AIEE WINTER TECHNICAL MEETING
January 24-28, 1944

PROGRAM

33 West 39th Street • New York, N.Y.
Engineering Societies Building
American Institute of Electrical Engineers

Winter Technical Meeting

January 24-28, 1944

PROGRAM
GENERAL INFORMATION

Directly related to the war effort are two feature addresses, one by Major General Roger B. Colton, Chief, Engineering and Technical Service, Signal Corps, U. S. Army, on the subject of "Enemy Army Communications Equipment," the other by Captain H. G. Rickover, Head of the Electrical Section, Bureau of Ships, U. S. Navy, on the subject of "Electricity on Shipboard." In connection with the former address a substantial amount of captured German, Italian, and Japanese telephone and radio equipment, as well as some American equipment, will be on display. In addition, there is a trip to the Brooklyn Navy Yard, Thursday noon, and a special meeting on Navy V-12 Programs on Friday morning, which are open only to a specially selected teaching personnel invited by the Navy Department. Two sessions on Thursday also pertain to research and the electrical systems for military aircraft.

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.

Information on all features of the meeting may be obtained at the registration desk. 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. Any mail for members received during the meeting will be held at registration desk until called for; letters undelivered at the close of the meeting will be forwarded to latest mailing address.

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 discusser. 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 18, N. Y., before February 11. Written discussions should be brief, without perfunctory commendations, and confined to individual papers rather than groups of papers.

Patent Exhibition. A catalog of some 45,000 United States patents and patent applications in the mechanical, electrical, and chemical fields, formerly enemy-owned or enemy-controlled, will be on exhibit during the meeting. These patents and patent applications are available for licensing under liberal terms, from Leo T. Crowley, Alien Property Custodian of the United States Government.

Postwar planning bulletins and related literature are available in the lobby through the courtesy of John F. Sinnott, Regional Manager, U. S. Department of Commerce, 500 Fifth Avenue, New York 18, N. Y.

Theatre Tickets. As an accommodation to our out-of-town members attending the meeting, a limited number of theatre tickets to popular shows are available for purchase. Tickets are for Wednesday evening, January 26. Tickets at $4.40 each for the following shows have been reserved:

1. "One Touch of Venus"
2. "Winged Victory"
3. "Ziegfeld Follies"
4. "Carmen Jones"
Winter Technical Meeting

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Monday, January 24

9:00 a.m.—Registration

9:30 a.m.—Transmission and Distribution

(Auditorium)

H. E. Wulfing, Presiding

44-53. Current Rating of Cables As Affected by Mutual Heating in Air or Conduit. IPCEA Committee on Research. 25 cents (by mail 30 cents).


9:30 a.m.—Electrical Measuring Instruments

(Room 501—B and C)

C. L. Dawes, Presiding


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

(Auditorium)

A. C. MONTIETH and H. E. WULFING, Presiding


2:00 p.m.—Applications of Electrical Measurements and Basic Sciences

(Room 501—B and C)

R. W. AGER and T. S. GRAY, Presiding

44-55. The Accuracy of Measurements in Lumped R-C Cable Circuits As Used in the Study of Transient Heat Flow. Victor Paschkis, Michael P. Heisler, Columbia Univ. 15 cents (by mail 20 cents).


Tuesday, January 25

9:30 a.m.—Transmission and Protective Devices
(Auditorium)
J. B. MacNeill and R. J. Wiseman, Presiding


9:30 a.m.—Conference on Turbogenerator Characteristics
(Room 501-B)
M. S. Oldacre, Presiding

This conference is sponsored by the Committee on Power Generation and the Standards Committee to develop information that is required in the standardization of turbogenerator characteristics. The work is being carried on by the AIEE-ASME Joint Committee on Turbogenerators. The committee is concerned with units of 10,000-kw capacity and above but at present is confining its work to 3600-rpm units for which the ASME group has recommended 12,500, 20,000, 30,000, 40,000, and 60,000-kw ratings. The conference will include results of a survey of present-day practice in loading and the power-factor rating of generators. The effect of changing of generator characteristics, such as power-factor rating, short-circuit ratio, temperature rise, etc., on the weight of active material required in the generators will be discussed. While a part of the material will be presented by the AIEE group of the Turbogenerator Committee, a major portion of the conference time will be available for general discussion, and it is hoped that as many members will participate as possible.

