



MIDDLE EASTERN DISTRICT MEETING

October 28-30, 1952

Toledo, Ohio

Headquarters:
Commodore Perry Hotel



Skyline of Toledo, Ohio

Three days of wide interest are in store for AIEE members who attend the Middle Eastern District Meeting October 28-30, 1952. Toledo, Ohio the Glass Center and leading coal port of the world is proud to be the host for this meeting. The Commodore Perry Hotel has been chosen as headquarters hotel and all technical sessions will be held there. The technical sessions have been carefully planned to cover a varied field of interests and the inspection trips will afford an opportunity to see a cross section of Toledo's industry.

Charles E. Ide, President of the Toledo Edison Company and Honorary Chairman will preside at the opening session on Tuesday October 28 at 10:00 A.M. The address will be given by Walker L. Cisler, President of the Detroit Edison Company. Mr. Cisler, a Fellow in the Institute, is also a consultant to the Army and State Department on electric power in the occupied areas.

Following the General Session a luncheon will be served in the Ballroom, officially welcoming the members as guests of the Toledo Section.

The Middle Eastern District Executive Committee will meet on Monday, October 27, at the headquarters hotel.

INSPECTION TRIPS

In addition to the four trips listed, arrangements can be made for informal inspection of local utility installations. Members should contact the Inspection Trips committee at the desk provided for these special trips.

Sun Oil Company: Wednesday, October 29, 1:30 P.M. This refinery is the largest in the Toledo area. Every day it can make sufficient gasoline to run an average automobile

for 1900 years. The world's tallest refinery unit, the first of its kind, a new catalytic cracking tower is located here in the Toledo plant.

Willys Overland Motors, Inc.: Wednesday, October 29, 1:30 P.M. This is the home of the mighty Jeep. Members will view the assembly lines as well as the giant press and forging operations. A guided tour will be of much interest to all electrical engineers as the military jeep is complete with electrical components—some designed specifically for under water operation.

Chesapeake & Ohio Coal and Ore Docks: Thursday, October 30, 1:30 P.M. This is one of two docks that give Toledo its position as the leading trans-shipper of soft coal in the world. The C & O coal handling equipment can empty 1,500 coal cars per day and has slips to accommodate 16 lake freighters at one time. The huge car dumpers, ore unloaders and car pushers afford an opportunity to see the electrical equipment and devices at work.

Toledo Scale Company: Thursday, October 30, 1:30 P.M. This modern plant is devoted to the manufacture of automatic retail and industrial scales and special testing devices. Here weighing devices are developed and manufactured which incorporate many electrical and electronic circuit elements.

ENTERTAINMENT

An interesting program has been arranged for the entertainment of the members and guests in attendance.

Continued on page 4

AIEE MIDDLE EASTERN DISTRICT MEETING — PROGRAM — Toledo, Ohio, October 28-30, 1952

ADVANCE COPIES OF PAPERS

Members may obtain preprints of numbered papers at the uniform price of 30c each (60c each to nonmembers), by sending enclosed order form and remittance to the AIEE Order Department, 33 West 39th Street, New York 18, N. Y. Mail orders (particularly from out-of-town members) are advisable, inasmuch as an adequate supply of each paper at the meeting cannot be assured. Coupon books in \$9 denominations are available for those who wish to avoid remittance by check or otherwise. Most of the papers ultimately will be published in the Bimonthly Publications and in the Transactions. *District Papers* denoted by DP.** are intended for presentation only, and are not available.

Tuesday, October 28

10:00 a.m.—General Session

Crystal Room
Charles E. Ide, Presiding
Address: Management Looks Ahead in the Electric Power Industry. W. L. Cisler, The Detroit Edison Co. Presentation of District Prize Paper Awards. J. C. Strasbourger, Vice President, AIEE.

2:00 p.m.—Management

Crystal Room
C. J. Beller, Presiding
DP.** Management Development. L. A. Russ, Westinghouse Electric Corp.
DP.** Human Relations in the Management Team. E. C. Stone, University of Pittsburgh.

2:00 p.m.—Air Transportation

Toledo Room
J. W. Allen, Presiding
DP.** Operation Problems of Air Turbines for Accessory Drives. T. E. Abraham, Douglas Aircraft Co., Inc.
DP.** A New Hydraulic Constant Speed Drive. R. E. Thorn and E. E. Lewis, General Electric Co.
52-311. Automatic Synchronizing for Aircraft Alternators. F. B. McCarty and G. W. Hills, Convair.
DP.** The Maintenance of Electrical Equipment on Modern Airplanes. A. J. Mustard, Eastern Airlines.

