

American Institute of Electrical Engineers



**WINTER
GENERAL MEETING**

Program

Please retain for use
during entire meeting

NEW YORK, N. Y.

JANUARY 28—FEBRUARY 2, 1962

**Statler-Hilton and Governor Clinton Hotels
and the Coliseum**



General Information

Our 1962 Winter General Meeting includes, for the first time, an ELECTRICAL ENGINEERING EXPOSITION, being held at the New York Coliseum. Headquarters for the meeting will be the Statler-Hilton Hotel, with sessions also being held in the Governor Clinton Hotel and the Coliseum. Committee meetings will be held in both hotels and in the United Engineering Center.

THE GENERAL SESSION Monday afternoon, January 29th, will be opened by General Chairman R. W. Gillette. The Principal address will be given by Mr. T. Keith Glennan, President, Case Institute of Technology. At this session the Edison Medal will be Awarded to Dr. William B. Kouwenhoven of the Engineering School at the Johns Hopkins University, an Honorary Membership will be presented to Dr. Philip Sporn, Past President, American Electric Power Corporation, and the AIEE Prize Paper Awards will be presented. The Nominating Committee will also give its report. President W. H. Chase will conclude with his report to the members of the Institute.

INFORMATION on all features may be obtained at the registration desk in the Statler-Hilton Hotel. Efforts will be made to deliver telegrams and messages promptly. Members who expect to receive mail are asked to inquire frequently at the information desk.

REGISTRATION FEES REQUIRED. The registration fees for members, nonmembers, and ladies have been set at \$6.00, \$10.00 and \$2.00, respectively. Student members and children are registered without fee.

TECHNICAL SESSIONS AND DISCUSSIONS are covered by the "Technical Session Guide" at the discretion of the presiding officers. Sufficient time will be allowed for the presentation of each paper and five minutes for each discussion. To receive consideration for publication, discussions on TRANSACTIONS papers in duplicate must be sent to Edward C. Day, Assistant Secretary, Technical Operations Department, AIEE, 345 East 47th Street, New York 17, New York, before February 16th, 1962. Discussions received later may not be included, depending upon the printing schedule of the paper to which the discussion is directed. The original typewritten double spaced copy, together with a duplicate copy and original illustrations as photographs or inked tracings should be submitted.

MONITORS AND PROJECTORS. Contact T. W. Bartlett on any questions arising in connection with monitors and projection equipment, in the Ballroom Rotunda Lounge of the Statler-Hilton Hotel.

If YOU need to be REACHED at the COLISEUM have your party telephone you at Area Code 212, JUDson 2-9130. Be sure you designate exposition booth or Technical Session room in which you are located.

Winter General Meeting

Schedule of Events

(See Separate Folder for Entertainment, Inspection Trips and Points of Interest)

SUNDAY, JAN. 28

- 2:00 p.m. Registration
Mezzanine
- 4:00 p.m. Informal Tea
Statler-Hilton Ballroom

MONDAY, JAN. 29

- 10:00 a.m. Production & Application of Light
Statler-Hilton East Room
- Broadcasting
Statler-Hilton West Room
- Logical Design
Statler-Hilton Gold Ballroom
- Control System Applications
Coliseum Room C
- Industrial Control
Statler-Hilton Georgian Room
- Corrosion & Cathodic Protection
Governor Clinton Governor Room
- General Systems
Coliseum Room A
- Extra High Voltage & Radio Noise
Coliseum Room B
- Electrostatic Processes
Statler-Hilton Skytop
- Basic Sciences—I
Governor Clinton Florentine Room
- Magnetic Amplifiers
Coliseum Room D
- Transformers
Statler-Hilton Grand Ballroom
- Digital Computer Workshop
Statler-Hilton Penn Top South
- 2:00 p.m. General Session
Statler-Hilton Grand Ballroom
- 7:30 p.m. Feedback Control Systems
Statler-Hilton Georgian Room

TUESDAY, JAN. 30

- 9:00 a.m. Section Representatives
Statler-Hilton Penn Top North
- Multivariable Control Systems—I
Statler-Hilton Penn Top South

TUESDAY (continued)

Setting the Climate for Engineering Achievement
Statler-Hilton Grand Ballroom

Safety
Statler-Hilton Mezzanine S. W.

Marine Transportation
Statler-Hilton Gold Ballroom

Symposium on Heavy Current Bus Design for
Electrochemical Plants
Governor Clinton Florentine Room

Instrumentation for Survival
Coliseum Room C

Towers, Poles & Conductors
Statler-Hilton Georgian Room

Transformers
Statler-Hilton Skytop

Relays
Governor Clinton Governor Room

Millimeter Wave Generation—I
Coliseum Room B

Computer Systems & Devices
Statler-Hilton West Room

Industrial and Semiconductor Power Rectifiers
Coliseum Room A

Electric Space Heating & Heat Pumps
Statler-Hilton East Room

Aluminum Conduit and Fittings
Governor Clinton Chelsea Room

Insulated Conductors
Coliseum Room D

Tutorial Session for Non-Computer Engineers
Governor Clinton Greeley Room

10:00 a.m. A Look Ahead in Technical Affairs
Statler-Hilton Cornell Room

2:00 p.m. Section Representatives
Statler-Hilton Penn Top North

Solid State Devices
Statler-Hilton Mezzanine S. W.

Marine Transportation
Statler-Hilton Gold Ballroom

Multivariable Control Systems—II
Statler-Hilton Penn Top South

Fundamental Electrical Standards
Coliseum Room C

Switching Surges
Statler-Hilton Georgian Room

Transformers
Statler-Hilton Skytop

TUESDAY (continued)

Hydro-Thermal Electric Systems
Governor Clinton Governor Room

Millimeter Wave Generation—II
Coliseum Room B

Semiconductor Rectifiers
Coliseum Room A

Heavy Current Metering for Electrochemical Plants
Governor Clinton Florentine Room

Insulated Conductors & Research
Coliseum Room D

Electric Space Heating & Heat Pumps
Statler-Hilton Grand Ballroom

WEDNESDAY, JAN. 31

9:00 a.m. Telegraph Systems
Coliseum Room C

Communication Switching—I
Coliseum Room A

Telemetry
Statler-Hilton East Room

Linear Control System
Coliseum Room B

Process Automation in the Primary Metals Industry
Governor Clinton Chelsea Room

Industrial & Commercial Power Systems
Statler-Hilton Penn Top South

Distribution Systems
Coliseum Room D

Generation Scheduling for Economic Dispatch
Statler-Hilton Grand Ballroom

Induction Machinery
Statler-Hilton Skytop

Tutorial Session on Non-Thermionic Electron
Emitters
Governor Clinton Florentine Room

Gigacycle Computer Symposium
Implications of Gigacycle Computing Systems
Statler-Hilton Governor Room

Solid State Devices
Statler-Hilton Gold Ballroom

Symposium—Classification of Hazardous Areas
Statler-Hilton West Room

Corona—I
Statler-Hilton Georgian Room

Switchgear—I
United Engineering Center Room 125

WEDNESDAY (continued)

- 2:00 p.m.** Data Communication
Coliseum Room C
- Communication Switching—II
Coliseum Room A
- Professional Integrity
Statler-Hilton Penn Top North
- Secondary Batteries
Governor Clinton Chelsea Room
- Nonlinear Control Systems
Coliseum Room B
- Advanced Electrical Systems for the Primary Metals Industry
Governor Clinton Greeley Room
- Industrial & Commercial Power Systems
Statler-Hilton Penn Top South
- Design & Performance of H. V. Lines
Coliseum Room D
- Economic Turbine Operation Considering Valve Losses
Statler-Hilton Grand Ballroom
- Symposium on High Temperature Induction Motors
Statler-Hilton Skytop
- Microwave and Gas Tubes
Governor Clinton Florentine Room
- Gigacycle Computer Symposium
Components and Circuits for Gigacycle Systems
Governor Clinton Governor Room
- Solid State Devices
Statler-Hilton Gold Ballroom
- Electronic Transformers
Statler-Hilton West Room
- The Impact of Digital Computers on Engineering—
A Report
Statler-Hilton Mezzanine S. W.
- Corona—II
Statler-Hilton Georgian Room
- Space Communications
Statler-Hilton East Room
- Switchgear—II
United Engineering Center Room 125
- 7:30 p.m.** “Your AIEE Town Meeting on AIEE-IRE Merger”
Statler-Hilton Grand Ballroom
- Is Today's Theory of Optimal Control Adequate for
Today's Problems in Industrial Systems Design
Statler-Hilton Gold Ballroom

THURSDAY, FEB. 1

- 9:00 a.m.** Space Communications
Statler-Hilton Mezzanine S. W.
- Communication Theory and Communication Switching
Systems
Governor Clinton Florentine Room
- Solid State Electronic Devices and Their Utilization
Statler-Hilton Gold Ballroom

THURSDAY (continued)

- Land Transportation—I
Coliseum Room C
- Adaptive Control Systems—I
Governor Clinton Governor Room
- Biomedical Engineering Techniques—I
Governor Clinton Greeley Room
- New Technical Activities
Statler-Hilton Penn Top North
- Substations, Transmission & Distribution
Statler-Hilton Grand Ballroom
- Turbine Generators
Statler-Hilton Georgian Room
- New Electron Tubes and Techniques
Statler-Hilton West Room
- Modern Circuit Techniques—I
Statler-Hilton East Room
- Gigacycle Computer Symposium
Organization of Gigacycle Computing Systems
Coliseum Room B
- Thermal Evaluation—I
Statler-Hilton Skytop
- Engineering of Large Systems—I. System Engineering
in Different Fields
Coliseum Room D
- Heavy Current Buses for Generator Leads
Statler-Hilton Penn Top South
- 2:00 p.m.** Radio Communication—I
Governor Clinton Florentine Room
- Wire Communication and Switching Systems
Statler-Hilton Penn Top South
- Current Trends in Undergraduate Electrical
Engineering Education
Statler-Hilton Penn Top North
- Land Transportation—II
Coliseum Room C
- Adaptive Control Systems—II
Governor Clinton Governor Room
- Indicating & Intergrating Instruments
Governor Clinton Chelsea Room
- Substations and Switchgear
Statler-Hilton Grand Ballroom
- Direct Current Machinery
Statler-Hilton Georgian Room
- Electronics
Statler-Hilton West Room
- Modern Circuit Techniques—II
Statler-Hilton East Room
- Gigacycle Computer Symposium
General Considerations in Gigacycle Computer
Systems
Coliseum Room B
- Thermal Evaluations—II
Statler-Hilton Skytop

THURSDAY (continued)

- Large Systems Engineering Symposium
Coliseum Room D
- Load Control and Load Flow Calculations
Statler-Hilton Gold Ballroom
- Excitation Systems
Statler-Hilton Mezzanine S. W.
- Biomedical Engineering Techniques—II
Governor Clinton Greeley Room

FRIDAY, FEB. 2

- 9:00 a.m.** Wire Communications—I
Statler-Hilton East Room
- Radio Communications—II
Statler-Hilton West Room
- System Planning
Coliseum Room D
- Land Transportation—III
Statler-Hilton Penn Top South
- Control Components & Performance Measurements
Coliseum Room B
- Ground Resistance and Potential Gradient Measurements
Statler-Hilton Penn Top North
- Switchgear—III
Statler-Hilton Georgian Room
- Hydroelectric Power
Statler-Hilton Grand Ballroom
- Modern Circuit Techniques—III
Coliseum Room A
- Computer Input-Output Devices
Statler-Hilton Skytop
- Electrical Insulation
Coliseum Room C
- Rotating Machinery
Statler-Hilton Gold Ballroom
- 2:00 p.m.** Wire Communications—II
Statler-Hilton East Room
- Land Transportation—IV
Statler-Hilton Penn Top South
- Discrete Data Control Systems
Coliseum Room B
- Electrical Measurements
Statler-Hilton Penn Top North
- Basic Sciences—II
Statler-Hilton Georgian Room
- Protective Devices
Statler-Hilton Gold Ballroom
- Foreign Practices
Statler-Hilton Grand Ballroom
- Modern Circuit Techniques—IV
Coliseum Room A

PAPERS MAY BE PURCHASED

Preprints of all *numbered* papers are on sale at 50¢ each to AIEE members (\$1.00 to nonmembers).

Papers bearing *Roman numerals* will be printed in the Transactions and the bimonthly publications as follows:

- I COMMUNICATIONS AND ELECTRONICS.
- II APPLICATIONS AND INDUSTRY.
- III POWER APPARATUS AND SYSTEMS.

**Asterisked papers* will be assigned numbers for sale at the same prices at the meeting if copies are so provided by the authors; no further reproduction is presently scheduled.

After the meeting, all then unsold copies (including authors' papers on sale) are available by order and remittance to AIEE Order Department, 345 East 47th Street, New York 17, N. Y. Coupon books in \$10 denominations are available by order from Headquarters to those who wish to avoid remittance by check or otherwise.

Monday, January 29th

10:00 a.m.—Production and Application of Light

Statler-Hilton East Room

Chairman: R. D. CHURCHILL, General Electric Co.

PRODUCTION AND APPLICATION OF LIGHT COMMITTEE

- CP.* Distribution Photometry and Automation. J. S. Franklin, P. M. Garrett; General Electric Co.
- CP.* Do Higher Footcandles Mean Higher Heat Loads? R. S. Wissoker, Day-Brite Lighting, Inc.
- CP.* Special Circuits for Fluorescent Lamps. P. R. Herrick, General Electric Co.

10:00 a.m.—New Allied Developments in Broadcasting

Statler-Hilton West Room

Chairman: C. M. BRAUM, National Educational Television and Radio Center

BROADCASTING COMMITTEE

- CP.* Round Robin Facilities for Closed Circuit ETV. H. D. Fulsher, R. S. Head, Michigan Bell Telephone Co.
- CP.* Technical Aspects of the Hartford Subscription Television Phonevision Test. E. Roschke, Zenith Radio Co.
- CP.* New Developments in FM Broadcasting Remote Control Facilities. R. E. Peterson, Jansky & Bailey.
- CP.* A Field Strength Meter for New York UHF Television Project. J. F. Dobosy, W. G. Hutton, C. S. Bidlack, C. E. Smith; Smith Electronics.

- 62-252 I The Measurement of Random Video Interference to Monochrome and Color TV Pictures. J. M. Barstow, H. N. Christopher; Bell Telephone Labs., Inc. (Re-presented for Discussion only)

10:00 a.m.—Logical Design

Statler-Hilton Gold Ballroom

Chairman: E. J. SCHUBERT, Beckman Systems

COMPUTING DEVICES COMMITTEE

- 62-11 I A Map Approach to the Solution of a Class of Boolean Functional Equations. K. K. Maitra, General Dynamics Electronics.

MONDAY (continued)

- CP.* Design of N-Valued Logic Networks. H. B. Baskin, IBM Corp.
 62-122 A Four-Megacycle, 18-Bit, Checked Binary Counter. M. E. I Homan, IBM Corp.
 62-123 The Automation of Backwiring Design and Topological Lay- I out—Part II: Topological Layout. R. R. Brown, G. F. Putnam, Minneapolis-Honeywell Regulator Co.

10:00 a.m.—Control System Applications

Coliseum Room C
 Chairman: W. F. EAGAN, Allis-Chalmers Mfg. Co.
 FEEDBACK CONTROL SYSTEMS COMMITTEE

- CP62-70. A High-Performance Elevator Control System with Unique Velocity and Position Transducers. K. A. Oplinger, L. A. Bobula, A. O. Lund, W. M. Ostrander; Westinghouse Electric Corp.
 CP62-71. UNIDAP: Universal Digital Autopilot. T. E. Conover, W. F. Collision; The Martin Co.
 CP62-250. Effect of Servomechanism Characteristics on Accuracy of Contouring Around a Corner. H. E. Vigour, General Electric Co.
 CP62-72. An Experimental Study of Multiple Controllers for a Single Process. W. L. Green, Sandia Corp.; C. H. Weaver, Auburn University.
 CP62-73. A Study of Contactor Servomechanisms With Positive Hysteresis. W. H. Golden, APGC—Air Force Systems Command; C. H. Weaver, Auburn University.

10:00 a.m.—Industrial Control

Statler-Hilton Georgian Room
 Chairman: A. H. MYLES, Square D Co.
 INDUSTRIAL CONTROL COMMITTEE

- 62-176 Improved Starting Process Alternative to Conventional Star- II Delta Switching of A-C Motors. M. N. Abdel-Hamid, University of Cairo.
 62-177 Stepless Starting of Wound Rotor Induction Motors. P. L. II Alger, Rensselaer Polytechnic Institute; Jalaluddin, Engineering College at Aligarh, UP India.
 62-22 Wide-Range Reversible Voltage Controllers for Polyphase II Induction Motors. N. Zagalsky, W. Shepherd; University of Manitoba.
 CP62-175. An AC Hoist Control With DC Characteristics. D. I. Bohn, Ashville, N. C.; O. Jensen, I-T-E Circuit Breaker Co.
 61-645 Speed Regulation by Digital Methods. W. C. Schmidt, R. R. II Potts; Reliance Electric & Engineering Co.

10:00 a.m.—Corrosion and Cathodic Protection

Governor Clinton Governor Room
 Chairman: B. HUSOCK, Harco Corp.
 CHEMICAL INDUSTRY COMMITTEE

- 62-66 Cathodic Protection of Transmission and Distribution Under- II ground Cables. E. R. Beeman, D. E. Knauss; Florida Power Corp. (Re-presented for Discussion only.)
 CP.* Underground Corrosion Program of Rural Electrification Ad- ministration. O. W. Zastrow, Rural Electrification Admini- stration.

MONDAY (continued)

- CP.* A Study by Polarization Techniques of the Corrosion of Aluminum and Steel Underground for Sixteen Months. W. J. Schwerdtfeger, National Bureau of Standards.

10:00 a.m.—General Systems

Coliseum Room A
 Chairman: J. K. DILLARD, Westinghouse Electric Corp.
 TRANSMISSION AND DISTRIBUTION COMMITTEE

- 62-101 Fault Analysis by Modified α , β , and σ Components—I. III T. Hsiao, Ann Arbor, Michigan.
 62-102 Fault Analysis by Modified α , β , and σ Components—II. III T. Hsiao, Ann Arbor, Michigan.
 62-103 A New Approach to the Transient Stability Problem. N. III Dharma Rao, Indian Institute of Science.
 62-104 New Method for Locating Transmission Line Ground Faults. III M. J. Lantz, Bonneville Power Administration.

10:00 a.m.—Extra High Voltage and Radio Noise

Coliseum Room B
 Chairman: J. M. CLAYTON, Westinghouse Electric Corp.
 TRANSMISSION AND DISTRIBUTION COMMITTEE

- CP.* Project EHV—The Value of Research. D. D. MacCarthy, J. W. Yetter; General Electric Co.
 CP.* Results From the First Year of Operation of Project EHV. P. A. Abetti, J. J. LaForest, C. B. Lindh, D. D. MacCarthy; General Electric Co.
 62-99 Bibliography on Extra-High-Voltage Systems—First Supple- III ment. P. A. Abetti, General Electric Co.
 CP62-251. Radio Noise Aging Characteristics of Small Aluminum Conductors. J. J. LaForest, E. A. Whepley; General Electric Co.
 62-106 Radio Noise From High-Voltage Transmission Lines—AIEE III Committee Report Radio Noise Subcommittee. H. L. Rorden, Chairman.

