

**AMERICAN
INSTITUTE
of
ELECTRICAL
ENGINEERS**



**Winter
General
Meeting**

•
**JANUARY 29
to
FEBRUARY 3
1961**

**Statler-Hilton
and
Governor Clinton
Hotels
New York, N. Y.**

GENERAL INFORMATION

Our Winter General Meeting this year features one of the largest technical programs in the history of the Institute which utilizes the facilities of the Statler-Hilton and the Governor Clinton Hotels. A group of inspection trips has been arranged closely allied with the technical sessions. On the social side, there will be the Eta Kappa Nu Annual Banquet, a smoker, a dinner-dance and special entertainment for the ladies.

Mr. Don G. Mitchell, President of General Telephone and Electronics Corp. will be the featured speaker of the General Session on Monday afternoon, January 30th. At this session the Institute's Edison Medal will be presented to Dr. Harold F. Osborne and the first presentation of the Mervin J. Kelly Award will be made to Dr. Mervin J. Kelly. The Institute Prize Paper Awards will also be presented and President C. H. Linder will address the members assembled.

In determining the technical sessions and committee meetings you wish to attend, please note that several have been assigned to the Governor Clinton Hotel, 7th Avenue and 31st Street and the Engineering Societies Building, 33 W. 39th St. The General Electric Auditorium at 570 Lexington Avenue is also being used.

Note: In fairness to all concerned and due to lack of display space, only Institute notices will be permitted during the meeting. This will prohibit the posting of any advertising or position opportunity notices.

Registration Fees Required. The Board of Directors has arranged for a ladies registration fee to help defray the cost of the ladies functions. The registration fees for members and nonmembers are \$6.00 and \$10.00 respectively. Student members and the immediate families of members are not required to pay any fee.

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

Technical Sessions and Discussions are covered by the "Technical Sessions Guide" at the discretion of the presiding officers. Sufficient time will be allowed for the presentation of each paper and 5 minutes for each discussion. To receive consideration for publication, discussion on TRANSACTIONS Papers in duplicate must be sent to Edward C. Day, Assistant Secretary, Technical Operations Department, AIEE, 33 West 39th Street, New York 18, New York, before February 17, 1961. 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 original illustrations as photographs or inked tracings should be submitted.

Advance Copies of Papers may be purchased by members at the technical papers desk at the uniform price of \$.50 each (\$1.00 to nonmembers). Only numbered papers are available. Mail orders should be addressed to the AIEE Order Department, 33 West 39th Street, New York 18, New York. The TRANSACTIONS Papers will also be published in the Bimonthly Publications. Note: Unnumbered Conference Papers (CP.*) may be available for sale at or after the meeting, if copies are provided by the author. They are not intended for publication in the TRANSACTIONS and are not presently scheduled for reproduction in any form by the Institute.

Monitors and Projectors. Contact T. W. Bartlett on any questions arising in connection with Monitors and projection equipment, at the Hartford Room of the Statler-Hilton Hotel.

Winter General Meeting

SCHEDULE OF EVENTS

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

SUNDAY, JAN. 29

2:00 p.m. Registration Starts
Mezzanine

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

MONDAY, JAN. 30

10:00 a.m. Modern Circuit Techniques — I
Statler-Hilton West Room

Electric Heating
Statler-Hilton Georgian Room

Industrial Power Rectifiers
Statler-Hilton Gold Ballroom

Telegraph Systems
Governor Clinton Florentine Room

Generator Excitation Systems
Governor Clinton Governor Room

Protective Devices
Statler-Hilton Penn Top North

Advances in Data Processing Systems
Statler-Hilton Penn Top South

Logic & Switching Circuit Theory
Statler-Hilton Skytop

Management
Statler-Hilton Grand Ballroom

Corrosion & Cathodic Protection in Electric
Generation & Distribution
Statler-Hilton East Room

2:00 p.m. General Session
Statler-Hilton Grand Ballroom

TUESDAY, JAN. 31

9:00 a.m. Electrostatic Processes — I
Governor Clinton Chelsea Room

Section Representatives
Statler-Hilton Penn Top North

Safety
Statler-Hilton Skytop

Discrete Data Control Systems
Engineering Societies Room 502

High Speed Telegraphy
Governor Clinton Greeley Room

Radio Communications
Statler-Hilton East Room

Integrating & Digital Instruments
Statler-Hilton West Room

TUESDAY (continued)

Insulated Conductors
Statler-Hilton Georgian Room

Central Control Rooms for Power Station
Statler-Hilton Penn Top South

Switchgear
Statler-Hilton Gold Ballroom

Semiconductor & Industrial Power Rectifiers
And Chemical Industry
Governor Clinton Governor Room

Corona Effects
Statler-Hilton Grand Ballroom

Modern Circuit Techniques — II
Engineering Societies Auditorium

Symposium on Electrostatography
Governor Clinton Florentine Room

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

Land Transportation
Statler-Hilton East Room

Control Components & Specifications
Engineering Societies Room 502

Allied Developments in Broadcasting
Statler-Hilton Georgian Room

Indicating Instruments & Calibration
Statler-Hilton West Room

Cross Compound Generator Starting
Statler-Hilton Penn Top South

System Controls & Economic Dispatch
Statler-Hilton Gold Ballroom

Transformers
Statler-Hilton Grand Ballroom

Rectifiers in Electro-Chemical Processes
Governor Clinton Governor Room

Liquid Insulations
Governor Clinton Florentine Room

Industry and Safety
Statler-Hilton Skytop

Electrostatic Processes — II
Governor Clinton Chelsea Room

Modern Circuit Techniques — III
Engineering Societies Auditorium

Data Communications Theory
Governor Clinton Greeley Room

Insulated Conductors
General Electric Auditorium

WEDNESDAY, FEB. 1

9:00 a.m. Industrial Control
Engineering Societies Room 502

Land Transportation
Statler-Hilton East Room

Industrial & Commercial Power Systems
Statler-Hilton Grand Ballroom

Non-Linear Control Systems — I
Statler-Hilton West Room

Chemical Processes & Refining
Governor Clinton Florentine Room

Communication in Biological Systems
Statler-Hilton Penn Top North

Electrical Insulation
Statler-Hilton Penn Top South

Telemetry
Governor Clinton Greeley Room

Computer Application to Power System Engineering
Statler-Hilton Skytop

Transformers
General Electric Auditorium

Switchgear
Statler-Hilton Georgian Room

Shaft Position Encoder Methods
Governor Clinton Governor Room

Symposium on Experience with Semiconductor Rectifiers
in Electrolytic Operation
Governor Clinton Chelsea Room

Magnetic Amplifiers
Engineering Societies Auditorium

New Goals in Plasma Energy and
in High Voltage Insulation
Statler-Hilton Gold Ballroom

2:00 p.m. Industrial Control
Engineering Societies Room 502

Land Transportation
Statler-Hilton East Room

Industrial & Commercial Power Systems
Statler-Hilton Grand Ballroom

Non-Linear Control Systems — II
Statler-Hilton West Room

Data Communication Theory
Engineering Societies Auditorium

Batteries
Statler-Hilton Penn Top North

Aircraft, Missile, Ordnance Telemetry
Governor Clinton Greeley Room

System Planning and Economics
Statler-Hilton Skytop

WEDNESDAY (continued)

- Switchgear
Statler-Hilton Georgian Room
- Substations
Governor Clinton Florentine Room
- Tutorial Sessions on Computer Applications to Design Evaluation & Simulation
Governor Clinton Governor Room
- Tube Techniques and New Tube Developments
Statler-Hilton Penn Top South
- Effects of Radiation on Equipment
Statler-Hilton Gold Ballroom
- Energy Converting Devices
Governor Clinton Chelsea Room

- 7:30 p.m.** Forum of Technical Committee Chairmen
Statler-Hilton Georgian Room
- Space Communications
Statler-Hilton Gold Ballroom

THURSDAY, FEB. 2

- 9:00 a.m.** Graduate Education in Electrical Engineering
Statler-Hilton Gold Ballroom
- Land Transportation
Statler-Hilton East Room
- Domestic Appliances
Statler-Hilton West Room
- Computers and Logic Devices
Statler-Hilton Skytop
- Data Communication
Statler-Hilton Grand Ballroom
- Wire Communications — I
Governor Clinton Florentine Room
- Special Instrumentation
Engineering Societies Room 502
- Lightning & Insulators
Engineering Societies Auditorium
- Rotating Machinery
Statler-Hilton Georgian Room
- Symposium—EHV Substations
Governor Clinton Governor Room
- Super Power Tubes — I
Statler-Hilton Penn Top South
- Radiation Effects Symposium
Governor Clinton Chelsea Room

THURSDAY (continued)

- Magnetic Amplifiers
Statler-Hilton Penn Top North
- Solid State Devices
Governor Clinton Greeley Room
- 2:00 p.m.** Super Power Tubes — II
Statler-Hilton Penn Top South
- Man-Machine Aspects of Automatic Programming for Digital Control Systems
Statler-Hilton Grand Ballroom
- Electric Space Heating & Heat Pumps
Statler-Hilton West Room
- Semiconductor Switching Devices & Applications
Governor Clinton Governor Room
- Wire Communications — II
Governor Clinton Florentine Room
- High Voltage Radio Noise & Corona Loss Measurements
Engineering Societies Auditorium
- Rotating Machinery
Statler-Hilton Georgian Room
- Electronic Transformers
Statler-Hilton Skytop
- Modern Circuit Techniques — IV
Engineering Societies Room 502
- How Irradiation Alters the Electrical Properties of Material Interaction
Governor Clinton Chelsea Room
- Magnetic Amplifiers
Statler-Hilton Penn Top North
- Communications Switching — I
Governor Clinton Greeley Room
- Graduate Education in Electrical Engineering
Statler-Hilton Gold Ballroom

FRIDAY, FEB. 3

- 9:00 a.m.** The Organization of Large Volume Data Processing Systems
Governor Clinton Governor Room
- Methods for Integration of Machine Aids Into Man's Design Effort
Statler-Hilton Gold Ballroom
- Metal Rolling Mill Electrical Systems
Governor Clinton Chelsea Room
- Linear Control Systems
Statler-Hilton Skytop

FRIDAY (continued)

- Communications Switching — II
Statler-Hilton West Room
- Distribution Systems
Statler-Hilton Grand Ballroom
- Extra High Voltages
Statler-Hilton Georgian Room
- Rotating Machinery
Statler-Hilton Penn Top South
- Relays
Statler-Hilton Penn Top North
- Microwave Tubes
Statler-Hilton East Room
- Is Systems Engineering?
Governor Clinton Florentine Room
- Magnetics
Governor Clinton Greeley Room
- 2:00 p.m.** Methods for the Automatic Design of Electronic Equipment
Governor Clinton Governor Room
- Metal Making & Processing Electrical Drive Systems
Governor Clinton Florentine Room
- Linear Control Systems & Applications
Statler-Hilton Skytop
- Communication Switching Systems — III
Statler-Hilton West Room
- Towers, Poles & Conductors
Statler-Hilton Grand Ballroom
- Capacitors & Switching Surges
Statler-Hilton Georgian Room
- Rotating Machinery
Statler-Hilton Penn Top South
- Subminiature Tubes & Environmental Testing
Statler-Hilton East Room
- Present and Future Trends in Education in Electronics
Statler-Hilton Gold Ballroom

Monday, January 30

10:00 a.m.—Modern Circuit Techniques I

Statler-Hilton West Room
Chairman: L. D. WECHSLER, General Electric Co.
ELECTRONICS COMMITTEE

- CP.* The Dynamic Behavior of Negative Resistance Devices. C. O. Harbourt, Syracuse University.
- CP.* Large-Signal Circuit Theory for Negative-Resistance Diodes, In Particular Tunnel Diodes. M. Schuller, W. W. Gaertner; CBS Labs.
- CP.* Tunnel Diodes With Ultra-Linear Characteristics. J. J. Tiemann, General Electric Research Lab.
- CP.* Increasing the Q of A Filter Through the Use of Tunnel Diodes. D. Sabih, Hughes Aircraft Co.
- CP.* Tunnel Diode Modulators. B. M. Rabinovici, J. Klapper, RCA.

10:00 a.m.—Electric Heating

Statler-Hilton Georgian Room
Chairman: C. A. TUBBURY, New Rochelle Tool Corp.
ELECTRIC HEATING COMMITTEE

- CP61-200. Reading Electric Heating Papers in Russian. Mrs. B. O. Buckland, General Electric Co.
- CP61-201. Leakage Currents in Appliance Heaters. A. F. Boice, General Electric Co.
- CP.* Applications of Variable Impedance Devices to Induction Heating. E. F. McBrien, R. A. Sommer; Ohio Crankshaft Co.
- 61-30 II Heat Transfer Aspects of Electric Heating. B. Rolsma, General Electric Co.
- CP.* High Temperature Radiant Sources. J. P. Frier, General Electric Co.

10:00 a.m.—Industrial Power Rectifiers

Statler-Hilton Gold Ballroom
Chairman: C. S. HAGUE, Westinghouse Electric Corp.
INDUSTRIAL POWER RECTIFIERS COMMITTEE

- CP.* Ignitrons for Large Motor Drives. C. C. Herskind, R. V. Pohl; General Electric Co.
- CP.* Progress in High Power Rectifier Technology — II. P. J. Colleran, A. Hansen, Jr., E. C. Rettig; General Electric Co.
- 61-109 II Design of Ignitron Firing Circuits Utilizing Controlled Rectifiers. D. C. Graham, Westinghouse Electric Corp.
- CP.* Semiconductor Rectifiers in Motor Drives. S. J. Roumanis, General Electric Co.

10:00 a.m.—Telegraph Systems

Governor Clinton Florentine Room
Chairman: W. G. VIETH, Western Union Telegraph Co.
TELEGRAPH SYSTEMS COMMITTEE

- CP.* Recent Advances in Printing Telegraph Apparatus. W. Y. Lang, Bell Telephone Labs.
- 61-60 I Telegraph Distortion and Distortion Measuring. H. H. Wusteney, Siemens & Halske.
- CP.* Advancements in the Facsimile Art During 1960. W. H. Bliss, RCA Labs.

MONDAY (continued)

10:00 a.m.—Generator Excitation Systems

Governor Clinton Governor Room
 Chairman: J. H. KINGHORN, American Electric Power Service Corp.
 POWER GENERATION COMMITTEE

- CP.* Static Excitation System for Electric Utility Steam Turbine Generators. L. M. Domeratzky, A. S. Rubenstein, M. Temoshok; General Electric Co.; W. S. Morgan, American Electric Power Service Corp.
- CP.* Design and Test of a Static Excitation System for Elec. Utility Steam Turbine Generators. L. J. Lane, D. F. Rodgers, P. A. Vance; General Electric Co.
- 61-8 Principles of a Simulator for Studying Synchronous Machine
 III Voltage Regulator Problems. C. Adamson, Manchester College of Science and Technology; A. M. El-Serafi, Cairo University.
- 61-9 Amplidyne Main Exciter Excitation System. L. M. Harvey,
 III A. S. Rubenstein, M. Temoshok, General Electric Co.
- 61-137 Proposed Excitation System Definitions for Synchronous
 III Machines. AIEE Excitation Sub. of the Power Generation Com., M. Temoshok, Chairman.

10:00 a.m.—Protective Devices

Statler-Hilton Penn Top North
 Chairman: H. O. STOELTING, Line Material Co.
 PROTECTIVE DEVICES COMMITTEE

- 61-44 Field Tests of Lightning Arrester Voltage and Current Caused
 III by Switching a 220-KV Line. M. C. Galiyano, V. C. Detty, Pennsylvania Power & Light Co.; A. R. Hileman, C. L. Wagner, Westinghouse Electric Corp.
- 61-46 A Mathematical Study of the Thermal Behavior of Silicon
 III Carbide for Valve Blocks. N. E. Bolen, Ohio Brass Co.
- CP.* Rigorous Arrester Development Testing. F. V. Cunningham, A. C. Westrom, Hubbard-Kearney Electrical Research Lab.
- CP.* A Graphical Solution of the Separation Distance Between Arrester and Protected Equipment. Working Group of the Lightning Protective Devices Sub., A. R. Hileman, Chairman.

10:00 a.m.—Advances in Data Processing Systems

Statler-Hilton Penn Top South
 Chairman: J. MADDOX, Philco Corp.
 COMPUTING DEVICES COMMITTEE

- CP61-125. Bit-By-Bit Input Processing for a Real Time Digital Computer. C. I. Eisiminger, J. A. Laird, IBM Corp.
- 60-1407. Data Gathering and Transmission System for Project EHV.
 I P. A. Abetti, D. W. Caverly, D. D. Davis, E. A. Whepley; General Electric Co.
- CP.* A Production Control System Using a Small Computer in a Job Shop. R. Tevonian, Western Electric Co.
- CP61-248. 1960 Computer Progress. G. L. Hollander, Editor.