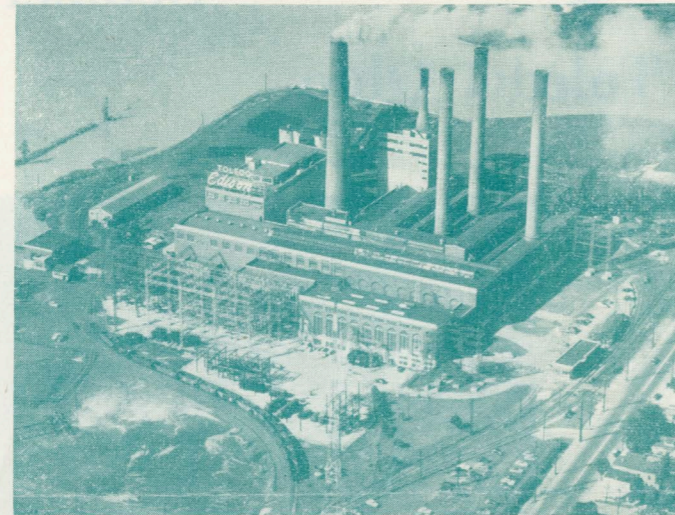
Wednesday, October 29

9:30 a.m.—Feedback Control Systems

Parlor #1
F. E. Crever, Presiding
DP.** Drag-Cup A-C Tachometer with Constant-Current Excitation. R. H. Frazier, Massachusetts Institute of Technology.
52-313. Stability Limits for Third-Order Servomechanisms. T. J. Higgins and J. G. Levinthal, University of Wisconsin.
52-199. The Use of Non-Linear Feedback to Improve the Transient Response of a Servomechanism. J. B. Lewis, University of Tennessee. Presentation by title only for discussion.
52-344. Piecewise Linear Servomechanisms. J. W. Schwartz, Cornell University. Presentation by title only for discussion.
52-314. An Approximate Transfer Function for the Analysis and Design of Pulsed Servos. R. G. Brown and G. J. Murphy, General Motors Corp.

9:30 a.m.—Rotating Machinery

Parlors 2, 3 and 4
S. F. Henderson, Presiding
52-315. A Graphical Method for Determining the Impedance of Multiple Cage Conductors. S. S. L. Chang, Robbins & Myers, Inc.



Toledo Edison Company's Acme Station

- 52-316. Performance Calculation of Double-Cage Induction ACO.* Motors. S. S. L. Chang and C. H. Crouse, Robbins & Myers, Inc.
52-317. A Contribution to the Theory of the Double Cage Induction Motor. J. F. H. Douglas, Marquette University.
52-318. Double and Triple Squirrel Cages for Polyphase Induction Motors. P. L. Alger and J. H. Wray, General Electric Co.

9:30 a.m.—Relaying

Toledo Room
M. Robison, Presiding
DP.** Phase Comparison Carrier Relaying for Three Terminal Lines. H. W. Lensner, Westinghouse Electric Corp.
DP.** Standardization of System Relaying. D. B. Brandt, General Electric Corp.
DP.** Typical Utility Microwave Applications. D. F. Burnside, Westinghouse Electric Corp.

9:30 a.m.—Air Transportation

Crystal Room
S. H. Hanville, Presiding
52-319. Characteristics of Aircraft A-C Generators. L. J. ACO.* Stratton, L. W. Matsch, Illinois Institute of Technology.
DP.** Effects of Aircraft A-C Generator Characteristics on System Performance. K. W. Carlson, General Electric Co.
DP.** Power Equalizer Systems for Aircraft Alternators. J. A. Granath and A. K. Hawkes, Illinois Institute of Technology.
DP.** Reactive Load Division of Parallel AC Generators in Aircraft Electrical Systems. E. S. Sherrard, Naval Research Lab.
52-322. Impedance Data for 400-Cycle Aircraft Distribution Systems. D. W. Exner and G. H. Singer, Jr., Boeing Airplane Co. Presentation by title only for discussion.
52-323. Continuous Current and Temperature Rise in Bundled Cables for Aircraft. Milton Schach and R. E. Kidwell, Jr., Naval Research Lab. Presentation by title only for discussion.