10:00 a.m.—Electrostatic Processes

Statler-Hilton Skytop
 Chairman: R. E. ARMINGTON, University of Maine
 ELECTRONICS COMMITTEE

- CP.* Ionization of a Gas by Radiation From a Discharge. G. W. Penney, Carnegie Institute of Technology.
 CP62-253. Dust Space-Charge in Electrical Precipitators. P. Cooper- man, Fairleigh Dickinson University.
 CP.* Some Effects of Varying Parameters on Prebreakdown Pulsed Discharges. T. I. Agnew, FEMCO, Inc., and G. W. Penney, Carnegie Inst. of Technology.
 CP.* Electron Injection and Storage in Solid Dielectrics. K. A. Wright, J. G. Trump, Massachusetts Inst. of Technology; A. S. Denholm, Goodrich-High Voltage Astronautics, Inc.
 61-184 Contact Potentials and the Adhesion of Dust. G. W. Penney, I E. H. Klingler; Carnegie Inst. of Technology. (Re-presented for Discussion only.)

MONDAY (continued)

10:00 a.m.—Basic Sciences—I

Governor Clinton Florentine Room
 Chairman: T. J. HIGGINS, University of Wisconsin
 BASIC SCIENCES COMMITTEE

- CP62-131. Topological Representations of Electromagnetic Wave Propagation. F. J. Lupo, New York University.
- 62-133 Irradiation of Small Sphere Gaps for Voltage Measurements.
 I D. F. Binns, Royal College of Advanced Technology; D. R. Hardy, Hawker Siddeley Engineering (formerly with Brush Electrical Engineering Co., Ltd.)
- CP62-134. Small Angle Notation for Large Angle Vectors. F. B. Hall, V. E. Finnegan; Argonne National Laboratory.
- CP.* Sumarea Determination of the Capacitance of a Finite Circular Cone. T. J. Higgins, F. Kreigler; University of Wisconsin.
- CP.* The Use of Functions of Matrices in the Transient Analysis of Linear Conservative Electrical Circuits. L. A. Pipes, University of California.

10:00 a.m.—Magnetic Amplifiers

Coliseum Room D
 Chairman: F. J. FRIEDLAENDER, Purdue University
 MAGNETIC AMPLIFIERS COMMITTEE

- 62-5 Comparison of Directly and Indirectly Measured Control Characteristics of Magnetic Amplifiers With External Feedback. W. A. Geyger, U. S. Naval Ordnance Laboratory.
- 62-195 Charge Control of Magnetic Amplifiers—Part I: Dynamic Properties of Square Hysteresis Loop Ferromagnetics. A. Góral, Warsaw Technical University.
- CP62-196. Charge Control of Magnetic Amplifiers—Part II: The Performance of Self-Saturating Magnetic Amplifiers. A. Góral, Warsaw Technical University.
- 62-197 A High-Gain Push-Pull Magnetic Amplifier With Limited Circulating Currents. I. M. Horowitz, Hughes Research Labs. (Re-presented for Discussion only.)

10:00 a.m.—Transformers

Statler-Hilton Grand Ballroom
 Chairman: H. H. WAGNER, Penna. Transformer Div., McGraw Edison Co.
 TRANSFORMERS COMMITTEE

- 62-10 Auxiliary Cooling of Power Transformers. D. L. Levine, III Commonwealth Edison Co.
- 62-178 Short-Circuit Testing of Distribution Transformers. M. F. Beavers, C. M. Adams, J. E. Holcomb; General Electric Co.
- 62-14 Time Constant and Overload Behavior of Oil Filled Transformers. H. Reber, Line Material Industries, McGraw-Edison Co.
- 62-234 Change of Time Constant With Transformer Load. L. C. III Whitman, General Electric Co.

10:00 a.m.—Digital Computer Workshop

Statler-Hilton Penn Top South
 Chairman: DEMOS EITZER, The City College of New York
 EDUCATION COMMITTEE

- CP.* Structure of a Digital Computer. D. P. Herrman, Jr., Royal McBee Corp.
- CP.* A Simple Approach to Programming a Digital Computer. W. E. Eccles, Purdue University.

MONDAY (continued)

2:00 p.m.—General Session

Statler-Hilton Grand Ballroom
 Chairman: R. W. GILLETTE, Consolidated Edison Co. of N. Y., Inc.

ADDRESS: Mr. T. Keith Glennan, President, Case Institute of Technology

REPORT OF THE NOMINATING COMMITTEE

PRESENTATION OF THE INSTITUTE PRIZE PAPER AWARDS by the President and L. F. Kennedy, Chairman, Prize Awards Committee

General Committees and Electrical Engineering Articles
 1st Prize Paper by Dr. Philip Sporn

General Applications Division
 1st Prize Paper by R. J. Tallent and Henry Oman

Power Division
 1st Prize Paper by L. O. Barthold and G. K. Carter

Science and Electronics Division
 1st Prize Paper by R. J. Metz and J. G. Fay
 2nd Prize Paper by J. H. Mulligan, Jr. and S. S. Shamis

Industry Division
 1st Prize Paper by P. K. C. Wang

Student Division
 1st Prize Paper by W. J. Wilson
 2nd Prize Paper by D. R. Harrison
 2nd Prize Paper by R. F. Overmyer

PRESENTATION OF AN HONORARY MEMBERSHIP CERTIFICATE TO DR. PHILIP SPORN, PAST PRESIDENT, MEMBER OF EXECUTIVE COMMITTEE OF SYSTEM DEVELOPMENT COMMITTEE, AMERICAN ELECTRIC POWER COMPANY

Citation of the Recipient by Harry A. Winne
 Presentation of the Certificate by President W. H. Chase
 Response by Dr. Sporn

PRESENTATION OF THE EDISON MEDAL TO DR. WILLIAM B. KOUWENHOVEN, PROFESSOR EMERITUS, ENGINEERING SCHOOL, THE JOHNS HOPKINS UNIVERSITY

History of the Edison Medal
 F. E. Harrell, Chairman of the Edison Medal Committee

Career of the Medalist
 Dr. Ferdinand Hamburger, Jr., Chairman, Electrical Engineering Department, The Johns Hopkins University

Presentation of the Medal and Certificate
 President W. H. Chase

Response of the Medalist
 Dr. W. B. Kouwenhoven

ADDRESS: President W. H. Chase

7:30 p.m.—Functions in Power Plant Automation

Statler-Hilton Georgian Room
 Chairman: D. M. SAUTER, Westinghouse Electric Corp.
 FEEDBACK CONTROL SYSTEMS AND POWER GENERATION COMMITTEES

CP.* Digital Computer Function and Economic Evaluation for Power Plant Automation. E. S. Burdick, T. J. Glass; General Electric Co.

CP.* Computer Control, Peaking Power Plant. P. W. Clark, H. S. Brewry, G. Balekjian, Allis-Chalmers Mfg. Co.

CP.* Man-Computer Communication in the Power Plant. N. L. Dickinson, Daystrom Corp.

Tuesday, January 30th

9:00 a.m.—Section Representatives

Statler-Hilton Penn Top North
Chairman: H. C. BREM, Allis-Chalmers Mfg. Co.
SECTIONS COMMITTEE

9:00 a.m.—Multivariable Control Systems—I

Statler-Hilton Penn Top South
Chairman: R. A. MATHIAS, Westinghouse Research Lab.
FEEDBACK CONTROL SYSTEMS COMMITTEE

- 62-74 Synthesis of Linear Multivariable Systems. R. W. Brockett,
II M. D. Mesarovic, Case Inst. of Technology.
- 62-75 Design and Synthesis Methods for a Class of Multivariable
II Feedback Control Systems Based on Single-Variable Methods.
E. V. Bohn, The University of British Columbia.
- 62-87 Application of the Matrix Methods to the Optimum Synthesis
II of Multivariable Systems Subject to Constraints. K. S. Nar-
renda, R. M. Goldwyn; Harvard University.
- CP.* Critique: S. S. L. Chang, New York University.

9:00 a.m.—Setting the Climate for Engineering Achievement

Statler-Hilton Grand Ballroom
Chairman: R. W. McFALL, Litton Industries
MANAGEMENT COMMITTEE

Moderator: S. W. Herwald, Westinghouse Electric Corp.
K. B. McEachron, Jr., Case Inst. of Technology
J. W. Townsend, Jr., National Aeronautics and
Space Administration
H. R. Huntley, American Tel. & Tel. Co. (Retired)
J. F. Young, General Electric Co.
R. N. Wagner, Aluminum Company of America
G. W. Clothier, Allis-Chalmers Mfg. Co.
R. R. Everitt, Mitre Corp.

9:00 a.m.—Safety

Statler-Hilton Mezzanine S. W.
Chairman: L. D. PRICE, Vice-Chairman, Safety Committee
SAFETY COMMITTEE

- 62-283 The Development of a Portable Defibrillator. W. B. Kouwen-
III hoven and G. G. Knickerbocker, The Johns Hopkins University.

9:00 a.m.—Marine Transportation

Statler-Hilton Gold Ballroom
Chairman: J. M. APPLE, Bureau of Ships, Dept. of the Navy
MARINE TRANSPORTATION COMMITTEE

- 62-4 N. S. Savannah—Electrical System in First Merchant Nuclear
II Reactor System. E. A. Geary, New York Shipbuilding Corp.
- CP62-38. Indication and Location of Grounds in Shipboard AC Elec-
trical Systems. O. T. Estes, R. E. Rountree; U. S. Coast
Guard.
- 62-6 Voltage Regulation of D-C Power Supply with Suddenly
II Applied Load. H. H. Hansen, Westinghouse Electric Corp.

TUESDAY (continued)

9:00 a.m.—Symposium on Heavy Current Bus Design for Electrochemical Plants

Governor Clinton Florentine Room
Chairman: WALDO PORTER, Aluminum Co. of America
CHEMICAL INDUSTRY COMMITTEE

- L. T. Guess, Aluminum Company of America
W. S. Miller, Diamond Alkali Co.
F. V. Calvert, Calvert Co.
W. D. Whinery, The Tide Co.
J. S. Banas, Delta Star Elec. Division of H. K. Porter Co.
G. A. Peterman, The Anaconda Co.
S. O. Rodeseike, I-T-E Circuit Breaker Co.

9:00 a.m.—Instrumentation for Survival

Coliseum Room C
Chairman: MERRILL EISENBUD, New York University
NUCLEAR INSTRUMENTATION COMMITTEE

- CP.* Area Monitoring. R. Graveson, Health and Safety Laboratory.
- CP.* Personnel Monitoring. E. L. Zebroski, General Electric Co.
- CP.* Food and Water Monitoring. H. J. L. Rechen, U. S. Public Health Service.
- CP.* Review of Disaster Instruments. R. J. Magill, Nuclear-Chicago.
- CP.* Instrument Applications to Guides for Personal Survival. R. J. Catlin, Westinghouse Testing Reactor.

9:00 a.m.—Towers, Poles and Conductors

Statler-Hilton Georgian Room
Chairman: J. A. RAWLS, Virginia Electric and Power Co.
TRANSMISSION AND DISTRIBUTION COMMITTEE

- 61-1045 A Study of Use of Aluminum Guyed Towers for Extra High
III Voltage Transmission Systems. L. H. J. Cook, Ingledow Kidd & Associates, Ltd. and B. Cooper, International Power and Engineering Consultants, Ltd.
- CP62-107. Sag and Tension Calculations By The Nomographic Method. R. H. Sarikas, Illinois Power Co.
- CP62-121. Ontario Hydro Live-Line Vibration Recorder For Transmission Conductors. A. T. Edwards, J. M. Boyd; Hydro-Electric Power Commission of Ontario.
- CP.* Transient Suspension Forces Caused By Broken Transmission Line Conductors. O. I. Elgerd, University of Florida.
- CP62-62. Experiments With Galloping Spans. J. J. Ratkowski, Commonwealth Edison Co.

9:00 a.m.—Transformers

Statler-Hilton Skytop
Chairman: C. H. BJORQUIST, Bonneville Power Administration
TRANSFORMERS COMMITTEE

- 62-105 The Effect of Temperature and Thermal Aging on the Electrical
III Characteristics of Film-Type Wire Insulations in Transformer Oil. M. F. Beavers, G. F. Lipsey; General Electric Co.
- 62-235 A New Transformer Insulation. B. D. Brummet, F. S. Sadler;
III Thomas A. Edison Research Lab., Div. of McGraw-Edison Co.
- CP.* Electrical Insulating Paper Development. J. E. Millington, Allis-Chalmers Mfg. Co.

TUESDAY (continued)

62-36 Bibliography on the Surge Performance of Transformers and Rotating Machines—First Supplement. P. A. Abetti, General Electric Co.

62-236 Numerical Evaluation of Natural Frequencies in Power Transformer Windings. I. Johansen, H. Riege; The Technical University of Norway.

9:00 a.m.—Relays

Governor Clinton Governor Room

Chairman: J. R. LINDERS, Cleveland Electric Illuminating Co.

POWER SYSTEM COMMUNICATIONS AND RELAYS COMMITTEES

62-20 A Mathematical Basis for a Protective Relay with Conic Pickup Characteristics. J. E. Skuderna, U. S. Bureau of Reclamation.

62-29 Bibliography of Relay Literature 1959-1960. AIEE Bibliography and Publicity Sub. of the AIEE Relays Committee; R. W. Hirtler, Chairman.

62-28 Evaluation of Transfer-Trip Relaying Using Power Line Carrier. AIEE Working Group, Relay Protection Sub. of the AIEE Relays Committee; C. L. Wagner, Chairman.

62-119 Carrier Current Transfer Trip Relaying Field Tests and Operation Experience. D. G. Wohlgemuth, D. A. Gillies, R. E. Dietrich; Bonneville Power Administration.

9:00 a.m.—Millimeter Wave Generation—I

Coliseum Room B

Chairman: G. I. KLEIN, Westinghouse Electric Corp.

ELECTRON TUBES COMMITTEE

CP.* The Role of Slow-Wave Circuits. C. K. Birdsall, University of California.

CP.* The Application of Megavolt Electronics Techniques to the Generation of Ultramicrowaves. M. D. Sirkis, University of Illinois.

CP.* Operation of an R-F Structure in a Higher Order Mode for Millimeter Wave Generation. M. I. Antoniou, The Bendix Corp.

CP.* Extended Interaction Circuit Oscillators for Millimeter Wave Generation. A. J. Prommer, Litton Industries.

9:00 a.m.—Computer Systems and Devices

Statler-Hilton West Room

Chairman: R. FERGUSON, Westinghouse Electric Corp.

COMPUTING DEVICES COMMITTEE

CP.* Significant Developments and Trends in the Computing Devices Field During 1961. Ad Hoc Group of the Computing Devices Committee, R. M. Kalb (Editor).

CP62-124. Magnetic Hysteresis Function Generator. S. Ohteru, Waseda University.

62-125 Transducers as Supplementary Devices to Direct-Current Network Analysers. S. Stricker, E. Elath; Israel Institute of Technology.

CP62-126. Control Equipment Used With a Digital Computer for Automated Production of Deposited Carbon Resistors. R. C. Ward, Western Electric Co., Inc.

TUESDAY (continued)

9:00 a.m.—Industrial and Semiconductor Power Rectifiers

Coliseum Room A

Chairman: M. M. MORACK, General Electric Co.

INDUSTRIAL POWER AND SEMICONDUCTOR RECTIFIERS COMMITTEES

CP62-222. A Filter for Silicon Controlled Rectifier Commutation and Harmonic Attenuation in High Power Inverters. R. R. Ott, Electro Mechanical Research (formerly with Westinghouse Electric Corp.).

CP.* High Frequency Power Conversion. P. W. Clarke, Bell Telephone Labs., Inc.

61-731 Development of a Metal Anode Ignitron Switch Tube. G. H. II Reiling, General Electric Co.

CP62-162. Short Circuit Currents in Power Rectifier Systems. J. Schaefer, Sipplingen, Bodensee, Germany (formerly with ITE Circuit Breaker Co.). To be presented by J. Zerbock.

CP.* I.E.C. Committee Report. L. W. Morton, General Electric Co.

9:00 a.m.—Electric Space Heating and Heat Pumps

Statler-Hilton East Room

Chairman: G. L. BIEHN, Westinghouse Electric Corp.

DOMESTIC AND COMMERCIAL APPLICATIONS COMMITTEE

62-17 An Introduction to the Assessment of Line Voltage Thermostat Performance for Electric Heating Applications. W. K. Roots, Mears Controls, Inc.

CP62-16. Modulation Circuits for the Line-Voltage Control of Electric Heating by Anticipated Thermostats. W. K. Roots, Mears Controls, Inc.

CP.* Temperature Control Systems for Electrically Heated Schools. R. M. Plettner, Barber-Colman Co.

CP.* Residential Light Flicker. V. H. Eargle, General Electric Co.

CP.* Electric Space Heating with Infrared Energy. W. R. Stephens, General Electric Co.

9:00 a.m.—Aluminum Conduit and Fittings

Governor Clinton Chelsea Room

Chairman: B. HUSOK, Harco Corp.

CHEMICAL INDUSTRY COMMITTEE

Panel discussion on Aluminum Conduit and Fittings with particular emphasis on the effect of copper content on corrosion resistance in various environments.

R. P. Northup, Crouse Hinds Co.

H. Esch, Kaiser Aluminum & Chemical Co.

R. L. Horst, Aluminum Co. of America

R. G. Rudrow, Atlas Chemical Industries, Inc.

R. S. Dalrymple, Reynolds Metals Co.

J. R. Beale, Aluminum Co. of Canada

H. M. Tomlinson, Jr., Celanese Corp.

9:00 a.m.—Insulated Conductors

Coliseum Room D

Chairman: J. J. RUECKERT, Baltimore Gas and Electric Co.

INSULATED CONDUCTORS COMMITTEE

CP62-54. An Accelerated Screening Test For Polyethylene High-Voltage Insulation. D. W. Kitchin, O. S. Pratt; Simplex Wire & Cable Co.

TUESDAY (continued)

- 62-55 Influence of Sorbed Water and Temperature on Tan δ and
III Dielectric Constant of Oil-Impregnated Paper Insulation. R. B. Blodgett, The Okonite Co.
- 62-9 Radial Oil Flow and Pressure Differences in Cable Insulations.
III N. Klein, International Rectifier Corp. (on Sabbatical Leave from the Israel Inst. of Technology), D. Schieber, Israel Armed Forces.
- 62-56 Electric Stresses in Cables. W. A. Del Mar, Phelps Dodge
III Copper Products Co.

9:00 a.m.—Tutorial Session for Non-Computer Engineers

Governor Clinton Greeley Room
Chairman: R. HOUSE, The Battelle Memorial Institute
COMPUTING DEVICES COMMITTEE

- CP.* The Programming Hierarchy. I. Flores, Polytechnic Institute of Brooklyn.
- CP.* How to Use Cobol, A Problem Oriented Data-Processing Language. G. M. Hopper, Remington Rand.
- CP.* Using Decision Tables for Product Engineering. B. Grad, IBM Corp.
- CP.* A Program Sympathetic Computer. E. L. Glaser, J. P. Anderson; Burroughs Corp.

