Maximum aid in the war effort is the principal objective of this meeting. Many of the sessions deal with getting the most out of existing equipment to conserve critical materials. Proposed guides for the selection, application, and operation of equipment during the war will be presented. A Conference Symposium on Defense Lighting will present authoritative up-to-the-minute developments. "Technical Man-Power in the War Effort" will be the feature of the general session on Wednesday.

Electric Arc Furnaces play an important role in the war effort. Problems of their power supply using a minimum of copper and other critical materials will be discussed. (See paper No. 43:29)
Monday, January 25

9:30 a.m.—Capacitor Generators and Transformer Loading

9:30 a.m.—Relaying
43-27. Pilot-Wire Circuits for Protective Relaying—Experience and Practice. Relay Subcommittee, Committee on Protective Devices. 15 cents by mail.
43-45. Correlation of System Overvoltages and System Grounding Impedance. Working Group on Correlation of System Grounding Impedance. 15 cents by mail.

9:30 a.m.—Electrical Machinery


2:00 p.m.—Transmission Lines
43-27. Wood-Pole 230-Kc Transmission Lines. O. S. Clark, War Department. 15 cents by mail.
43-29. Transmission-Line and System Problems in Supplying Large Electric Arc Furnaces during Wartime. R. M. Jones, Duquesne Light Co. 20 cents by mail.
43-20. Intrasystem Transmission Losses. E. E. George, Esso Services, Inc. 30 cents by mail.

2:00 p.m.—Conference on Relays
Introduction: H. F. Lindemuth
CP.™ Routine Tests, Inspection, and Trouble Checks. C. A. Muller, American Gas & Elec. Service Corp.

2:00 p.m.—Conference on Selection of Motors and Controllers

7:30 p.m.—Conference on Emergency Loading of Transmission Systems
Tuesday, January 26

9:30 a.m.—Transmission and Distribution


43-30. Balling Loads on Single- and Multiple-Conductor Impregnated-Paper Lead-Encased Cable, Solid Type. A. P. S. Bellis, John A. Reebing's Sons Co. 30 cents by mail.


9:30 a.m.—Land Transportation


CP.® Train Communication. L. O. Grondahl, P. N. Bossart, Union Switch & Signal Co.


43-40. Factors Involved in the Selection of Railroad Motive Power. H. C. Wilcox, Railway Mechanical Engineer; A. G. Oehler, Railway Age. 20 cents by mail.

9:30 a.m.—Industrial Power Applications


2:00 p.m.—Relaying of Long Transmission Lines


2:00 p.m.—Conference Symposium on Defense Lighting

Now it should be told and the electrical fraternity as well as all business men should hear the results of the first year's operations of defense lighting. The subject of blackouts and dimouts will be presented from the following viewpoints:

CP.® The Relationships with the Electrical Utilities. Tom P. Walker, President, Council of Elec. Operating Companies, Washington, D. C.


CP.® The Safety Features and Influences on Street Traffic. Richard E. Simpson, Chairman, Disaster Consulting Committee, State Defense Council, Connecticut. This symposium is guided by four recognized authorities in their respective fields and will summarize up to the minute the many interesting and pertinent developments of defense lighting. Opportunity will be afforded for a full and off-the-record discussion of these problems that are becoming closely interwoven into the daily lives of all citizens.

2:00 p.m.—Basic Sciences

43-11. Formulas for the Calculation of the Inductance of Linear Conductors of Structural Shape. T. J. Higgins, Illinois Institute of Technology. 15 cents by mail.
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43-43. Skin Effect in Bi Metallic Conductors. B. R. Teare, Jr., Josephine R. Webb, Carnegie Institute of Technology. 20 cents by mail.