9:30 a.m.—Conference on Measurement of Temperature Rise in Continuous - Duty Machines
(Room 501-A)
C. E. Kilbourne, Presiding

The 1943 edition of A.S.A. Standard C-50 recognizes the resistance method of temperature determination of d-c machines only to the extent of establishing standards for shunt field windings. Mr. P. L. Alger, Chairman of AIEE Coordinating Committee No. 4, has issued a "Memorandum on Addendum to A.S.A. Standard C-50, American Standard Rotating Electrical Machinery, Approved March 29, 1943," in which he proposes standards of permissible temperature
TUESDAY—Continued

rise by resistance for all windings of d-c machines, including revisions of present standards for shunt field windings. The purpose of the conference session is to develop factual information through the presentation of several conference papers, which may form the basis of reaching conclusions concerning the adoption and revision of standards of permissible rise by resistance of the windings of continuous duty machines, primarily d-c.

2:00 p.m.—Circuit Breakers

(Auditorium)
J. B. MacNEILL, Presiding


2:00 p.m.—Land Transportation

(Room 501-B)
A. G. OEHLER, Presiding

44-20. Electrification of Large Open-Pit Copper Mines. L. W. Birch, Ohio Brass Co. 10 cents (by mail 15 cents).


"Open-Pit Copper Mining"—a motion picture, by courtesy of the General Elec. Co.


over
TUESDAY—Continued

2:00 p.m.—Conference on Permissible Temperature Rise of Short-Time Rated Machines

(Room 501-A)

J. F. CALVERT, Presiding

Mr. P. L. Alger, Chairman of AIEE Co-ordinating Committee No. 4, has issued a "Memorandum on Addendum to A.S.A. Standard C-50, American Standard Rotating Electrical Machinery, Approved March 29, 1943," in which he proposes revision of present standards and addition of new standards for permissible temperature rise by resistance on intermittent rated machines, both a-c and d-c, and including fractional and integral horsepower sizes.

The purpose of the conference session is to develop information through the presentation of several conference papers which may form the basis, at a later date, of reaching conclusions concerning standards for permissible temperature rise by resistance of intermittent rated machines.

2:00 p.m.—Conference on Speed Relaying

(Room 501-C)

E. L. HARDER, Presiding


CP.* Effect of Speed of Relaying on System Stability. R. C. R. Schulze, Public Serv. Elec. & Gas Co.

CP.* Influence of High-Speed Relaying and Reclosing on Overall-System Performance. C. E. Parks, Public Serv. Co. of Ind.

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

6:30 p.m.—Smoker at the Hotel Commodore

(Grand Ballroom)

5:30 p.m.—Cocktail hour
6:30 p.m.—Dinner
8:00 p.m.—Floor Show
9:15 p.m.—Get-together

Tickets 5.00 per person. All seats reserved—tables for ten.
Wednesday, January 26

10:00 a.m.—General Session
(Auditorium)
President N. E. Funk, Presiding
Edison Medal Presentation to Dr. Vannevar Bush
The History of the Edison Medal
Dr. W. B. Kouwenhoven
Chairman, Edison Medal Committee
Address: Dr. Frank B. Jewett
Presentation of Medal: President Funk
Response: Dr. Vannevar Bush

Address: "The Engineer in America's Business Future." Colonel Willard Chevalier, Publisher, Business Week; Vice-President, McGraw-Hill Publishing Co.

2:00 p.m.—Conference on Lighting
(Auditorium)
W. C. Kalb, Presiding
Address: "Progress in Light Sources," Preston S. Millar, President, Elec'l Testing Labs.

2:00 p.m.—Relays
(Room 501-B)
J. B. MacNeill, Presiding


44-68. System Voltages and Fault Currents Determined Easily on D-C Board. C. E. Asbury, Illinois Pr. Co. 15 cents (by mail 20 cents).