10:00 a.m.—Logic and Switching Circuit Theory

Statler-Hilton Skytop
 Chairman: R. J. PREISS, IBM Corp.
 COMPUTING DEVICES COMMITTEE

- CP.* Engineer Oriented Computer Languages. R. B. Vogeler, Automatic Electric Labs., Inc.
- CP.* Some Applications in Asia of Digital Computers to Power System Analysis. J. K. Delson, General Electric Japan.

MONDAY (continued)

- 61-193. A Four Megacycle, 24-Bit Checked Binary Adder. M. E. I Homan, IBM Corp. (Re-presented for Discussion only).
- 60-1223. Minimization of Multiple-Output Switching Circuits. R. B. I Polansky, Electronic Systems Lab. (Re-presented for Discussion only).
- 60-1226. E-Algebras in Switching Theory. W. Semon, Harvard University. (Re-presented for Discussion only).

10:00 a.m.—Management

Statler-Hilton Grand Ballroom
 Chairman: G. KLEIS, Westinghouse Electric Corp.
 MANAGEMENT COMMITTEE

- CP.* The Measurement of Engineering Effort. F. Ames, General Electric Co.
- CP.* Managing Research and Development. T. H. Hollomon, General Electric Co.
- CP.* Planning, Scheduling, and Measurement of Engineering Development. R. H. Buescher, Litton Industries.
- CP.* Use of the Business Simulator in Management Training. R. H. Davis, Westinghouse Electric Corp.

10:00 a.m.—Corrosion & Cathodic Protection in Electric Generation & Distribution

Statler-Hilton East Room
 Chairman: B. HUSOCK, Harco Corp.
 CHEMICAL INDUSTRY COMMITTEE

- CP.* Underground Corrosion Protection on Bonneville Power Administration System. R. V. Moorman, Bonneville Power Administration.
- CP.* Protection of Pipe-Type Cable. D. E. Knauss, E. R. Beeman, Florida Power Corp.
- CP.* Cathodic Protection for Coal Unloading Facilities. J. Segal, Burns & Roe, Inc.

2:00 p.m.—General Session

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

ADDRESS: President C. H. Linder.

REPORT OF THE NOMINATING COMMITTEE by the Chairman.

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

General Committee and Electrical Engineering Articles

1st Prize Paper by Bern Dibner.

General Applications Division

1st Prize Paper by J. E. Hogan.
 2nd Prize Paper by J. W. Horine.

Power Division

1st Prize Paper by S. C. Bartlett.

Science and Electronics Division

1st Prize Paper by G. W. Dick.
 2nd Prize Paper by D. F. Moyer and G. D. Talbott, M.D.

MONDAY (continued)

Industry Division

1st Prize Paper by B. Husock.

Student Division

1st Prize Paper by R. A. Elco.

2nd Prize Paper by R. M. Gardner.

PRESENTATION OF THE FIRST AWARD OF THE MERVIN J. KELLY AWARD TO DR. MERVIN J. KELLY, Retired Chairman of the Board, Bell Telephone Laboratories, Inc., by the President and Dr. S. Reid Warren Jr., Chairman, Recognition Awards Committee

PRESENTATION OF THE EDISON MEDAL TO PAST PRESIDENT H. S. OSBORNE, RETIRED CHIEF ENGINEER, AMERICAN TELEPHONE AND TELEGRAPH CO.

History of the Edison Medal

C. M. Mapes, Chairman of the Edison Medal Committee.

Career of the Medalist

H. I. Romnes, President, Western Electric Company.

Presentation of the Medal and Certificate

President C. H. Linder.

Response of the Medalist

Mr. H. S. Osborne.

THE CHALLENGES TO ENGINEERING IN THE 1960's.
Don G. Mitchell, President of General Telephone and Electronics Corp.

Tuesday, January 31

9:00 a.m.—Electrostatic Processes I

Governor Clinton Chelsea Room

Chairman: S. R. OREM, Aerotec Industries, Inc.

ELECTRONICS COMMITTEE

61-90 Movement of Air in the Electric Wind of the Corona Discharge. M. Robinson, Research-Cottrell, Inc.

CP.* High Voltage Generation in Space: The Parametric Electrostatic Machine. A. S. Denholm, A. J. Gale, Goodrich-High Voltage Astronautics, Inc.; J. G. Trump, Massachusetts Inst. of Technology.

61-91 Pulsed Discharges Preceding Sparkover at Low Voltage Gradients. G. W. Penney, Carnegie Inst. of Technology; S. Craig, General Electric Co.

9:30 a.m.—Section Representatives

Statler-Hilton Penn Top North

Chairman: W. E. SCHOLZ, Philadelphia Electric Co.

9:00 a.m.—Safety

Statler-Hilton Skytop

Chairman: H. H. WATSON, General Electric Co.

SAFETY COMMITTEE

CP.* Safe Ungrounded Portable Electric Appliances. D. M. Manson, Canadian Standards Association.

CP.* The Relative Merits of Grounding and Double Insulation of Portable Electric Tools and Appliances, J. L. Bennett, The Black & Decker Mfg. Co.

TUESDAY (continued)

CP.* Grounding of Cord Connected Tools and Appliances. J. B. Hayes, Bell Telephone Labs. Inc.

CP.* Safety Regulations with Regard to Portable Electrical Tools and Other Hand-Held Electrical Equipment in the Netherlands. A. Stegenga, Labor-Industry Inspection, The Netherlands.

CP61-237. Improvements in Electrical Safety. C. F. Dalziel, University of California.

9:00 a.m.—Discrete Data Control Systems

Engineering Societies Room 502

Chairman: J. E. BERTRAM, IBM Corp.

FEEDBACK CONTROL SYSTEMS COMMITTEE

CP.* Pulse-Data Servo Mechanism Analysis. C. K. Taft, Warner and Swasey Co.

61-76 Optimum Control of Nonlinear Discrete-Data Systems. J. T. Tou, B. Vadhanaphuti, Purdue University.

61-77 Time Domain Design of Sampled-Data Control Systems. M. P. Pastel, G. J. Thaler, U. S. Naval Postgraduate School (Re-presented for Discussion only)

CP.* Panel Discussion on the Status and Future Direction of Sampled Data Control System. J. R. Ragazzini; R. E. Kalman RIAS.

9:00 a.m.—High Speed Telegraphy

Governor Clinton Greely Room

Chairman: J. B. BOOTH, American Telephone and Telegraph Co.

TELEGRAPH SYSTEMS COMMITTEE

CP.* Selective Control for Conventional Teletypewriters and High Speed Data Systems. C. J. Colombo, Canadian Pacific Railway Co.

61-29 A Proposed Electronic Method for High-Speed Teleprinters. I N. N. Biswas, University of Roorkee.

CP.* SC 3000 High-Speed Communication Printer. K. M. Gootgeld, Stromberg-Carlson.

CP61-45. High Speed Communication of Graphic Intelligence with Hard Copy Readout. J. R. Shonnard, Westrex Corp.

9:00 a.m.—Radio Communications

Statler-Hilton East Room

Chairman: C. R. KRAUS, Bell Telephone Co. of Pennsylvania

RADIO COMMUNICATION SYSTEMS COMMITTEE

CP.* Standardization of Mobile Telephone Service Signaling. W. J. Dobias, General Electric Co.

CP61-122. Selectivity and the Performance of a Mobile Receiver. R. T. Myers, Jr., General Electric Co.

CP61-176. A New Concept in Point-To-Point Radio Systems for Light-Density Multichannel Service. E. E. Nolan, A. T. Ross, W. C. Fisher, H. B. Sutton; Farinon Electric Co.

61-61 The Theory of a Single-Ring Circular Antenna Array. C. E. Hickman, H. P. Neff, J. D. Tillman; University of Tennessee.

61-47 Antenna Matching Unit for H-F Vehicular Whip. J. R. Gruber, G. J. Seward, Avco Corp. (Re-presented for Discussion only)

TUESDAY (continued)

- 9:00 a.m.—Integrating and Digital Instruments**
 Statler-Hilton West Room
 Chairman: M. B. STOUT, University of Michigan
INDICATING AND INTEGRATING INSTRUMENTS
- CP61-62. The Extended Scale Demand Register. D. M. Ham, F. W. Truesdell; General Electric Co.
- CP.* The Design of a Repulsion Magnetic Bearing for Watthour Meters. D. F. Wright, Westinghouse Electric Corp.
- CP.* A General Description of Digital Voltmeters. C. Stansbury, National Bureau of Standards.
- 61-189 Design of Resistive Temperature Compensation by Single and Multiple Thermistor Networks. S. Farhi, Harowe Precision, Inc.; S. Groves, The Bendix Corp.

- 9:00 a.m.—Insulated Conductors**
 Statler-Hilton Georgian Room
 Chairman: E. J. MERRELL, Phelps Dodge Copper Products Corp.
INSULATED CONDUCTORS COMMITTEE
- 61-160. The Flat Type Oil-Filled Cable. J. S. Mollerhoj, A/S Northern Cable & Wire Works.
- 61-238. Engineering Trends in High-Voltage Cable Techniques in Great Britain. C. C. Barnes, Central Electricity Authority; C. T. W. Sutton, Enfield Cables, Ltd.
- 61-239. Toronto Installation of 115 KV Aluminum Sheathed Oil-Filled Cable in 15 KV Duct and Manhole System. T. J. Burgess, C. E. Bishop, Hydro-Electric Power Commission of Ontario; S. Kozak, K. Kuwahara, Canada Wire and Cable Co. Ltd.
- 61-159. A Comparison of Switching Surges to Conventional Surges on Cable Insulation. P. Gazzana-Priaroggia, G. Palandri; Pirelli S.p.A.

- 9:00 a.m.—Central Control Rooms for Power Station**
 Statler-Hilton Penn Top South
 Chairman: J. G. NOEST, Consolidated Edison Co. of N. Y., Inc.
POWER GENERATION COMMITTEE
- CP61-215. A Central Control Room for Dickerson Units 1 and 2. C. W. Schmitz, Jr., C. S. Bilisoly, Potomac Electric Power Co.
- CP61-216. Present Design Practice of Centralized Control Rooms in Pacific Gas & Electric Company's Power Plants. E. Nilsson and G. A. Abbott, Pacific Gas & Electric Co.
- CP.* Control Room Features at Saint Clair Power Plant. R. C. Austin, J. L. Voyles.

- 9:00 a.m.—Switchgear**
 Statler-Hilton Gold Ballroom
 Chairman: C. E. ASBURY, Commonwealth Associates, Inc.
SWITCHGEAR COMMITTEE
- CP61-205. Proposed Standard for Molded Case Air Circuit Breakers. W.G. on Molded Case Air Circuit Breakers of AIEE Switchgear Committee, L. H. Romzick, Chairman.
- CP61-130. Interrupting Ratings for Low Voltage Circuit Breakers on a Symmetrical Basis. NEMA Joint Sections Committee on Air Circuit Breakers, J. D. Wood, Chairman.
- CP61-179. 5 Kv Metal Clad Switchgear — 1961. W. A. Carter, A. Conangla, J. E. Nugent; I-T-E Circuit Breaker Co.
- 61-131. A New Current-Limiting Motor-Starter Fuse. F. L. Cameron, Westinghouse Electric Corp.

TUESDAY (continued)

- CP61-177. Proposed Revision of American Standard Low Voltage Air Circuit Breakers C37.13, C37.14. AIEE W.G. on Revision of Present Standards for Low Voltage Air Circuit Breakers of the Switchgear Committee, C. E. Asbury, Chairman.

- 9:00 a.m.—Semiconductor & Industrial Power Rectifiers and Chemical Industry**
 Governor Clinton Governor Room
 Chairman: C. A. LANGLOIS, Reynolds Metals Co.
CHEMICAL INDUSTRY, INDUSTRIAL POWER AND SEMICONDUCTOR RECTIFIER COMMITTEES

- 61-23 Proposed Method of Loss Measurement for Semiconductor Rectifier Equipments. I. K. Dortort, I-T-E Circuit Breaker Co.
- CP61-206. Characteristics of Rectifier Cells. E. J. Diebold, International Rectifier Corp.
- 61-24. Fatigue Free Silicon Device Structure. W. B. Green, Westinghouse Electric Corp.
- CP.* Semiconductor Rectifiers for Electrical Railroads. E. J. Diebold, International Rectifier Corp.
- 61-89 Commutation and Destructive Oscillations in Diode Circuits. I. Somos, General Electric Co. (Re-presented for Discussion only)

- 9:00 a.m.—Corona Effects**
 Statler-Hilton Grand Ballroom
 Chairman: J. F. DEXTER, Dow Corning Corp.
ELECTRICAL INSULATION COMMITTEE
- 61-243. Progressive Stress: A New Accelerated Approach to Voltage Endurance. W. T. Starr, H. S. Endicott; General Electric Co.
- 61-244. The Effects of Electrical Discharges Between Electrodes Across Insulation Surfaces II: Discharges Occurring in Static Air. L. Mandelcorn, R. E. Hoff, G. R. Sprengling; Westinghouse Electric Corp.
- 61-212. The Effects of Electrical Discharges Between Electrodes Across Insulation Surfaces: I. Some Basic Ideas and Preliminary Experiments. L. Mandelcorn, Westinghouse Electric Corp. (Re-presented for Discussion only).
- 61-21. Surface Electrical Failure in the Presence of Contaminants—The Inclined Plane, Liquid Contaminant Test. K. N. Mathes, E. J. McGowan; General Electric Co.
- CP.* Electrical Discharges and Life of Polyethylene Insulated Cables. W. T. Starr, General Electric Co. and John Agrios, U. S. Army Signal Research and Development Lab.

- 9:00 a.m.—Modern Circuit Techniques II**
 Engineering Societies Auditorium
 Chairman: G. REVESZ, Robertshaw-Fulton Controls Co.
ELECTRONICS COMMITTEE
- 61-96 Transistor Amplifier Stages with Prescribed Gain and Static and Dynamic Sensitivity. J. H. Mulligan, Jr., S. S. Shamis; New York University.
- 61-97. Amplitude Distortion in Transistor Feedback Amplifiers. J. H. Mulligan, Jr., New York University.
- CP.* Improved AGC Performance for Transistor IF Amplifiers Using a Cascade Configuration. J. F. Perkins, Jr.
- 61-25 On the Elimination of Null in Modulating and Demodulating Devices. S. Jones, Hughes Aircraft Co.
- CP.* Transfluxor Frequency Memory. A. G. Samusenko, RCA Labs.

TUESDAY (continued)

61-98 Transistor Morse to Teleprinter Code Converter. J. F. Cunniff, I
C. E. Theall, Jr., Trak Electronics (Re-presented for Discussion only)

**9:00 a.m.—Symposium on Electrostatography
(Recording of Information by Means of Electric Charge Patterns)**

Governor Clinton Florentine Room

Chairman: F. A. SCHWERTZ, Haloid-Xerox Inc.

SOLID STATE DEVICES COMMITTEE

CP.* Signal Recording Techniques in Xerography. C. R. Mayo, Haloid Xerox Inc.

CP.* Technique of Digital Electrostatic Recording. P. A. Stowell, Burroughs Corp.

CP.* The Videograph Printing Process. H. A. Dahl, G. H. Jenkinson; A. B. Dick Co.

CP.* Thermoplastic Recording. W. E. Glenn, General Electric Research Laboratory.

2:00 p.m.—Section Representatives

Statler-Hilton Penn Top North

Chairman: W. E. SCHOLZ, Philadelphia Electric Co.

2:00 p.m.—Land Transportation

Statler-Hilton East Room

Chairman: R. E. STILLWAGON, Westinghouse Electric Corp.

LAND TRANSPORTATION COMMITTEE

CP61-190. Contact Wire Wear. K. H. Gordon, Pennsylvania Railroad Co.

CP61-208. The Economic Justification of Railway Electrification in the United States. H. C. Cross, Westinghouse Electric International Co.

CP.* Electrical Control Equipment for Disneyland Monorail Trains. J. J. Stamm, Westinghouse Electric Corp.

2:00 p.m.—Control Components and Specifications

Engineering Societies Room 502

Chairmen: J. R. SHULL, AiResearch Mfg. Co. of Ariz. and D. D. PIDHAYNY, Ramo-Wooldridge Corp.

FEEDBACK CONTROL SYSTEMS COMMITTEE

CP.* The Chairman's Report of 1960. D. D. Pidhayny, Ramo-Wooldridge Corp.