2:00 p.m.—Section Representatives

Statler-Hilton Penn Top North
Chairman: H. C. BREM, Allis-Chalmers Mfg. Co.
SECTIONS COMMITTEE

2:00 p.m.—Solid State Devices

Statler-Hilton Mezzanine S. W.
Chairman: P. KLEIN, Sperry-Rand Research Center
SOLID STATE DEVICES COMMITTEE

- 62-200 Advances in Alloyed Silicon Power Transistors. T. C. New,
I Westinghouse Electric Corp. (Re-presented for Discussion only.)
- 62-201 The Epitaxial Transistor. M. J. Bentivegna, L. L. Lehner,
I P. D. Lynch; Motorola, Inc. (Re-presented for Discussion only.)
- 62-291 Generalized Theory of the Thermionic Plasma Energy Converter.
II M. E. Talaat, The Martin Co. (Re-presented for Discussion only.)
- 62-292 Transistor-Tunnel Diode Combination Produces An N-Type
I Negative Resistance Characteristic. C. D. Todd, Hughes Aircraft Co. (Re-presented for Discussion only.)
- CP62-202. Charge-Step Derived Transfer Functions for the Junction Transistor. C. J. Bader, Burroughs Corp.
- CP62-204. Partial Shading of Silicon Solar Cell Converter Panels. W. Luft, International Rectifier Corp.
- CP.* Applications of the Photoconductor. E. T. Zmuda, Sylvania Electric.
- CP.* Silicon Sheets for the Manufacture of Semiconductor Devices. S. N. Dermatis and J. W. Faust, Jr., Westinghouse Electric Corp.

TUESDAY (continued)

2:00 p.m.—Marine Transportation

Statler-Hilton Gold Ballroom
Chairman: J. M. APPLE, Bureau of Ships, Dept. of the Navy
MARINE TRANSPORTATION COMMITTEE

- 62-52 Reliable Shipboard Alternating Current Power Systems—
II Some Considerations. L. E. Sutton, Gibbs & Cox, Inc.
- 62-53 Determination of Shipboard Electrical Short-Circuit Currents.
II W. A. Hall, General Electric Co.
- CP.* Application of Overcurrent Protective Devices in Shipboard.
P. L. Camp, I-T-E Circuit Breaker Co.

2:00 p.m.—Multivariable Control Systems—II

Statler-Hilton Penn Top South
Chairman: W. M. GAINES, General Electric Co.
FEEDBACK CONTROL SYSTEMS COMMITTEE

- 62-8 Linear Multivariable Control System Design With Root Loci.
II E. Kinnen, D. S. Liu; University of Minnesota.
- 62-34 Computer Solutions of Algebraic Equations. A. N. Landyshev,
II California State Polytechnic College.
- CP62-76. Multi-Parameter Self Adaptation Using Auxiliary Models. K. W. Han, G. J. Thaler; U. S. Naval Postgraduate School.
- CP.* Coupling in Cruciform Missile Control Systems. W. K. Waymeyer, T. H. Young; Douglas Aircraft Co.
- CP.* Critique: P. Dorato, Polytechnic Institute of Brooklyn and P. Spink, Westinghouse Air Arm Division.

2:00 p.m.—Fundamental Electrical Standards

Coliseum Room C
Chairman: S. C. RICHARDSON, General Electric Co.
FUNDAMENTAL ELECTRICAL STANDARDS COMMITTEE

- 62-43 A Voltage Divider Standard. L. C. Fryer, Leeds & Northrup
I Co.
- CP62-254. Resonant Capacitance-Inductance Transfer Using the Ratio Transformer Bridge. D. L. Hillhouse, General Electric Co.
- 62-42 The Development of the Current Comparator, A High Accuracy Alternating-Current Ratio Measuring Device. P. N. Miljanic, N. L. Kusters, W. J. M. Moore; National Research Council.
- CP62-290. The Use of Active Devices in Precision Bridges. H. P. Hall, R. G. Fulks; General Radio Co.
- 62-69 Audio Voltage Calibrating Standard. K. J. Koep, Daystrom,
I Inc.; G. B. Ruble, Rutgers University.

2:00 p.m.—Switching Surges

Statler-Hilton Georgian Room
Chairman: J. T. LUSIGNAN, Ohio Brass Co.
TRANSMISSION AND DISTRIBUTION COMMITTEE

- 62-108 Phase-To-Phase Switching Surges on Line Energization. I. B.
III Johnson, D. D. Wilson, General Electric Co.; R. F. Silva, University of Connecticut (formerly with General Electric Co.).
- 62-109 Switching Surge and Dynamic Voltage Study of Arizona Public Service Company 345 KV Proposed Transmission System Utilizing Miniature Analyzer Techniques. W. H. Croft, R. H. Hartley, Arizona Public Service Co.; R. L. Linden, D. D. Wilson, General Electric Co.

TUESDAY (continued)

- 62-110 Switching Surges and Arrester and Gap Performance During
III 220 KV Line-Dropping Tests. W. N. Rothenbuhler, Southern California Edison Co.; D. D. Wilson, General Electric Co.
- 62-111 Effect of Preceding Bias Voltage on Switching Surge Operation of Spill Gaps and Lightning Arresters. A. Klopfenstein, Southern California Edison Co.; E. York, Los Angeles Dept. of Water and Power; J. W. Kalb, The Ohio Brass Co.

2:00 p.m.—Transformers

Statler-Hilton Skytop

Chairman: G. K. KALLENBACH, Niagara Mohawk Power Corp.
TRANSFORMERS COMMITTEE

- CP62-266. 460 and 650 KV Autotransformers for Penelec and Project EHV. J. P. Geibel, C. B. Lindh, A. Rowe; General Electric Co.
- CP62-237. Gas Generation During Interruption Under Oil. A. H. Baguhn, R. E. Reinhard, L. Oakes; Allis-Chalmers Mfg. Co.
- CP62-238. Thermal and Electrical Evaluation of Aluminum and Copper Bolted Joints. D. Myers, Jr., General Electric Co.
- CP.* New Processes for Joining Aluminum in Transformers. H. H. Caldwell, Jr., J. R. Terrill; Aluminum Co. of America.
- CP62-239. A New Current Sensing Device. L. B. Stein, Jr., Sigma Instruments, Inc.

2:00 p.m.—Hydro-Thermal Electric Systems

Governor Clinton Governor Room

Chairman: C. A. MacARTHUR, Pennsylvania Power and Light Co.
SYSTEM ENGINEERING COMMITTEE

- 62-32 General Time-Dependent Equations for Short-Range Optimization
III of Hydro-Thermal Electric Systems. A. Arismunandar, Illinois Inst. of Technology; F. Noakes, University of British Columbia.
- 62-100 Optimum Operation of a Hydro-Thermal System. J. H. Drake,
III R. B. Mayall, H. Wood, Southern California Edison Co.; L. K. Kirchmayer, General Electric Co.
- CP.* Hydro-Thermal Economic Scheduling—Part V. Scheduling a Hydrothermal System With Interconnections. B. Bernholtz, L. J. Graham; Hydro-Electric Power Commission of Ontario.

2:00 p.m.—Millimeter Wave Generation—II

Coliseum Room B

Chairman: J. E. ROWE, University of Michigan
ELECTRON TUBES COMMITTEE

- CP.* A Survey of Research in Millimeter Wave Generation. G. Wade, Raytheon Co.
- CP.* Limitations to the Generation of Submillimeter Waves by Election Beam Devices. G. Convert, Compagnie Générale de Télégraphie Sans Fils.
- Panel Discussion on Millimeter Wave Generation
Moderator—J. E. Rowe, University of Michigan
M. R. Currie, Hughes Research Labs.
H. Kroemer, Varian Associates
C. C. Cutler, Bell Telephone Labs, Inc.
G. E. Weibel, General Telephone & Electronics Lab.

TUESDAY (continued)

2:00 p.m.—Semiconductor Rectifiers

Coliseum Room A

Chairman: I. W. BURTON, General Electric Co.
SEMICONDUCTOR RECTIFIER COMMITTEE

- CP62-41. Three-Phase Transformer-Rectifier Power Converters. D. S. Toffolo, U. S. Naval Research Lab.
- CP.* Computer Power Supplies Utilizing SCR Conversion Techniques. T. W. Macie, E. F. Chandler; General Electric Co.
- CP.* Solid State Switching and Control Circuit Utilizing the Very Low Current Silicon Controlled Rectifier. D. R. Grafham, General Electric Co.
- CP.* Effect of Operating Stress on Silicon Rectifier Reliability. W. R. Comstock, B. W. Jalbert; General Electric Co.
- CP.* Digital Computer Calculation of Rectifier and SCR Ratings. C. D. Mohler, General Electric Co.

2:00 p.m.—Heavy Current Metering for Electrochemical Plants

Governor Clinton Florentine Room

Chairman: R. P. STRATFORD, General Electric Co.
CHEMICAL INDUSTRY COMMITTEE

- CP.* A New Technique for Measuring Rectifier Output Currents. F. Bingham, W. Chumakov; ITE.
- CP.* A Type 19A D-C Current Transmitter. A. E. Paine, Foxboro Co.
- CP.* D. C. Metering, C. H. Elliott, Kaiser Aluminum Chemical Co.
- CP.* Acyclic Generator Design and Its Application to Electrochemical Processes. F. L. Kaestle, R. J. Burnett; General Electric Co.

2:00 p.m.—Insulated Conductors and Research

Coliseum Room D

Chairman: R. C. GRAHAM, Rome Cable Div. of Alcoa
INSULATED CONDUCTORS AND RESEARCH COMMITTEES

- CP62-57. Experience with Connectors on Aluminum Underground Cable. E. L. Abel, Burndy Corp.; R. M. Bishop, Alabama Power Co.
- CP62-58. Oil-Filled Pipe-Type Cable With Aluminum Conductors Installed in the City of Edmonton. R. J. Lemieux, Northern Electric Co., Ltd.; C. Z. Monaghan, City of Edmonton Electric Light & Power Distribution System.
- 62-59 Long Cable Lines—A.C. With Reactor Compensation or D.C.
III J. J. Dougherty, C. S. Schifreen, Philadelphia Electric Co.
- 62-60 New Resins for Electrical Applications. F. R. Eirich, H. F. Mark; Polytechnic Inst. of Brooklyn. (Re-presented for Discussion only.)

2:00 p.m.—Electric Space Heating and Heat Pumps

Statler-Hilton Grand Ballroom

Chairman: R. N. RAU, Philadelphia Electric Co.
DOMESTIC AND COMMERCIAL APPLICATIONS COMMITTEE

- CP.* Economics of Insulation for Electrically Heated Homes. A. W. Johnson, National Mineral Wool Insulation Association; R. L. Boyd, Jr., Edwin L. Wiegand Co.

TUESDAY (continued)

- CP62-280. A Study of Electric Heating in the Air Conditioning Research Residence No. 4. J. H. Healy, B. W. Hryekewicz; University of Illinois.
- CP62-39. Energy Demands for Electric House Heating. G. A. Erickson, R. R. Leonard, Wood Conversion Co.; R. C. Jordan, University of Minnesota.
- CP62-40. Some New Aspects of Electric Heating by Means of Heat Pumps with Supplemental Heat Storage. C. W. Bary, J. F. Paquette, Jr.; Philadelphia Electric Co.

Wednesday, January 31st

9:00 a.m.—Telegraph Systems

Coliseum Room C

Chairman: W. G. VIETH, Western Union Telegraph Co.
TELEGRAPH SYSTEMS COMMITTEE

- 62-219 I Telex in the U.S.A. P. R. Easterlin, Western Union Telegraph Co.
- CP.* Teleprinter Margin and Margin Measurements. H. H. Wüsteney, Siemens & Halske, A.G.
- CP.* Recent Advances in Printing Telegraph Apparatus During 1961. W. Y. Lang, Bell Telephone Labs., Inc.
- CP.* Advancements in the Facsimile Art During 1961. W. H. Bliss, RCA Labs.
- 62-220 I Selective Control for Conventional Teletypewriter and High Speed Data Systems. C. J. Colombo, Canadian Pacific Railway Co. (Re-presented for Discussion only)
- CP62-249. An Ultra-high Speed Microfilm Facsimile System. D. Shaler, Hogan Faximile Corp.
- CP.* Federal Aviation Agency Service A. Data Interchange System (ADIS). F. D. Biggam and S. Silberg, Teletype Corp.

9:00 a.m.—Communication Switching—I

Coliseum Room A

Chairman: A. E. JOEL, Bell Telephone Laboratories, Inc.
COMMUNICATION SWITCHING SYSTEMS COMMITTEE

- CP62-273. A New Voice Communication System for Air Traffic Control. T. E. Allen, Laboratory for Electronics (formerly with Bell Telephone Labs., Inc.).
- CP.* Logic Circuits with Transformers and Rectifiers. A. Darré, Siemens & Halske, A.G.
- CP.* A Path-finding Method Covering all Connecting Possibilities for Switching Fields of Electronically Controlled Switching Systems. D. Voegtlen, Siemens & Halske, A.G.
- 61-1041 I The New Line Concentrator 1A. W. Whitney, Bell Telephone Labs., Inc. (Re-presented for Discussion only)

9:00 a.m.—Telemetry

Statler-Hilton East Room

Chairman: W. E. PHILLIPS, Leeds and Northrup Co.
TELEMETERING COMMITTEE

- 62-271 I Long-Range Outlook for Oceanographic Telemetry. J. M. Snodgrass, University of California.

WEDNESDAY (continued)

- CP.* Pipe Line Telemetry. F. V. Long, Texas Eastern Transmission Corp.
- CP62-279. A New Solid State Digital Telemetry and Control System. L. Moore, Moore Associates, Inc.
- CP62-172. Digital Telemetry and Control for an Irrigation System Using Multiaperture Magnetic Logic. S. M. Chalmers, Salt River Project; L. Norde, Motorola, Inc.
- CP62-278. Solid State Digital Telemetry for Remote Control. J. A. Arnold, R. J. Grosch; Gulton Industries, Inc.

9:00 a.m.—Linear Control Systems

Coliseum Room B

Chairman: F. C. WEIMER, Ohio State University
FEEDBACK CONTROL SYSTEMS COMMITTEE

- 62-98 II On the Identification of Linear Systems. G. G. Lendaris, General Motors Corp. (formerly with the University of California).
- 62-77 II On Minimizing Integral of Absolute Deviations in Linear Control Systems. M. Aoki, University of California.
- 62-78 II A New Graphical Method for Feedback Control System Compensation Design. C. C. Hsu, University of Washington.
- 62-79 II A Computer Oriented Iterative Design of Linear Control Systems Subject to Open and Closed Loop Specifications. J. Zaborsky, Washington University; R. G. Marsh, National Rejectors, Inc.
- 62-21 I Delay of Time Functions by Means of Frequency Domain Sampling. W. W. Wierwille, Cornell University.

9:00 a.m.—Process Automation in the Primary Metals Industry

Governor Clinton Greeley Room

Chairman: E. H. BROWNING, Westinghouse Electric Corp.
METAL INDUSTRY COMMITTEE

- CP.* Use of Statistics for Economic Evaluation of Gauge Controls. J. C. Price, M. Cuoco; General Electric Co.
- CP.* Mill Schedule Optimization for Automatically Controlled Rolling Mills. V. S. R. Naidu, T. H. Bloodworth; Allis-Chalmers Mfg. Co.
- CP.* Evaluation of Advanced Electrical Systems in the Primary Metals Industry. J. A. McCarthy, Westinghouse Electric Corp.
- CP.* Digital Techniques Approach to Flying Shear Control. I. Epstein, Clark Controller Co.

9:00 a.m.—Industrial and Commercial Power Systems

Statler-Hilton Penn Top South

Chairman: A. M. KILLIN, Union Carbide Metals Co.
INDUSTRIAL AND COMMERCIAL POWER SYSTEMS COMMITTEE

- 62-173 II Induction-Motor Model for Industrial Power System Computations. A. R. Kelly, Esso Research & Engineering Co.
- 62-61 II Report on Reliability of Electrical Equipment in Industrial Plants. W. H. Dickinson, Esso Research & Engineering Co.
- CP62-174. Rates for Electric Service. S. W. John, Commonwealth Services, Inc.
- CP62-25. A Practical Wiring System for Hazardous and Corrosive Locations. S. E. Wenzel, R. D. Evans; E. I. du Pont de Nemours & Co., Inc.

WEDNESDAY (continued)

9:00 a.m.—Distribution Systems

Coliseum Room D

Chairman: R. F. LAWRENCE, Westinghouse Electric Corp.
TRANSMISSION AND DISTRIBUTION COMMITTEE

- 62-113 Economic Application of Tapless Distribution Transformers on a Major Utility System. C. G. Brown, General Electric Co.; R. D'Agostino, Southern California Edison Co.
- 62-289 Monte-Carlo Simulation of Residential Transformer Loads. III D. N. Reys, Westinghouse Electric Corp.
- CP62-114. Effect of Demand Interval Upon Indicated Peak Demand. R. H. Sarikas, Illinois Power Co.

9:00 a.m.—Generation Scheduling for Economic Dispatch

Statler-Hilton Grand Ballroom

Chairman: R. H. TRAVERS, Ohio Edison Co.
SYSTEM ENGINEERING COMMITTEE

- CP62-211. Economic Dispatch Computing for Simplified Power Systems. C. E. Bailey, H. B. Smith; Niagara Mohawk Power Corp.
- CP62-218. The Average Cost Approach to Generator Scheduling. C. Bachovzeff, Bibby Foundry Ltd.; J. Corrigan, Arthur Andersen & Co.; W. Frischemeier, Gulf Oil Corp.; A. P. Hayward, Duquesne Light Co.
- 62-212 Power Generation Scheduling by Integer Programming—Part III I: Development of Theory. L. L. Garver, General Electric Co.
- 62-213 A Note on Incremental Loss Computation. J. E. Van Ness, III Northwestern University.

9:00 a.m.—Induction Machinery

Statler-Hilton Skytop

Chairman: L. W. BUCHANAN, Westinghouse Electric Corp.
ROTATING MACHINERY COMMITTEE

- 62-179 Line Frequency Magnetic Vibration of A-C Machines. R. C. III Robinson, Westinghouse Electric Corp.
- 62-13 An Approach to Induction Motor Synthesis. W. H. Midden- III dorf, University of Cincinnati.
- 62-180 Derating the Polyphase Induction Motors Operated With Un- III balanced Line Voltages. M. M. Berndt, Midwest Universities Research Association; N. L. Schmitz, The University of Wisconsin.
- 62-27 Equivalent Drag Cup Resistance. B. L. Fuller, P. H. Trickey; III Wright Machinery Co., div. of Sperry Rand Corp.

9:00 a.m.—Tutorial Session on Non-Thermionic Electron Emitters

Governor Clinton Florentine Room

Chairman: P. H. GLEICHAUF, General Electric Co.
ELECTRON TUBES COMMITTEE

- CP.* Recent Progress in Field Emission. W. P. Dyke, F. M. Char- bonnier; Linfield Research Inst.
- CP.* New Applications of Photo Cathodes and Associated Prob- lems. W. M. Feist, Raytheon Co.
- CP.* P-N Junction Emitters. J. L. Moll, Stanford University; D. Bartelink, Bell Telephone Labs, Inc.
- CP.* Tunnel Emission. C. E. Horton, General Electric Co.; C. A. Mead, California Inst. of Technology.

WEDNESDAY (continued)

- CP.* The Magnesium Oxide Type Cold Cathode. Present Status and Aspects of Further Advancement. D. Dobischek, U. S. Army Signal Lab.

9:00 a.m.—Gigacycle Computer Symposium: Implications of Gigacycle Computing Systems

Governor Clinton Governor Room

Chairman: SAMUEL LEVINE, Teleregister Corp.
COMPUTING DEVICES COMMITTEE

The papers in this symposium will be available as special publication S-136.

