large and to more highly specialized organizations and interests within its own general field. Early this administrative year, the Board of Directors referred these problems to the Committee on Planning and Co-ordination, who have appointed two special subcommittees to explore the professional and the technical activities of the Institute in relation to those of other engineering and scientific societies and more particularly in relation to the desires and aspirations of the members of the Institute.

The relationship to other organizations is the easier part of the study. The desires and aspirations of the rank and file of the membership are more difficult of determination. This conference is intended as a first step toward finding out what a sample of the membership believes the Institute ought to be doing or ought to do in a different way.

Members active in Institute affairs should take this opportunity to assist the subcommittees by giving thought to the problems in advance of the conference, by attending the meeting and stating their considered opinions and specific suggestions. It is hoped that every District and every Section will be represented by at least one member but the meeting is open to all members and their views on these possible new frontiers of the Institute will be welcomed.

2:00 p.m.—Conference on Standardization Activities of the Committee on Air Transportation

(Room 502)
J. D. MINER, Chairman; H. E. KENEIPP, Secretary

This conference will be conducted as an open meeting of the Committee on Air Transportation. Members interested in this activity are invited to attend and take part in the discussion.

Agenda

Approval of minutes of meeting held January 24, 1945.

General discussion of standardization activities—J. R. North.

Reports of Subcommittees and discussion:

- a. Aircraft Electric Systems. R. H. Kaufmann, Chairman
- b. Aircraft Electric Control and Protective Devices. R. A. Millermaster, Chairman
- c. Aircraft Wire and Cable. W. S. Hay, Chairman

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- d. Aircraft Electric Rotating Machinery. M. L. Schmidt, Chairman
- e. Joint Subcommittee (Air Transportation and Electric Machinery) on Carbon Brushes. V. P. Hessler, Chairman

Discussion of one-year trial period of AIEE Report No. 700 on Standard D-C Voltages for Aircraft. Consideration of a Subcommittee for a final Standard.

Discussion of possible additional subcommittees, particularly a subcommittee concerned with airline operation and its electrical problems.

Discussion of places for technical papers and for general committee work. Consideration of future meetings.

Discussion of the progress in the formation of technical discussion groups and of the value of such groups.

New business:

- (a) H. F. Rempt has suggested that the committee initiate a study of electrical fires in aircraft.

2:00 p.m.—Conference on Machine Tool and Process Drives

(Room 501)
PHILIP BLISS, Presiding

- *CP. Report of Subcommittee on Machine Tool and Process Drives.
- *CP. Machine Tool Drives. H. T. Johnson, General Motors Corp.
- 46-56. Co-ordinated Electric Drive for a Rubber Calender Train. K. W. John, U. S. Rubber Co.; G. W. Knapp, W. A. Mosteller, General Elec. Co. 15 cents (by mail 20 cents).
- 46-57. Industrial Application of Rototrol Regulators. W. R. Harris, Westinghouse Elec. Corp. 15 cents (by mail 20 cents).

8:00 p.m.—Joint Meeting with I.R.E.

(Auditorium)

Presiding, W. E. WICKENDEN, President, AIEE
Hoover Medal Presentation to W. H. Harrison.

Presiding, W. L. EVERITT, President, IRE
Address: "Some Electrical Engineering and General Aspects of the Atomic Bomb Project." Major General Leslie R. Groves.

Motion Pictures of the Atomic Bomb Project.

Thursday, January 24

9:30 a.m.—Power Transmission

(Auditorium)
R. J. WISEMAN, Presiding

- 46-16. Lightning Performance of 220-Kv Transmission Lines—II. Lightning and Insulator Working Group. 10 cents (by mail 15 cents).
- 46-8. Formulas for Conductor Size According to Cost of Resistance Loss. H. B. Dwight, Massachusetts Institute of Technology. 10 cents (by mail 15 cents).
- 46-44. Arcing Ground Tests on a Normally Ungrounded 13-Kv, Three-Phase Bus. J. E. Allen, S. K. Waldorf, Pennsylvania Water & Pr. Co. 20 cents (by mail 25 cents).
- 46-37. Formulas for the Inductance of Coaxial Busses Comprised of Square Tubular Conductors. H. P. Messinger, Allis-Chalmers Mfg. Co.; T. J. Higgins, Ill. Inst. of Technology. 25 cents (by mail 30 cents).