CP.* Proposed DC Tachometer Specification by NEMA. E. Luoma, Reliance Electric and Mfg. Co.

CP.* Survey of AC Control Motors. J. O'Donohue, Lockheed Electronics.

CP.* A Control Components Application of the Stability Factor Method. A. G. Fonda, Bell Aerospace.

CP.* Gyro Progress Report by Aerospace Industries Association. C. Janoff, Bell Aerospace.

61-78 A Set of Standard Specifications for Linear Automatic Control Systems. J. E. Gibson, Z. V. Rekasius, E. S. McVey, R. Sridhar, C. D. Leedham; Purdue University.

CP61-85. Servo Motor Characteristics by Impulse Testing. H. R. Weed, Ohio State University.

CP.* 1960 Activities of the Performance Measurements Subcommittee. J. R. Shull, AiResearch Mfg. Co. of Arizona.

TUESDAY (continued)

2:00 p.m.—Allied Developments in Broadcasting

Statler-Hilton Georgian Room

Chairman: O. W. B. REED, JR., Jansky & Bailey, Inc.

THE BROADCASTING COMMITTEE

CP.* Microwave Radio Relay of High Definition Video Information. R. Zamer, V. E. Love, Raytheon Corp.

CP61-181. Noise and Intermodulation Problems in Multi-Channel Closed Circuit Television Systems. C. A. Collins, A. D. Williams; Bell Telephone Labs.

CP.* FM Stereo Broadcast Field Tests. A. P. Walker, National Association of Broadcasters.

CP.* Experience With Two-Way Radio Talk Back for Medical Education. A. P. Fredette, Albany Medical College.

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

Statler-Hilton West Room

Chairman: L. J. LUNAS, Westinghouse Electric Corp.

INDICATING AND INTEGRATING INSTRUMENTS COMMITTEE

61-63 An Analysis of Errors in the Calibration of Electrical Instruments. F. L. Hermach, National Bureau of Standards.

CP61-64. An A-C Ammeter Calibrator Using Tapped Winding Current Transformers. R. F. Estoppey, Daystrom, Inc.

61-65 Taut Band Suspension Switchboard Instruments. J. C. Nycz, I
V. S. Thomander, R. C. Mac Indoe, D. F. Roerty; Westinghouse Electric Corp.

61-66 A Simplified Design of Long-Scale Ammeters and Voltmeters. III
C. F. Van Bennekom, R. M. Rowell; General Electric Co.

2:00 p.m.—Cross Compound Generator Starting

Statler-Hilton Penn Top South

Chairman: M. TEMOSHOK, General Electric Co.

POWER GENERATION COMMITTEE

61-94 Cross-Compound Turbine-Generator Turning Gear Synchronization Study: I — Analytical Analysis Using Automatic Digital Computation. C. M. Lane, T. H. Kuo; Westinghouse Electric Corp.

61-95 Cross-Compound Turbine-Generator Turning Gear Synchronization Study: II — Field Test Investigation. C. M. Lane, Westinghouse Electric Corp. P. Barth; Public Service Electric & Gas Co

CP.* Recent Developments in Starting Cross Compound Turbine Generator Units. L. R. Stuve, P. E. Benner, General Electric Co.

CP.* An Approach to Synchronizing Cross Compound Generators on Turning Gear. J. D. Davidson, Westinghouse Electric Corp.

60-852 A New Frequency Converter Excitation ("FCE") System for A.C. Generators. K. M. Sparrow, Lima Electric Motor Co. (Re-presented for Discussion only)

60-851 Performance of a New Static-Magnetic Exciter and Voltage Regulator for Round Rotor Marine Steam Turbine Generators. D.F. Talcott, P. M. Tabor, C. Concordia; General Electric Co. (Re-presented for Discussion only)

TUESDAY (continued)

2:00 p.m.—System Controls and Economic Dispatch

Statler-Hilton Gold Ballroom

Chairman: M. J. THRASHER, Long Island Lighting Co.
SYSTEM ENGINEERING COMMITTEE

- 60-846 Methods of Controlling Generation on Interconnected Power Systems. N. Cohn, Leeds & Northrup Co. (Re-presented for Discussion only)
- CP61-48. Load Control Response Tests of Unit R2 at Grand Coulee. M. D. Liechty, Leeds & Northrup Co.
- CP61-49. Economic Dispatch With Phase Angles as Controlling Variables. H. G. Hedges, Michigan State University.
- CP61-50. Spinning Reserve on a Large Interconnected System. C. K. Duff, The Hydro-Electric Power Commission of Ontario.
- CP.* Hydro-Thermal Economic Scheduling—Part III: Scheduling the Thermal Sub-System Using Constrained Steepest Descent. B. Bernholtz, L. J. Graham; The Hydro-Electric Power Commission of Ontario.

2:00 p.m.—Transformers

Statler-Hilton Grand Ballroom

Chairman: H. H. WAGNER, Fischbach & Moore, Inc.
TRANSFORMERS COMMITTEE

- 61-18 Transformer Invented 75 Years Ago. A. A. Halacsy, Federal Pacific Electric Co.; G. H. von Fuchs, Doble Engineering Co.
- CP61-28. A Short History of Development of Power Transformers by One Manufacturer. R. L. Brown, Westinghouse Electric Corp.
- 61-58 The Current Comparator and Its Application to the Absolute Calibration of Current Transformers. N. L. Kusters and W. J. M. Moore, National Research Council.
- 61-13 Tertiary Windings in Autotransformers. O. T. Farry, Wagner Electric Corp.
- 61-27 Suggestions for Improving the Accuracy of Transformer Noise Tests in the Field. AIEE W.G. on Technical Investigations of Subcommittee on Audible Sound of Transformers Committee, M. W. Schulz, Jr., Chairman.

2:00 p.m.—Rectifiers In Electro-chemical Processes

Governor Clinton Governor Room

Chairman: F. M. BAXENDALL, Dow Chemical Co.
CHEMICAL INDUSTRY AND INDUSTRIAL
POWER RECTIFIERS COMMITTEE

- 61-20 An Investigation of the Transient Behavior of an Aluminum Pot-Line Installation. A. Greenwood, W. C. Kotheimer, General Electric Co.; C. A. Langlois, Reynolds Metals Co.
- CP.* Committee Report on Electrical Characteristics of Electro-chemical Cell Lines. C. S. Hague, Westinghouse Electric Corp.; A. E. Marshall, Monsanto Chemical Co.; R. P. Stratford, General Electric Co.
- 61-67 Grounding of D-C Structures and Enclosures. D. C. Hoffmann, General Electric Co.
- CP.* Preliminary Report on Survey of Safety Procedures on the Application and Maintenance of Industrial Power Rectifiers. P. Gomulkiewicz, Aluminum Co. of America.

TUESDAY (continued)

2:00 p.m.—Liquid Insulations

Governor Clinton, Florentine Room

Chairman: T. W. DAKIN, Westinghouse Research Labs.
ELECTRICAL INSULATION COMMITTEE

- 61-245. Electric Breakdown of a Parallel Solid and Dielectric System. III K. Wechsler, M. Ricitello, Westinghouse Electric Corp.
- 61-246. Phenomena Accompanying Transient Low-Voltage Discharges in Liquid Dielectrics—III: Anomalous Cathode Erosion for Arcs of Millisecond Duration. J. M. Feldman, E. M. Williams; Carnegie Inst. of Technology.
- CP.* A New, More Sensitive ASTM Dielectric Strength Test for Insulating Oils. P. F. Ast, General Electric Co.
- 61-249. The Study of Discharges in Dielectric Voids By Photomultiplier Methods. N. M. Bashara, University of Nebraska (Re-presented for Discussion only).

2:00 p.m.—Industry & Safety

Statler-Hilton Skytop

Chairmen: W. T. ROGERS, Ebasco Services, Inc. and
R. T. WOODRUFF, Aluminum Co. of America
SAFETY COMMITTEE AND INDUSTRY DIVISION

- CP.* Safety Considerations in Designing Data Processing Equipment. B. L. Stone, IBM Corp.
- CP61-108. Electrical Engineering Standards for Industrial & Commercial Power Systems. J. W. St. Andre, Kaiser Aluminum & Chemical Corp.
- CP61-123. Guide for the Installation in Buildings of Wiring and Equipment Over 600 Volts. An AIEE Preliminary Report Prepared by the Task Force on Medium Voltage Systems of the Industrial & Commercial Power Systems Committee, D. T. Michael, Chairman.
- CP.* Electrical Safety at Gary Steel Works. J. T. Seaman, U. S. Steel Corp.

2:00 p.m.—Electrostatic Processes II

Governor Clinton Chelsea Room

Chairman: S. R. OREM, Aerotec Industries, Inc.
ELECTRONICS COMMITTEE

- 61-92 The Determination and Simulation of the Equivalent Circuits of Electrostatic Precipitators. J. B. Thomas, Princeton University; J. W. Drenning, H. T. Williams, Koppers Co.
- CP.* Prediction of Fly Ash Precipitator Efficiency. R. Ramsdell, Consolidated Edison Co. of New York, Inc.
- CP61-184. Contact Potentials and the Adhesion of Dust. G. W. Penney, E. H. Klingler; Carnegie Inst. of Technology.
- 61-93 The Charging of Non-Spherical Particles in a Corona Discharge. P. L. Smith, G. W. Penney; Carnegie Inst. of Technology. (Re-presented for Discussion only)

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

Engineering Societies Auditorium

Chairman: H. HELLERMAN, University of Delaware
ELECTRONICS COMMITTEE

- CP.* Threshold Logic and Tunnel Diode Applications. T. L. Francis, L. D. Wald; Texas Instruments.
- CP.* A Logic Device Utilizing Thin Ferromagnetic Films. R. E. Morley, Lab. for Electronics, Inc.

TUESDAY (continued)

- CP.* Thin Film-Tunnel Diode Logical Devices. T. A. Smay, A. V. Pohm; Iowa State University of Science and Technology.
- CP.* Application of Transformer Logic Circuitry. D. J. Hinkein, IBM Corp.
- 61-1 I A Low Level Linear Rundown Circuit for Pulse Height to Pulse Width Conversion. D. L. Endsley, W. W. Grannemann, T. Summers; University of New Mexico.

2:00 p.m.—Data Communications Theory

Governor Clinton Greeley Room

Chairman: G. R. COOPER, Purdue University

DATA COMMUNICATION COMMITTEE

- 61-101 I The Design of an "Error-Free" Data Transmission System for Telephone Circuits. B. Reiffen. W. G. Schmidt, H. L. Yudkin; Massachusetts Inst. of Technology.
- CP.* An Appraisal of "Error Free" Communication Methods. K. Morgan, J. Metzner, New York University.
- CP61-102. Minimization of Error in Systems with Random Connections. J. B. Thomas, Princeton University; E. Wong, IBM Corp.
- CP.* Computer Simulation of the Use of Group Codes with Retransmission on a Gilbert Burst Channel. W. R. Cowell, H. O. Burton; Bell Telephone Labs.

2:00 p.m.—Insulated Conductors

General Electric Auditorium

570 Lexington Ave.

Chairman: F. M. HULL, Detroit Edison Co.

INSULATED CONDUCTORS COMMITTEE

- 61-240. Cable Jackets and Water Permeability. G. F. Todd, Collyer III Insulated Wire Co., Inc.
- 61-241. Parameters for Predicting Gassing of Oils Under Electric Stress. R. B. Blodgett, The Okonite Co., S. C. Bartlett, Jr., Sun Oil Co.
- CP61-242. Nondestructive Inspection of Cable Terminations and Splices by X-Ray Analysis. T. L. Bourbonnais, II, E. I. du Pont de Nemours & Co., Inc.

Wednesday, February 1

9:00 a.m.—Industrial Control

Engineering Societies Room 502

Chairman: H. G. FROSTICK, U. S. Steel

INDUSTRIAL CONTROL COMMITTEE

- 60-649 II A. C. Contactors Supplied by Long Control Lines. R. P. Alley, General Electric Co. (Re-presented for Discussion only).
- 61-37. II Variable Three-Phase Reversible Voltage Sources Using Saturable Reactors. M. H. Bolt, A. Simeon, W. Shepherd; University of Manitoba.
- CP61-40. Fast Response Static A-C Hoist Control. C. B. Sanborn, Square D Co.
- CP61-220. The Design of a Transistorized Regulator Amplifier. R. G. Schieman, K. A. Benjamin, Reliance Electric and Engineering Co.

WEDNESDAY (continued)

9:00 a.m.—Land Transportation

Statler-Hilton East Room

Chairman: A. G. OEHLER, Weehawken, N. J.

LAND TRANSPORTATION COMMITTEE

- CP.* A Fresh Approach to Diesel Electric Locomotive Design. J. C. Aydelott, General Electric Co.
- CP.* Unique Features of 2500-hp Diesel-Electric Locomotive. J. C. Aydelott, General Electric Co.
- CP.* Senate Subway System. W. L. Rubel, Architect of the Capitol; W. H. Watson, R. E. Stillwagon, Westinghouse Electric Corp.

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

Statler-Hilton Grand Ballroom

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

INDUSTRIAL AND COMMERCIAL POWER SYSTEMS COMMITTEE

- CP61-41. Safety Aspects of Emergency Power Systems. C. F. Willett, E. J. Dubois; Automatic Switch Co.
- CP61-156. Recent Progress in Safety and Service Continuity in Molded Case Circuit Breakers and Enclosed Switches. J. E. Bayles, R. R. McGee; General Electric Co.
- CP.* Designing Maximum Safety into Metal-Clad Switchgear. W. R. Axon, Federal Pacific Electric Co.
- CP61-42. A Case for Safety Grounding of a 4800 Volt System. R. W. Sittner, General Electric Co.; H. J. Donnelly, New York Telephone Co.

9:00 a.m.—Non-Linear Control Systems I

Statler-Hilton West Room

Chairman: L. F. KAZDA, University of Michigan

FEEDBACK CONTROL SYSTEMS

- 61-114 II Determining the Response of Non-Linear Systems to Arbitrary Inputs. R. McFee, Syracuse University.
- 61-79 II Optimum Nonlinear Bang-Bang Control Systems with Complete Roots Part II: Analytical Studies. P. Chandaket, Royal Thai Navy; E. C. Deland, The Rand Corp.; C. T. Leondes, University of California.
- CP61-80. Analysis of a Certain Class of Higher-Order Non-Linear Control Systems. Mrs. C. Lakshmi-Bai, Indian Inst. of Science.
- 60-1020 II Problems of Asymptotic Behavior and Stability. L. Cesari, University of Michigan. (Re-presented for Discussion only)
- CP.* Critique of Papers. K. Chen, Westinghouse Electric Corp.; R. E. Kuba, Power Equipment Co.

9:00 a.m.—Chemical Processes and Refining

Governor Clinton Florentine Room

Chairman: R. F. SHUMAR, Dow Chemical Co.

CHEMICAL INDUSTRY AND PETROLEUM INDUSTRY COMMITTEES

- CP.* Direct Burial Cables versus Conduit Systems in Chemical Plants. P. T. Carmack, Union Carbide International Co.
- CP61-169. An Interlocked Armor Cable Installation in a Class I, Group D Division II Area. W. E. Burpee, Badger Mfg. Co.; S. P. Axe, The Atlantic Refining Co.
- CP61-31. Aluminum Conduit Use in the Hydrocarbon & Chemical Process Industries. H. Esch, R. P. Brown; Kaiser Aluminum & Chemical Corp.
- CP.* Survey of Electrical Equipment Reliability. AIEE Petroleum Industry Report, W. H. Dickinson, Chairman.

WEDNESDAY (continued)

9:00 a.m.—Communication in Biological Systems

Statler-Hilton Penn Top North

Chairman, H. SHERMAN, Massachusetts Institute of Technology
COMMUNICATION THEORY COMMITTEE

- CP.* Echolocation by Bats. D. R. Griffin, Harvard University; J. J. G. McCue, Massachusetts Inst. of Technology.
- CP.* The Detection and Evasion of Bats by Moths. K. D. Roeder, Tufts University.
- CP.* Event Correlation Analysis — A Method for Improving the Significance of Noisy Multiple Channel Bioelectric Signals. B. Saltzberg, Bisset-Berman Corp.
- CP.* Adjustment of Living Systems to Information Input Overload. J. G. Miller, University of Michigan.
- 61-170 An Error Correction Code for Quaternary Data Transmission. I E. H. Scherer, Collins Radio Co. (Re-presented for Discussion only)

9:00 a.m.—Electrical Insulation

Statler-Hilton Penn Top South

Chairman: L. J. FRISCO, The Johns Hopkins University
ELECTRICAL INSULATION COMMITTEE

- 61-219. Severe Moisture Conditioning Uncovers Weaknesses in Conventional Motor Insulation Systems for Naval Shipboard Use. H. P. Walker, U. S. Navy Bureau of Ships; R. J. Flaherty, U. S. Naval Experiment Station.
- CP.* Thermal Stability of Commercial Class F. Insulating Varnishes. C. J. Straka, Westinghouse Electric Corp.
- CP.* Tensile, Impact and Dielectric Properties of Irradiated Polymers. H. E. Pendergast, A. S. Hoffman, William Brand-Rex Division of American Enka Corp.
- CP.* High Temperature Epoxide Resin Formulations. J. A. Warburton, R. S. Norman, General Electric Co.