- CP.* An Introduction to Gigacycle Computers. D. Hogan, Depart- ment of Defense.
- S-136 Gigahertz Computer Circuitry. G. L. Hollander, Fullerton, Calif.
- S-136 Applications of Gigacycle Computers. L. Fein, Palo Alto, California.
- Panel Discussion on "Kilomegacycle Computers Revisited"
D. L. Hogan, Dept. of Defense
G. L. Hollander, Fullerton, Calif.
L. Fein, Palo Alto, Calif.
R. A. Kudlich, AC Spark Plug Co.
R. E. Meagher, Consultant
J. P. Eckert, Sperry Rand
M. C. Andrews, IBM

9:00 a.m.—Solid State Devices

Statler-Hilton Gold Ballroom

Chairmen: F. A. SCHWERTZ, Xerox Corp. and
S. GHANDI, Philco Corp.
SOLID STATE DEVICES COMMITTEE

- CP.* Thin-Film Amplifiers. A. Yang, Air Force Cambridge Re- search Center.
- CP.* Optical Masers. R. J. Collins, Bell Telephone Labs., Inc.
- CP.* Status Report on Photoelectric Converters. R. Biel, Westing- house Electric Corp.
- CP.* Status Report on Magnetic Thin Films. A. K. Rapp, Philco Research Center.

9:00 a.m.—Symposium—Classification of Hazardous Areas

Statler-Hilton West Room

Chairman: J. C. NORTON, Union Carbide Olefins Co.
CHEMICAL INDUSTRY COMMITTEE

- Speakers: S. P. Axe, Atlantic Refining Co.
J. J. Duggan, Union Carbide Chemicals Co.
E. L. Sutton, Rohm & Haas Co.
M. E. Woodworth, National Fire Protection Association
C. F. Hedlund, Associated Factory Mutual Fire Insurance Co.

9:00 a.m.—Corona—I

Statler-Hilton Georgian Room

Chairman: F. S. OLIVER, Phelps Dodge Copper Products Co.
ELECTRICAL INSULATION COMMITTEE

- CP.* Definitions of Terms Related to Corona. Working Group on Corona Definitions, J. C. Devins, Chairman.

WEDNESDAY (continued)

- CP62-261. Introduction to Corona in Insulating Materials and Apparatus. AIEE Joint Working Group on Corona Measurements, H. S. Endicott, Chairman.
- CP62-248. A Review of Methods Used in Corona Measurements on Insulation Systems. E. B. Curdts, James G. Biddle Co.
- CP62-260. Corona Pulse Detection Circuits and Their Calibration. T. W. Dakin, Westinghouse Electric Corp.

9:00 a.m.—Switchgear—I

United Engineering Center Room 125
 Chairman: C. R. JOY, Ebasco Services, Inc.
 SWITCHGEAR COMMITTEE

- CP62-33. Measuring Transient Current in a Short-Circuit Laboratory. J. S. Withers, Bussman Mfg. Co.
- 62-240 Assembled Switchgear Designed by Computer Paper No. I—III Design to Application Specification. H. B. Wortman, M. H. Waller; Westinghouse Electric Corp.
- 62-241 Assembled Switchgear Designed by Computer—II. A General Computer Method for Translating Functional and Descriptive Input Into Parts Lists. H. B. Wortman, M. H. Waller, H. K. Gallimore, R. H. Davis; Westinghouse Electric Corp.
- CP.* An Extruded Polyphase Bus. H. G. Frostick, R. E. Goers, U. S. Steel Corp.

2:00 p.m.—Data Communication

Coliseum Room C
 Chairman: H. F. CALEY, Western Union Telegraph Co.
 DATA COMMUNICATION COMMITTEE

- CP.* Design and Performance of a Magnetic Tape Data Terminal. C. N. Batsel, R. E. Montijo, J. P. Reed, W. Saeger; Radio Corp. of America.
- CP.* Data Communication Coordination in an RCA Magnetic Tape Terminal. R. E. Montijo, W. Saeger, R. J. Sibthorp, E. F. Wesley; Radio Corp. of America.
- CP.* Data System Performance as Evaluated by Eye Patterns. D. L. Favin, T. C. Anderson; Bell Telephone Labs., Inc.
- CP.* A Fast-Response Data Communication System for Airline Reservations. S. Levine, E. A. Avakian; Teleregister Corp.
- CP.* Design of an Automatic, Single-Channel ARQ Terminal. J. J. O'Donnell, C. D. Hughes; Radio Corp. of America.
- 62-141 An AM Vestigial Sideband Data Transmission Set Using Synchronous Detection for Serial Transmission Up to 3000 Bits Per Second. F. K. Becker, J. R. Davey, B. R. Saltzberg; Bell Telephone Labs., Inc. (Re-presented for Discussion only)
- 62-142 A Multifrequency Data Set for Parallel Transmission Up to 20 Characters Per Second. B. R. Saltzberg, R. Sokoler; Bell Telephone Labs., Inc. (Re-presented for Discussion only)
- 62-143 PM Data Sets for Serial Transmission at 2000 and 2400 Bits Per Second. P. A. Baker. Bell Telephone Labs., Inc. (Re-presented for Discussion only)
- 62-144 Recording and Visual Analysis of "Noise" Errors. A. E. Johanson, Bell Telephone Labs., Inc. (Re-presented for Discussion only)
- 62-146 Some Error Characteristics of a Data Communication System. I R. L. Townsend, Bell Telephone Labs., Inc. (Re-presented for Discussion only)

WEDNESDAY (continued)

2:00 p.m.—Communication Switching—II

Coliseum Room A
 Chairman: F. D. REESE, Automatic Electric Labs.
 COMMUNICATION SWITCHING SYSTEMS COMMITTEE

- CP.* New Read-Out System for Toll Ticketing Equipment. D. A. Brewin, General Dynamics/Telecommunication.
- CP62-232. Traffic-Controlled Routing of Toll Calls in Strowger Automatic Toll Ticketing Systems. I. V. Coleman, Automatic Electric Labs., Inc.
- CP62-233. Automatic Ticketing of Person-To-Person Calls in a Step-By-Step Telephone Exchange. R. B. King, Automatic Electric Labs., Inc.
- CP.* Circuit Design Manipulation in Solving Toll Switching Problems. F. A. Stallworthy, J. G. Brown; Associated Electrical Industries Export, Ltd.

2:00 p.m.—Professional Integrity

Statler-Hilton Penn Top North
 Chairman: A. H. KIDDER, Philadelphia Electric Co.
 PROFESSIONAL CONDUCT COMMITTEE

- CP.* Professional Integrity in Engineering. J. F. Young, General Electric Co.
- CP.* Codes of Ethics for Students. R. W. Van Houten, Newark College of Engineering.
- CP.* Problems in Professional Ethics for Engineers. N. A. Christensen, Cornell University.

2:00 p.m.—Secondary Batteries

Governor Clinton Chelsea Room
 Chairman: H. E. JENSEN, The Electric Autolite Co.
 CHEMICAL INDUSTRY COMMITTEE

- CP.* Storage Battery Requirements for Communications Satellites. D. Feldman, M. K. Zinn; Bell Telephone Labs., Inc.
- CP.* Thermionic Space Power Generation. D. L. Purdy, Valley Forge Space Technology Center.
- CP.* Sealed Secondary Batteries: Nickel-Cadmium and Silver Zinc for Space Power. R. Shair, Gulon Industries, Inc.
- CP.* Fuel Cells—A Realistic Approach. M. Shaw, The Electric Autolite Co.
- CP.* Reliable Power Packages for Switchgear Tripping Control and Emergency Diesel Engine Starting. W. H. Taylor, The Electric Autolite Co.

2:00 p.m.—Nonlinear Control Systems

Coliseum Room B
 Chairman: L. F. KAZDA, University of Michigan
 FEEDBACK CONTROL SYSTEMS COMMITTEE

- 62-80 A New Procedure for Plotting Phase Plane Trajectories. G. P. II Szegő, Purdue University.
- 62-81 The Variable Gradient Method for Generating Liapunov Functions. D. G. Schultz, J. E. Gibson, Purdue University.
- 62-3 A Graphical Method of Evaluating the Describing Function. II B. L. Deekshatulu, Indian Inst. of Science.
- CP62-92. Analog Simulation of a Relay Servomechanism With Variable Width Transition. H. R. Weed, F. C. Weimer, The Ohio State University; R. J. Lahr, IBM Research Center.
- CP.* Critique: S. S. L. Chang, New York University; W. Sollecito, General Electric Co.

WEDNESDAY (continued)

2:00 p.m.—Advanced Electrical Systems for the Primary Metals Industry

Governor Clinton Greeley Room
 Chairman: O. C. GOCHENOUR, Jones and Laughlin Steel Co.
 METAL INDUSTRY COMMITTEE

- CP.* Application of Computer to Primary Rolling Mill. A. W. Smith, Westinghouse Electric Corp.
- CP.* Silicon Controlled Rectifier Excitation Systems for Metal Rolling Mill Drives. J. B. Feltner, C. R. Moody; General Electric Co.
- CP.* Data Logging and Control of Bulk Material Handling. L. M. Wilson, Consolidated Systems Corp.
- CP.* Automation of Hot Strip Mill Downcoilers. R. M. Bosshardt, Reliance Electric and Engineering Co.

2:00 p.m.—Industrial and Commercial Power Systems

Statler-Hilton Penn Top South
 Chairman: T. W. HAYMES, Shell Oil Co.
 INDUSTRIAL AND COMMERCIAL POWER SYSTEMS COMMITTEE

- CP.* An Approach to the Economic Evaluation of Electrical Power Generation in Continuous Process Plants. T. D. Higgins, Union Carbide Chemicals Co.
- CP.* Application of Industrial Capacitors to Ferro-Alloy Plants. D. H. Rowley, Union Carbide Metals Co.
- 62-147 Excitation Systems for Small Industrial and Commercial III Generators. D. H. Miller, A. S. Rubenstein; General Electric Co.
- 61-1047 How to Select Overcurrent Relay Characteristics. D. V. Fawcett, Canadian Westinghouse Co., Ltd. (Re-presented for II Discussion only)

2:00 p.m.—Design and Performance of H.V. Lines

Coliseum Room D
 Chairman: H. E. HOUSE, Alcoa Research Laboratories
 TRANSMISSION AND DISTRIBUTION COMMITTEE

- 61-1104 Basic Parameters in Determining the Insulation Requirements III of Transmission Lines. J. M. Clayton, Westinghouse Electric Corp.
- 62-115 Probability Method for Determining Insulation of EHV Lines. III W. H. McCreary, National Energy Board of Ottawa, Canada (formerly with Hydro-Electric Power Commission of Ontario); G. R. Tebo, Hydro-Electric Power Commission of Ontario.
- CP.* Prediction of Lightning Outage Performance of Extra-High-Voltage Lines by Nanosecond Model and Monte Carlo Computer Calculations. J. G. Anderson, General Electric Co.; J. P. Barron, Dallas Power and Light Co.; M. R. Boess, Arizona Public Service Co.; P. G. Wallace, Texas Power and Light Co.
- 62-116 Performance of 161-KV and 115-KV Transmission Lines. III F. Chambers, C. P. Almon, Jr.; Tennessee Valley Authority.
- CP62-284. Fault and Load Current Testing of a Bundle Conductor Spacer. R. L. Retallack, American Electric Power Service Corp.; T. R. Fry, C. A. Popeck, A. B. Chance Co.

WEDNESDAY (continued)

2:00 p.m.—Economic Turbine Operation Considering Valve Losses

Statler-Hilton Grand Ballroom
 Chairman: L. K. KIRCHMAYER, General Electric Co.
 SYSTEM ENGINEERING COMMITTEE

- CP.* Economic Operation at Valve Cracking Points. F. H. Light, J. A. Gille; Philadelphia Electric Co.
- 62-112 Economic System Operation Considering Valve Throttling III Losses—Part I: Method of Computing Valve Loop Heat Rates on Multi-Valve Turbines. H. H. Happ, W. B. Ille; General Electric Co.; R. H. Reisinger, Baltimore Gas and Electric Co.
- 62-129 Economic System Operation Considering Valve Throttling III Losses—Part II: Distribution of System Loads By the Method of Dynamic Programming. R. J. Ringlee, General Electric Co.; D. D. Williams, Baltimore Gas and Electric Co.

2:00 p.m.—Symposium on High Temperature Induction Motors

Statler-Hilton Skytop
 Chairman: H. B. MARGOLIS, American Electric Power Service Corp.
 ROTATING MACHINERY COMMITTEE

- CP.* Economic Evaluation and Trends of Hi-Temp Motors. V. J. Picozzi, General Electric Co.
- CP62-183. The Relationship Between High Temperature Operation and the Performance Guarantees of Induction Motors. J. F. Heidbreder, R. C. Robinson, E. F. Merrill; Westinghouse Electric Corp.
- CP.* Comparison of American and European National Standards for Polyphase Induction Machines. S. F. Henderson, Westinghouse Electric Corp.
- CP.* Performance of Reduced Frame Size Motors. J. F. Dexter, Dow Corning Corp.; J. G. Frase, Westinghouse Electric Corp.
- CP.* Opportunities from Hi-Temp Insulation in Induction Motor Design. W. J. Martiny, General Electric Co.

2:00 p.m.—Microwave and Gas Tubes

Governor Clinton Florentine Room
 Chairman: H. H. WITTENBERG, Radio Corporation of America
 ELECTRON TUBES COMMITTEE

- CP.* The Coaxitron, An Integral-Circuited Super-Power UHF Amplifier Tube. F. S. Keith, W. N. Parker, C. L. Rintz; Radio Corp. of America.
- CP.* Long Term Frequency Stability for a Reflex Klystron Without the Use of External Cavities. G. B. Gucker, Bell Telephone Labs., Inc.
- CP.* A New Method for the Design of Pierce Gun Electrodes. G. Kent, Syracuse University.
- CP.* A Traveling-Wave Tube for a Communication Satellite. G. Novak, B. Kleinman; Radio Corp. of America.
- CP.* Ignitron Discharge Growth During High Current Pulses. D. B. Cummings, University of California.
- CP62-154. Experimental Study of the Ignited Mode in Cesium Thermionic Converters. S. Kitrilakis, Thermo Electron Engineering Corp.; E. N. Carabateas, Massachusetts Inst. of Technology.

WEDNESDAY (continued)

- CP.* Electronic Flashtubes. H. E. Edgerton, J. H. Goncz, Edgerton, Germeshausen & Grier, Inc.
- 62-265 Super-Power Ultra-High-Frequency Amplifier Tube Developments. R. E. Reed, A. C. Tunis; Radio Corp. of America. (Re-presented for Discussion only)
- 62-264 Design of High-Power Modulator Tubes. W. E. Harbaugh. I Radio Corp. of America. (Re-presented for Discussion only)

2:00 p.m.—Gigacycle Computer Symposium: Components and Circuits for Gigacycle Systems

Governor Clinton Governor Room
 Chairman: G. G. HOBERG, American Bosch Arma Corp.
 COMPUTING DEVICES COMMITTEE

The papers in this symposium will be available as special publication S-136.

- S-136 Logical Design and Implementation in a Pumped Tunnel Diode-Transistor Logic System. S. B. Akers, E. P. Stabler; General Electric Co.
- S-136 Transformer-Coupled Tunnel Diode NOR Circuits. J. S. Cubert, T. M. LoCasale; Sperry Rand Corp.
- S-136 Generation of a High-Speed Clock Using a Travelling Wave Oscillator. J. A. Fraunfelder, Sperry Rand Corp.
- S-136 Piecewise-Linear Switching Analysis of a Bistable Tunnel-Diode Logic Circuit. W. T. Rhoades, Hughes Aircraft Co.

2:00 p.m.—Solid State Devices

Statler-Hilton Gold Ballroom
 Chairmen: E. H. LOUGHER, Battelle Memorial Institute and G. STRULL, Westinghouse Electric Corp.
 SOLID STATE DEVICES COMMITTEE

- CP.* Status of Thermoelectric Power-Generation Devices. N. F. Schuh, Westinghouse Electric Corp.
- CP.* Status of Thermoelectric Materials for Power Generation. P. H. Egli, U. S. Naval Research Lab.
- CP.* Integrated Circuits and Molecular Electronics. H. W. Henkels, Westinghouse Electric Corp.
- CP.* Thin Film Microcircuitry. O. L. Meyer, N. Doctor; DOFL.

2:00 p.m.—Electronic Transformers

Statler-Hilton West Room
 Chairman: L. W. KIRKWOOD, Bell Telephone Labs., Inc.
 ELECTRONIC TRANSFORMERS COMMITTEE

- CP62-286 Insulation, A Critical Factor in High Reliability Design. R. B. Feuchtbaum, Hughes Aircraft Co.
- CP.* Corona Testing of Rectifier Transformers and Inductors. J. J. Halloran, Electro Engineering Works.
- CP.* Influence of Construction Methods on Pulse Transformer Design and Performance. W. C. Stilwell, R. D. Smith, General Electric Co.
- 62-223 Use of Computers in Minimizing Pulse Transformer Weight. I L. Gilman, R. Lee; Westinghouse Electric Corp.
- CP62-288. Three Phase Power Supplies Using Capacitor Input Filters. R. E. Lee, Westinghouse Electric Corp.
- CP.* Insertion Loss Synthesis of Transmission Transformers With Butterworth and Chebycheff Response. W. H. Smith, Bell Telephone Labs., Inc.

WEDNESDAY (continued)

2:00 p.m.—The Impact of Digital Computers on Engineering—A Report

Statler-Hilton Mezzanine S. W.
 Chairman: T. F. JONES, JR., Purdue University
 EDUCATION COMMITTEE

- CP.* The Impact on Engineering Teaching By Use of a Student Oriented Language. R. E. Machol, Conductor Corp.
- CP.* The Impact on Dynamical Studies—A Report on Use of DYANA. D. E. Hart, General Motors Technical Center.
- CP.* The Impact on Power Systems Analysis and Management. G. Stagg, American Electric Power Service Corp.; A. H. El-Abiad, Purdue University.

2:00 p.m.—Corona—II

Statler-Hilton Georgian Room
 Chairman: F. S. OLIVER, Phelps-Dodge Copper Products Corp.
 ELECTRICAL INSULATION COMMITTEE

- CP62-262. The Micro-Scanner—A Device for Detecting and Marking Corona-Producing Defects in Cable. D. Eigen, J. S. Geary, The Okonite Co.
- 62-156 Ionization of a Gas By Radiation From a Discharge. G. W. I Penney, R. E. Voshall; Carnegie Institute of Technology.
- 62-157 Wet Surface Tracking of Insulation—A Differential Test With III Controlled Short Discharges to a Water Electrode. L. Mandelcorn, T. W. Dakin; Westinghouse Electric Corp.
- CP.* Required Characteristics of Electrical Insulating Oils Can Now Be Specified F. C. Doble, Doble Engineering Co.

2:00 p.m.—Space Communications

Statler-Hilton East Room
 Chairman: J. L. JATLOW, ITT Federal Labs.
 SPACE COMMUNICATIONS COMMITTEE

- CP.* "S" Band Solid State Receiver for Space Application. E. Schlicter, General Telephone & Electronics Corp.
- CP.* State of the Art of Solid State Microwave Transmitters. W. Maciag, General Telephone & Electronics Corp.
- CP.* Component Redundancy in Circuit Design. W. E. Michel, Motorola, Inc.
- CP.* Non-linear Reactance Frequency Multipliers. W. Janeff, ITT Federal Labs.