9:30 a.m.—Electric Machinery I

(Room 502)
L. A. KILGORE, Presiding

- 46-58. Shut Down Vs. Hot-Spot Temperatures in Polyphase Induction Motors. C. P. Potter, A. E. Frohardt, Wagner Elec. Corp. 10 cents (by mail 15 cents).
- 46-5. Transients in A-C Motors and Generators. G. S. Smith, Univ. of Washington. 10 cents (by mail 15 cents).
- 46-59. The Polyphase Commutator Regulator for Speed Control. A. G. Conrad, Yale Univ.; F. E. Brooks, Jr., Univ. of Texas; R. G. Fellers, Naval Research Laboratory. 25 cents (by mail 30 cents).
- 46-6. Temperature Rise of Water-Cooled Power Transformers. J. R. Meador, General Elec. Co. 10 cents (by mail 15 cents).

9:30 a.m.—Instruments and Measurements I

(Room 501)
TRUMAN S. GRAY, Presiding

- 46-2. The Measurement of Large Varying Currents. A. C. Johnson, Edward G. Budd Mfg. Co. 10 cents (by mail 15 cents).
- 46-62. Electronically Balanced Recorder for Flight Testing and Spectroscopy. A. J. Williams, Jr., W. R. Clark, R. E. Tarpley, Leeds & Northrup Co. 10 cents (by mail 15 cents).

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- 46-17. Electrical Analogy Methods Applied to Servomechanism Problems. G. D. McCann, S. W. Herwald, H. S. Kirschbaum, Westinghouse Elec. Corp. 10 cents (by mail 15 cents).
- 46-60. Stress Measurement by Electrical Means. R. E. Kern, S. B. Williams, Curtiss-Wright Corp. 25 cents (by mail 30 cents).

2:00 p.m.—Electric Machinery II

(Room 502)
L. A. KILGORE, Presiding

- 46-63. Differential Leakage of a Fractional-Slot Winding. M. M. Liwschitz, Polytechnic Institute of Brooklyn. 25 cents (by mail 30 cents).
- 46-64. Die Cast Rotor Testing by Test Stator Method. P. H. Trickey, Diehl Mfg. Co. 10 cents (by mail 15 cents).
- 46-65. Performance Calculations on Polyphase Reluctance Motors. P. H. Trickey, Diehl Mfg. Co. 10 cents (by mail 15 cents).
- 46-66. The Short-Circuit Characteristics of Direct-Current Generators. G. E. Frost, General Electric Co. 25 cents (by mail 30 cents).

2:00 p.m.—Instruments and Measurements II

(Room 501)
E. D. DOYLE, Presiding

- 46-69. Thermal Demand Meter Testing Techniques. E. E. Lynch, M. E. Douglass, General Elec. Co. 15 cents (by mail 20 cents).
- 46-68. Peak Voltages Induced by Accelerated Flux Reversal in Reactor Cores Operating above Saturation Density. Theodore Specht, E. C. Wentz, Westinghouse Elec. Corp. 25 cents (by mail 30 cents).
- 46-67. An Automatic Oscillograph with a Memory. A. M. Zarem, California Institute of Technology. 10 cents (by mail 15 cents).

2:00 p.m.—Conference on Statistical Methods Applied to Standards

(Room 503)
W. P. DOBSON, Presiding

The purpose of the conference is to secure additional discussion on two papers, which have been published in *ELECTRICAL ENGINEERING* since the last Winter meeting; to give further information regarding the work of the Standards Subcommittee on Statistical Methods, and to receive suggestions for its future activities.

- *CP. Quality Reports for Management Purposes. Martin A. Brumbaugh, Univ. of Buffalo.

over

American Institute of Electrical Engineers

- *CP. Quality Control through Product Testing. P. L. Alger, General Elec. Co.
- 45-142. Statistical Methods in the Development of Apparatus Life Quality. E. B. Ferrell, Bell Telephone Labs., Inc. 15 cents (by mail 20 cents).
- 45-132. Statistics as an Aid to Engineering Judgment in the Manufacture of Lightning Arrester Blocks. C. Goffman, Westinghouse Electric Corp. 10 cents (by mail 15 cents).

7:00 p.m.—Dinner-Dance—Hotel Plaza

Tickets for dinner and dance, \$8.00 per person. Limited number of tickets for dance only, \$3.00 per person. Tables can be reserved for 8 and 10. Please make reservations now.

Friday, January 25

9:30 a.m.—Hydroelectric Systems

(Room 502)
A. J. KRUPY, Presiding

- *CP. A Review of Features of Interest to the Electrical Engineer in the Design of Hydro-Electric Power Plants. A. H. Frampton, Hydro-Electric Pr. Comm. of Ont.
- 46-71. Supervisory Control of 30,000-Kva Hydro Plant. C. W. Bohner, General Elec. Co.; A. P. Maness, Tennessee Valley Authority. 10 cents (by mail 15 cents).
- 46-70. Technique of Electrical and Hydraulic Testing of Hydro-Electric Units. G. D. Floyd, J. J. Traill, Hydro-Electric Pr. Comm. of Ont. 15 cents (by mail 20 cents).
- *CP. Maintenance of Hydro-Electric Generators. L. B. Stirling, Shawinigan Water & Pr. Co.
- *CP. Successful Conversion of Hydroelectric Plants to Semiautomatic Operation. A. F. Ayres, California Elec. Pr. Co.