9:00 a.m.—Telemetering

Governor Clinton Greeley Room

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

- CP.* The Language and Elements of Digital Telemetering. W. T. Wynne, Leeds & Northrup Co.
- CP61-16. Telemetering in the Crude Oil and Crude Oil Products Pipe Line Industry, Past, Present and Future. I. B. Cloessner, Humble Pipe Line Co.
- 61-17 Digital Telemetering Techniques. Miss A. Brothman, E. H. Brothman, R. D. Reiser; Industrial Process Engineers, Inc.
- CP.* Application of Digital Techniques in the Remote Control Monitoring of Petroleum Production. D. K. Butemeyer, Texas Instruments, Inc.

9:00 a.m.—Computer Application to Power System Engineering

Statler-Hilton Skytop

Chairman: V. CONVERTI, Arizona Public Service Co.
SYSTEM ENGINEERING COMMITTEE

This Special Publication in \$2.50 per copy

- S109A Third Report on Survey of Electric Utility Applications of Digital Computers. AIEE Computer Application Sub. of the AIEE System Engineering Com., J. E. VanNess, Chairman,

WEDNESDAY (continued)

and AIEE Computer Systems Sub. of the AIEE Computing Devices Com., S. Levine, Chairman.

- 61-52 A Digital Approach to Power System Engineering — III (Digital Computer Program). M. B. Reed, G. B. Reed, Michigan State University; J. L. McKinley, H. K. Polk, R. V. Hugo, W. J. Martin, Public Service Co. of Colorado.
- 61-53 A Digital Approach to Power System Engineering — IV. The Node Transformation and N-Graph. M. B. Reed, G. B. Reed, Michigan State University; J. L. McKinley, H. K. Polk, R. V. Hugo, W. J. Martin, Public Service Co. of Colorado.
- 61-54 A Logic for Identifying the Trees of a Graph. H. W. Hale, Iowa State University.

9:00 a.m.—Transformers

General Electric Auditorium
570 Lexington Ave.

Chairman: C. W. MILLER, Westinghouse Electric Corp.
TRANSFORMERS COMMITTEE

- 61-59 Detection of Incipient Faults in Transformers by Gas Analysis. P. S. Pugh, American Electric Power Service Corp.; H. H. Wagner, Pennsylvania Transformer Division — McGraw Edison Co.
- CP61-36. C₃F₈ As a Coolant and Dielectric in High Temperature Sealed Dry Type Transformers. B. F. Allen, G. F. Simmons; General Electric Co.
- CP61-39. Controlled Temperature and Insulation Protection in the Operation of Power Transformers. F. B. Grace, Westinghouse Electric Corp.
- CP.* Transformer Loadability and the Loading Guides. C. W. Hiers, J. H. Carpenter; General Electric Co.
- CP.* Utilization Transformers with 7620 volt Secondaries and Services for Underground Residential Distribution. H. G. Hally, Iowa Power & Light Co.

9:00 a.m.—Switchgear

Statler-Hilton Georgian Room

Chairman: J. R. GUY, Cleveland Electric Illuminating Co.
SWITCHGEAR COMMITTEE

- 61-132 Mechanical Effects Produced in Oil Circuit Breakers By High Power Fault Interruption. M. G. Mathers, P. Wildi; Federal Pacific Electric Co.
- CP61-133. The Trend to Single-Tank Oil Breakers for Subtransmission Voltages. E. B. Rietz, I-T-E Circuit Breaker Co.
- CP.* Lightning Surge Voltages in Substations Caused by Line Flashovers. C. F. Wagner, A. R. Hileman; Westinghouse Electric Corp.
- CP.* Electronics — A New Concept for Recloser Control. R. E. Riebs, N. J. Reis; Line Material Industries.

9:00 a.m.—Shaft Position Encoder Methods

Governor Clinton Governor Room

Chairman: M. E. FRANK, Thompson-Ramo-Wooldridge Products Co.
COMPUTING DEVICES COMMITTEE

- CP61-198. A Direct-Reading Printed-Circuit Commutator for Analog-To-A-Digital Data Conversion. C. A. Walton, IBM Corp.
- CP.* Logical Detenting in Relation to Unit Distance Coding in Pattern-Reading Digitizers. B. Lippel, Army R and D Labs.

WEDNESDAY (continued)

- CP61-199. A High Accuracy Electrostatic Angle Measuring System. J. Machlis, Telecomputing Corp.
- CP.* Application of Microgon to Precision Angle Encoding. R. C. Webb, S. Peterson; Colorado Research Corp.
- 61-15. Tentative Recommendation for the Definition and Testing of the Dynamic Performance of Analog-To-Digital Converters. I W. M. Gaines, General Electric Co., P. P. Fischer, Westinghouse Electric Corp.
- 60-1005. Rotating Raster Character Recognition Systems. R. W. I Weeks, IBM Products Development Lab. (Re-presented for Discussion only).

9:00 a.m.—Symposium on Experience with Semiconductor Rectifiers in Electrolytic Operation
Governor Clinton Chelsea Room
Chairman: W. PORTER, Aluminum Co. of America
CHEMICAL INDUSTRY COMMITTEE

- CP.* R. A. Congelosi, Stauffer Chemical Co.
- CP.* C. K. Harshbarger, Hercules Powder Co.
- CP.* E. Hill, Kennecott Refining Co.
- CP.* J. L. Michaelis, Columbia Southern Chemical Corp.
- CP.* G. B. Scheer, Kaiser Engineers
- CP.* R. N. Wagner, Aluminum Co. of America
- CP.* R. E. Wood, Dow Chemical Co.
- CP.* W. S. Miller, Diamond Alkali Co.

9:00 a.m.—Magnetic Amplifiers
Engineering Societies Auditorium
Chairman: P. L. SCHMIDT, Bell Telephone Labs., Inc.
MAGNETIC AMPLIFIERS COMMITTEE

- 61-128 On the Process of Flux Reversal in Multiaperture Ferrite I Cores. I. H. Rowe, DeHavilland Aircraft of Canada; G. R. Slemmon, University of Toronto.
- 61-129 Detailed Measurements of Slow Magnetization Processes in I Tape Wound Cores. R. M. Brownell, R. C. Barker; Yale University.
- 60-874 Initiation of Flux Reversal in Magnetic Amplifier Cores. I F. J. Friedlander, Purdue University; I. P. Leliakov, General Electric Co. (Re-presented for Discussion only)
- 61-153 Crossed-Field Magnetic Modulators. A. J. DeMaria, United I Aircraft Corp.

9:00 a.m.—New Goals in Plasma Energy and in High Voltage Insulation
Statler-Hilton Gold Ballroom
Chairman: K. S. WYATT, Phelps-Dodge Copper Products Corp.
RESEARCH COMMITTEE

- CP.* Research Problems for Fusion Power. R. Mills, Princeton University.
- CP.* Dense Plasmas for Power and Processing. L. Linde, Allis-Chalmers Mfg. Co.
- CP.* Designing Polymers for Electrical Applications. F. R. Eirich, H. F. Mark; Polytechnic Inst. of Bklyn.
- CP.* Objectives for Overcoming Temperature and Electrical Stress Barriers of EHV Cable Insulation Through Molecular and Physical Design. J. J. Grebe, R. C. Mildner; (formerly with Telegraph Construction and Maintenance Co. Ltd.) The Dow Chemical Co.

WEDNESDAY (continued)

2:00 p.m.—Industrial Control
Engineering Societies Room 502
Chairman: D. L. PIERCE, Westinghouse Electric Corp.
INDUSTRIAL CONTROL COMMITTEE

- 60-645. Wide Range D. C. Center Wind Drive. B. Jones, T. Pare, II The Louis Allis Co.
- 60-642. Automatic Speed Regulation of DC Motors Using Combined II Armature Voltage and Motor Field Control. A. Hansen, A. W. Wilkerson; The Louis Allis Co. (Re-presented for Discussion only).
- 61-38. Analogue and Digital Computers Aid in the Design of a Numerically Controlled Positioning Servomechanism. J. Callan; Allen-Bradley Co.
- CP61-218. A Proximity Digital Code Reader for Conveyor Traffic Control. R. C. Montross, Square D Co.
- CP61-223. High Accuracy Digital-Analog Solid-State Speed Controller. F. T. Thompson, Westinghouse Electric Corp.

2:00 p.m.—Land Transportation
Statler-Hilton East Room
Chairman: L. W. BARDSLEY, Toronto Transit Commission
LAND TRANSPORTATION COMMITTEE

- CP.* Electrical and Diesel Power on Russian Railroads. J. W. Horine, Pennsylvania Railroad Co.
- CP.* Symposium on British Electrification Conference. Panel consists of: S. V. Smith, Pennsylvania Railroad; H. H. Duehne, New York Central Railroad; K. A. Browne, Chesapeake & Ohio Railroad; J. Stair, Rosemont, Pa.

2:00 p.m.—Industrial & Commercial Power Systems
Statler-Hilton Grand Ballroom
Chairman: H. J. DONNELLY, New York Telephone Co.
INDUSTRIAL AND COMMERCIAL POWER SYSTEMS

- CP61-209. Computers in Industrial Power System — Performance Analysis. R. S. Forbes, Jr., E. I. DuPont de Nemours & Co., Inc.
- CP.* Basic Considerations in the Proper Application of Low-Voltage Current-Limiting Fuses. P. J. Reifschneider, General Electric Co.
- CP.* Safety in the Application and Testing of Industrial Distribution Protective Devices. W. A. Weddendorf, Mutual Boiler & Machinery Insurance Co.

2:00 p.m.—Non-Linear Control Systems II
Statler-Hilton West Room
Chairman: E. C. JOHNSON, Bendix Aviation Corp.
FEEDBACK CONTROL SYSTEMS COMMITTEE

- CP61-81. Rate Diagram Method of Analysis of an On-Off Control System. H. Patapoff, Space Technology Labs., Inc.
- CP61-82. Mathematical Models for Time-Domain Design of Electro-Hydraulic Servomechanisms. P. K. C. Wang, IBM Corp.
- CP61-175. The Design of Time-Optimal Electro-hydraulic Servomechanisms. P. K. C. Wang, IBM Corp.
- 61-83 A Linear Switching Condition for Third Order Positive-II Negative Feedback Control Systems. S. J. Garrett, Westinghouse Electric Corp. (Re-presented for Discussion only)
- CP.* Critique of Papers. K. Chen, Westinghouse Electric Corp.; R. E. Kuba, Power Equipment Co.

WEDNESDAY (continued)

2:00 p.m.—Data Communication Theory

Engineering Societies Auditorium

Chairman: R. M. KALB, Sperry Rand Corp.

DATA COMMUNICATION SYSTEMS COMMITTEE

- CP.* Information Rate Analysis and Performance Predication for an Operative Digital Data Link. R. D. Brandsberg, Remington Rand Univac.
- CP.* Reliable Data Transmission Through Noisy Media. C. M. Melas, IBM Corp.
- CP.* Technique for Comparing Modulation Method for Data Transmission Over Telephone Channels. W. R. Bennett and F. E. Frohlich, Bell Telephone Labs., Inc.
- CP.* Data Transmission Capacity and Reliability of Future Data Transmission Systems. R. Filipowsky, Collins Radio Co.

2:00 p.m.—Batteries

Statler-Hilton Penn Top North

Chairman: H. E. JENSEN, Electric Autolite Co.

CHEMICAL INDUSTRY COMMITTEE

- CP.* The Silver Oxide-Cadmium Secondary Battery. P. L. Howard, Yardney Electric Corp.
- CP.* Sealed Silver-Zinc Cells. A. M. Chritzberg, The Electric Storage Battery Co.
- CP.* Sealed Nickel Cadmium Batteries. R. C. Shair, Gulton Industries, Inc.
- CP.* Maintenance of Storage Batteries and Chargers. P. B. Wickersham, Philadelphia Electric Co.
- CP.* Fuel Cells, Pounds, Cubic Feet and Dollars. E. Willihnganz, The Electric Autolite Co.

2:00 p.m.—Aircraft, Missile, Ordnance Telemetry

Governor Clinton Greeley Room

Chairman: W. J. MAYO-WELLS, Engleman & Co., Inc.

TELEMETERING COMMITTEE

- CP.* A New Signal Conditioning System for Space Telemetry. D. B. Schneider, Neff Instruments Inc.
- CP.* A NEW Electronic-Mechanical Multiplexer. F. H. Gerring, Instrument Development Labs., Inc.
- CP.* The Design & Evaluation of a Magazine-Loaded Transistorized Instrumentation Magnetic Tape Recorder. K. W. Schoebel, R. L. Peshel; Precision Instrument Co.
- CP.* The EPSCO Data Processing System for Air Traffic Control. L. A. F. Rivas, EPSCO Inc.
- CP.* Revision of AIEE Telemetry Bibliography. C. A. Mabey, Bristol Co.

2:00 p.m.—System Planning and Economics

Statler-Hilton Skytop

Chairman: R. H. TRAVERS, Ohio Edison Co.

SYSTEM ENGINEERING COMMITTEE

- 61-51 III Elimination Methods for Load-Flow Studies. J. E. Van Ness, Northwestern University; J. H. Griffin, General Motors Corp.
- 61-57 III The Cost-of-Capital in Economic Studies—Parts I and II. F. M. Heck, Jr., Potomac Edison Co.
- CP61-165 A Test of Direct Economic Dispatch of Real and Reactive Power In Network Analyzer Studies. F. W. Smith, Portland General Electric Co.

WEDNESDAY (continued)

- 60-844 III Incremental Cost of Water Power. S. Stage, Y. Larsson; South Sweden Power Co. (Re-presented for Discussion only)

- 60-1400 III Operation of a Hydro-Thermal Electric System — A Multi-Stage Decision Process. J. Lindqvist, Swedish State Power Board. (Re-presented for Discussion only).

2:00 p.m.—Switchgear

Statler-Hilton Georgian Room

Chairman: J. B. Owens, I-T-E Circuit Breaker Co.

SWITCHGEAR COMMITTEE

- 61-3 III The Effect of Contact Synchronization on A-C Interruption. A. M. Howatson, The University of Sheffield.
- 61-134 III 20,000 Ampere Mechanical Switch. P. M. Newgard, Stanford Research Institute.
- CP61-135. Vacuum Power Switches: Five Years of Field Application and Testing. H. C. Ross, Jennings Radio Mfg. Corp.
- 61-136 III An Investigation of the Breakdown Strength of Nitrogen at High Temperatures Using a Shock Tube. A. H. Sharbaugh, P. K. Watson, D. R. White, T. H. Lee, A. Greenwood; General Electric Co.

2:00 p.m.—Substations

Governor Clinton Florentine Room

Chairman: E. ZAVITZ, The Detroit Edison Co.

SUBSTATIONS COMMITTEE

- CP61-22. Dorchester 240,000 KVA Underground Substation in Downtown Montreal. P. L. Ward, Canadian General Electric Co., Ltd.; L. D'Auteuil, J. Pauze, A. Gaudette; Quebec Hydro-Electric Commission.
- 61-155 III 650-KV Substations for Project EHV. P. A. Abetti, A. H. Powell, General Electric Co.; R. E. Larson, Aluminum Co. of America; M. D. Robinson, Stone & Webster Engineering Corp.
- CP61-19. Factors to Consider in the Selection of Substation Sites. W. A. Conklin, Consumers Power Co.

2:00 p.m.—Tutorial Session on Computer Applications to Design Evaluation & Simulation

Governor Clinton Governor Room

Chairman: J. H. McLEOD, Convair Astronautics

COMPUTING DEVICES COMMITTEE

- CP.* Introduction to Computers for Design. R. B. Wise and B. Mittman; Illinois Inst. of Technology.
- CP.* Digital Techniques in Feedback Systems Analysis. J. W. Ryan, General Electric Co.
- CP.* Simulation for System Evaluation. J. H. McLeod, Convair Astronautics.
- CP.* Analog Simulation of Electric Power System Problems. C. Concordia, General Electric Co.
- CP.* Analog Simulation of Power Systems with Mathematical Models in Monte Carlo. C. J. Baldwin, Westinghouse Electric Corp.
- CP.* Simulation of Learning Processes. G. S. Glinski, University of Ottawa.