2:00 p.m.—System Engineering

Toledo Room
A. A. Johnson, Presiding
DP.** Expected National Load Growth and Its Effect on

Utility Expansion. A. A. Johnson, Westinghouse Electric Corp.

- DP.** A New Design 60 Cycle AC Network Analyzer. J. L. Davidson, Long Island Lighting Co., and R. E. Koll, System Analyzer Corp.
DP.** Aluminum for Conductors and Electrical Equipment. R. R. Cope, Aluminum Co. of America.
DP.** Commodity and Power Requirements. C. R. Beardley, Defense Electric Power Administration.

2:00 p.m.—Rotating Machinery

Parlor #1
T. C. Loyd, Presiding
52-325. Defining the Equivalent Circuit of the Double Cage Motor. Paul Jacobs, Westinghouse Electric Corp.
52-326. A Design Method for Double Squirrel-Cage Induction Motors. J. Goodman, Allis-Chalmers Mfg. Co.
52-327. A Design Method for Double Squirrel Cage Induction Motors. C. H. Lee, Reliance Electric & Engineering Co.
DP.** Design Description, Test Results, and Comparison of Calculated Characteristics of Sample Double-Cage Motors. J. J. Courtin, Westinghouse Electric Corp.

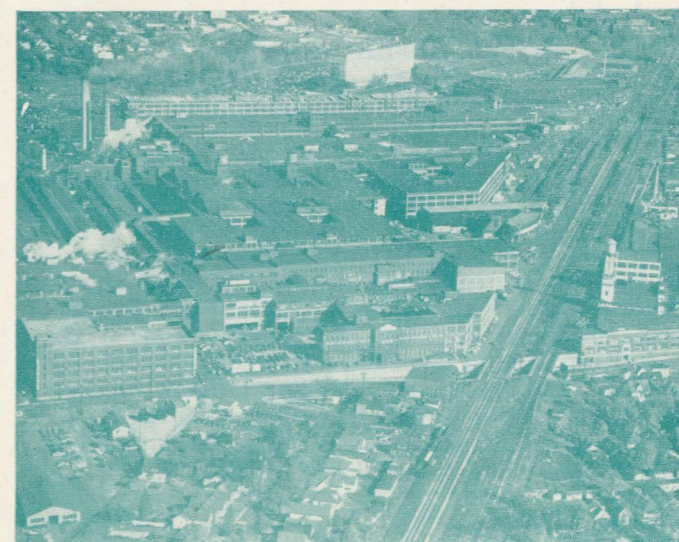
2:00 p.m.—Air Transportation

Crystal Room
B. O. Austin, Presiding
DP.** A System of Boosting D-C Voltage for Special Aircraft Applications. J. A. Hastings and E. L. Foster, Lockheed Aircraft Corp.
52-328. Electrostatic Oscillation in Sensitive Contact Mechanisms. T. R. Stuelpnagel, Hughes Aircraft Co. Presentation by title only for discussion.
52-329. Consideration of Off-On-Modulated Reversing Clutch Servo Systems. T. R. Stuelpnagel and J. P. Dallas, Hughes Aircraft Co.
DP.** Development of Static Regulators for Aircraft A-C Generators. D. L. Plette & H. H. Britten, General Electric Co.
52-330. Stabilizing Elements in Aircraft D-C Systems. D. G. Scorgie and D. H. Schaefer, Naval Research Lab.

Thursday, October 30

9:30 a.m.—Industrial Control

Parlor #1
J. A. Cortelli, Presiding
DP.** Importance and Coordination of Electrical Controls



Main Plant, Willys-Overland Motors, Inc.

and Power to the Refinery Process. M. K. Dubbs and C. H. Johnson, Sun Oil Co.

- DP.** Electrical Interlocking of Automatic Industrial Equipment. R. O. Bradley, Toledo Scale Co.
DP.** Quick Stopping of Rubber Mill Motors. J. F. Sellers and A. Halter, Allis-Chalmers Mfg. Co. and Blake Wheeler, Cutler Hammer, Inc.

9:30 a.m.—System Engineering

Toledo Room
H. H. Kerr, Presiding
DP.** Economic Effects of Conductor Size on Transmission Line Loadings. R. M. Butler, L. E. Saline and H. J. Fiedler, General Electric Co.
52-331. Power Supply to Critical Loads. S. G. Farace and ACO.* P. W. Crosby, Philadelphia Electric Co.
DP.** Power Supply to Critical Loads in the Glass Industry. N. W. James, Libbey-Owens-Ford Glass Co.