2:00 p.m.—Conference on Emergency Rating of Power Cables
G. L. Carlisle, War Production Board
H. W. Collins, The Detroit Edison Company
H. L. Davis, Jr., Philadelphia Electric Company
G. E. Deane, Public Service Electric and Gas Company
A. Del Mar, Habershaw Cable and Wire Company
Herman Halperin, Commonwealth Edison Company
C. T. Batchler, Consolidated Edison Company of New York
E. W. Oestereich, Duquesne Light Company
G. B. Shanklin, General Electric Company

Wednesday, January 27

10:00 a.m.—General Session
(Auditorium)
President HAROLD S. OSBORNE, President
Presentation of Alfred Noble Prize to George W. Dunlap

Technical Man Power in the War Effort
Brigadier General Miller G. White, Assistant Chief of Staff, War Department, General Staff
Dr. Joseph W. Barker, Special Assistant to the Secretary of the Navy

Major General Lewis B. Hershey, Director of Selective Service

The objective of the meeting is to present an up-to-the-minute picture of the technical manpower requirements of the armed services and the plans for meeting these, together with the essential industries' requirements, with suitable trained and conditioned men and women. The positions of responsibility and authority held by the scheduled speakers should make the session one of particular interest to engineers of all age groups as well as engineering students. The timeliness of the subject has been emphasized by the recent reorganization of the Government's manpower groups.

2:00 p.m.—Conference on Wartime Engineering Education
CP. "Continuing Programs of Specialized Engineering Education for Military and Industrial Services, and the Allocation of the Technical Graduates. Edward C. Elliott, Chief, Professional and Technical Employment and Training Division, War Manpower Commission, and President of Purdue University.


Portable Capacitor Units play an important part in emergency operation and their application will be discussed in the first session on Monday.

2:00 p.m.—Conference on Getting the Most Out of Electronic Tubes in Wartime
This conference will take the form of an informal discussion on methods of operating electronic devices to improve their life and increase their usefulness under existing wartime conditions. The question of adequate rating of electronic devices to permit the obtaining of their maximum utility will also be considered. Several speakers will briefly introduce these topics, after which discussion from the floor will be in order. It is hoped to obtain a wide participation by those present.

2:00 p.m.—Conference on Substation Designs to Meet Wartime Conditions

Thursday, January 28

9:30 a.m.—Circuit Breakers and Switches


(Continued on middle of page 5)
I.R.E. WINTER CONFERENCE--JANUARY 28, 1943

Thursday, January 28

9:30 a.m.—Technical Session
Transmission-Line Charts. R. S. Julian, Bell Telephone Laboratories, Inc.
Phosphors and the Periodic System of the Elements. H. W. Leverenz, RCA Communications Laboratory.

2:00 p.m.—Annual Meeting
Annual Report of the Secretary
Trends of Institute Accomplishments. Past President A. F. Van Dyck
Transference of the Gavel, as the Symbol of Office, to President L. P. Wheeler
Presentation of the Institute Medal of Honor to William Wilson
Conference of Institute Fellowships on the following:
Andrew Alford
I. S. Coggeshall
Jennings B. Dow
Lee DuBridge
Peter C. Goldmark
Daniel E. Harnett
Dorman Israel
Axel C. Jensen
George F. Meckal
Irving Wolff

(AIEE Program continued from page 1)

9:30 a.m.—Conference on Power Generating Equipment
The objective of this conference is to correlate all possible ideas on how to get the most out of present equipment.

CP.* Emergency Measures to Increase Output of Generating Equipment. C. M. Laffson, Subcommittee Chairman.


CP.* Wartime Personnel Problems
The first memorandum will contain case examples of the effect of voltage, ambient temperature, hydrogen pressure, etc., on the operation of turbine and waterwheel generators. The second memorandum is being prepared from answers to a questionnaire submitted to the leading operating companies together with summation on such subjects as loading limits on equipment, maintenance, power-factor correction, interconnected operation, effect of voltage and frequency on system loads, rebuilding or rehabilitation of equipment or stations, etc. The two memoranda are intended to serve as a basis for questions and discussions from the audience, to which the major part of the conference will be devoted.

2:00 p.m.—Switching Equipment and Related Subjects

Special Papers Symposium
Radio in Two World Wars. Lloyd Espeneschied, Bell Telephone Laboratories, Inc.
The Army-Navy Electronics Production Agency. F. R. Lack, Director, Army-Navy Electronics Production Agency
The Function of the War Production Board in Radio. Ray Ellis, Director, Radio and Radar Division, War Production Board
Radio Standards Go to War. H. P. Westman, War Committee on Radio, American Standards Association
The Engineer's Position in the Man-Power Program. Kirk Miles, War Manpower Commission

8:30 p.m.—A.I.E.E.-I.R.E. Meeting
Address: "Ultrahigh Frequencies." Dr. George C. Southworth, Bell Telephone Laboratories, Inc.