WEDNESDAY (continued)

2:00 p.m.—Tube Techniques and New Tube Developments

Statler-Hilton Penn Top South

Chairman: H. N. PRICE, General Electric Co.

ELECTRONICS COMMITTEE

- CP.* Operation and Applications of Getter-Ion Pumps. C. V. Larson. Varian Associates.
- CP.* Operating Characteristics of the Triode Ion Pump. W. M. Brubaker, Bell and Howell Research Center; A. R. Hamilton, Consolidated Vacuum Corp.
- CP.* Ni-Ti Technique of Sealing Ceramic Electron Tubes. G. R. Wisser, M. W. Hagadorn; Sylvania Electronic Tubes.
- CP.* Heater Cathode Leakage in Electron Tubes. R. J. Jaccodine, E. R. King; Bell Telephone Labs.
- CP.* The Influence of the Collector Mesh on the Basic Characteristics of Direct-View Storage Tubes. V. Le Gendre, Allen B. DuMont Labs.
- CP.* Self-Testing Thyratrons. W. A. Maijala, A. J. Humphrey; Reliance Electric and Engineering Co.
- CP.* A New Ruggedized "Instant-Heat" 175-MC Power Amplifier Tube for Mobile Applications. A. Dzik, RCA.

2:00 p.m.—Effects of Radiation on Equipment

Statler-Hilton Gold Ballroom

Chairman: J. C. FRASER, General Electric Co.

NUCLEONICS COMMITTEE

- CP.* Nuclear Radiation Hardening of Electronic Circuits. J. C. Mitchell, Chance Vought Aircraft Inc.
- CP.* The Effect of Nuclear Radiation on the Performance of Image Orthicon Television Camera Tubes. D. L. Schaefer, General Electric Co.
- CP.* Irradiation of Bare Silicon Solar Cells. T. H. Clark, General Electric Co.; D. H. Thomas, University of Pennsylvania.
- CP.* The Radiation Effects Handbook, W. R. Langdon, General Electric Co.
- CP.* Transient and Dose Effects of Reactor Radiation on the Dielectric Strength of Several Insulating Materials. A. B. Spears, Convair.
- 60-1015. Neutron and Gamma Irradiation of Some Square Loop and Microwave Ferrites. R. W. Moss, Boeing Airplane Co.; C. F. Kooi, M. E. Baldwin, Lockheed Aircraft Corp. (Re-presented for Discussion only).
- CP.* Nuclear Radiation Effects Instrumentation Techniques. R. G. Saelens, L. L. Kaplan; U. S. Army Signal Research & Development Lab.

2:00 p.m.—Energy Converting Devices

Governor Clinton Chelsea Room

Chairman: P. H. KLEIN, General Electric Co.

SOLID STATE DEVICES COMMITTEE

- 61-188. Electric Analog of the Transport Phenomena in a Thermoelectric Generator. M. E. Talaat, The Martin Co.
- 61-247. Gamma Radiation Effects in Silicon Solar Cells. G. Enslow, I. F. Junga, W. W. Happ; Lockheed Aircraft Corp.

WEDNESDAY (continued)

CP61-224. Evaluation of Thermoelectric Energy Conversion. B. Evans, The Martin Co.; E. T. B. Gross, Illinois Inst. of Technology.

61-225. The Initial Transient Behavior of a Thermoelectric Generator. F. G. Stremmer, University of Michigan; P. E. Gray, Massachusetts Inst. of Technology.

7:30 p.m.—Forum of Technical Committee Chairmen

Statler-Hilton Georgian Room

7:30 p.m.—Space Communications

Statler-Hilton Gold Ballroom

Chairman: J. L. GLASER,

SPACE COMMUNICATIONS COMMITTEE

CP61-110. Satellites Go Commercial — For Communications. H. E. Wepler, American Tel. & Tel. Co.

CP.* Synchronous Versus Low Level Multiple Active Satellite Communications Systems. H. R. Mathwich, RCA.

CP.* Active Satellite Equipment for Communication Relays. L. Pollack, D. R. Campbell, ITT Labs.

CP.* Communications With Lunar Spacecraft. R. D. Gloor, Space Technology Labs.

Thursday, February 2

9:00 a.m.—Graduate Education In Electrical Engineering

Statler-Hilton Gold Ballroom

Chairman: K. B. McEACHRON, JR., Case Institute of Technology

EDUCATION COMMITTEE

Sponsored by ASEE Electrical Engineering Division, IRE Professional Group on Education, and AIEE Education Committee.

Session I — Planned discussion of the objectives and characteristics of graduate education including appropriate criteria with respect to

- Faculty
- Admissions
- Programs of Study
- Residence Requirements
- Theses

9:00 a.m.—Land Transportation

Statler-Hilton East Room

Chairman: C. M. HINES, Westinghouse Airbrake Co.

LAND TRANSPORTATION COMMITTEE

CP.* Epoxy Resins for Electrical Apparatus. I. H. Elbling, Westinghouse Research Labs.

CP61-43. Analog Simulation of Train Operation. R. C. Buck, General Railway Signal Co.

CP.* Maintenance and Rehabilitation of Traction Electrical Equipment. D. E. Stafford, National Electric Coil Co.

9:00 a.m.—Domestic Appliances

Statler-Hilton West Room

Chairman: W. F. KINDT, General Electric Co.

DOMESTIC AND COMMERCIAL APPLICATIONS COMMITTEE

CP.* Matching Bimetal Elements to Snap-Action Switches. C. C. Perry, W. M. Chace Co. & Wayne State University.

THURSDAY (continued)

- CP.* A New Electric Range Thermostat. S. C. Jordan, General Electric Co.
- CP.* Advanced Appliance Control Techniques. J. D. Harnden, Jr., General Electric Co.
- CP.* AIEE and Appliance Engineering — For What and For Whom. M. A. Fuller, Whirlpool Corp.

9:00 a.m.—Computers and Logic Devices

Statler-Hilton Skytop

Chairman: T. M. STOUT, Thompson-Ramo-Wooldridge Products Co.
FEEDBACK CONTROL SYSTEMS COMMITTEE

- CP61-213. A Study of a Generalized Model for Digital Computer Control of Blending Processes. G. E. Adams, General Electric Co.
- CP61-186. Accuracy In Process Computer Instrumentation Systems. W. M. Gaines, W. N. Patterson; General Electric Co.
- 61-73 II Plant Identification in the Presence of Disturbances and Application to Digital Adaptive Systems. P. Joseph, J. Lewis, J. Tou; Purdue University.

9:00 a.m.—Data Communication

Statler-Hilton Grand Ballroom

Chairman: V. N. VAUGHN, American Telephone and Telegraph Co.
DATA COMMUNICATION COMMITTEE

- CP61-103. The Design of Data Transmission Systems. R. G. Enticknap, R. M. Lerner; Massachusetts Inst. of Technology.
- CP.* A Buffer Store for Data Transmission. W. E. Baker, F. E. Froehlich, Bell Telephone Labs.
- CP.* Punched Card Transmission on Telegraph Switching Systems. R. Steeneck, Western Union Telegraph Co.
- CP.* The Increasing Need for High Speed and Reliable Digital Communications. C. A. Strom, Jr., USAF.

9:00 a.m.—Wire Communications I

Governor Clinton Florentine Room

Chairman: G. F. ORELLI, General Telephone Service Corp.
WIRE COMMUNICATIONS SYSTEMS COMMITTEE

- 61-111 A Completely Transistorized 600-Channel Multiplex System. D. W. Sparks, General Electric Co.
- 61-112 I Type T-12S-Tr Transistorized Short-Haul Carrier System. O. Ishihara, S. Fujita, Nippon Telegraph & Telephone Public Corp.; Y. Yamamoto, R. Murakami, Nippon Electric Co. Ltd.
- CP61-113. Pole-Zero Techniques Applied to Voice Frequency Telephone Lines. P. Fleming, Jr., Automatic Electric Labs., Inc.
- 60-1250 I A Speakerphone System for Large Conference Rooms. L. R. Huggler, The Bell Telephone Co. of Penna. (Re-presented for Discussion only)
- 61-164 I The Subscriber Loop Bridge Lifting Problem and Some Methods of Solution. L. Hochgraf, Bell Telephone Labs. (Re-presented for Discussion only)

THURSDAY (continued)

9:00 a.m.—Special Instrumentation

Engineering Societies Room 502

Chairman: B. E. LENEHAN, Westinghouse Electric Corp.

SPECIAL INSTRUMENTS AND AUXILIARY APPARATUS COMMITTEE

- CP.* High Resolution Differential Tachometer with Suppressed Lower Resolutions. V. B. Kwast, Daystrom Inc.
- CP61-106. Reliability of Industrial Pilot Lights as Indicating Devices. D. L. Pettit, Square D Co.
- 61-107 I A Pulse Position Modulator Type Magnetometer. S. Stricker, Israel Inst. of Technology; A. A. Wulkan.
- CP61-174. A Solid State Electronic Control System for Industrial Processes. H. H. Koppel, Bailey Meter Co.

9:00 a.m.—Lightning & Insulators

Engineering Societies Auditorium

Chairman: J. M. CLAYTON, JR., Westinghouse Electric Corp.
TRANSMISSION & DISTRIBUTION COMMITTEE

- 61-88. Monte Carlo Computer Calculation of Transmission Line Lightning Performance. J. G. Anderson, General Electric Co.
- 61-171. Effect of Bundle Conductor Field Influence on EHV Transmission Line Design. R. W. Harmon, The Ohio Brass Co.
- 61-226. III The Flashover Strength of Extra-High Voltage Line and Station Insulation. A. F. Rohlf, H. E. Fiegel, J. G. Anderson; General Electric Co.
- 61-6. III The Salt Contamination of the External Insulations of High Voltage Electric Apparatus and its Counter-Measures. M. Yamamoto, K. Ohashi; Tokyo Shibaura Electric Co. Ltd.

9:00 a.m.—Rotating Machinery

Statler-Hilton Georgian Room

Chairman: J. L. KUEHLTHAU, Allis-Chalmers Mfg. Co.
ROTATING MACHINERY COMMITTEE

- 61-138 III Very Low Frequency High Potential Testing. B. V. Bhimani, General Electric Co.
- 61-139 III Resistance and Capacitance Measurement on High Voltage Insulation at Very Low Frequencies. B. V. Bhimani, General Electric Co.
- 61-140 III Evaluation of Generator Windings Based on In-Stator Single-Coil Power Factor Measurements. R. G. A. Brearley, D. A. Findlay, C. C. Louttit, Aluminum Company of Canada, Ltd.
- 61-141 III Investigation of Maintenance Tests for Generator-Insulation. C. A. Duke, L. E. Smith, C. A. Roberts; Tennessee Valley Authority; A. W. W. Cameron, The Hydro-Electric Power Commission of Ontario.
- CP61-163. A Simulated Service Test for Evaluation of High Voltage Turbine-Generator Insulation Systems. E. A. Boulter, H. N. Galpern, W. D. Bartlett; General Electric Co.

9:00 a.m.—Symposium — EHV Substations

Panel Discussion on EHV Substations

Governor Clinton Governor Room

Chairman: C. R. JACOBSEN, Commonwealth Associates, Inc.
SUBSTATIONS COMMITTEE

THURSDAY (continued)

9:00 a.m.—Super Power Tubes — I

Statler-Hilton Penn Top South

Chairman: J. E. ROWE, University of Michigan
ELECTRONICS COMMITTEE

- CP.* A Comparison of Approaches to the Generation of Very High Power at Microwave Frequencies. W. C. Brown, Raytheon Co.
- CP.* The TPOM As A Very High Power Broad Band Amplifier. P. Guenard, O. Doehler, Compagnie Générale de Télégraphie Sans Fil.
- CP.* On the Heating of Output Windows of High Power Microwave Tubes by Electron Bombardment. D. Preist, R. Talcott; Eitel-McCullough, Inc.
- CP.* Generation, Application, and Transmission of 20 KW C-W Power at X-Band. L. T. Zitelli, I. Maltzer; Varian Associates.
- CP.* Super-Power Ultra-High-Frequency Amplifier Tube Developments. A. C. Tunis, R. E. Reed; RCA.

9:00 a.m.—Radiation Effects Symposium: Application of Isotopes

Governor Clinton Chelsea Room

Chairman: W. A. GREENHOW, Vought Aeronautics
NUCLEONICS COMMITTEE

- CP.* Economic Considerations Associated with the Use of Radioisotopes as Energy Sources. G. R. Armstrong, M. A. Welt, Chance Vought Aircraft Inc.
- CP.* A. E. C. Isotope Technology Development, J. W. Hitch, Office of Isotopes Development.
- CP.* Application of Radioisotopes within the Naval Establishment. R. J. Bartell, Bureau of Yards and Docks.

9:00 a.m.—Magnetic Amplifiers

Statler-Hilton Penn Top North

Chairman: R. E. MORGAN, General Electric Co.
MAGNETIC AMPLIFIERS COMMITTEE

- 61-149 Tunnel Diode D-C Power Converter. H. F. Storm, D. P. I Shattuck; General Electric Co.
- CP61-150. A Magnetically Regulated D-C to D-C Converter Power Supply. G. Sager, Stromberg-Carlson Co.
- CP61-151. Achieving Maximum Power Utilization in Variable Output Transistor Oscillators. S. P. Jackson, Power Equipment Co.
- CP61-152. The Effect of the Series Connected Saturable Reactor with Finite Control Impedance on the Ripple Factor of a Single Phase Full Wave Bridge Rectifier. S. P. Jackson, Power Equipment Co.; H. R. Weed, Ohio State University.

9:00 a.m.—Solid State Devices

Governor Clinton Greeley Room

Chairman: G. K. GHANDHI, Philco Corp.
SOLID STATE DEVICES COMMITTEE

- CP.* The Epitaxial Transistor — How It Is Made and What It Will Do. P. D. Lynch, M. J. Bentivegna, L. L. Lehner; Motorola Inc.
- CP.* Transistor Design Considerations for Nuclear Radiation Environments. J. Sluss, T. Miles, P. Bonk; Philco Corp.

THURSDAY (continued)

- CP.* Advances in Silicon Power Transistors. T. New, Westinghouse Electric Corp.

- CP.* The Cadmium Sulphide Analog Transistor and Its Applications. R. W. Smith, RCA Labs.

- CP.* The Binistor — Its Characteristics and Its Applications. L. Kauffield, E. Jackson, Transitron Corp.

2:00 p.m.—Super Power Tubes — II

Statler-Hilton Penn Top South

Chairman: E. D. McARTHUR, General Electric Co.
ELECTRONICS COMMITTEE

- CP.* Super Power Beam Tetrodes. W. P. Bennett, S. G. McNees, L. G. Sutton; RCA.
- CP.* High-Power Modulator Tubes and Circuits. W. E. Harbaugh, T. E. Yingst; RCA.
- CP61-172. Cooling of Anodes Subjected to Long Impulses of High Peak Power. P. W. Crapuchettes, Litton Industries.
- CP.* High-Power Triodes for Communications and Industry. C. V. Weden, Machlett Labs.
- CP.* A New 250-Kilowatt Short-Wave Broadcast Transmitter. N. W. Mapham, General Electric Co.
- CP.* The Radio Frequency Excitation of the Heavy Ion Linear Accelerator. F. Voelker, University of California.
- CP61-210. The RCA 6949 as a Self-Excited Cyclotron Oscillator. B. H. Smith, University of California.

2:00 p.m.—Man-Machine Aspects of Automatic Programming for Digital Control Systems.

Statler-Hilton Grand Ballroom

Chairman: W. H. MacWILLIAMS, Bell Telephone Labs., Inc.
MAN-MACHINE INTEGRATION COMMITTEE

- CP.* Automatic Programming for Real Time Systems. A. Siegel, Computronics, Inc.
- CP61-162. Man-Machine Aspects of Automatic Programming for Numerically Controlled Machine Tools. D. T. Ross, Massachusetts Inst. of Technology.
- CP61-74. Programming Techniques for New Electronic Switching Systems. S. H. Washburn, Bell Telephone Labs., Inc.
- CP61-185. Near Future Applicability of Problem-Oriented Languages to Programming for Real Time Control Systems. V. A. Vysotsky, Bell Telephone Labs., Inc.