9:30 a.m.—Air Transportation I

(Room 503)
R. W. GEMMELL, Presiding

- 46-14. Electrical Measurements on Aircraft Engine Ignition Circuits. W. E. Berkey, Westinghouse Elec. Corp. 10 cents (by mail 15 cents).
- 46-1. All-Electric Gun Charging. W. C. Rohn, Allied Control Valve Co. 10 cents (by mail 15 cents).
- 46-4. A Carbon Pile Speed Governor. C. T. Button, The Master Elec. Co. 10 cents (by mail 15 cents).

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9:30 a.m.—Symposium on Lighting

(Auditorium)
S. G. HIBBEN, Presiding

Address: "Advances in the Production and Application of Germicidal Radiation." Dr. L. J. Buttolph, General Elec. Co.

Address: "Industrial Applications of Infrared Radiation." Edwin H. Robinson, The Fostoria Pressed Steel Corp.

Address: "New Frontiers in Airport and Airway Lighting." W. A. Pennow, Westinghouse Elec. Corp., Lighting Div.

Address: "New Glassware in the Services of Lighting." C. W. Clarkson, Corning Glass Works.

The foregoing addresses will be supplemented with demonstrations.

9:30 a.m.—Symposium on Nuclear Energy

(Room 501)
J. D. TEBO, Presiding

Address: "Physics of Nuclear Energy." Dr. K. K. Darrow, Research Physicist, Bell Telephone Labs., Inc.

Address: "Peacetime Applications of Nuclear Energy." C. G. Suits, Vice-President and Director of Research, General Elec. Co.

Address: "Some Practical Aspects in the Generation of Electric Power by Nuclear Energy." Dr. J. A. Hutcheson, Associate Director of Research Labs., Westinghouse Elec. Corp.

Address: "Economic Aspects of the Application of Nuclear Energy." Philip W. Swain, Editor, Power, McGraw-Hill Publishing Co.

2:00 p.m.—Excitation Systems

(Auditorium)
A. J. KRUPY, Presiding

46-78. Excitation Systems for Synchronous Machines. S. B. **ACO. Crary, J. B. McClure, General Elec. Co. 10 cents (by mail 15 cents).

46-76. Excitation Systems for Turbine Generators. M. D. **ACO. Ross, Westinghouse Elec. Co. 10 cents (by mail 15 cents).

46-77. Motor-Driven Exciters for Turbine Alternators. R. B. Bodine, S. B. Crary, A. W. Rankin, General Elec. Co., 20 cents (by mail 25 cents).

over

FRIDAY—Continued

- 46-74. Application and Performance of Electronic Exciters for Large A-C Generators. H. A. P. Langstaff, West Penn Pr. Co.; H. R. Vaughan, R. F. Lawrence, Westinghouse Elec. Corp. 15 cents (by mail 20 cents).
- 46-75. Electronic Generator Voltage Regulator. J. E. Reilly, C. E. Valentine, Westinghouse Elec. Corp. 10 cents (by mail 15 cents).
- 46-73. The Design of an Electronic Exciter for Large Generators. W. R. Farley, C. R. Marcum, Westinghouse Elec. Corp. 10 cents (by mail 15 cents).
- **ACO.**

2:00 p.m.—Air Transportation II

(Room 501)
F. M. ROBERTS, Presiding

- 46-3. Basic Design Principles for A-C Electrical Power Systems in Large Military Aircraft. C. K. Chappuis, U. S. Army Air Force; L. M. Olmsted, Air Technical Service Command. 10 cents (by mail 15 cents).
- 46-13. Pressure-Arc-Interruption Circuit Breakers for 400-Cycle Aircraft Electric Power System. B. O. Austin, Westinghouse Electric Corp. 10 cents (by mail 15 cents).
- 46-79. Governor for Variable Ratio Transmission Used in Developmental 400-Cycle Electrical System for Large Aircraft. P. F. Desch, D. E. Garr, J. G. Hutton, General Elec. Co. 10 cents (by mail 15 cents).
- 46-15. Effect of Altitude on Ventilation and Rating of Aircraft Electric Machines. C. G. Veinott, Westinghouse Elec. Corp. 15 cents (by mail 20 cents).