10:30 p.m.—A nationwide hookup over the facilities of the Columbia Broadcasting System, 10:30 to 10:45 p.m., eastern war time. has been arranged to link the Washington banquet and the New York meeting. Dr. L. P. Wheeler, President, I.R.E., will broadcast a brief word of greeting from New York following an introduction by Junior Past President Arthur F. Van Dyck, while from the Washington banquet the Honorable James Laurence Fly, Chairman of the Board of War Communications will speak.


2:00 p.m.—Conference on Industrial Distribution

3:15 p.m.—Medal Presentations
Edison Medal to Major Edwin H. Armstrong
John Fritz Medal to Dr. Willis R. Whitney
Hoover Medal to Dr. Gerard Swope

3:30 p.m.—A.I.E.E.-I.R.E. Meeting
Address: "Ultrahigh Frequencies." Dr. George C. Southworth, Bell Telephone Laboratories, Inc.
Friday, January 29

9:30 a.m.—Transformer Loading

9:30 a.m.—Radio Measurements

9:30 a.m.—Conference on Analysis of Military Loads and Postwar Application
43-60. Estimating Electric Loads for Military Training Bases, Federal Housing, and Other Wartime Projects. H. M. Pettis, Bonneville Power Administration. 30 cents by mail.
H. P. Sedye and D. K. Blake will discuss the relationship of distribution to the general problem with emphasis on conservation possibilities.


CP* Matters of Safety
(1) To People
(2) In Equipment Design. S. B. Williams
R. B. Shepard will comment and C. F. Scott will discuss the relationship of ambient and operating temperatures to the problem of safety.


2:00 p.m.—Transformer Loading Discussion
2:00 p.m.—Conference on Basic Characteristics of Varistors
This resume will cover various nonohmic devices, nonsymmetrical, such as copper oxide and other rectifier types, as well as the symmetrical, including the more recently developed thermistor types. It should be of considerable interest to all engineers.
Authoritative speakers will initiate the discussion by presenting up-to-date information on the various types, such as their current voltage relationships, temperature and humidity effects, maximum voltage or power limitations, polarization and frequency effects, and minimum useful voltage.

*CP.: Conference paper; no advance copies are available; not intended for publication in TRANSACTIIONS.
†ACO.: Advance copies only available; not intended for publication in TRANSACTIIONS.

General Information
In accordance with "AIEE Wartime Policies Defined" (EE, September '42, p. 477) all programmed social activities have been omitted. However, out-of-town members wishing to get together after business hours for a theatre party, radio broadcast, or dinner and dancing at one of the hotels should inquire at the registration desk. It also is hoped that there will be an opportunity for the general membership to get together during the meeting.

Columbia Engineers' Dinner
The annual informal dinner for Columbia electrical engineers will be held Wednesday evening, January 27, at the Columbia University Club, 4 West 43rd Street. A social half hour will precede the dinner, which is scheduled for 6:30 p.m.

Registration and Hotels
Please fill in and return promptly the enclosed Advance Registration Card. Upon arrival at the meeting do not fill out another card—just ask for your badge. I.R.E. members desiring to attend any A.I.E.E. sessions on any day except Thursday should register as guests of A.I.E.E. The I.R.E. will conduct a separate registration for issuance of their badges on Thursday only. A registration fee of $2.00 will be charged all nonmembers to attend A.I.E.E. sessions, except Enrolled Students, immediate families of members, and those registered for the I.R.E. meeting.
Members and guests should make their own hotel reservations by writing directly to the hotel of their preference.

H. H. HENLINE, National Secretary

National Technical Meeting Committee
C. R. Jones, Chairman
F. A. Cowan M. D. Hooven R. L. Webb
W. S. Hill A. E. Knowlton C. C. Whipple
C. S. Purnell

I.R.E.-A.I.E.E. Co-operating Committee
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