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

Statler-Hilton West Room

Chairman: C. B. GRUND, JR., Southern Services, Inc.
DOMESTIC AND COMMERCIAL APPLICATIONS COMMITTEE

- CP.* Heat Pump Compressor Performance. C. A. Dubberly, General Electric Co.
- CP.* Analysis of Some Methods of Increasing the Heating-Cooling Ratio of Heat Pumps. S. F. Gilman, Carrier Air Conditioning Co.
- CP.* Multiple vs. Single Heat Pump Installations. R. D. Roley, General Electric Co.
- CP.* Developments in Thermoelectric Refrigeration. R. A. Whisnant, Westinghouse Electric Corp.

THURSDAY (continued)

2:00 p.m.—Semiconductor Switching Devices and Applications

Governor Clinton Governor Room

Chairman: H. P. WEIRICH, Fansteel Metallurgical Corp.
SEMICONDUCTOR RECTIFIERS COMMITTEE

- 60-227 Switching Characteristics of Silicon Power Controlled Rectifiers — I Turn-On Action. I. Somos, General Electric Co. (Re-presented for Discussion only)
- CP.* Turn-Off Time Characterization and Measurement of Silicon Controlled Rectifiers. R. F. Dyer, G. K. Houghton; General Electric Co.
- CP.* A Semiconductor Variable Speed A-C Motor Drive. D. C. Griffith, R. M. Ulmer; Thompson Ramo Wooldridge.
- CP61-126. Surge Protection of Low Voltage D-C Circuits. P. Chowdhuri, L. J. Goldberg; General Electric Co.
- 61-127 Proposed Definitions for Semiconductor Switches. AIEE Rectifier Device Working Group of the Semiconductor Rectifiers Com., J. R. Thurell, Chairman.
- 61-182 Problems Encountered in Applying the Silicon Controlled Rectifier to Controlled Tungsten Lamp Loads. C. S. Daugherty, Vickers, Inc. (Re-presented for Discussion only)

2:00 p.m.—Wire Communications II

Governor Clinton Florentine Room

Chairman: J. M. WALSH, R.C.A. Communications, Inc.
WIRE COMMUNICATIONS COMMITTEE

- 61-115. Automatic Dialing and Electronic Selection on Railroad Message and Dispatcher Circuits. O. A. Jorgensen, Stromberg-Carlson Co.
- CP61-116. Transmission Aspects of an Integrated Private Line Telephone System. R. A. Schaefer, Wisconsin Telephone Co.
- 61-117. Telephone Circuit and Equipment Impedances As They Affect Transmission Performance. P. F. Radue, Kellogg Switchboard & Supply Co. (Re-presented for Discussion only)
- 61-118 Effects of Cable Irregularities on the Operation of Telephone Repeaters. S. I. McCaron, General Telephone Co. of California. (Re-presented for Discussion only)
- CP61-211. Administration of Exchange Area Trunks for Good Transmission. J. D. Howard, Jr., Southern Bell Tel. & Tel. Co.

2:00 p.m.—High Voltage Radio Noise & Corona Loss Measurements

Engineering Societies Auditorium

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

- 61-161. Radio Interference Studies on EHV Lines. J. Reichman, J. R. Leslie, The Hydro-Electric Power Commission of Ontario.
- 61-167. Instrumentation for Power Loss and Meteorological Measurements at the Ontario Hydro Coldwater Project. J. M. Vanderleck, The Hydro-Electric Power Commission of Ontario.
- 61-119. Corona Loss Research at the Ontario Hydro Coldwater Project. O. Nigol, J. G. Cassan; The Hydro-Electric Power Commission of Ontario.

THURSDAY (continued)

2:00 p.m.—Rotating Machinery

Statler-Hilton Georgian Room

Chairman: R. F. HORRELL, Electric Machinery Mfg. Co.
ROTATING MACHINERY COMMITTEE

- CP61-11. Eddy Current Losses of a Drag Cup Rotor With Circular End Plates. D. Godovanik, Israel Inst. of Technology.
- CP61-142. A Basic Analysis of the Commutator-Less Primitive Machine of Kron. H. Majmudar; Syracuse University.
- 60-225 Thermal Relationships in an Induction Motor Under Normal and Abnormal Operation. W. J. Martiny, R. M. McCoy, General Electric Co.; H. B. Margolis, American Electric Power Service Corp. (Re-presented for Discussion only)
- CP.* Steady State Voltages and Torques of an Induction Machine With Simultaneous Rotor and Stator Impedance Unbalance. D. W. Olive, University of Nebraska.
- CP61-221. Transient Torques in 3-Phase Induction Motors During Switching Operations. M. R. Chidambara, S. Ganapathy; Indian Inst. of Science.

2:00 p.m.—Electronic Transformers

Statler-Hilton Skytop

Chairman: J. P. WHISTLER, Transformer Engineers
ELECTRONICS COMMITTEE

- 60-231 Ultra High Temperature (500°C) Electronic Transformers Part I — Design Considerations. J. F. Rippin, Jr., U. S. Air Force; H. B. Harms, G. Walters, General Electric Co. (Re-presented for Discussion only)
- 60-230 Ultra High Temperature (500°C) Electronic Transformers Part II — Design Optimization. G. Walters, General Electric Co. (Re-presented for Discussion only)
- CP.* Tentative Proposed Standard for Computer Type Pulse Transformers. J. D. Schwartz, Bell Telephone Labs., Inc.
- CP.* Design of Transmission Transformers on a Digital Computer. J. K. Borkman, F. J. Kasper; Bell Telephone Labs., Inc.
- CP.* Some Aspects of Broadband Transformers. E. B. Harrison, Peerless Electrical Products, Inc.
- CP.* Consideration of Insulation Behavior in Wide-Band Transformers. S. W. Zimmerman, Cornell University.

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

Engineering Societies Room 502

Chairman: R. MAYER, Minneapolis-Honeywell Regulator Co.
ELECTRONICS COMMITTEE

- CP.* Properties of the Silicon Controlled Rectifier: A Survey. J. D. Harnden, Jr., General Electric Co.
- CP.* D-C to D-C Conversion by Means of Silicon Controlled Rectifiers. R. E. Morgan, General Electric Co.
- 61-99 Design of Diode-Switch High-Sensitivity Trigger Circuits. I M. M. Vojinovic, Carnegie Inst. of Technology.
- CP61-4. An Electronic Stepping Switch Function Generator. A. F. Nagy, University of Michigan.
- 61-100 Linear Analysis of the Electromechanical Pulser. H. C. Pande, Polytechnic Inst. of Brooklyn.
- 60-1413 The Design of the Generator Voltage Regulator. B. M. Van Emden, Automation Development Corp. (formerly with Hydro-Aire Co.) (Re-presented for Discussion only)

THURSDAY (continued)

2:00 p.m.—How Irradiation Alters the Electrical Properties of Material Interaction

Governor Clinton Chelsea Room
 Chairman: J. W. KALLANDER, U. S. Naval Research Lab.
 NUCLEONICS COMMITTEE

- CP.* How Irradiation Alters the Electrical Properties of Material Interaction. V. A. J. Van Lint, General Atomics.
- CP.* Why Irradiate Electronic Components and Materials. L. A. Wall, National Bureau of Standards.
- CP.* What can be Learned Toward Improving Components by Irradiating Semiconductors. J. Loferski, RCA Research Labs.
- CP.* The Need for Pulse Radiation. J. S. Wickland, Diamond Ordnance Fuze Labs.

2:00 p.m.—Magnetic Amplifiers

Statler-Hilton Penn Top North
 Chairman: H. F. STORM, General Electric Co.
 MAGNETIC AMPLIFIERS COMMITTEE

- 61-35 An Experimental Study on the Ampere-Turn Gain of Ordinary Saturable Reactors. W. A. Geyger, U. S. Naval Ordnance Lab.
- CP61-147. A Discussion of the Transient Behavior of Magnetic Amplifiers with a Nonlinear Steady State Gain Characteristic. N. E. Nahi; University of Southern California.
- 61-148 The Analysis of Conventional Single-Ended Magnetic Amplifiers with Inductive-Resistive Load Including the Derivation of Transfer Functions. N. E. Nahi, University of Southern California.

2:00 p.m.—Communications Switching I

Governor Clinton Greeley Room
 Chairman: A. E. JOEL, Bell Telephone Labs., Inc.
 COMMUNICATION SWITCHING SYSTEMS COMMITTEE

- CP61-68. An Approach to Handling Automated Toll Traffic Requiring Operator Assistance. H. H. Smith, Stromberg-Carlson Co.
- 61-69 A Low Cost Number Identifier for Small Telephone Systems. I T. R. Redington, Stromberg-Carlson Co.
- CP61-70. Economical Usage of Magnetic Tape Recording in Toll Ticketing. M. A. Clement, Stromberg-Carlson Co.
- CP61-71. Some Traffic Considerations in Toll Ticketing. R. R. Mina, Stromberg-Carlson Co.
- CP61-214. A New Service in Direct Distance Dialing. R. B. King, Automatic Electric Labs., Inc.
- CP.* Experimental SATT Tabulator Using Ferrite Cores. H. M. Winters, Automatic Electric Labs.

2:00 p.m.—Graduate Education In Electrical Engineering

Statler-Hilton Gold Ballroom
 Chairman, K. B. McEACHRON, JR., Case Institute of Technology
 EDUCATION COMMITTEE

Session II: Continuation of the study and discussion begun in Session I

Note: This series will be continued at the spring meeting of the IRE in New York City on 22 March 1961.

Friday, February 3

9:00 a.m.—The Organization of Large Volume Data Processing Systems

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

- CP61-202. Intercommunication Between Simplex Computer Systems. R. E. Cart, J. J. O'Keefe; IBM Corp.
- CP.* Trends in the Use of Large Scale Digital Computers for Scientific Calculations. R. Berman, G. W. Bills; North American Aviation, Inc.
- CP.* Large-Scale On-Line Data Processing Systems. S. Levine, Teleregister Corp.
- CP.* Philco 2000 Data Processing System Organization. A. H. Sepahban, V. J. Porter, T. N. Timlin; Philco Corp.
- 60-980. Considerations in the Design of a Dynamic Control System for the Generalized Chemical Processing Model Considered as a Nonlinear System. A. E. Beecher, L. A. Gould; Massachusetts Inst. of Technology (Re-presented for Discussion only).

9:00 a.m.—Methods for Integration of Machine Aids Into Man's Design Effort

Statler-Hilton Gold Ballroom
 Chairman: E. K. VAN TASSEL, Bell Telephone Labs., Inc.
 MAN-MACHINE INTEGRATION COMMITTEE

- CP.* Machine Processing of Manufacturing Information for Digital Systems. R. T. Herbst, Miss D. C. Leagus, G. A. Sellers, Bell Telephone Labs., Inc.
- CP.* Computer Aids to the Design and Machine Wiring of Digital Equipment. E. O. Codier, General Electric Co.
- CP61-104. Implications of Machine Aids to Design. O. J. Morzenti, Bell Telephone Labs., Inc.
- CP.* Design Automation — A Look at the Future. G. L. Baldwin, T. H. Crowley, C. W. Rosenthal; Bell Telephone Labs.

9:00 a.m.—Metal Rolling Mill Electrical Systems

Governor Clinton Chelsea Room
 Chairman: E. H. BROWNING, Westinghouse Electric Corp.
 METAL INDUSTRY COMMITTEE

- CP.* Electrical Systems Advancements for Steel Mill Processes. W. H. Dauberman, Westinghouse Electric Corp.
- CP.* The Application of Digital-Analog Techniques for Metal Rolling. K. R. Thompson, G. A. Branscom; General Electric Co.
- CP.* Sendzimir Mill Requirements for Motors and Control. D. E. Rea, Allis-Chalmers, Mfg. Co.
- CP.* Speed Regulators for Hot Strip Mills. K. G. Black, General Electric Co.

9:00 a.m.—Linear Control Systems

Statler-Hilton Skytop
 Chairman: F. C. WEIMER, Ohio State University
 FEEDBACK CONTROL SYSTEMS COMMITTEE

- 61-14 On The Design of A-C Servo Lead Networks. G. Weiss, II Polytechnic Inst. of Brooklyn.

FRIDAY (continued)

- CP.* Informationally Based, Optimally Controlled Physical Systems. D. L. Herr, Santa Barbara, California.
- CP.* Generalized 704 Program for Linear Systems Analysis. J. W. Ryan, General Electric Co.
- 60-1019 A Digital Time Domain Synthesis Technique for Feedback Control Systems. L. E. Weaver, A. P. Sage, Jr., University of Arizona; R. L. Miller, U. S. Army Signal Corps. (Re-presented for Discussion only)
- 60-1018 Stochastic Time Optimal Control Systems. M. Aoki, University of California. (Re-presented for Discussion only)
- CP.* Critique of Aforementioned Papers. G. C. Newton, Jr., Massachusetts Inst. of Technology; R. J. Kochenberger, The University of Connecticut.

9:00 a.m.—Communications Switching II

Statler-Hilton West Room

Chairman: C. F. FFOLLIOTT, General Telephone Labs., Inc.
COMMUNICATIONS SWITCHING SYSTEMS COMMITTEE

- CP.* Features of a 100 Line Electronic Crosspoint P.A.B.X. J. DeCicco, Automatic Electric Labs.
- CP.* Transmission in 100 Line Electronic Crosspoint P.A.B.X. R. F. Kowalik, Automatic Electric Labs.
- CP.* Logical Control in 100 Line Electronic Crosspoint P.A.B.X. R. P. Sanders, Automatic Electric Labs.
- CP.* Philosophy of Design of the Ferrite-Core Memory for a 100-Line Crosspoint P.A.B.X. J. P. Shuba, Automatic Electric Labs.

9:00 a.m.—Distribution Systems

Statler-Hilton Grand Ballroom

Chairman: L. J. WEED, Boston Edison Co.
TRANSMISSION AND DISTRIBUTION COMMITTEE

- CP61-157. Distribution System Planning for Growth—Part I. Secondary System Program Development. M. W. Gangel, R. C. Ender; General Electric Co.
- 61-227. Analysis of Feeder Service Continuity. J. E. McNabb, Westinghouse Electric Corp.
- 61-158. Present Worth Approach for Optimizing Distribution Transformer and Secondary Designs to Serve Growing Loads. R. P. Burandt, J. A. Hughes, Commonwealth Edison Co.; A. D. Patton, D. N. Repts, Westinghouse Electric Corp.
- 61-228. Use of 34.5 KV Supply to Reduce 4.16 and 12.47 KV Distribution System Investment. R. H. Sarikas, Illinois Power Co.
- 61-229. Representation of Phase Shifting Transformers on A-C Network Analyzers. S. Linke, L. B. Spencer, Cornell University (Re-presented for Discussion only).
- CP.* Transformer Load Growth—A Factor of Economics. D. Achtenberg, A. Price, Detroit Edison Co.

9:00 a.m.—Extra High Voltages

Statler-Hilton Georgian Room

Chairman: E. L. KANOUSE, Los Angeles Dept. of Water and Power
TRANSMISSION AND DISTRIBUTION COMMITTEE

- CP61-235. Metal Towers for 650-KV Operation on Project EHV. S. D. Alpert, Stone & Webster Engrg. Corp.; J. H. Foote, Commonwealth Associates Inc.; G. E. Fortney, U. S. Steel

FRIDAY (continued)

- Corp.; D. D. MacCarthy, General Electric Co.; H. B. White, Aluminum Co. of Canada, Ltd., J. E. Williams, Aluminum Co. of America.
- CP61-217. Glued Laminated Wood and Prestressed Concrete 650 KV Tower Structures for Project EHV. S. D. Alpert, Stone & Webster Engrg. Corp.; J. J. LaForest, General Electric Co.; M. Schupack, Schupack & Zollman; R. W. Stumbo, Jr., Rilco Laminated Products, Inc

NOTE: The following paper will be available to members at \$1.75 per copy and to nonmembers at \$3.50 per copy.

- CP61-236. Leadville High-Altitude EHV Test Project.
Part I: Report on Four Years of Testing. L. M. Robertson, Public Service Co. of Colorado; J. K. Dillard, Westinghouse Electric Corp. (Transactions Paper).
Part II: Corona Loss Investigations. L. M. Robertson, J. C. Smith, Public Service Co. of Colorado; D. F. Shankle, J. E. O'Neil, Westinghouse Electric Corp. (Transactions Paper).
Part III: Radio Influence Investigations. L. M. Robertson, Public Service Co. of Colorado; W. E. Pakala, E. R. Taylor, Jr., Westinghouse Electric Corp.
Part IV: Conductors, Towers Insulators, and Substations. L. M. Robertson, J. C. Smith, Public Service Co. of Colorado; D. H. Sandell, Aluminum Co. of America; H. M. Walton, U. S. Steel Corp.; O. R. Huggins, Malleable Iron Fittings Co.; R. G. Yerker, Hughes Bros., Inc.; A. D. Lantz, Jr., Ohio Brass Co.; J. E. O'Neil, Westinghouse Electric Corp.