2:00 p.m.—Switchgear—II

United Engineering Center Room 125
 Chairman: J. B. OWENS, I-T-E Circuit Breaker Co.
 SWITCHGEAR COMMITTEE

- 62-244 Some Fundamental Aspects of Recovery Voltages. J. Zaborzky, Washington University; J. W. Rittenhouse, Hi-Voltage Equipment Co.
- 62-276 Fundamental Aspects of Some Switching Overvoltages on III Power Systems. J. Zaborzky, Washington University and J. W. Rittenhouse, Hi-Voltage Equipment Co.
- 62-243 A 2 Cycle 138-KV 10,000,000 KVA Air-Blast Circuit Breaker III Design Considerations and Field Tests at Phillip Sporn Station. O. Naef, J. E. Beehler, American Electric Power Service Corp.; R. B. Shores, J. W. Beatty, General Electric Co.

WEDNESDAY (continued)

- 62-15 Observations on the Development of Arc Interrupters of Small
III Physical Volume for Industrial Circuit Breakers with Large
Interrupting Ratings. W. K. Roots, Mears Controls, Inc.

7:30-10:30 p.m.—“Your AIEE Town Meeting”

Grand Ballroom, Statler-Hilton

“OPPORTUNITIES and PROBLEMS
in the UNIFICATION of AIEE-IRE”

Audience participation in an off-the-record discussion of this timely topic with Presidents Chase and Haggerty, the joint Committee-of-Eight and the Committees-of-Two.

EVERYONE INVITED

Auspices—The Technical Committee Chairmen’s Forum.

7:30 p.m.—Is Today’s Theory of Optimal Control Adequate
for Today’s Problems in Industrial Systems
Design?

Statler-Hilton Gold Ballroom

Chairman: T. M. STOUT, Thompson-Ramo-Woolridge Corp.
FEEDBACK CONTROL SYSTEMS COMMITTEE

Panel Discussion:

- G. K. L. Chien, IBM Corp.
R. O. Decker, Westinghouse Electric Corp.
W. M. Gaines, General Electric Corp.
J. M. Ham, University of Toronto
T. J. Higgins, University of Wisconsin
R. E. Kalman, RIAS
W. Kipiniak, American Cyanamid Corp.

Thursday, February 1st

9:00 a.m.—Space Communications

Statler-Hilton Mezzanine S. W.

Chairman: E. D. BECKEN, RCA Communications
SPACE COMMUNICATIONS COMMITTEE

- CP.* The Communication System for Project Relay. R. C. Booton, Space Technology Labs.
CP.* The Syncom Satellite. R. Roani, Hughes Aircraft Co.
CP.* Interference Between Satellite Communications Systems and Common Carrier Surface Systems. H. E. Curtis, Bell Telephone Labs., Inc.
CP.* Selection of the Ground Station Site at Rumford, Me. N. J. Caserta, A. T. & T. Co.

9:00 a.m.—Communication Theory and Communication
Switching Systems

Governor Clinton Florentine Room

Chairman: G. R. COOPER, Purdue University
COMMUNICATION THEORY AND SWITCHING SYSTEMS COMMITTEES

- CP.* Communication System Optimization—Part I. R. Kalaba, The Rand Corp.

THURSDAY (continued)

- CP.* Communication System Optimization—Part II. M. Juncosa, The Rand Corp.
CP.* Markov Chains and Communication Networks. D. Epstein, W. Litchman; ITT Communication Systems, Inc.
62-65 Some Traffic Characteristics of Communications Networks
I With Automatic Alternate Routing. J. H. Weber, Bell Telephone Labs., Inc.
CP62-255. An Appraisal of Pocketed Calls in Common Control Switching. I. Molnar, General Telephone and Electronics Labs., Inc.

9:00 a.m.—Solid State Electronic Devices and Their
Utilization

Statler-Hilton Gold Ballroom

Chairman: O. W. KENNEDY, JR., Worcester Polytechnic Institute
EDUCATION COMMITTEE

- CP.* Esaki Diodes: Their Uses and Limitations. R. Pucel, Raytheon Co.
CP.* Cryotrons and Their Uses in Digital Computers. J. P. Beesley.
CP.* Microwave and Optical Masers. R. A. McFarlane, Bell Telephone Labs., Inc.
CP.* Passive Thin Film Components. H. W. Katz, General Electric Co.

9:00 a.m.—Land Transportation—I

Coliseum Room C

Chairman: J. L. SWARNER, Pullman-Standard Co.
LAND TRANSPORTATION COMMITTEE

- CP62-12. Application of a Severity Rating Analysis of Railroad Operating Variables to Brush Grade Selection. K. R. Matz, National Carbon Co.
CP62-256. A Functional Evaluation Method for Traction Field Coils. T. Orbeck, Westinghouse Electric Corp.
CP62-270. Operating Experience with Epoxy Resins in Insulation Systems of Traction Rotating Apparatus. J. J. Kuscharsey, W. E. Kelley; Pennsylvania Railroad Co.

9:00 a.m.—Adaptive Control Systems—I

Governor Clinton Governor Room

Chairman: R. L. COSGRIFF, Ohio State University
FEEDBACK CONTROL SYSTEMS COMMITTEE

- CP62-82. A Learning System Using Statistical Decision Functions. K. S. Fu, Purdue University.
62-35 An Adaptive Control System With Sinusoidal Parameter Perturbation. R. B. Lackey, The Ohio State University.
CP62-83. A Model Referenced Parameter Tracking Technique for Adaptive Control Systems—Part I: The Principle of Adaptation. D. D. Donalson, Hughes Aircraft Co., C. T. Leondes, University of California.
CP.* Critique: J. Aseltine, Aerospace Corp.; J. Zaborszky, Washington University.

9:00 a.m.—Biomedical Engineering Techniques—I

Governor Clinton Greeley Room

Chairman: S. D. LARKS, Marquette University
ELECTRICAL TECHNIQUES IN MEDICINE AND BIOLOGY COMMITTEE

- CP.* The Automatic Detection of Abnormal Cardiovascular Sounds by Zero Crossing Analysis Technique. M. H. Paul, J. E. Jacobs, E. T. Kozol; Northwestern University.

THURSDAY (continued)

- CP.* Constraints of an Electromagnetochemical Theory of Rapid Biological Transients. V. W. Bolie, Iowa State University.
- CP.* Application of the Capacitance Pickup in Heart Sound Research. D. Groom, Y. T. Sihvonen, W. W. Francis, Medical College of South Carolina.
- 62-63 Recent Advances in Heart-Lung Bypass Systems. G. C. I Riggie, J. M. F. DeBroske; National Institutes of Health. (Re-presented for Discussion only)

9:00 a.m.—New Developments in Electrical Engineering

Statler-Hilton Penn Top North
 Chairman: L. C. HARRIOTT, General Electric Co.
 NEW TECHNICAL ACTIVITIES COMMITTEE

- CP.* Superconductivity—Recent Advances and Implications. J. K. Hulm, Westinghouse Electric Corp.
- CP.* Future of Optical Masers in Communication. W. S. Boyle, Bell Telephone Labs., Inc.
- CP.* Principles of Laser Ranging. M. L. Stitch, Hughes Aircraft Co.
- CP.* Nuclear Space Power Systems—the SNAP Reactors. R. E. Wimmer, North American Aviation.

9:00 a.m.—Substations and Transmission and Distribution

Statler-Hilton Grand Ballroom
 Chairman: R. F. STEVENS, Bonneville Power Administration
 SUBSTATIONS AND TRANSMISSION AND DISTRIBUTION COMMITTEES

- CP.* Performance Specifications for Connectors for Aluminum Conductors. F. E. Sanford, Commonwealth Associates.
- CP62-263. Experiences with Tinned-Bronze Clamp Connectors on Aluminum Conductors. R. W. Shaw, L. C. Earp, C. S. Roadhouse, H. C. Sampers; Omaha Public Power District.
- CP62-245. 34.5 KV Complements 4.8-KV Distribution. C. M. Short, City of Los Angeles Dept. of Water and Power.

9:00 a.m.—Turbine Generators

Statler-Hilton Georgian Room
 Chairman: W. L. RINGLAND, Allis-Chalmers Mfg. Co.
 ROTATING MACHINERY COMMITTEE

- 62-184 Diagonal-Flow Ventilation of Gap-Pickup Rotors for Large III Turbine Generators. N. Schmitt, D. M. Willyoung, R. L. Winchester; General Electric Co.
- 62-185 Local Rotor Winding Temperature Measurements for Large III Turbine Generator Fields. H. W. Kudlacik, D. M. Willyoung; General Electric Co.
- 62-186 Harmonic Power in Non-Salient Pole Synchronous Machinery. III P. I. Nippes, Elliott Co., a div. of Carrier Corp.
- 62-187 Current Sheets Equivalent to End Winding Currents of Turbine Generator Stator and Rotor. J. A. Tegopoulos, Westinghouse Electric Corp.

THURSDAY (continued)

- 62-188 Flux Impinging on the Endplate of Turbine Generators. J. A. III Tegopoulos, Westinghouse Electric Corp.

9:00 a.m.—New Electron Tubes and Techniques

Statler-Hilton West Room
 Chairman: J. R. SOMMERVILLE, General Electric Co.
 ELECTRON TUBES COMMITTEE

- 62-155 Fast Heating Thermionic Cathodes. E. G. Dorgelo, Amperex I Electronic Corp.
- CP.* Elements of VHF Receivers for Direct Operation from 26 Volts. T. E. Gausman, B. B. Scott; Sylvania Electric Products, Inc.
- CP.* A Ceramic Voltage Reference Tube for Severe Environments. A. D. Sanders, General Electric Co.
- CP.* Application Notes on a New 50,000 Micromho Planar Ceramic Triode. J. W. Rush, General Electric Co.
- CP.* Storage Tube TMA404 for TV Scan Conversion. P. A. Bouvalot and B. M. Courtan, Compagnie Generale de Telegraphie Sans Fils.
- CP62-268. Experiences With a Simple Titanium Ion Pump. M. J. Pawelko, Amperex Electronic Corp.

9:00 a.m.—Modern Circuit Techniques—I

Statler-Hilton East Room
 Chairman: A. P. STERN, The Martin Co.
 ELECTRONIC CIRCUITS AND SYSTEMS COMMITTEE

- CP.* Precise Frequency Synthesis Using Non-Precise Tuning Components. T. W. Butler, Jr., University of Michigan.
- CP62-149. Gain and Sensitivity as Design Criteria for Iterative Transistor Amplifiers. S. S. Shamis, A. Chertok; New York University.
- CP.* The Thermotron as a Low Drift DC Amplifier. J. W. Higginbotham, The Martin Co.
- CP.* A Comb Filter for Use in Tracking Satellites. R. L. Vitek, U. S. Army Ordnance Ballistic Research Labs.
- CP.* An Optical Correlation Device. J. N. Packard, The Martin Co.
- 62-148 The Dynamic Behavior of Negative-Resistance Devices. C. O. I Harbourt, The University of Texas. (Re-presented for Discussion only)

9:00 a.m.—Gigacycle Computer Symposium: Organization of Gigacycle Computing Systems

Coliseum Room B
 Chairman: G. F. CRAMER, International Business Machines Corp.
 COMPUTING DEVICES COMMITTEE

- The papers in this symposium will be available as special publication S-136.
- S-136 Considerations in the Design of a Computer With High Logic-To-Memory Speed Ratio. L. Bloom, M. Cohen, S. Porter; The National Cash Register Co.
- S-136 Problems in the Logical Organization of a Kilomegacycle Computer. P. Warburton, Radio Corp. of America.
- S-136 Guides for the Organization of Computing Systems Using Multiplexed Equipment. W. C. Carter; IBM Corp.
- S-136 The Organization of a Multi-List Type Associative Memory. N. S. Prywes, H. J. Gray; University of Pennsylvania.

THURSDAY (continued)

9:00 a.m.—Thermal Evaluation—I

Statler-Hilton Skytop
 Chairman: J. F. DEXTER, Dow-Corning Corp.
 ELECTRICAL INSULATION COMMITTEE

Symposium and Discussion—The Problem of Limits in Thermal Aging Tests of Electrical Insulation.

Presentations of the various philosophies of the temperature classifications of insulating materials.

9:00 a.m.—Engineering of Large Systems—

I. System Engineering in Different Fields

Coliseum Room D
 Chairman: G. L. HOLLANDER, Hollander Associates
 SCIENCE AND ELECTRONICS DIVISION COMMITTEE

- CP.* Generation and Optimization of Aerospace Systems. D. R. S. McColl, Aerospace Corp.
- CP.* Systems Engineering A Large Chemical Plant Complex. T. J. Williams, Monsanto Chemical Co.
- CP.* System Engineering for Automation of a Large Power Plant. W. L. Chadwick, Southern California Edison Co.
- CP.* An Airline Reservation and Communication System. Samuel Levine, Teleregister Corp.

9:00 a.m.—Heavy Current Buses for Generator Leads

Statler-Hilton Penn Top South
 Chairman: J. G. NOEST, Consolidated Edison Co. of New York, Inc.
 POWER GENERATION AND SWITCHGEAR COMMITTEES

- 62-171 Minimizing the Magnetic Field Surrounding Isolated Phase Bus By Electrically Continuous Enclosures. W. F. Skeats, N. Swerdlow; General Electric Co.
- 62-242 Isolated Phase Metal-Enclosed Conductors for Large Electric Generators. R. H. Albright, A. Conangla, A. C. Bates, J. B. Owens; I-T-E Circuit Breaker Co.
- CP62-282. The High Current Generator Bus. G. E. Buchanan, J. S. Banas, H. K. Porter Co., Inc.
- CP62-26. Design of High Current Buses for Generator Leads. E. W. Whitmer; Ebasco Services, Inc.
- 62-170 Recent Developments in Starting Cross-Compound Turbine-III Generator Units. L. R. Stuve, P. E. Benner; General Electric Co. (Re-presented for Discussion only)

2:00 p.m.—Radio Communications—I

Governor Clinton Florentine Room
 Chairman: P. T. SPROUL, Bell Telephone Labs., Inc.
 RADIO COMMUNICATION SYSTEMS COMMITTEE

- CP62-44. Parametric Amplifiers for Microwave Communications Systems. J. N. Ratti, Collins Radio Co.
- 62-45 Interference Considerations for 6 GC Microwave Systems. I B. R. Hallford, Collins Radio Co.
- 62-47 An Optimum Self-Synchronized Communication System. I S. S. L. Chang, B. Harris; New York University.
- CP62-50. The RF/7 Transistorized 6 Gc Microwave System. I. T. Corbell, General Electric Co.

THURSDAY (continued)

2:00 p.m.—Wire Communication and Switching Systems

Statler-Hilton Penn Top South
 Chairman: M. E. CLARK, New England Telephone and Telegraph Co.
 COMMUNICATION SWITCHING SYSTEMS
 AND WIRE COMMUNICATION SYSTEMS COMMITTEE

- CP62-224. Application of "Touch-Tone Calling" in the Bell System. M. L. Benson, American Tel. & Tel. Co.; F. L. Crutchfield, H. F. Hopkins, Bell Telephone Labs., Inc.
- CP62-225. Central Office and PBX Arrangements for "Touch-Tone" Calling. D. J. Gagne, C. J. Schulz; Bell Telephone Labs., Inc.
- CP62-226. Signaling System and Receiver for "Touch-Tone" Calling. R. N. Battista, C. G. Morrison, D. H. Nash; Bell Telephone Labs., Inc.
- CP62-227. A "Touch-Tone" Caller for Station Sets. J. H. Ham, F. West; Bell Telephone Labs., Inc.

2:00 p.m.—Current Trends in Undergraduate Electrical Engineering Education

Statler-Hilton Penn Top North
 Chairman: S. S. SHAMIS, New York University
 EDUCATION COMMITTEE

- CP.* Circuits and Networks. M. E. Van Valkenburg, University of Illinois.
- CP.* Electromagnetic Fields. R. E. Collin, Case Inst. of Technology.
- CP.* Electronics. E. O. Pederson, University of California.

2:00 p.m.—Land Transportation—II

Coliseum Room C
 Chairman: R. FERGUSON, Association of American Railroads
 LAND TRANSPORTATION COMMITTEE

- 62-130 Automatic Safety and Vigilance Control System for Railroad II Locomotives and Motor Coaches. B. Steiner, Oerlikon Engineering Co. (presented by J. O. Amstutz)
- CP62-274. Aids for Calculating Freight Train Performance by Digital Computer. J. E. Hogan, The Pennsylvania Railroad Co.
- CP62-269. Rectifier Type Locomotive for Pennsylvania Railroad. J. W. Horine, Pennsylvania Railroad; D. R. McLeod, General Electric Co.

2:00 p.m.—Adaptive Control Systems—II

Governor Clinton Governor Room
 Chairman: VINTON B. HAAS, University of Connecticut
 FEEDBACK CONTROL SYSTEMS COMMITTEE

- CP62-84. The Identification of Linear System Parameters. R. B. Kerr, Princeton University.
- CP62-96. General Method of Computing System Parameters with an Application to Adaptive Control. B. J. Miller, North American Aviation, Inc.
- 62-97 Stability Analysis of a Rapidly-Adapting Control System. II J. H. Noland, University of South Carolina.
- CP62-85. A Model Referenced Parameter Tracking Technique for Adaptive Control Systems—Part II: Stability Analysis by the Second Method of Lyapunov. D. D. Donalson, Hughes Aircraft Co., C. T. Leondes, University of California.
- CP.* Critique: J. E. Gibson, Purdue University; L. F. Kazda, University of Michigan.

THURSDAY (continued)

2:00 p.m.—Indicating and Integrating Instruments

Governor Clinton Chelsea Room

Chairman: M. B. STOUT, University of Michigan

INDICATING AND INTEGRATING INSTRUMENTS COMMITTEE

- 62-31 I The Ring-Core Magnetometer—A New Type of Second-Harmonic Flux-Gate Magnetometer. W. A. Geyger, U. S. Naval Ordnance Laboratory.
- CP.* Design of a Radio Frequency Voltage Calibrator. H. R. Brownell, Sensitive Research Instrument Corp.
- CP62-281. A High Accuracy Torque—Balance Watt Transducer Employing Taut-Band Suspension. B. E. Lenehan, J. T. Wintermute, Westinghouse Electric Corp.
- CP.* A Direct Observation of Instrument Ballistics. R. G. Fulks, H. C. Littlejohn, General Radio Co.
- 59-156 I Interchangeable Errors in Instrument Systems. G. M. Anderson, Thomas A. Edison Industries.

2:00 p.m.—Substations and Switchgear

Statler-Hilton Grand Ballroom

Chairman: J. O. NOEL, Illinois Power Co.

SUBSTATIONS AND SWITCHGEAR COMMITTEES

- 62-246 III High and Extra High Voltage Substation Design and Economic Comparisons. G. E. Hertig, I-T-E Circuit Breaker Co.
- CP62-285. The Design and Testing of Air Switches Above 345 KV. J. A. Turgeon, I-T-E Circuit Breaker (Canada) Ltd.
- CP.* Installation, Operation and Maintenance of 220 KV Oilless Circuit Breakers in Southern California Edison Company Substations. R. S. Melville, L. W. Wood; Southern California Edison Co.
- 62-153 III Considerations in Establishing a Standard of Mechanical Loads on Oil Circuit Breaker Bushings. W. E. Harper, Allis Chalmers Mfg. Co., E. F. Huston, Ohio Brass Co.

2:00 p.m.—Direct Current Machinery

Statler-Hilton Georgian Room

Chairman: E. H. MYERS, Westinghouse Electric Corp.