2:00 p.m.—Conference on Industrial Control
(Room 501-C)
E. H. Alexander, Presiding


WEDNESDAY—Continued


2:00 p.m.—Conference on Civic Affairs and Co-operation with Other Organizations

(Room 501-A)

H. W. HIBBER, Presiding

A conference arranged by the Civic Affairs Subcommittee of the Technical Program Committee for a general discussion of existence, effectiveness, and adequacy of the co-operation among engineering societies in connection with the war effort and in other activities. Should other societies be included? Should types of existing co-operation be changed?

2:00 p.m.—Meeting of Safety Committee

(Room 1101)

W. R. SMITH, Chairman

Anyone interested in the following paper or general matters that come before the Safety Committee is welcome to attend this meeting.


Thursday, January 27

9:30 a.m.—Air Transportation

(Auditorium)

Lt.-Col. T. B. HOLLIDAY, Presiding


44-43. Testing Aircraft Generators. H. E. Keneipp, Westinghouse E. & M. Co. 10 cents (by mail 15 cents).


9:30 a.m.—Conference on Domestic and Commercial Applications

(Room 503)

W. F. OGDEN, Presiding

44-69. The Vibration of Electrical Contacts. M. N. Russell, Saul Kellien, Pass & Seymour, Inc. 10 cents (by mail 15 cents).
THURSDAY—Continued


CP.* Design Procedure for Low-Temperature Panel Space Heating. B. F. Raber, F. W. Hutchinson, University of California.

9:30 a.m.—Conference on Industrial Power Applications

(Room 501-A)

HERBERT SPEIGHT, Presiding


CP.* Experience with Short Circuits and Breakers, with Emphasis on Co-ordination between Fuses and Breakers. L. C. Peterman, Ford, Bacon, and Davis.

CP.* Lightning Protection for Industrial Equipment Operating at Line Potential. A. C. Muir, Berwind-White Coal Mining Co.

CP.* Plant Distribution Systems. C. E. Smith, New York Shipbuilding Corp.

CP.* Dodge Chicago Plant’s Distribution Scheme with Airplane Engine Power Recovery Circuits. E. L. Bailey, Chrysler Corp.

CP.* Induction Heating Applications. Howard E. Somes, Budd Induction Heating, Inc.


12:15 p.m.—Trip to Brooklyn Navy Yard, under the direction of Captain H. G. Rickover, and open only to a specially selected and invited teaching personnel from the colleges in which Navy Specialized Training Programs are conducted. An oath will be administered, 4:30 p.m., Wed., Jan. 26, in ASCE Board Room, 15th floor.

2:00 p.m.—Air Transportation

(Auditorium)

Lt.-Col. T. H. HOLLIDAY, Presiding


American Institute of Electrical Engineers

THURSDAY—Continued


44-59. Corona in Aircraft Electric Systems As a Function of Altitude. W. R. Wilson, General Elec. Co. 15 cents (by mail 20 cents).

44-5. Aircraft Signal Systems. Raymond A. Rugge, Curtiss-Wright Corp. 10 cents (by mail 15 cents).


2:00 p.m.—Communication and Electronics

(Room 503)

H. A. AFFEL and S. B. INGRAM, Presiding

44-42. Crossbar Toll Switching System. L. G. Abraham, A. J. Busch, F. F. Shipley, Bell Tel. Labs., Inc. 20 cents (by mail 25 cents).

44-49. Automatic Ticketing of Telephone Calls. O. A. Friend, Bell Tel. Labs., Inc. 20 cents (by mail 25 cents).


1:15 p.m.—“Oil for War”

(Auditorium)

A colored motion picture by courtesy of the Barrett Division, Allied Chemical and Dye Corp.