NOTE: Parts I and II have been classified as Transactions papers although they have been preprinted under the one cover with the Conference Paper number given above. They will be published in a future issue of the Transactions.

9:00 a.m.—Rotating Machinery

Statler-Hilton Penn Top South

Chairman: L. C. SCHAEFER, Century Electric Co.
ROTATING MACHINERY COMMITTEE

- CP61-173. High Frequency Iron Losses in Fractional Horsepower Induction Motors. V. C. Shaneman, Westinghouse Electric Corp.
- CP.* Analysis of the Intrinsic Characteristics of the AIEE Round Robin Motorette. L. M. Johnson, U. S. Naval Research Lab.
- 61-207. Performance Calculations in Phase Converters, Single Phase A-C Drag Cup Tachometer Generators and Single Phase Brakes. P. H. Trickey, Wright Machinery Co.
- CP61-204. The Surge Comparison Testing of Several Types of D-C Armature Windings. F. A. Sceda, Westinghouse Electric Corp.
- CP.* Advanced Design of Printed Motor, Employing Barium Ferrite Field Structure. F. A. Higgins, Photocircuits Corp.

9:00 a.m.—Relays

Statler-Hilton Penn Top North

Chairmen: L. F. FERRI, Commonwealth Associates, Inc., and E. S. KOCAN, Pennsylvania Electric Co.

RELAYS AND POWER SYSTEM COMMUNICATION COMMITTEES

- 61-124 Bonneville Power Administration Experience With Transferred Trip Over Microwave Radio. R. E. Dietrich, H. S. Lorentson, T. W. Stringfield; Bonneville Power Administration.
- CP61-183. Protective Relaying for the GPU — Penelec 460 KV Line. L. E. Goff, General Electric Co.; W. W. Turner and C. H. McCullough, Pennsylvania Electric Co.

FRIDAY (continued)

- CP61-121. The R-C Circuit With Functionally Variable Time Constant and Its Application to Static Protective Relays. J. Baude, Allis-Chalmers Mfg. Co.
- CP.* Bridge Methods for the Measurements of Sequence Quantities on 3-Phase Unbalanced Systems. S. A. Nasar, University of California.
- CP61-203. Automatic Reclosing Following Bus Relay Operation. Task Force of the Relaying Practices Subcommittee of the AIEE Relays Committee, H. J. Sutton, Chairman.

9:00 a.m.—Microwave Tubes

Statler-Hilton East Room
 Chairman: S. PERKOWSKI, Western Electric Co.
 ELECTRONICS COMMITTEE

- CP.* A Light-Weight Ku-Band TWT Amplifying Chain. W. J. Caton, R. E. Bridge; RCA.
- CP.* A Study of Signal Suppression in Broad-Band TWT Amplifiers. M. Freeling, H. J. Wolkstein; RCA.
- CP.* Duplexers and Switching Devices in 4.3-MM Frequency Range. I. Reingold, U. S. Army Signal Research and Development Lab.
- CP61-168. Microwave Devices with Field Emission Cathodes. J. R. Fontana, H. J. Shaw; Stanford University.
- CP.* New Developments in Pencil Tubes. L. P. A. DeBacker, RCA.
- CP.* A Low-Cost L-Band Oscillator Package for Air-Traffic-Control Transponders. P. W. Gipslis, RCA.

9:00 a.m.—Is Systems Engineering?

Governor Clinton Florentine Room
 Chairman: L. C. HARRIOTT, General Electric Co.
 NEW TECHNICAL ACTIVITIES COMMITTEE

Panel Members:

J. W. EMLING, Bell Telephone Laboratories, Inc.
 D. P. ECKMAN, Case Institute of Technology
 FRED PAYNE, North American Aviation
 E. L. HARDER, Westinghouse Electric Corp.
 HAROLD CHESTNUT General Electric Co.

9:00 a.m.—Magnetics

Governor Clinton, Greeley Room
 Chairman: L. R. BICKFORD, International Business Machines Corp.
 BASIC SCIENCES COMMITTEE

- 61-194. On the Design of High Coercivity Permanent Magnets, Exposed to External Fields. M. Schindler, RCA.
- CP61-195. Root Locus Method for Plotting Hysteresis Loops of Ferromagnetic Thin Films. A. A. Borsei, University of California.
- CP.* Transient Analysis of Interacting Dynamical Systems by the Principle of Energy Transformation. S. S. L. Chang, New York University.
- 61-5. The Synthesis of General Parameter Insertion Loss Filters Using a Digital Computer. G. C. Temes, Northern Electric Co. Ltd.

2:00 p.m.—Methods for the Automatic Design of Electronic Equipment

Governor Clinton Governor Room
 Chairman: GERARD SALTON, Sylvania Electric Products, Inc.
 MAN-MACHINE INTEGRATION COMMITTEE

- CP61-178. Design Automation Survey — A Report to the AIEE Membership. R. J. Preiss, IBM Corp.

FRIDAY (continued)

- CP.* A Quasi-Simplex Method for Designing Sub-Optimum Packages of Electronic Building Blocks. R. H. Glaser, ITT Communications Systems, Inc.
- CP.* The Automation of Computer Backwiring Design and Topological Layout. R. R. Brown, G. F. Putnam; Minneapolis Honeywell Regulator Co.
- CP.* Computer Simulation as a Machine Aid to Switching System Design. J. A. Bader, W. S. Hayward; Bell Telephone Labs., Inc.
- CP.* Use of a General Purpose Digital Computer for Design and Manufacture of an Airborne Bombing System. G. G. Evans, D. E. Brotherton; General Electric Co.

2:00 p.m.—Metal Making and Processing Electrical Drive Systems

Governor Clinton Florentine Room
 Chairman: O. E. GOCHENAUER, Jones and Laughlin Steel Corp.
 METAL INDUSTRY COMMITTEE

- CP.* Anticipated Problems and Possible Solutions in Continuous Annealing of Thin Tinplate. A. L. Mozina, Allis-Chalmers Mfg. Co.
- CP61-10. A Transistorized Tension and Loop Control. T. E. DeViney, Square D Co.
- CP.* Approach to the Realization of Automatic Blast Furnace Operation. J. R. Erbe, Westinghouse Electric Corp.
- CP.* Automatic Wheel Wear Compensation for Roll Grinder. M. L. Ranallo, Clark Controller Co.
- CP61-2. An Improved Consumable Electrode Vacuum Arc Melting Furnace. A. L. Feild, Jr., K. L. Bryant, Jr., E. I. DuPont de Nemours & Co., Inc.

2:00 p.m.—Linear Control Systems and Applications

Statler-Hilton Skytop
 Chairman: R. T. BYERLY, Westinghouse Electric Corp.
 FEEDBACK CONTROL SYSTEMS COMMITTEE

- 61-86. The Synthesis of Optimum Systems from Non-Ideal Components. J. K. Wolf, USAF; T. R. Williams, J. B. Thomas, Princeton University.
- 61-72. Random Linear Systems: A Special Case. A. R. Bergen, University of California.
- 61-12. Predictive Control System Application. H. Chestnut, W. E. Sollecito, P. H. Troutman, General Electric Co.
- CP61-154. Damping the First Stage of a Two-Stage Electro-Hydraulic Servo Valve. T. W. Thompson, P. F. Hayner, Sanders Associates, Inc.

2:00 p.m.—Communication Switching Systems III

Statler-Hilton West Room
 Chairman: H. F. MAY, Bell Telephone Labs., Inc.
 COMMUNICATION SWITCHING SYSTEMS COMMITTEE

- CP.* ESSEX and Time Divisions Communications. W. A. Maltaner, Bell Telephone Labs, Inc.
- CP.* Semi-Conductor Gates for Time Separation Switching. H. S. Feder, Bell Telephone Labs., Inc.
- 61-75. The British J.E.R.C. Development of Electronic Switching. T. H. Flowers, British Post Office Engineering Dept.; G. Forshaw, Automatic Telephone and Electric Co., Ltd.

FRIDAY (continued)

2:00 p.m.—Towers, Poles & Conductors

Statler-Hilton Grand Ballroom

Chairman: J. A. RAWLS, Virginia Electric and Power Co.

TRANSMISSION AND DISTRIBUTION COMMITTEE

- CP61-87. A Study of NESC Wind Load Requirements with Relation to Conductor Diameter. R. L. Retallack, American Electric Power Service Corp.
- CP61-233. Wind and Ice Design Loads for Transmission Lines of American Electric Power Company. R. L. Retallack, E. S. Zobel, American Electric Power Service Corp.
- CP61-234. Temperature, Current, and Resistance Characteristics of Bare Aluminum Distribution Conductors. E. Hazan, Kaiser Aluminum & Chemical Co.
- 61-120. All Aluminum Transmission Tower Line. A. H. Sellers, Philadelphia Electric Co.; J. E. Williams, Aluminum Co. of America.

2:00 p.m.—Capacitors & Switching Surges

Statler-Hilton Georgian Room

Chairman: K. E. HAPGOOD, Tennessee Valley Authority

TRANSMISSION AND DISTRIBUTION COMMITTEE

- 61-230. Bibliography on Power Capacitors 1956-1959. Bibliography III W. G. of the Capacitor Sub. of the AIEE Transmission & Distribution Com., K. E. Hapgood, Chairman.
- CP61-231. Report of a Survey on the Connection of Shunt Capacitor Banks Part II: Station Banks. AIEE Switched Capacitor W. G. of the Capacitor Sub. of the Transmission & Distribution Committee, K. E. Hapgood, Chairman.
- 61-166. Optimizing the Application of Shunt Capacitors for VAR III Control and Loss Reduction. R. F. Cook, Westinghouse Electric Corp.
- CP61-232. A study of Transient Recovery Voltages in Systems Containing Long High-Voltage Transmission Lines with Midpoint Series Capacitors. O. I. Elgerd, University of Florida; K. Rama Mohan Rao, University of California.
- 61-7. Switching Surges—Part I. A Report by the AIEE W. G. on III Switching Surges of the Transmission & Distribution Committee, I. B. Johnson, Chairman.

2:00 p.m.—Rotating Machinery

Statler-Hilton Penn Top South

Chairman: M. R. LORY, Westinghouse Electric Corp.

ROTATING MACHINERY COMMITTEE

- CP61-143. The Effect of Temperature, Humidity, and Current on Collector Ring and Brush Wear. D. J. Herder, W. Kerber, Jr.; General Electric Co.
- 61-144 Synchronizing and Damping Torque Coefficients of Syn- III chronous Machines. R. V. Shepherd, General Electric Co. (Re-presented for Discussion only)
- CP61-145. The Explanation of the Torque in a Dynamo. E. I. Shoberg II, R. Holm; Stockpole Carbon Co.
- CP61-222. Reluctance Motors for High Torque Specifications. J. F. H. Douglas, Marquette University.

FRIDAY (continued)

2:00 p.m.—Subminiature Tubes and Environmental Testing

Statler-Hilton East Room

Chairman: G. QUINT, Sylvania Electronic Products Corp.

ELECTRONICS COMMITTEE

- CP.* New Subminiature Tubes Offer Improved Performance. J. D. Robbins, B. B. Scott; Sylvania Electronic Tubes.
- CP.* Design and Application Considerations for the Use of Nuvistor Tetrodes. I. E. Locke, RCA.
- CP.* A Developmental Nuvistor Triode for Small-Signal Grounded-Grid Amplifiers. W. A. Harris, R. J. Rundstedt; RCA.
- 61-34 I An X-Ray Tube With Grid for Control of Exposures in Cineradiography. T. H. Rogers, Machlett Labs., Inc. (Re-presented for Discussion only)
- CP.* New Insight into Vibrational Testing of Electron Tubes. F. W. Willardson, Sylvania Electronic Tubes.
- CP.* Equipment Design Problems in Testing for Shorts. F. W. Mintel, Sylvania Electronic Tubes.

2:00 p.m.—Present and Future Trends in Education in Electronics

Statler-Hilton Gold Ballroom

Chairman: G. A. RICHARDSON, Worcester Polytechnic Institute

ELECTRONICS COMMITTEE

Panel Discussion:

- CP.* J. B. Russel, General Electric Co.
- CP.* T. L. Martin, Jr., University of Arizona.
- CP.* T. F. Jones, Jr., Purdue University.
- CP.* R. A. Sharp, Iowa State University.

NOTE: Unnumbered Conference Papers (CP.*) may be available at or after the meeting, if copies are provided by the author. They are not intended for publication in the TRANSACTIONS and are not presently scheduled for reproduction in any form by the Institute.

Note: The *Transactions* paper will be printed in the bimonthly publication as follow:

- I COMMUNICATION AND ELECTRONICS.
- II APPLICATION AND INDUSTRY.
- III POWER APPARATUS AND SYSTEMS.

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COMMITTEE MEETINGS

Statler-Hilton & Gov. Clinton Hotels

New York, N. Y.

Monday, January 30, 1961

9:00 A.M.—12:00 Noon

Nominating Committee Boston Room
 Prize Awards Committee Cornell Room
 Data Acquisition & Trans. Subcommittee C. D. Room J*
 Public Relations Committee Town Room
 Special Publications Committee Empire Suite II
 Professional Conduct Committee CR 2*
 System Planning Subcommittee of S. E. Village Room
 Education in Electronics of Elect. CR 1*
 Lamme Medal Committee Empire Suite I
 Electronic & High Frequency Instruments Com. Room D*

9:00 A.M.—2:00 P.M.

1962 Conference on Rectifiers in Industry Committee
 Clinton Room*

10:00 A.M.—12:00 Noon

Sections Committee Dartmouth Room
 Educational Publications Committee Schuyler Room
 System Operation Subcommittee of S. E. Room E*
 Members For Life Fund Buffalo Room

12:30 P.M.—2:00 P.M.

Luncheon — Sections Committee Dartmouth Room
 Luncheon — Electric Heating Committee Empire Suite II
 Luncheon — General Sessions Pennsylvania Room
 Luncheon — Broadcasting Committee Schuyler Room

4:00 P.M.—6:00 P.M.

Correlation of Lab. and Field Data W. G. CR 4*
 Administrative Committee of TOD Boston Room
 Energy Developments of P. G. Room J*
 Advancement of Power Engineering Subcom. of P. G.
 Schuyler Room

Induction & Dielectric Heating Subcommittee CR3*
 Administrative Subcommittee of S. R. Empire Suite I
 System Controls Subcommittee of S. E. CR 2*
 TOD Manual Subcommittee of TOD Village Room
 1962 Conference on Rectifiers in Industry Committee
 Clinton Room*

Radio Communication Systems Committee Room D*
 District No. 2 Executive Committee Room K*
 Catholic Protection Subcommittee of C. I. Town Room
 Excitation Systems Sub. of P. G. CR 1*
 Management Committee Empire Suite II
 Application of Probability Methods Subcommittee Room E*

5:30 P.M.—7:30 P.M.

Sections — Get-Together Chelsea Room*

7:30 P.M.—10:00 P.M.

Administrative Subcommittee of S. E. Empire Suite I
 Design Automation Subcommittee C. D. Room J*

* Located at the Gov. Clinton Hotel

** Located at Engineering Societies Building,
 33 West 39th Street, New York, N. Y.

Tuesday, January 31, 1961

7:30 A.M.—9:00 A.M.

Canadian Breakfast Cornell & Dartmouth Rooms

9:00 A.M.—12:00 Noon

Nucleonics Subcom. on Reactor Control & Instr. .. Room 1105**
 System Engineering Committee Cornell Room
 Midwest Subcommittee of TOD CR 5*
 Electronic Circuits & Systems Subcom. of Elect. CR 1*
 Communication Theory Committee Herald Room*
 Capacitor Subcommittee of T. & D. Village Room
 Textile Industry Committee Clinton Room*
 Computer Standards Subcommittee of C. D. Room 1101**
 Non Linear Control Theory Subcommittee of F. C. S.
 Room 1001**

Recording & Controlling Instrumentation CR 4*
 Power System Communications Committee Dartmouth Room
 Control Components Subcommittee of F.C.S. Room D*
 Appl. to Des. Eval. & Sim Subcommittee of C. D. Room J*
 Recognition Awards Committee Schuyler Room
 Power Transformer W. G. Electronics CR 3*
 Power Plant Control & Automation Subcom. of P. G. ... Room E*
 Fortescue Fellowship Committee CR 2*
 General Systems Subcommittee of T. & D. Empire Suite II
 Membership Committee Room K*
 Distribution Subcommittee of T. & D. Town Room
 W. G. of Radio Noise Sub. of T. & D. Boston Room
 Towers Poles & Conductors Subcom. of T. & D. .. Gramercy Room*
 W. G. No. 2 of Instrumentation of AIEE
 Radio Noise Sub. CR 6*

9:00 A.M.—4:00 P.M.