ROTATING MACHINERY COMMITTEE

- 62-193 III Commutator Design. V. B. Honsinger, Allis-Chalmers Mfg. Co.; W. H. Middendorf, University of Cincinnati.
- 62-189 III Theory of the Sparking During Commutation on Dynamos. R. Holm, Stackpole Carbon Co.
- 62-190 III Commutation. E. I. Shobert II, Stackpole Carbon Co.
- CP62-191. Explanation of the Torque in a Dynamo. R. Holm, Stackpole Carbon Co.
- CP.* A Status Report on the Printed Motor. R. P. Burr, Circuit Research Co.

2:00 p.m.—Infrared Applications

Statler-Hilton West Room

Chairman: F. J. KOCSIS, JR., Servo Corp. of America

ELECTRONICS COMMITTEE

- CP.* Infrared Techniques. W. L. Wolfe, University of Michigan.
- CP.* Infrared Materials & Optics. J. Jerger, Servo Corp. of America.
- CP.* Introduction to Infrared Spectrophotometers. M. Axler, Baird-Atomic.

THURSDAY (continued)

- CP.* Infrared Instrumentation for Space Vehicles. E. M. Wormser, Barnes Engineering Co.
- CP.* Infrared Reconnaissance. H. Levenstein, Servo Corp. of America.

2:00 p.m.—Modern Circuit Techniques—II

Statler-Hilton East Room

Chairman: L. D. WECHSLER, General Electric Co.

ELECTRONIC CIRCUITS AND SYSTEMS COMMITTEE

- CP.* Electronically Tunable UHF Tunnel Diode Oscillator. F. G. Haneman, G. W. Thomson; Airborne Instruments Laboratory.
- CP.* Tunnel Diode Autodyne Converter. E. Gottlieb, General Electric Co.
- CP.* An 8 mc Transistorized Limiter-Amplifier with Minimum Phase Shift Variation. S. P. Stranddorf, General Electric Co.
- CP.* Low Loss Frequency Multipliers of Higher Order and Power in the UHF Range—An Analysis for Their Design Using Non-linear Capacitors. J. C. Martin, Clemson A and M College.
- 62-150 I Suppressed Carrier Modulation With Tunnel Diodes. B. Rabinovici, J. Klapper, S. Kallus; Radio Corp. of America. (Re-presented for Discussion only)

2:00 p.m.—Gigacycle Computer Symposium: General Considerations in Gigacycle Computer Systems

Coliseum Room B

Chairman: DOUGLAS HOGAN, Dept. of Defense

COMPUTING DEVICES COMMITTEE

- The papers in this symposium will be available as special publication S-136.
- S-136 Ultrahigh-Speed Memory Design Considerations. W. W. Davis, E. L. Krieger; Sperry Rand Corp.
- S-136 Reliability in Non-Repairable KMC Digital Computers. J. Tooley, Texas Instruments, Inc.
- S-136 Automatic Utilization of Hierarchical Memories. J. P. Anderson, E. L. Glaser; Burroughs Corp.
- S-136 Some Considerations in Kilomegacycle Computer Design. D. R. Crosby, Radio Corp. of America.

2:00 p.m.—Thermal Evaluation—II

Statler-Hilton Skytop

Chairman: K. N. MATHES, General Electric Co.

ELECTRICAL INSULATION COMMITTEE

- Symposium and Discussion—The Problem of Limits in Thermal Aging Tests of Electrical Insulation.

2:00 p.m.—Large Scale Systems Engineering Symposium

Coliseum Room D

Chairman: L. E. SALINE, General Electric Co.

SCIENCE AND ELECTRONICS DIVISION

- CP.* Formulations. D. P. Eckman, Case Institute of Technology.
- CP.* Modeling and Simulation in Systems Engineering. H. Chestnut, General Electric Co.
- CP.* Optimization Techniques Applied to Electric Utility Industry. L. K. Kirchmayer, General Electric Co.

THURSDAY (continued)

CP.* Management Planning and Control Systems. D. G. Malcolm, Operations Research, Inc.

CP.* Evaluation and Reliability. S. W. Herwald, Westinghouse Electric Corp.

2:00 p.m.—Load Control and Load Flow Calculations

Statler-Hilton Gold Ballroom
 Chairman: J. E. VAN NESS, Northwestern University
 SYSTEM ENGINEERING COMMITTEE

CP62-247. Application of an On-Line Digital Computer for Dispatch and Control of the Detroit Edison System. D. G. Blodgett, A. K. Falk, Detroit Edison Co.; T. W. Hissey, W. B. Schultz, Leeds and Northrop.

62-221 System Frequency Stability in the Pacific Northwest. A. R. Benson, D. G. Wohlgenuth, Bonneville Power Administration.

62-194 Automatic Evaluation of Power System Performance—Effects of Line and Transformer Outages. A. H. El-Abiad, American Electric Power Service Corp. and Purdue University; G. W. Stagg, American Electric Power Service Corp.

62-214 Power Flow Solution By Impedance Matrix Iterative Method. H. E. Brown, C. E. Person, Commonwealth Edison Co.; G. K. Carter, H. H. Happ, General Electric Co.

2:00 p.m.—Excitation Systems

Statler-Hilton Mezzanine S. W.
 Chairman: MICHAEL TEMOSHOK, General Electric Co.
 POWER GENERATION COMMITTEE

CP.* The Rotating Transformer Exciter for Variable-Speed Variable-Frequency Brushless Synchronous Alternators. K. M. Sparrow, The Lima Electric Motor Co.

CP.* The Induction Frequency Converter Saturable Reactor (FCE-SR) as an Exciter-Regulator for a Brushless A-C Generator. K. M. Sparrow, The Lima Electric Motor Co.

62-165 A Harmonic Excitation System for Turbine Generators. L. R. Roche, Elliott Co., a div. of Carrier Corp.

62-166 Status of the High Temperature Gas-Cooled Reactor. T. G. LeClair, General Dynamics (Re-presented for Discussion only)

2:00 p.m.—Biomedical Engineering Techniques—II

Governor Clinton Greeley Room
 Chairman: G. C. RIGGLE, National Institutes of Health
 ELECTRICAL TECHNIQUES IN MEDICINE AND BIOLOGY COMMITTEE

CP.* Pre-natal Diagnosis of Congenital Cardiac Malformation: Criteria. S. D. Larks, Marquette University.

CP.* An Improved Method of Automatically Computing Dilution Curves. C. F. Hepner, J. E. Jacobs, H. U. Wessel, P. Kezdi, Northwestern University.

CP62-64. Pattern Recognition By Random Lines. D. Rubenstein, General Electric Co.

CP.* Analog Computer Simulation of Heart Action. J. McLeod, Convair.

Friday, February 2nd

9:00 a.m.—Wire Communications—I

Statler-Hilton East Room
 Chairman: L. J. RITTER, New York Central Railroad
 WIRE COMMUNICATIONS SYSTEMS COMMITTEE

62-37 Spectrum Generator for Transmission Testing of Wire Facilities. D. L. Favin, F. J. Danik; Bell Telephone Labs., Inc.

62-7 Minutemen Communication Cable Tests. E. A. Havens, J. H. Wolf, Radio Corp. of America.

CP62-228. Transmission Characteristics of Aluminum Conductors in Open Wire Communications Circuits. F. J. Trebby, Kaiser Aluminum & Chemical Corp.

62-229 Figure 8 Thermoplastic Insulated and Jacketed Telephone Cables. V. W. Pehrson, L. Jachimowicz, General Cable Corp.; R. E. Potter, General Telephone Co. of the Southeast; H. Puliam, General Telephone & Electronics Corp.

62-230 Plug-In Units for Long Lines Circuits. P. J. Read, Northern Electric Co., Ltd.

9:00 a.m.—Radio Communications—II

Statler-Hilton West Room
 Chairman: C. R. KRAUS, Bell Telephone Co. of Pennsylvania
 RADIO COMMUNICATION SYSTEMS COMMITTEE

CP62-48. Radio Wave and Alternate Communications in the Arctic. N. C. Gerson, U. S. Naval Committee for the IGY.

CP62-267. Portable Use of Short Haul Carrier Over Microwave. J. F. Kiener, R. E. Bloor; Ohio Bell Tel. Co.

62-49 Protection of Service in the 74B Microwave Radio System. R. A. Heine, L. B. Johnson; Lenkurt Electric Co., Inc.

62-51 Multiplexing Using Quasi-Orthogonal Binary Functions. W. J. Judge, Magnavox Research Labs.

9:00 a.m.—System Planning

Coliseum Room D
 Chairman: B. L. LLOYD, Westinghouse Electric Corp.
 SYSTEM ENGINEERING COMMITTEE

CP62-277. The Spurious Solution in Load Flow Calculations. J. K. Delson, The North Zealand Electricity & Tramway Co., Ltd.

62-68 Load Forecasting on the TVA System—Part I: Substation Loads. W. R. New, Tennessee Valley Authority.

62-215 A Computer Program for Automatic Transmission Planning. J. L. Whysong, H. E. Brown, Commonwealth Edison Co.; R. Uram, University of Pittsburgh; C. W. King, C. A. DeSalvo, Westinghouse Electric Corp.

CP62-217. Regulation Studies for Columbia River Hydroelectric Power Planning. J. S. Clubb, W. F. Tinney, H. H. Kasai, J. L. Bloodworth; Bonneville Power Administration.

61-1057 The Break-Even Cost of Peaking Capacity. F. M. Heck, Jr. and C. Morrison, The Potomac Edison Co.

FRIDAY (continued)

9:00 a.m.—Land Transportation—III

Statler-Hilton Penn Top South

Chairman: L. W. BIRCH, Ohio Brass Co.

LAND TRANSPORTATION COMMITTEE

- CP62-2. Electrification—Devil or Angel? L. B. Curtis, The Pennsylvania Railroad Co.
- CP62-159. New Design of Current Collection Pantograph. A. Scheidecker, Etablissements L. Faiveley.
- CP.* Trends in European Pantograph Design. G. Moehring, August Stemann OHG; J. Schwalm, Ringsdorf Werke.

9:00 a.m.—Control Components and Performance Measurement

Coliseum Room B

Chairman: J. P. O'DONAHUE, Bell Telephone Labs., Inc.

FEEDBACK CONTROL SYSTEMS COMMITTEE

- CP62-86. Single Phasing as Determined by Control Circuit Impedance. M. G. Rehoff, Jr., Agricultural and Mechanical College of Texas; N. L. Schmitz, University of Wisconsin.
- CP.* Report: Progress in Gyroscope Specifications and Terminology, 1962, Aerospace Industries Association. C. Janoff, Bell Aero-systems.
- CP62-88. Twin-T Compensation Using Root Locus Methods. J. B. Slaughter, A. B. Rosenstein; University of California.
- CP62-89. Multiloop Control System Study of a Gas Turbine Compressor and Power Unit—Part I: Analytical Investigation. J. R. Shull, G. A. Russell; AiResearch Mfg. Co. of Arizona.
- CP62-90. Open Loop Performance Measurements of Precision A.C. Motor-Tachometer Generators. H. Sabath, Massapequa, N. Y. formerly with Servomechanisms, Inc.

9:00 a.m.—Ground Resistance and Potential Gradient Measurements

Statler-Hilton Penn Top North

Chairman: J. C. PARKER, Memphis Light, Gas and Water Division

SPECIAL INSTRUMENTS AND AUXILIARY APPARATUS COMMITTEE

- CP62-205. Earth Potential Distributions Associated With Power Grounding Structures. D. W. Bodle, Bell Telephone Labs., Inc.
- CP62-206. Proving the Adequacy of Station Grounds. A. Elek, The Hydro-Electric Power Commission of Ontario.
- CP62-207. Ground Impedance Component Measurement. C. A. Duke, L. E. Smith, Tennessee Valley Authority.

Panel Discussion on the Measurement of Ground Resistance and Potential Gradients in the Earth.

Moderators: D. W. Bodle, Bell Telephone Labs., Inc.

E. B. Curdts, James G. Biddle Co.

C. A. Duke, Tennessee Valley Authority

A. Elek, Hydro-Electric Power Commission of Ontario

9:00 a.m.—Switchgear—III

Statler-Hilton Georgian Room

Chairman: C. E. ASBURY, Commonwealth Associates, Inc.

SWITCHGEAR COMMITTEE

- CP62-67. Research and Development Leading to the High-Power Vacuum Interrupter—An Historical Review. J. D. Cobine, General Electric Co.

FRIDAY (continued)

- 62-151 Development of Power Vacuum Interrupters. T. H. Lee, A. III Greenwood, D. W. Crouch, C. H. Titus; General Electric Co.
- 62-161 Design of Vacuum Interrupters to Eliminate Abnormal Over-voltages. T. H. Lee, A. Greenwood, G. Polinko, Jr.; General Electric Co.
- 62-120 Heavy Duty Vacuum Recloser. A. L. Streater, R. H. Miller, III J. C. Sofianek; General Electric Co.

9:00 a.m.—Hydroelectric Power

Statler-Hilton Grand Ballroom

Chairman: K. J. GRANBOIS, Safe Harbor Water Power Corp.

POWER GENERATION COMMITTEE

- 62-167 Dynamic Response of a Hydroelectric Plant. R. Oldenburger, III Purdue University; J. Donelson, Jr., Tennessee Valley Authority.
- 62-168 Bersimis II Powerhouse-Plant Arrangement—Description of III Apparatus. G. E. Ransom; Asselin, Benoit, Boucher, Ducharme, LaPointe, Consulting Engineers (formerly with Quebec Hydro-Electric Commission)
- 62-1 Modern Control of Large Hydroelectrical Generating Stations. III R. H. Bruck, U. S. Army North Pacific Corps of Engineers.
- 62-24 Electrical Features of Ontario Hydro's Modern Supervisory III Controlled Hydraulic Generating Stations. J. W. Ellis, The Hydro-Electric Power Commission of Ontario.
- 62-169 Speed Regulation Tests on a Hydro Station Supplying an III Isolated Load. L. M. Hovey, L. A. Bateman; Manitoba Hydro.

9:00 a.m.—Modern Circuit Techniques—III

Coliseum Room A

Chairman: H. L. PARKS, The Martin Co.

ELECTRONIC CIRCUITS AND SYSTEMS COMMITTEE

- 62-19 Low-Loss Materials for Printed Microwave Applications. T. D. I Schlabach, R. J. Colardeau; Bell Telephone Labs., Inc.
- CP.* Broadband-Stable-Hybrid Coupled Parametric Amplifier. D. Sabih, Hughes Aircraft Co.
- CP.* Broadband Parametric Amplifiers by Simple Experimental Techniques. B. B. Bossard, R. Pettai; Radio Corp. of America.
- CP.* A Baseband Diode Limiter. R. V. Garver; J. A. Rosado, Diamond Ordnance Fuze Lab.
- CP.* Operation of Tunnel Diode Converters at L and S Band. A. Brandli, A. Garfein; General Electric Co.

9:00 a.m.—Computer Input-Output Devices

Statler-Hilton Skytop

Chairman: M. E. FRANK, Hughes Aircraft Co.

COMPUTING DEVICES COMMITTEE

- CP.* A Development Study of the Print Mechanism on the IBM 1403 Chain Printer. B. J. Greenblott, IBM Corp.
- CP62-127. Digital Circuit Techniques for Speech Analysis. G. L. Clapper, IBM Corp.
- CP62-128. High-Accuracy Analog-To-Digital Converter. R. Gross, J. Jagy, J. Scutt; Ford Instrument Co.

FRIDAY (continued)

9:00 a.m.—Electrical Insulation

Coliseum Room C
 Chairman: J. C. BOTTS, Westinghouse Electric Corp.
 ELECTRICAL INSULATION COMMITTEE

- CP.* Effect of Elongation of Enameled Magnet Wire on Thermal Endurance. Working Group on Thermal Evaluation of Magnet Wire of the Subcommittee on Thermal Stability of the AIEE Committee on Electrical Insulation. Prepared for the Group by: W. W. Pendleton, Anaconda Wire & Cable Co.
- CP.* AIEE Publication #1—Suggested Division Into Two Parts—Materials and Insulation Systems. H. L. Saums, Anaconda Wire & Cable Co.
- CP.* Selection of Suitable Resins for High Voltage Insulation Systems. L. V. Bucklew, National Electric Coil Division of McGraw-Edison Co.
- CP62-158. The Importance of Low Dissipation Factor Insulation in Metal-Clad Switchgear. L. L. Mankoff, W. J. Donaldson; General Electric Co.

9:00 a.m.—Rotating Machinery

Statter-Hilton Gold Ballroom
 Chairman: F. R. TERRANT, Reliance Electric and Engineering Co.
 ROTATING MACHINERY COMMITTEE

- CP.* Noise Test on Electric Motors in Various Environments. R. B. Edmiston, Westinghouse Electric Corp.
- 62-117 III Equivalent Circuits for Cylindrical-Rotor, Reluctance and Salient-Rotor Synchronous Machines. G. R. Slemon, University of Toronto.
- 62-118 III The Torque Tensor of the General Machine. Yao-Nan Yu, The University of British Columbia.
- CP.* Potting Compound for Canned Motor Pumps. M. E. Nelson, D. F. Christensen, Dow Corning Corp.; F. A. Yeoman, D. R. Nixon, Westinghouse Electric Corp.
- CP62-192. A-C and D-C Methods for the Evaluation and Maintenance Testing of High-Voltage Insulation in Electrical Machines. A. Wichmann, Siemens-Schuckertwerke AG.

2:00 p.m.—Wire Communications—II

Statter-Hilton East Room
 Chairman: A. M. SEYMOUR, Lenkurt Electric Co., Inc.
 WIRE COMMUNICATION SYSTEMS COMMITTEE

- CP62-231. Design Considerations for High Density Multiplex Equipment. R. B. Anderson, M. L. Stephens; Lenkurt Electric Co., Inc.
- CP.* A Completely Transistorized Coaxial Cable System for 960 Channels. A. W. Newman, D. W. Sparks; General Electric Co.
- 61-1071 I The Application of Carrier Systems to Exchange Trunk Plant in Canada. A. Currar, T. G. Fellows, Northern Electric Co., Ltd. (Re-presented for Discussion only)

2:00 p.m.—Land Transportation—IV

Statter-Hilton Penn Top South
 Chairman: D. Q. GAUL, Chicago Transit Authority
 LAND TRANSPORTATION COMMITTEE

- CP62-258. Winter Aspects of Electric Railroad Operation. P. H. Hatch, R. P. Turnbull; Long Island Railroad.

FRIDAY (continued)

- CP62-272. Equipment for Rapid Transit. W. C. Wheeler, St. Louis Car Co.
- CP62-160. Rapid Transit Train Control. C. A. Butts, Chicago Transit Authority.

2:00 p.m.—Discrete Data Control Systems

Coliseum Room B
 Chairman: J. T. TOU, Northwestern University
 FEEDBACK CONTROL SYSTEMS COMMITTEE

- CP62-91. Oscillations in Nonlinear Sampled-Data Systems. M. A. Pai, University of California.
- CP62-93. On Multidimensional Sampled-Data Optimalizing Control. R. Kulikowski, Columbia University.
- CP62-94. Modern Synthesis of Computer Control Systems. J. T. Tou, Northwestern University; P. D. Joseph, Space Technology Labs., Inc.
- CP62-95. An Extension of the Optimum Design Through Digital Compensation for Linear Multivariable Sampled Data Control Systems. M. Sobral, Jr., University of Illinois.