9:30 a.m.—Air Transportation

Crystal Room
Ray D. Jones, Presiding
DP.** Regulated Transformer Rectifiers. G. B. Farnsworth, General Electric Co.
DP.** Study of a Transformerless Rectified 120 Volt D-C Aircraft Electrical System. J. P. Dallas and C. A. Reising, Jr., Hughes Aircraft Co.
DP.** Economic Factors for Aircraft Electric Power Systems. R. M. Bergslien, L. J. Stratton and H. J. Finison, Armor Research Foundation.
DP.** Coordination of Circuit Protection Devices with Cables. Rudolf Steiner, USNADC.
52-332. Feeder Fault Protection for Direct-Current Aircraft Generators. W. W. Davis, Boeing Airplane Co. Presentation by title only for discussion.
52-333. Arc Interruption Phenomena in a Magnetic Field at Altitude. J. P. Dallas, Los Angeles, Calif. Presentation by title only for discussion.
DP.** Current Transformer Differential Protection for Aircraft D-C Systems. C. A. Brown, General Electric Co.

2:00 p.m.—Electrical Application in Glass Industry

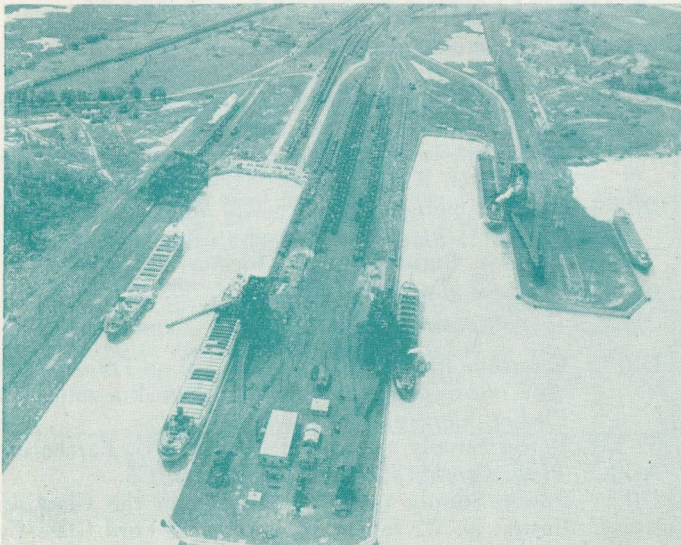
Parlor #1
James E. Arberry, Presiding
DP.** Comparison of Induction Regulators and Saturable Reactors for Electric Melting of Glass. C. R. Olson, Westinghouse Electric Corp.
DP.** Coordinated Section Drives in the Manufacture of "Fiberglas." N. A. Dragics, Owens-Corning Fiberglas Corp.
DP.** Electric Power Applications in the Glass Industry. E. A. E. Rich, General Electric Co.
52-320. Electric Glass Welding. M. R. Shaw, Corning Glass Works.

2:00 p.m.—Power Plants and Equipment

French Room
L. R. Gaty, Presiding
DP.** Electrical Features of Eastlake Generating Station. C. F. Paulus, Cleveland Electric Illuminating Co.
DP.** A Study for the Selection of a Station Power One Line Diagram. L. E. Smith, Toledo Edison Co.
52-334. A Fluid Network Reduction Method for Accurate ACO.* Representation of the Non-Linear Characteristics. W. T. Brown and R. A. Markel, Philadelphia Electric Co.

2:00 p.m.—Rotating Machinery

Toledo Room
C. G. Veinott, Presiding
DP.** Magnetic Noise in Salient Pole Synchronous Ma-



Chesapeake & Ohio Coal and Ore Docks

- chines. W. L. Ringland, Allis-Chalmers Mfg. Co.
- DP.** The Figure of Merit of DC Rotating Power Amplifiers. J. T. Carleton, Westinghouse Electric Corp.
- DP.** Analog Comparator as a Tool in Motor Application. J. L. Fuller and A. P. DiVincenze, Reliance Electric and Engineering Corp.
- DP.** Automatic Speed Controls for the AC Brush-Shifting Commutator Motor. V. J. Picozzi, General Electric Co.
- 52-343. Apparatus for Determination of Induction Motor Torque. K. M. Chirgwin, English Electric Co. of Canada, Ltd.
- 2:00 p.m.—Air Transportation**
Parlors 2, 3 and 4
R. L. Olson, Presiding
- 52-335. A Review of the Factors Affecting the Temperature of Airborne Electrical and Electronic Equipment. L. J. Lyons, Northrop Aircraft Inc.
- 52-336. Altitude Chamber Requirements for Evaluating Blast-Cooled Aircraft Generators. D. H. Scott, Naval Research Lab.
- 52-337. Thermodynamic and Aerodynamic Evaluation of Aircraft Generator Installations. D. Friedman and J. M. Marzolf, Naval Research Lab.
- 52-338. Improving the Dynamic Response of Airplanes by Means of Electrical Equipment. W. R. Monroe, North American Aviation, Inc.