2:00 p.m.—Industrial Power Applications

(Room 501-A)

HERBERT SPEIGHT, Presiding


THURSDAY—Continued


8:00 p.m.—Joint IRE-AIEE Session

(Auditorium)

H. A. AFFEL, Presiding


Captured enemy equipment and U. S. Signal Corps action photographs will be on display in Room 501 from Thursday afternoon until Saturday afternoon. Included in the captured equipment are the following:

- Italian Ducati Radio Set
- Japanese Radio Direction Finder
- German Radio Tank Set
- Telephone Switchboards
- Samples of Tubes
- Radio Components and Field Wire

Certain American military instruments will be shown for comparison and include the following:

- Lip and Throat Microphones
- Sound-Powered Telephones
- Under-Helmet Receivers
- Complete Radio Command Set for a Bomber

A separate exhibit of Signal Corps photographs will be on display in the main floor lobby all week.

Friday, January 28

9:15 a.m.—Special Meeting on Navy V-12 Program

(Room 503)

ROBIN BEACH, Presiding

A special talk on “Power Aspects of the Electrical Circuit and Electrical Machinery Courses in the Navy V-12 Program,” by Captain H. G. Rickover, Head, Electrical Section, Bureau of Ships, United States Navy. This talk is open only to specially selected and invited teaching personnel from the colleges in which the Navy V-12 specialized training programs are conducted. An oath will be administered, 4:30 p.m., Wed., Jan. 26, in ASCE Board Room, 15th floor.
FRIDAY—Continued

9:30 a.m.—Electrical Machinery

(C) P. POTTER, Presiding

44-35. The Asymmetrical Stator As a Means of Starting Single-Phase Induction Motors. John L. Baum, Chillicothe, Ohio. 20 cents (by mail 25 cents).

44-1. Design of Starting Windings for Split-Phase Motors. T. C. Lloyd, Robbins and Myers, Inc.; J. H. Karr, Purdue Univ. 10 cents (by mail 15 cents).


44-63. A Design Method for D-C Machines. M. I. Beers, Robbins and Myers, Inc.; J. H. Karr, Purdue Univ. 15 cents (by mail 20 cents).


2:00 p.m.—Transformers

(M. S. OLDACRE, Presiding)


44-65. Thermal Protection of Transformers under Overload Conditions. V. M. Montsinger, G. Camilli, General Elec. Co. 15 cents (by mail 20 cents).


2:00 p.m.—Conference on Administrative Problems in Army and Navy Specialized Training Programs

(Robin Beach, Presiding)


3:15 p.m.—Teaching Aids for Navy Specialized Training Programs

(Robin Beach, Presiding)

Address: "Electricity on Shipboard." Captain H. G. Rickover, Head, Electrical Section, Bureau of Ships, United States Navy.
I.R.E. PROGRAM

Hotel Commodore

Friday, January 28

8:30 a.m.—Registration

10:00 a.m.—Opening of Meeting
B. E. Shackelford, Chairman, 1944 Winter Technical Meeting Committee
Ceremony of “Passing the Gavel” from Retiring President Wheeler to Incoming President Turner

10:10 a.m.—Technical Session
L. P. WHEELER, Presiding

11:00 a.m.—Annual Meeting of I.R.E.
President H. M. TURNER, Presiding

11:15 a.m.—Technical Session
L. P. WHEELER, Presiding

11:15 a.m.—Technical Session
F. S. BARTON, Presiding
The Limitations Imposed by Quantum Theory on Resonator Control of Electrons. L. P. Smith, Cornell University, (RCA Temporary Consultant).

12:30 p.m.—President's Luncheon

2:00 p.m.—Technical Session
HARADEN PRATT, Presiding
The Modification of Noise by Certain Non-Linear Devices. D. O. North, RCA.
Some Experiments Relating to the Statistical Theory of Noise. C. M. Burrill, RCA.

over
FRIDAY—Continued

2:00 p.m.—Technical Session

R. A. HACKBUSH, Presiding


3:00 p.m.—Symposium on Work of the Radio Technical Planning Board

HARADEN PRATT, Presiding

Speakers:


VHF Broadcasting. C. M. Jansky, Vice-Chm., Panel 5.


Industrial, Scientific and Medical Equipment. C. V. Aggers, Chm., Panel 12.