2:00 p.m.—Electrical Measurements

Statter-Hilton Penn Top North
 Chairman: B. E. LENEHAN, Westinghouse Electric Corp.
 SPECIAL INSTRUMENTS AND AUXILIARY APPARATUS COMMITTEE

- 62-18 I The Impedance of a Coil Placed on a Conducting Plane. T. J. Russell, The Bendix Corp.; V. E. Schuster, Motorola, Inc.; D. L. Waidelich, University of New South Wales.
- CP62-208. A Special Shielded Resistor for High Voltage D-C Measurements. J. H. Park, National Bureau of Standards.
- 62-23 I The Effect of Winding Potentials on Current Transformer Errors. N. L. Kusters, W. J. M. Moore; National Research Council.
- CP62-209. A Clamp-On Current Transducer for A-C and D-C Measurements Using Hall Probes. H. Hollitscher, Canadian General Electric Co., Ltd.
- 62-210 I A New Transducer and Its Application to Power Measurements By Hook-On Transformers. A. J. Corson, J. P. Ulcht; General Electric Co.

2:00 p.m.—Basic Sciences—II

Statter-Hilton Georgian Room
 Chairman: J. H. MULLIGAN, New York University
 BASIC SCIENCES COMMITTEE

- CP62-135. Electromechanical Energy Conversion in Double Cylindrical Structures. R. M. Saunders, University of California.
- 62-136 I The Misapplication of Graph Theory to Electrical Networks. G. Kron, General Electric Co.
- CP62-137. Electrode Erosion and Gas Evolution of Vacuum Arcs. E. E. Burger, retired, formerly with General Electric Co.; J. D. Cobine, T. A. Vanderslice, General Electric Co.
- CP62-138. Electrode Materials and Their Stability Characteristics in the Vacuum Arc. G. A. Farrall, J. M. Lafferty, J. D. Cobine, General Electric Co.

FRIDAY (continued)

CP62-139. Recovery Characteristics of Vacuum Arcs. J. D. Cobine, G. A. Farrall, General Electric Co.

62-140 The Performance of a Magneto-hydrodynamic Re-Entry Vehicle Channel. M. J. Brunner, General Electric Co. (Represented for Discussion only)

2:00 p.m.—Protective Devices

Statler-Hilton Gold Ballroom

Chairman: H. O. STOELTING, Line Material Industries
PROTECTIVE DEVICES COMMITTEE

62-199 Lightning Protection of Rotating Machines Directly Connected to Overhead Lines. R. W. Powell, A. R. Hileman, M. Maxwell; Westinghouse Electric Corp.

62-198 The Surge Performance of Cable Connected Pad Mounted Distribution Transformers. H. R. Armstrong, M. D. Charneski, R. T. Curto; Detroit Edison Co.

62-275 Records of Coughnard Deionisers. Working Group on Service III Records of Coughnard Deionisers of the Lightning Protective Devices Sub. of the AIEE Protective Devices Committee. M. J. Smith, Chairman.

2:00 p.m.—Foreign Practices

Statler-Hilton Grand Ballroom

Chairman: G. H. McDANIEL, American Electric Power Service Corp.
POWER GENERATION COMMITTEE

62-163 Power Development in the U.S.S.R. F. L. Lawton, Aluminum III Labs., Ltd.

CP62-259. The Present Stand of Pumped Storage in Europe. H. K. Happoldt, E. Wiedemann, Brown, Boveri Co., Ltd.; O. J. Hartmann, Motors-Columbus, Ltd.

CP62-257. Developments in Large Turbo Type Generators. P. Richardson, C. A. Parsons & Co., Ltd.

CP62-164. Prediction of Long Range Power Generation Requirements in Foreign Countries. G. B. Scheer, Kaiser Engineers.

CP.* Trends in Power Station Switchgear Practice in Great Britain. R. P. E. Tabb and S. E. Newman, The English Electric Co., Ltd.

2:00 p.m.—Modern Circuit Techniques—IV

Coliseum Room A

Chairman: W. PEIL, General Electric Co.
ELECTRONIC CIRCUITS AND SYSTEMS COMMITTEE

CP.* Characterization of Semiconductor Diodes for Switching Circuit Design. G. H. Goldstick, The National Cash Register Co.

CP.* Properties and Applications of Transistor Logging Circuits. H. W. Abbott, V. P. Mathis; General Electric Co.

CP.* The Unsymmetrical Flip-Flop, Advantages and Design. P. W. Becker, General Electric Co.

CP.* Switching of Large Inductive Currents with Silicon Power Transistors in a High Power Inverter. R. A. Colclasser, Westinghouse Electric Corp.

CP.* Avalanche Transistor Circuits for Generating Rectangular Pulses. D. J. Hamilton, P. G. Griffith, F. H. Shaver; The University of Arizona.

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Committee Meetings

1962 WINTER GENERAL MEETING

MONDAY, JANUARY 29, 1962

	ROOM
9:00 A.M.—12 Noon	
System Planning Subcom., System Engg.....	Clinton*
Standards Subcommittee, Nuclear Inst.....	Empire Suite II
American Automatic Control Council.....	E*
Task Group on Artificial Intelligence (Computer Systems), Comp. Dev.	B-29*
Induction & Dielectric Heating Subcom. Electric Heating....	D-29*
Nominating Committee	Boston
Domestic & Commercial Applications.....	Town
Electric Heating Committee.....	J*
Solid State Devices Committee.....	Board**
Membership Committee	K*
Advancement of Power Engg., Pwr. Gen.....	C-29*
9:30 A.M.—12:00 Noon	
Professional Conduct Committee.....	Schuyler
Fortescue Fellowship Committee.....	Village
Lamme Medal Committee.....	Empire Suite I
Educational Publications Committee.....	A-29*
10:00 A.M.—12:00 Noon	
Administration Subcom. Insulated Conductors.....	D*
Sections Committee	Dartmouth
Members-For-Life Fund Committee.....	Buffalo
10:00 A.M.—2:00 P.M.	
Executive Committee, 1962 Rectifiers in Ind. Tech., Conf. Ind. & Comm. Pwr. Sys.....	E-29*
12:00 Noon—2:00 P.M.	
Luncheon, Production & Application of Light Committee.....	E*
12:15 P.M.—2:00 P.M.	
Luncheon, Broadcasting Committee.....	Herald*
4:00 P.M.—6:00 P.M.	
Industrial Control Committee.....	Empire Suite II
Electric Space Heating & Heat Pump Subcom. Dom. & Comm. Appli.....	Town
Semiconductor Rectifier Committee.....	Clinton*
Instrumentation Division Committee.....	Village
Basic Sciences Committee.....	Boston
Wire Line Protection Subcommittee.....	Empire Suite I
Cathodic Protection Subcom., Chemical Ind.....	E-29*
Electrochemical Processes Subcom., Chemical Ind.....	D*
Electrothermal Processes Subcom., Chemical Ind.....	D-29*
ITG Coordination Committee.....	C-29*
Application to Design Evaluation & Simulation Subcom. Comp. Dev.	B-29*
TOD-GAD AdHoc Committee.....	J*
4:00 P.M.—7:00 P.M.	
Public Relations Committee.....	E*
Energy Developments Subcom., Pwr. Gen.....	K*

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	ROOM
4:00 P.M.—8:00 P.M.	
Task Group on Control Computers, Computing Devices....	A-29*
4:30 P.M.—6:00 P.M.	
District No. 2 Executive Committee.....	Schuyler
7:00 P.M.—11:00 P.M.	
Programming, Comp. Dev.....	B-29*
7:30 P.M.—11:00 P.M.	
Logic & Switching Circuit Theory, Comp. Dev.....	Gramercy*
8:00 P.M.—11:00 P.M.	
Task Group on 1963 Workshop (Computer Systems) Comp. Dev.	A-29*
5:30 P.M.—7:30 P.M.	
Section Representatives Meeting.....	Florentine Room*

TUESDAY, JANUARY 30, 1962

7:30 A.M.—9:00 A.M.	
Canadian Breakfast.....	Cornell & Dartmouth Rooms
9:00 A.M.—11:00 A.M.	
System Economics Subcommittee, Sys. Engg.....	E-29*
9:00 A.M.—11:30 A.M.	
Intersociety Relations Committee.....	D-29*
9:00 A.M.—12:00 Noon	
System Controls Subcom., Sys. Engg.....	111**
9:00 A.M.—12:00 Noon	
Special Publications	Village
Education Committee	Dartmouth
Fundamental Electrical Standards Committee.....	B-29*
Recognition Awards Committee.....	Schuyler
Magnetic Amplifiers Committee.....	Buffalo
Research Committee	Boston
Registration of Engineers Committee.....	E*
Computer Application Subcom., System Engg....	Empire Suite II
Telegraph Systems	Town
TOD Manual Subcom., TOD.....	A-29*
Application to Automation Processes, Comp. Dev.....	J*
Executive Committee, Comp. Dev.....	K*
Nuclear Power Subcommittee, Pwr. Gen.....	Board Room East**
Data Communication Committee.....	Board Room West**
Reactor Control & Instr. Subcom., Nuclonics Publications Conf.**	
9:00 A.M.—1:00 P.M.	
Pulse Transformers Subcom., Electronic Trans.....	112**
Power Plant Control, Protection & Automation Subcom., Pwr. Gen.	D*
9:00 A.M.—3:30 P.M.	
System Operations Subcom., Sys. Engg....	Mezzanine Meeting II
9:00 A.M.—4:30 P.M.	
Student Branches Committee.....	Pennsylvania

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American Institute of Electrical Engineers

	ROOM
9:00 A.M.—5:00 P.M.	
Textile Industry Committee.....	Mezzanine Meeting I
Working Group on Red Book Revision In. & Comp. Pwr. Sys.....	C-29*
9:30 A.M.—4:30 P.M.	
Section Representatives	Penn Top North
10:00 A.M.—11:30 A.M.	
District Vice Presidents and GAD-TOD Officers Meeting..	Cornell
10:00 A.M.—12 Noon	
New Energy Sources for Electronics, Electronics.....	Gramercy*
10:30 A.M.—5:00 P.M.	
Electric Systems for Commercial Bldgs. Subcom. Ind. & Comm. Pwr. Sys.....	Room 113**
11:00 A.M.—12:00 Noon	
Publications & Public Relations, Comp. Dev.....	Herald*
12:30 P.M.—3:30 P.M.	
Luncheon, Electrostatic Processes Subcom., Electronics....	West
12:30 P.M.—4:30 P.M.	
Luncheon, Communication Div.....	Village
12:30 P.M.—5:00 P.M.	
Luncheon, Station Design Subcom. Power Gen.....	J*
1:30 P.M.—4:00 P.M.	
Executive Committee, Cement Ind.....	A-29*
2:00 P.M.—4:00 P.M.	
W. G. 53-1 Extra High Voltage Substations, Substations..	Schuyler
Methods of Measurements Subcommittee.....	K*
2:00 P.M.—4:30 P.M.	
Safety & Standards Subcom., Nucleonics.....	Empire Suite I
Microwave Subcommittee, Pwr. Sys. Comm.....	Cornell
Test Codes Subcom., Ind. Control.....	East Room
Executive Subcom., Pwr. System Comm.....	Boston
Nuclear Instrumentation Committee.....	Buffalo
2:00 P.M.—5:00 P.M.	
Radiation Technology Subcom., Nucleonics and Effects of Radiation on Insulation Subcom., Elec. Ins. (Joint Meeting)	Greeley*
Carrier Bibliography and Publicity Subcom., Pwr. Sys. Comm.....	Private Room
Research Committee, Pwr. Sys. Comm.....	TOD Conf. Room**
Dielectric Devices Subcom. Solid State Dev.....	Room 110**
Equipment Design Standards Subcom., Pwr. Sys. Comm. Publications Conf.**	
2:00 P.M.—10:00 P.M.	
W. G. #2 on Instrumentation of AIEE Subcom. Radio Noise, T. & D.....	Room 112**
2:30 P.M.—4:30 P.M.	
Packaging Industry Subcom., Genl. Ind. Appl.....	Town
Safety Committee	Empire Suite II
STC Relationship with EJC Societies.....	B-29*

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Winter General Meeting

	ROOM
2:30 P.M.—5:00 P.M.	
1963 International Conference on Nonlinear Magnetics, Mag. Ampl.....	Chelsea*
Periodicals & Transactions Committee.....	E-29*
Electronics Committee	Herald*
Transfers Committee	D*
Management Committee	E*
Working Group 59.1 Minimum Electrical Clearances in Substations, Substations	Board Room East**
Voltage & Current Reference Sources Subcom., Rec. & Cont. Inst.....	Board Room West**
2:30 P.M.—6:00 P.M.	
Computing Devices Committee.....	Gramercy*
4:00 P.M.—6:00 P.M.	
Chemical Industry Committee.....	K*
Planning & Co-Ordination Subcom. B. of D.....	Schuyler
Administrative Subcom. Power Gen.....	D-29*
Industrial Power Rectifiers Committee.....	Mezzanine Meeting II
4:30 P.M.—6:30 P.M.	
Special Technical Conferences Subcom., TOD.....	A-29*
7:30 P.M.—10:00 P.M.	
Administrative Subcommittee, Sys. Engg.....	Schuyler
7:30 P.M.—11:00 P.M.	
Computer Systems, Comp. Dev.....	D*
8:00 P.M.—11:00 P.M.	
General Industr. Application, Executive Committee.....	D-29*
8:00 P.M.—12:00 Midnight	
Computer Standards Subcom. Comp. Dev.....	J*

WEDNESDAY, JANUARY 31, 1962

9:00 A.M.—12:00 Noon	
Nuclear Congress and Nucleonics Committee.....	Gramercy*
Working Group 56.3, Future Revision of American Standards, Substations Power System Communications Comm.....	K*
Transmission Substation Subcom., Substations.....	Herald*
Working Group 60.1 Aluminum & Steel Substation Structures, Substations	C-29*
Synchronous Machinery Subcom., Rotating Mach.....	D*
General Systems Subcommittee, Trans. & Dist.....	Empire Suite II
District TOD Representatives Committee.....	J*
Lightning and Insulator Subcom., Trans. & Dist.....	Town
Professional Development and Recognition Dept.....	Schuyler
Computer Logic Devices Subcom., Feedback Control.....	B-29*
Science & Electronics Division Committee.....	Boston
Power Generation Committee.....	Cornell
Nuclear Reactor Subcom., Nucleonics.....	D-29*
9:00 A.M.—2:00 P.M.	
Luncheon, General Industry Application Committee... Dartmouth	
9:00 A.M.—5:00 P.M.	
AIEE Task Force on Tower Design.....	Mezzanine Meeting I
General Administration Dept.....	Pennsylvania
W. G. on Mag. Ampl. Materials under extreme Envir., Mag. Ampl.	E-29*
Rectifier Standards Working Group, Ind. Pwr. Rec.	Empire Suite I

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American Institute of Electrical Engineers

	ROOM
9:30 A.M.—12:00 Noon	
Design Automation Subcom., Comp. Dev.....	E*
12:30 P.M.—2:00 P.M.	
Luncheon, Science and Electronics Division Committee....	Boston
Metal Industry Committee.....	Cornell
12:30 P.M.—5:00 P.M.	
Luncheon, Aero Space Instrumentation Committee.....	B-29*
Luncheon, Telemetry Committee.....	Village
Luncheon, Chemical Processes Subcom., Chemical Ind.....	D*
2:30 P.M.—5:00 P.M.	
General Application Division Committee.....	A-29*
Publications Dept.	E*
Automatic & Supervisory Systems Subcom., Substations....	C-29*
Conversion Substation Subcommittee, Substations.....	K*
Science & Electronics Division Committee.....	Boston
Industry Division Committee.....	Town
Application of Probability Methods Sys. Engg.....	D-29*
Radio Noise Subcommittee, Trans. & Dist.....	Herald*
Power Division Committee.....	Buffalo
Nucleonics Committee	Gramercy*
2:30 P.M.—6:00 P.M.	
Distribution Substation Subcommittee, Substations.....	J*
4:00 P.M.—6:00 P.M.	
Batteries Subcommittee, Chemical Ind.....	Chelsea*
Induction Machinery Subcom., Rotating Machinery	Empire Suite II
Administrative Subcom. Ind. Pwr. Rectifiers.....	Cornell
Capacitor Subcom., Trans. & Dist.....	Schuyler
Liquid Insulation Subcom., Insulated Conductors	Mezzanine Meeting II
4:30 P.M.—6:30 P.M.	
Reception, The Engineering Institute of Canada.....	Hartford
5:00 P.M.—8:00 P.M.	
Marquette University Alumni Association Cocktail Party..	Village
7:30 P.M.—10:00 P.M.	
Your AIEE Town Meeting.....	Grand Ballroom
Communication Switching Systems Committee.....	K*
Gaseous Insulation Subcom., Insulation.....	E*
6:30 P.M.—11:00 P.M.	
Dinner, Cornell Society of Engineers.....	The Engineers Club

THURSDAY, FEBRUARY 1, 1962

9:00 A.M.—12:00 Noon	
Infrared Applications Subcom., Electronics.....	Schuyler
Insulation Subcom., Rotating Mach.....	Village
System Engineering Committee.....	Dartmouth & Cornell
Control Components Subcom., Feedback Control.....	J*
Materials Subcom. Non-Linear Magnetics Comm.....	K*
Characteristics of Loads Subcom., Ind. & Comm. Pwr. Sys.	Empire Suite I
Industrial Plant Power Systems Subcom., Ind. &	Comm. Pwr. Sys.....
	C-29*

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Winter General Meeting

	ROOM
I & CPS Executive Subcommittee.....	A-29*
Distribution Subcommittee, Trans. & Dist.....	Empire Suite II
Codes & Standards Subcom. Ind. & Comm. Pwr. Sys.....	B-29*
Towers, Poles and Conductors Subcom., Trans. & Dist....	Herald*
Radio Communication Systems Committee.....	D*
Electronic & High Frequency Instruments.....	Buffalo
Performance Measurements Subcom., Feedback Control....	E-29*
Discrete Data Systems Subcom., Feedback Control.....	D-29*
9:00 A.M.—12:30 P.M.	
Technical Operations Department.....	Pennsylvania
9:00 A.M.—2:00 P.M.	
Luncheon, Frequency Range Transformers Subcom. Elec. Trans.	Mezzanine Meeting II
9:00 A.M.—4:00 P.M.	
Luncheon, Cement Industry.....	Gramercy*
9:00 A.M.—5:00 P.M.	
Luncheon, W. G. Hermatic Motor Insulation..	Mezzanine Meeting I
ASA C40 Committee.....	Board Room West**
District Vice-President's Meeting.....	Boston
9:30 A.M.—12 Noon	
American Standards Committee, C57 Meeting.....	Town
9:30 A.M.—2:00 P.M.	
Luncheon, D-C Machinery Subcom. Rot. Mach.....	Clinton*
11:30 A.M.—1:30 P.M.	
Luncheon, Electric Techniques in Medicine & Biology Comm.	Herald*
12:00 Noon—2:00 P.M.	
Luncheon, System Coordination and Protective Subcommittee,	Ind. & Comm. Pwr. Sys.....
	D-29*
12:30 P.M.—2:00 P.M.	
Luncheon, Technical Operations Dept.....	Cornell
Luncheon, Indicating & Intergrating Instruments Comm....	A-29*
12:30 P.M.—4:00 P.M.	
Luncheon, Space Communication Committee.....	E*
1:30 P.M.—5:00 P.M.	
Electron Tubes	Empire Suite I
2:00 P.M.—5:00 P.M.	
AIEE, ASTM Joint Working Group on Thermal Evaluation	Empire Suite II
Definitions Subcom. Electronic Trans.....	Mezzanine Meeting II
Planning & Coordination Committee.....	Pennsylvania
2:30 P.M.—5:00 P.M.	
Industrial & Commercial Power Systems Committee.....	Buffalo
Education on Electronics Subcom., Electronics.....	E-29*
Transmission & Distribution Committee.....	Dartmouth
Communication Theory Committee.....	D-29*
4:00 P.M.—6:00 P.M.	
Hydroelectric Power Subcom., Pwr. Gen.....	D*
Electrical Insulation Committee.....	Cornell