2:00 p.m.—Conference on Education

(Room 502)
H. W. BIBBER, Presiding

The objective of this conference is to review the experience which private industries and governmental agencies have had with electrical engineering graduates in a civilian status during the war so that possible changes in the engineering curricula of colleges and universities may be considered promptly. Due to the shortage of recent graduates and younger engineers in war industries the engineer has had to learn to work effectively with engineering aids and technicians. In war research agencies engineers have had to co-operate with physicists to a greater extent than ever before. Arrangements are being made to explore the border-line relationships between the several groups mentioned.

6:00 p.m.—IRE Party

(Hotel Astor).

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

**ACO.: Advance copies only available; not intended for publication in TRANSACTIONS.

*Please Check Mail and Telegram Desk
in Lobby Before Leaving.*

Winter Convention

INSPECTION TRIPS

Details as to exact times of trips, costs, etc., obtainable at Inspection Trips Desk. In most cases proof of citizenship will be required.

LaGuardia Field and Airplane Flight

Tuesday, January 22

Inspection of all field facilities, including shops, control towers, hangars, etc.

A 45 minute flight over the metropolitan district will be available at a charge of \$5.75 per person, plus bus transportation charge to and from field.

Brooklyn Navy Yard Trip

Wednesday, January 23

Inspection of all yard installations, including shops, dry-docks, waterfront facilities. Included also will be a complete inspection of the famous Aircraft Carrier "Franklin," now reconditioned for service, and other warships. Only charge will be for bus transportation to the yard and return.

Westinghouse Meter Works

Wednesday, January 23

The Westinghouse Meter Works at Newark, N. J. will be open on Wednesday afternoon at 2 p.m. The company manufactures at this plant, meters, relays and instruments. A complete exhibit of all products will be available.

Link Radio Selective Two-Way Demonstration

Thursday and Friday, January 24 and 25

An opportunity to view the simultaneous demonstration of two-way selective radio communication with roving automobiles within the city, televised at DuMont Laboratories.

Waterside Generating Station

Thursday, January 24

Inspection of the complete installations in this large generating station of the Consolidated Edison Company, a high pressure steam station with Topping turbines.

Bell Telephone Laboratories at Murray Hill, N. J.

Friday, January 25

Inspection will include metallurgical research on magnetic and non-ferrous materials, electrical insulation, artificial and natural crystals, telephone instruments, loud speakers and radar.

Transportation by bus for which there will be a charge.

LADIES' ENTERTAINMENT

A ladies' entertainment committee had made arrangements to entertain the ladies attending the convention. A luncheon, bridge, and fashion show has been arranged at the Hotel Pierre on Wednesday, January 23. Tickets are \$3.00 each. Please make reservations in advance. For tickets and details on other arrangements, go to Ladies' Headquarters on 10th floor.

WINTER CONVENTION COMMITTEE

C. S. Purnell, *Chairman*

J. L. Callahan
M. D. Hooven

R. A. Jones
A. E. Knowlton
J. H. Pilkington

J. J. Pilliod
C. C. Whipple

Smoker

C. T. Hatcher, *Chairman*

W. J. Barrett
C. F. Bolles
A. J. Cooper
T. C. Duncan
H. E. Farrer

J. B. Harris, Jr.
William Jordan
E. B. King
E. G. D. Paterson
D. M. Quick

W. H. Rodgers
H. B. Snow
D. W. Taylor
E. F. Thrall
W. R. Van Steenburgh

Dinner - Dance

G. J. Lowell, *Chairman*

E. S. Banghart
J. M. Comly
J. G. Derse
E. T. Farish
H. E. Farrer

S. B. Graham
L. F. Hickernell
J. B. MacLean
J. P. Neubauer
Ernst Ohnell

H. C. Otten
E. C. Plant
P. W. Spence
W. H. Taubert

Inspection Trips

R. T. Oldfield, *Chairman*

P. H. Adams
E. F. DeTurk
H. E. Farrer

R. W. Gillette
R. K. Honaman
J. R. Kerner

H. H. Nance
W. A. Petrusek
R. M. Pease

Ladies' Entertainment

Mrs. J. F. Fairman, *Chairman*

Mrs. T. F. Barton
Mrs. R. F. Brower
Mrs. C. W. Franklin
Mrs. R. A. Jones

Mrs. H. S. Osborne
Mrs. J. J. Pilliod
Mrs. C. S. Purnell

Mrs. D. A. Quarles
Mrs. G. S. Rose
Mrs. W. R. Smith
Mrs. G. Sutherland

Theatre and Broadcast Tickets

H. H. Heins, *Chairman*

G. H. Campbell
G. J. Dyktor

W. Hayden, Jr.
H. E. Murphy

T. J. Talley, 3rd