1944 Winter Technical Meeting

7:00 p.m.—Banquet (informal)
George Lewis, Master of Ceremonies
Presentation of Awards by President Turner
1943 Medal of Honor—to Haraden Pratt
1943 Morris Liebmann Memorial Prize—to W. L. Barrow
Annual Address of Retiring President L. P. Wheeler

Saturday, January 29

9:45 a.m.—Technical Session

H. M. TURNER, Presiding

Design Technique versus Service Requirements.
I. W. Stanton, RCA.
A. Stringer, National Association of Broadcasting.
Speaker and subject to be announced.

10:30 am.—Symposium on Engineering Work of the Federal Communications Commission

H. M. TURNER, Presiding

Engineering Work of the FCC. E. K. Jett, Ch. Engr., FCC
Timely Broadcast Matters. G. P. Adair, Ass’t Ch. Engr., FCC
Police Aviation and Maritime Services. W. N. Krebs, Cf. of Safety and Special Serv. Div., FCC

12:30 p.m.—Students’ Luncheon

2:30 p.m.—Technical Session

L. ESPENSCHIED, Presiding

Organization of Radio Research, Development and Production in Great Britain. F. S. Barton, British Air Commission.

Adjournment—4:30 p.m.
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Winter Technical Meeting

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Theatre Tickets
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W. A. Clark
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COMMITTEE MEETINGS

Monday, January 24
10:00 a.m.—Lightning Arresters Subcommittee .......... 1001
10:00 a.m.—Insulation Resistance Subcommittee .......... 1101
2:00 p.m.—Sections ........................................... 1001
2:00 p.m.—Joint Subcommittee on Power System Applications of Carrier Current ........................................... 903
4:00 p.m.—Protective Devices Subcommittee Chairmen ASCE President's Room, 15th Floor

Tuesday, January 25
10:00 a.m.—National Nominating .................. 1001
10:00 a.m.—Land Transportation ASCE Board Room, 15th Floor
Noon —Power Generation Engineers' Club
12:30 p.m.—Electrical Machinery Columbia University Club, 4 West 43rd Street 1001
2:00 p.m.—Lamme Medal ........................................... 1001
2:00 p.m.—Visiting Committee, Dept. of Elec. Engg., Massa chusetts Institute of Technology Alcove, 10th Floor 903
2:00 p.m.—Membership ........................................... 903
2:00 p.m.—Lightning and Insulator Working Group ASCE President's Room, 15th Floor
2:00 p.m.—Subcommittee on Electrical Hazards to Farm Ani mals ASCE Board Room, 15th Floor

Wednesday, January 26
8:30 a.m.—Standards Coordinating Committee No. 4 ........ 1001
Noon —Subcommittee on Industrial Control ........... 1001
2:00 p.m.—Communication ........................................... 1001
2:00 p.m.—Safety ........................................... 1101
2:00 p.m.—Subcommittee on Industrial Distribution Systems Guide ........................................... 903
2:00 p.m.—E.C.P.D. Executive Committee ASCE President's Room, 15th Floor 1001
7:30 p.m.—Standards ........................................... 1001

Thursday, January 27
9:30 a.m.—Automatic Stations ASCE President's Room, 15th Floor 1101
10:00 a.m.—Electronics ASCE President's Room, 15th Floor 903
10:00 a.m.—Subcommittee on Voltage Transients in Arc Furnace Circuits ........................................... 903
1:00 p.m.—Domestic and Commercial Applications Engineers' Club 1001
2:00 p.m.—Board of Directors ........................................... 1101
2:00 p.m.—Electrochemistry and Electrometallurgy ........................................... 1101
2:15 p.m.—Engineering Foundation-AIEE Research Project on Insulating Oils and Cable Saturants ........................................... 903

Friday, January 28
9:30 a.m.—Electric Welding ........................................... 1001
9:30 a.m.—Student Branches ASCE Board Room, 15th Floor 903
10:00 a.m.—Working Group on Fuses ........................................... 903
5:00 p.m.—Education ........................................... 1001