DP.**—District paper; no advance copies are available; not intended for publication in TRANSACTIONS.

ACO.*—Advance copies only available, not intended for publication in TRANSACTIONS.

CONTINUED FROM PAGE ONE

On Tuesday, October 28, a smoker will be held in the Crystal Room of the Commodore Perry Hotel at 7:30 P.M. This event will provide an opportunity for members to be together for an evening of relaxation and fun. There will be music, refreshments, snacks and a full hour show.

The banquet Wednesday evening, October 29 at 7:00 P.M. in the Crystal Room will wind up the social part of the meeting for the members and their ladies. Mr. Grove Patterson, Editor-in-chief of the Toledo Blade, world traveler, nationally known and highly respected newspaperman will be the speaker. Music will be furnished and each lady will receive a special attractive favor.

LADIES ENTERTAINMENT

The ladies entertainment committee under the chairman-

ship of Mrs. W. E. Boruh has planned an interesting program of events and trips.

On Tuesday, October 28th, from 2:00 to 4:00 P.M., a get-acquainted tea will be held at the Commodore Perry Hotel. A dinner and card party will be held at 7:00 P.M. on Tuesday evening at the Toledo Woman's Club.

At 10:30 A.M. on Wednesday an interesting trip will be made through the Grace E. Smith nationally known cafeteria with luncheon being served at 11:30. At 2:30 P.M. the same day arrangements have been made for a most unusual and educational inspection trip through the Libbey Glass Division of the Owens Illinois Glass Company, manufacturers of the famous Safe Edge glassware and Libbey hostess sets.

Wednesday evening at 6:30 P.M. the ladies will join the men at the banquet to be held in the Commodore Perry Hotel. Thursday will be free for the ladies to visit Toledo's fine shopping district within walking distance of the hotel. Ladies are also invited to attend the opening day luncheon on Tuesday.

The French Room in the hotel has been designated as headquarters, for the ladies convenience during their stay in Toledo. Members of the Ladies Committee will be on hand continually to help ladies arrange tours other than those listed and to get acquainted with each other.

AIR TRANSPORTATION COMMITTEE

The Air Transportation Committee has selected this District meeting for its annual meeting. Morning and afternoon sessions will be held on all three days. There will be a special luncheon for the Committee on Thursday in the French Room of the Commodore Perry Hotel and the annual business session on Friday morning, October 31, at 9:00 A.M.

STUDENT ACTIVITIES

Students of the Middle Eastern District will hold a conference at the University of Toledo on Friday and Saturday October 31 and November 1. The students are encouraged to attend the sessions of the District Meeting and they are welcome to attend any of the inspection trips and social functions.

REGISTRATION

Please register in advance by returning the accompanying advance registration card, properly filled out. Arrangements have been made to expedite the registration of those who promptly send in their cards. The registration fee, payable at the meeting, is \$2.00 for members and \$3.00 for non-members. No fee is required of enrolled students and immediate families of members. Reservations for luncheons, social functions, and inspection trips should be made at the ticket sale desk.

HOTEL RESERVATIONS

Reservations should be made directly with the hotel of your choice. Rooms with bath are available at the following minimum rates and up.

	Single	Double	Twin Beds
Commodore Perry	4.50	7.00	9.50
Secor	4.00	6.50	8.00
Fort Meigs	4.00	6.00	8.75

The members of the **Middle Eastern District Meeting Committee** are M. W. Keck, Chairman; C. E. Ide, Honorary Chairman; Roy Stott, Secretary-Treasurer; L. H. Fox, Chairman, Toledo Section; L. E. Smith, Scheduling; J. W. Cofer, Technical Program; W. H. Schwalbert, Inspection Trips; D. L. Rexford, Registration and Finance; W. E. Boruh, Entertainment and Publicity; Mrs. W. E. Boruh, Ladies Program; Tsute Yang, Student Activities.