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	ROOM
Rotating Machinery Committee.....	Gramercy*
Land Transportation	Clinton*
4:30 P.M.—7:00 P.M.	
Telephone Instruments Standards Subcom., Wire Comm. Sys.	Schuyler
5:30 P.M.—7:00 P.M.	
Feedback Control Systems Committee.....	Buffalo
7:30 P.M.—10:00 P.M.	
Wire Communication Committee.....	Boston
Nonlinear Control Theory Subcom., Feedback Control.....	E*

FRIDAY, FEBRUARY 2, 1962

9:00 A.M.—12:00 Noon	
Board of Directors.....	Pennsylvania
9:00 A.M.—12:30 P.M.	
Substations Committee	Boston
9:00 A.M.—5:00 P.M.	
Materials Subcom., Electronic Transformers.....	Empire Suite I
12:00 P.M.—2:00 P.M.	
Luncheon, Board of Directors.....	Cornell
1:00 P.M.—3:00 P.M.	
AIEE Working Group 510, Rotating Machinery.....	Schuyler
2:00 P.M.—5:00 P.M.	
Board of Directors.....	Pennsylvania

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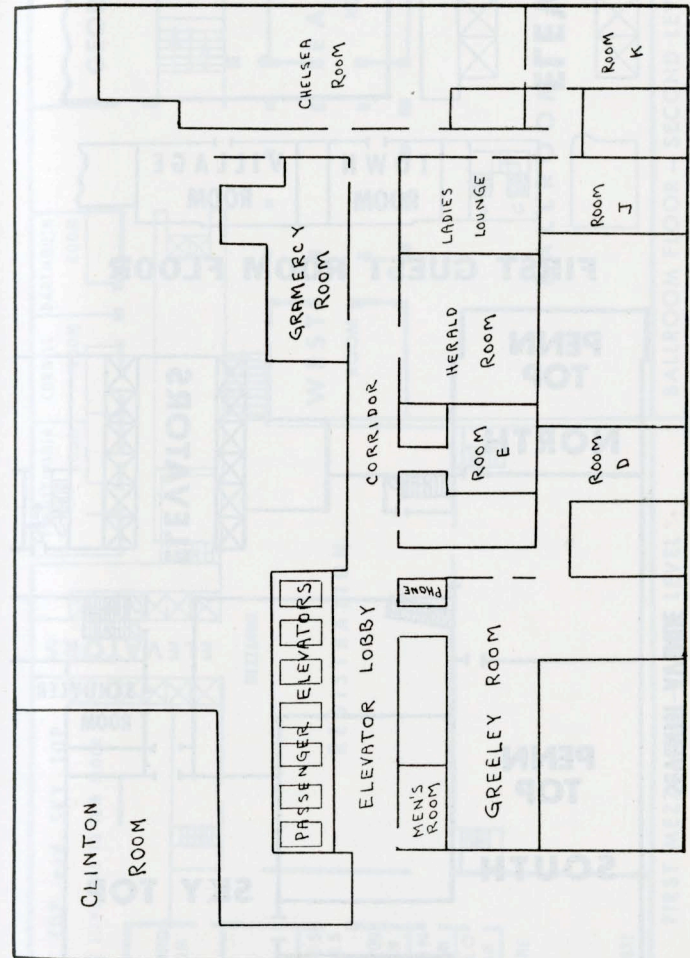
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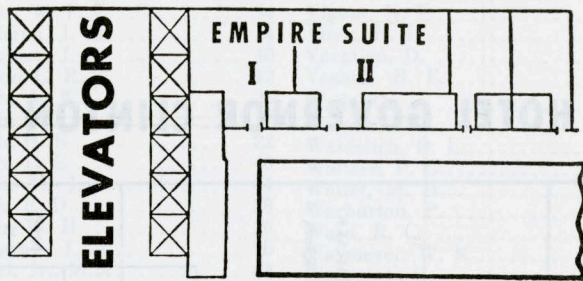
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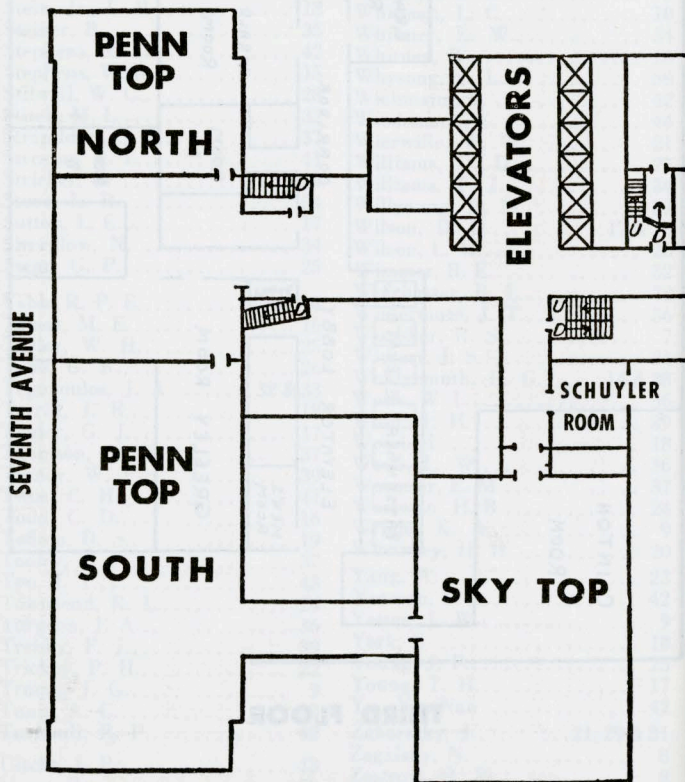


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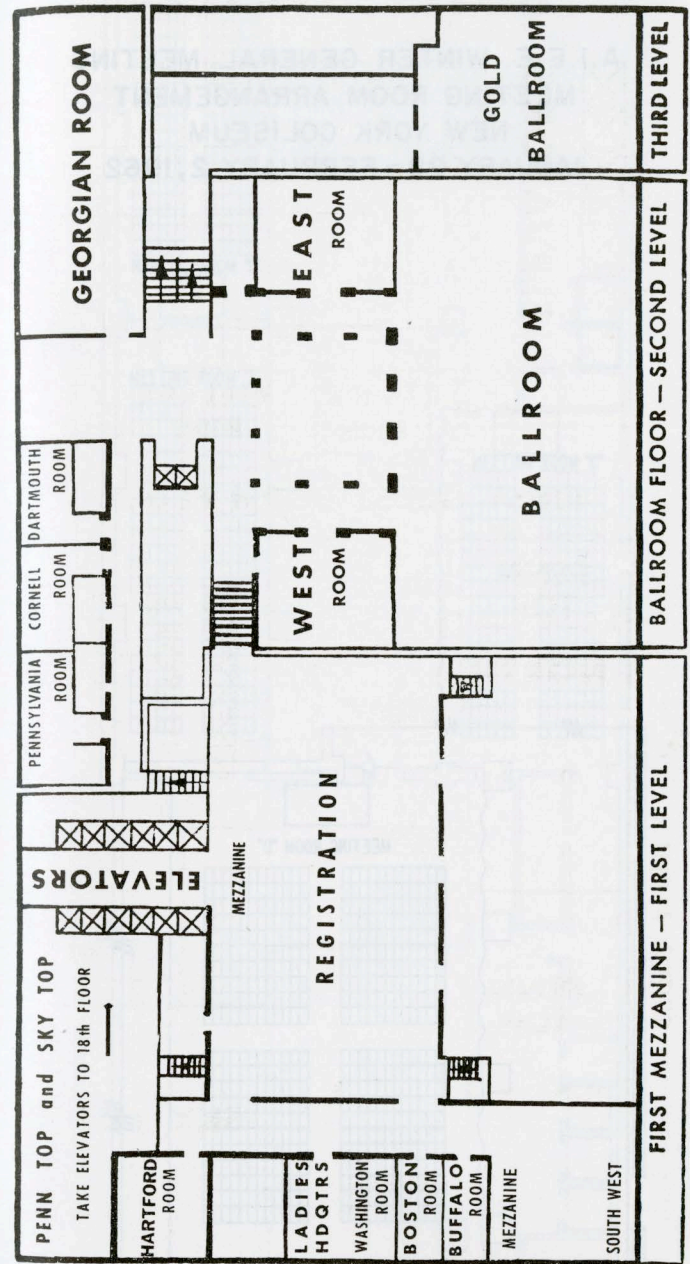
HOTEL STATLER



FIRST GUEST ROOM FLOOR

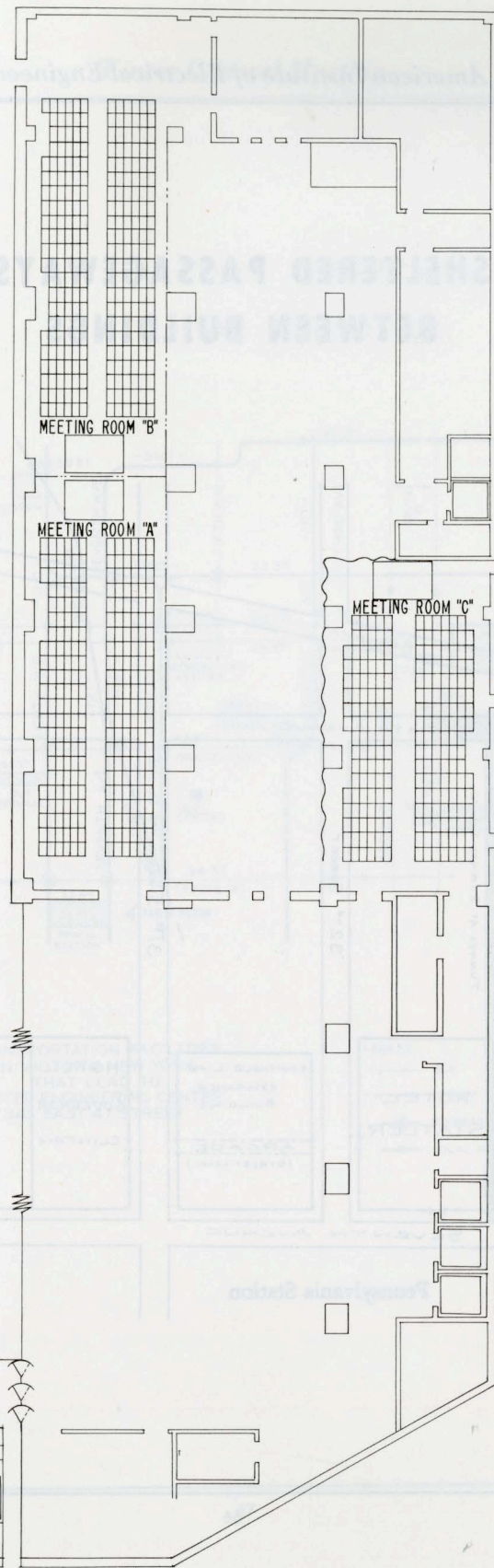
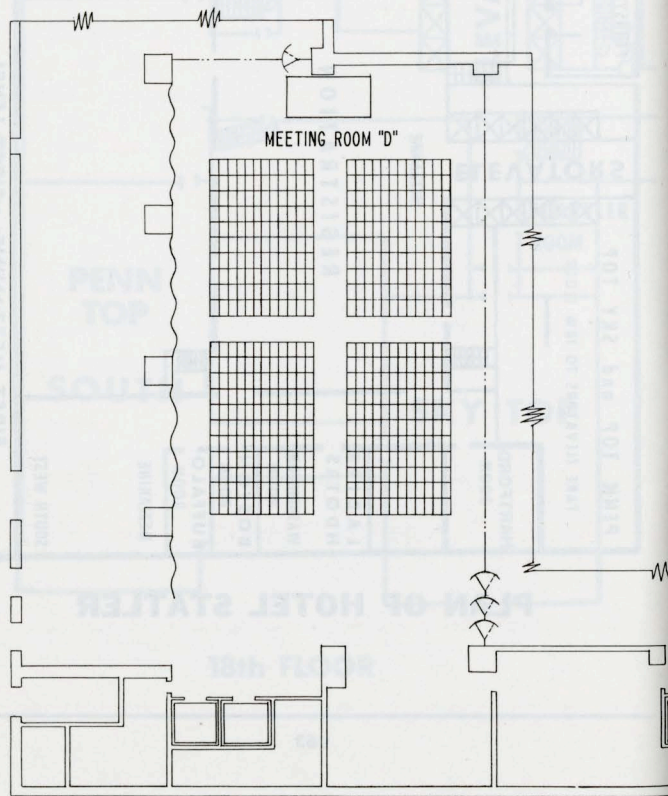


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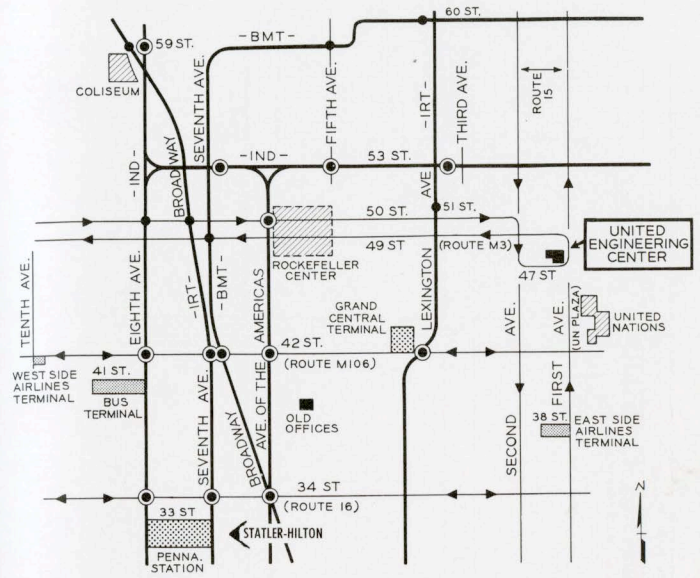
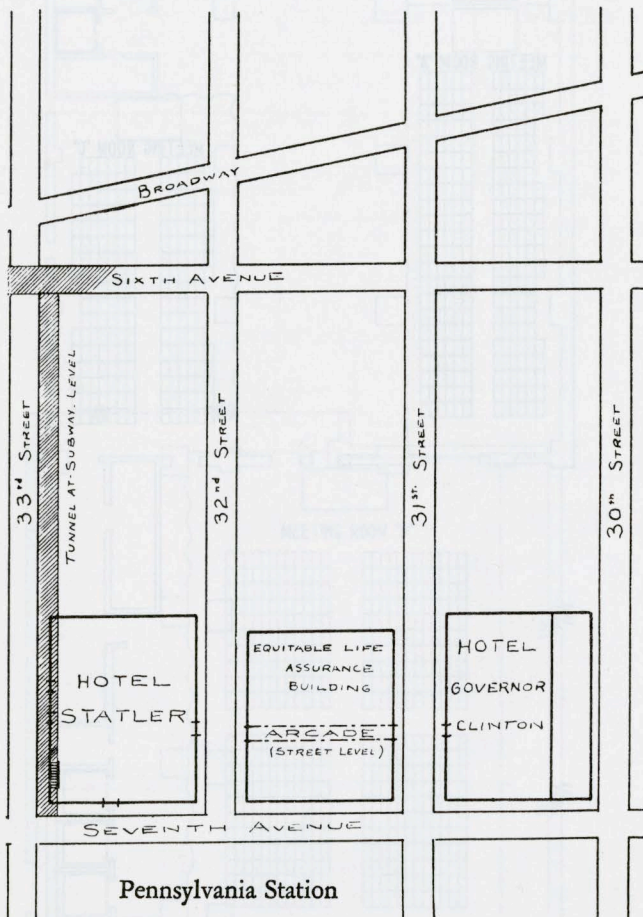


PLAN OF HOTEL STATLER

A.I.E.E. WINTER GENERAL MEETING
MEETING ROOM ARRANGEMENT
NEW YORK COLISEUM
JANUARY 29 - FEBRUARY 2, 1962



SHELTERED PASSAGEWAYS BETWEEN BUILDINGS



TRANSPORTATION FACILITIES
IN MIDTOWN NEW YORK
THAT LEAD TO
UNITED ENGINEERING CENTER
345 EAST 47 STREET

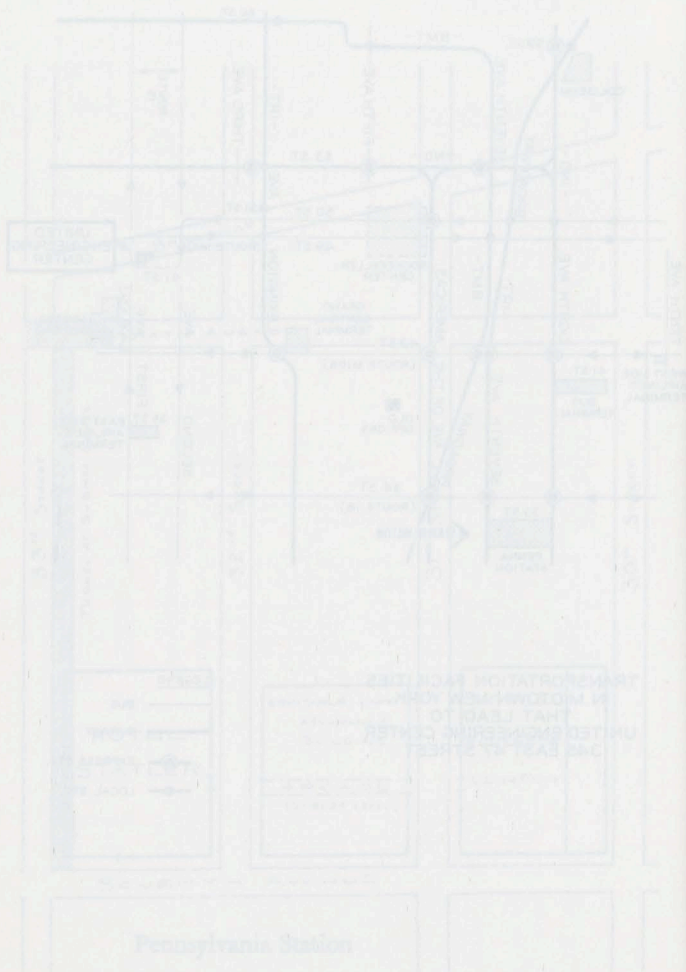
LEGEND

- BUS
- SUBWAY
- EXPRESS STA.
- LOCAL STA.

MEMORANDUM

MEMORANDUM

SHELTERED PASSAGEWAYS
BETWEEN BUILDINGS



MEMORANDUM

DAILY CALENDAR

	Evening	Happy Hr.	P.M.	Lunch	A.M.	Bkfst
Sunday						
Monday						
Tuesday						
Wednesday						
Thursday						
Friday						



NEW YORK COLISEUM