Periodicals & Transactions Comm. ASCE Board Room**

9:00 A.M.—4:30 P.M.

Student Branches Committee Pennsylvania Room
 W. G. 60.1 Aluminum and Steel Substation Structures
 Private Room

12:30 P.M.—2:00 P.M.

Luncheon — Indicating & Integrating Instr. Com. .. Village Room
 Luncheon — Instrumentation Div. Room E*
 Luncheon — W. G. on Project 57.1 of Sub. Room K*

12:30 P.M.—4:00 P.M.

Luncheon — Registration of Engineers Committee ... Room D*

12:30 P.M.—4:30 P.M.

Luncheon — Communication Division Com. .. Gramercy Room*
 Luncheon — General Systems Subcom. of T. & D. .. Town Room

2:30 P.M.—4:00 P.M.

Hydroelectric Power Subcommittee of P. G. CR 1*
 W. G. 60.2 Design Standardization Methods
 & Techniques for Sub. CR 4*
 Textile Industry Committee Clinton Room*

2:30 P.M.—4:30 P.M.

TOD-GAD Complex of Meetings CR 6*
 Transfers Committee Buffalo Room
 Solid State Devices Committee Empire Suite II

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American Institute of Electrical Engineers

Revision of AIEE 954 W. G.Schuyler Room
 Electronics CommitteeVillage Room
 Voltage & Current Reference Source Subcom.
 of R. & C. I.CR 5*

2:30 P.M.—5:30 P.M.

W. G. on Project 59.1 of SubstationsRoom 1101**
 Test Codes Subcommittee of I. C. ...ASME Alcove (11th Fl.)**
 Executive Committee of Cement Ind.CR 2*
 Research CommitteeRoom 1001**
 Instrumentation DivisionRoom E*
 Radio Noise Subcommittee of T. & D.Herald Room*
 W. G. on Project 56.3—Future Revision of
 American Standard C37.2CR 3*
 Lightning & Insulator Subcommittee of T. & D.Room K*

2:30 P.M.—10:00 P.M.

Computing Devices CommitteeBoston Room

4:00 P.M.—6:00 P.M.

Chemical Industry CommitteeRoom J*
 Telegraph Systems CommitteeASCE Board Room**
 Basic Sciences CommitteeClinton Room*
 W. G. on Project 53.1 — EHV SubstationsRoom D*
 Administrative Subcommittee of I. P. R.CR 1*
 Substation W. G. on Project 57.2CR 4*

4:30 P.M.—6:30 P.M.

Land Transportation CommitteeGramercy Room*
 New Energy Sources for Electronics Subcom.CR 5*

Wednesday, February 1, 1961

8:30 A.M.—12:00 Noon

Breakfast — Domestic & Commercial Application Com.
 Cornell Room

9:00 A.M.—12:00 Noon

Advisory Com. to Nat'l Bur. of StandardsCR 2*
 Publications DepartmentTown Room
 District TOD Representatives CommitteeRoom J*
 Professional Development & Recognition Department
 Schuyler Room

General Industry Applications CommitteeBoston Room
 Conversion Substation Subcom. of Sub.Room D*
 Power Generation CommitteeBuffalo Room
 Automatic & Supervisory Control Subcom. of Sub. ...Room E*
 Kilomegacycle Workshop Task Group of Computer
 Systems Subcommittee C. D.CR 3*

Distribution Substation Subcommittee of Sub.Herald Room*
 Transmission and Distribution CommitteeDartmouth Room
 Science & Electronics Div.Gramercy Room*
 Pulse Transformer W. G. of Elect.Room 1001**
 Transmission Substation Subcommittee of Sub. ...Village Room
 Synchronous Machinery SubcommitteeCR 6*
 Space Communication CommitteeCR 1*
 Characteristics of Loads Subcommittee I & CPS ..Empire Suite I
 Safety Standards Subcommittee of Nuc.ASME Alcove**
 Safety CommitteeEmpire Suite II
 Computers & Logic Devices Subcom. of FCSRoom 1101**

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Winter General Meeting

9:00 A.M.—2:00 P.M.

Microsystem Electronics Sub. of SSDCR 5*

9:00 A.M.—5:00 P.M.

General Administration DepartmentPennsylvania Room
 American Automatic Control Conference
 G. E. Bldg., 570 Lexington Ave., (9th Floor)

11:00 A.M.—1:00 P.M.

Artificial Intelligence WorkshopCR 3*

12:30 P.M.—2:00 P.M.

Luncheon — Electrostatic Processes Subcom. of C. I.
 Village Room
 Luncheon — Chemical Processes Subcom. of C. I. ..Town Room
 Luncheon — Science & Electronics Division ..Gramercy Room*
 Luncheon — Sectional Committee C57Herald Room*
 Luncheon — Telemetry CommitteeRoom E*

12:30 P.M.—4:00 P.M.

Luncheon — Production & Application of Light Com.
 Schuyler Room
 Luncheon — ASA C57Room J*

12:30 P.M.—5:30 P.M.

Luncheon — General Applications Div. Committee
 Boston Room

2:00 P.M.—4:00 P.M.

EHV Cable Conference CommitteeCR 2*

2:30 P.M.—5:30 P.M.

Domestic Appliance Subcommittee of D & C ACR 1*
 Industry Division CommitteeEmpire Suite II
 Fundamental Electrical Standards Committee ...Empire Suite I
 Electrothermal Subcommittee of C. I.Town Room
 Gaseous Insulation SubcommitteeCR 6*
 Electric Space Heating and Heat Pump Subcom. D & C A
 Room 1001**
 Performance Evaluation Subcom. of F. C. S.CR 5*
 Nucleonics CommitteeVillage Room
 Computer Systems Subcom. of C. D.Herald Room*
 Industrial Power Rectifiers CommitteeBuffalo Room
 Frequency Range Transformer W. G. Elect.CR 4*
 Magnetic Amplifiers CommitteeDartmouth Room
 Electric Coupling SubcommitteeCR 3*
 Power Division CommitteeRoom K*
 Education CommitteeCornell Room
 W. G. on Hi-Temperature Induction Motors
 Machinery Sub.Room 1101**

4:00 P.M.—6:00 P.M.

Electronics Control Subcommittee of I. C.CR 2*
 Battery Subcommittee of C. I.Schuyler Room
 Electrochemical Subcommittee of C. I.Room E*
 Insulation Subcommittee of R. M.Room J*

7:30 P.M.—10:00 P.M.

Semiconductor Rectifier CommitteeTown Room
 Forum of Technical Committee ChairmenGeorgian Room
 Logic & Switch Circuit Theory Subcom. of C. D. ...Empire Suite II

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Thursday, February 2, 1961

9:00 A.M.—12:00 Noon

- System Economics Subcommittee of S. E.CR 1*
- Program Subcommittee of E. T. M. B.Room J*
- Computer Applications Subcom. of S. E.Room 1001**
- Systems Applications Subcommittee of F. C. S.Room E*
- Induction Machinery Subcommittee of R. M. ...Empire Suite II
- Electronic Transformer Subcommittee of Elect.Room D*
- Technical Operations DepartmentPennsylvania Room
- Executive Subcommittee I & C P SEmpire Suite I
- Electric Coupling Subcommittee No. 2Schuyler Room
- Methods of Measurements No. 2 Subcom. of P. S. C. ...CR 2*
- W. G. on Temperature Stds., Syn. Mach.Penn Top Lounge
- Equipment Design Standards Subcom. No. 6 P. S. C. ...CR 4*
- W. G. on Measurements of Corona Effects Subcom.CR 6*
- Microwave Subcommittee No. 3 P. S. C.CR 3*
- Communication Switching Systems CommitteeRoom K*
- Wire Protection Subcommittee No. 7 P. S. C.CR 5*
- Constitution & Bylaws CommitteeVillage Room
- Terms & Definition No. 8 Subcom. P. S. C.Room 1105**
- Linear Systems Theory Sub. of F. C. S.Town Room

9:00 A.M.—4:30 P. M.

- Indoctrination of District Vice-PresidentsDartmouth Room
- Cement Industry Subcommittee of G I A C
Dental Soc. Room 18th Floor

12:30 P.M.—2:00 P.M.

- Luncheon — Executive Subcommittee No. 1 P. S. C.
Empire Suite II
- Luncheon — Technical Operations Dept.Cornell Room
- Luncheon — Cement Industry Sub. of G I A C
Dental Soc. Room 18th Floor
- Luncheon — Metal Industry CommitteeVillage Room

12:30 P.M.—4:30 P.M.

- Luncheon — D-C Subcommittee of R. M.Town Room

1:30 P.M.—5:00 P.M.

- Feedback Control SystemsBoston Room

2:00 P.M.—5:00 P.M.

- Electrical Techniques in Medicine and BiologyRoom J*
- Evaluation of Procedures for Testing Hermetic
Motor Insulation SystemsEmpire Suite I
- Computer Magnetics SubcommitteeRoom D*
- Packaging Industry Subcommittee G. I. A.Gramercy Room*
- Industrial and Commercial Power Systems Committee
Herald Room*

2:30 P.M.—4:00 P.M.

- W. G. on Corona Definitions of E. I.Room E*
- Power Systems Communications CommitteeCornell Room

2:30 P.M.—4:30 P.M.

- Planning & Coordination CommitteePennsylvania Room
- Magnetic Amplifiers Theory SubcommitteeCR 1*
- Substations CommitteeBuffalo Room
- Industrial Control CommitteeSchuyler Room
- Applied Automatic Techniques CommitteeVillage Room

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4:00 P.M.—6:00 P.M.

- Data Communication CommitteeRoom K*
- Rotating Machinery CommitteeCornell Room
- Corona Effects Subcommittee of E. I.Room E*
- Wire Communication Systems CommitteeRoom 1001**

5:00 P.M.—7:00 P.M.

- The Electron Tube Subcommittee of Elec.Penn Top South

Friday, February 2, 1961

9:00 A.M.—12:00 Noon

- Board of DirectorsPennsylvania Room
- Radiation Technology of Nucleonics &
Radiation Effects of E. I.Boston Room
- 1961 JACC CommitteeBuffalo Room
- New Activities Executive CommitteeTown Room
- Safety & Standards Sub. of NucleonicsSchuyler Room
- Reactor Control & Instrumentation of Nucleonics ...Empire Suite I
- Nuclear Reactors Sub. NucleonicsEmpire Suite II

9:00 A.M.—2:00 P.M.

- Nuclear Reactor Subcommittee of NucleonicsVillage Room

9:00 A.M.—5:00 P.M.

- W. G. on Magnetic Amplifier Materials Under
Extreme Environmental ConditionsRoom D*

10:00 A.M.—12:00 Noon

- Magnetics Subcommittee of B. S.Dartmouth Room

12:30 P.M.—2:00 P.M.

- Luncheon — Board of DirectorsCornell Room

2:30 P.M.—5:30 P.M.

- Board of DirectorsPennsylvania Room
- New Activities CommitteeTown Room
- Nucleonics CommitteeBoston Room
- Steering Committee 1962 Joint Automatic
Control ConferenceVillage Room

4:00 P.M.—7:00 P.M.

- Wire Line Protection SubcommitteeRoom 1105**

* Located at the Gov. Clinton Hotel

** Located at Engineering Societies Building,
33 West 39th Street, New York, N. Y.

LIST OF AUTHORS

<i>Author</i>	<i>Page</i>	<i>Author</i>	<i>Page</i>
Abbott, G. A.	12	Brant, K. L., Jr.	39
Abetti, P. A.	8 & 25	Brearley, R. G. A.	29
Achtenberg, D.	36	Bridge, R. E.	38
Adams, G. E.	28	Brotherton, D. E.	39
Adamson, C.	8	Brothman, Miss A.	20
Agrois, J.	13	Brothman, E. H.	20
Allen, B. F.	21	Brown, R. L.	16
Alley, R. P.	18	Brown, R. P.	19
Alpert, S. D.	36 & 37	Brown, R. R.	39
Ames, F.	9	Brown, W. C.	30
Anderson, J. G.	29	Browne, K. A.	23
Aoki, M.	36	Brownell, R. M.	22
Armstrong, G. R.	30	Brubaker, W. M.	26
Ashbury, C. E.	13	Buck, R. C.	27
Ast, P. F.	17	Buckland, B. O., Mrs.	7
Austin, R. C.	12	Buescher, R. H.	9
Axe, S. P.	19	Burandt, R. P.	36
Axon, W. R.	19	Burgess, T. J.	12
Aydelott, J. C.	19	Burpee, W. E.	19
		Burton, H. O.	18
		Butemeyer, D. K.	20
Bader, J. A.	39		
Baker, W. A.	28	Callan, J.	23
Baldwin, C. J.	25	Cameron, A. W. W.	29
Baldwin, G. L.	35	Cameron, F. L.	12
Baldwin, M. E.	26	Campbell, D. R.	27
Barker, R. C.	22	Carmack, P. T.	19
Barnes, C. C.	12	Carpenter, J. H.	21
Bartell, R. J.	30	Cart, R. E.	35
Barth, P.	15	Carter, W. A.	12
Bartlett, S. C., Jr.	9 & 18	Cassan, J. G.	32
Bartlett, W. D.	29	Caton, W. J.	38
Bashara, N. M.	17	Caverly, D. W.	8
Baude, J.	38	Cesari, L.	19
Bayles, J. E.	19	Chandaket, P.	19
Beecher, A. E.	35	Chang, S. S. L.	38
Beeman, E. R.	9	Chen, K.	19 & 23
Benjamin, K. A.	18	Chestnut, H.	38 & 39
Benner, P. E.	15	Chidambara, M. R.	33
Bennett, J. L.	10	Chowdhuri, P.	32
Bennett, W. P.	31	Chritzberg, A. M.	24
Bennett, W. R.	24	Clark, T. H.	26
Bentivegna, M. J.	30	Clement, M. A.	34
Bergen, A. R.	39	Cloessner, I. B.	20
Berman, R.	35	Codier, E. O.	35
Bernholtz, B.	16	Cohn, N.	16
Bhimani, B. V.	29	Colleran, P. J.	7
Bilisoly, C. S.	12	Collins, C. A.	15
Bills, G. W.	35	Colombo, C. J.	11
Bishop, C. E.	12	Conangla, A.	12
Biswas, N. N.	11	Concordia, C.	15 & 25
Black, K. G.	35	Congelosi, R. A.	22
Bliss, W. H.	7	Conklin, W. A.	25
Blodgett, R. B.	18	Cook, R. F.	40
Boice, A. F.	7	Cowell, W. R.	18
Bolen, N. E.	8	Craig, S.	10
Bolt, M. H.	18	Crapuchettes, P. W.	31
Bonk, P.	30	Cross, H. C.	14
Borkman, J. K.	33	Crowley, T. H.	35
Borsei, A. A.	38	Cunniff, J. F.	13
Boulter, E. A.	29	Cunningham, F. V.	8
Bourbonnais, T. L., II	18		
Branssberg, R. D.	24	Dahl, H. A.	14
Branscom, G. A.	35		

LIST OF AUTHORS

<i>Author</i>	<i>Page</i>	<i>Author</i>	<i>Page</i>
Dalziel, C. F.	11	Fischer, W. C.	11
Dauberman, W. H.	35	Flaherty, R. J.	20
Daugherty, C. S.	32	Fleming, P., Jr.	28
D'Auteuil, L.	25	Flowers, T. H.	39
Davidson, J. D.	15	Fonda, A. G.	14
Davis, D. D.	8	Fontana, J. R.	38
Davis, R. H.	9	Footte, J. H.	36
DeBacker, L. P. A.	38	Forbes, R. S., Jr.	23
DeCicco, J.	36	Foreshaw, G.	39
Deland, E. C.	19	Fortney, G. E.	36
Delson, J. K.	8	Francis, T. L.	17
DeMaria, A. J.	22	Fredette, A. P.	15
Denholm, A. S.	10	Freeling, M.	38
Detty, V. C.	8	Friedlander, F. J.	22
DeViney, T. E.	39	Frier, J. P.	7
Dick, G. W.	9	Froelich, F. E.	24 & 28
Dickinson, W. H.	19	Fujita, S.	28
Diebold, E. J.	13	Fuller, M. A.	28
Dietrich, R. E.	37		
Dillard, J. K.	37	Gaertner, W. W.	7
Dobias, W. J.	11	Gaines, W. M.	22 & 28
Doehler, O.	30	Gale, A. J.	10
Domeratzky, L. M.	8	Galiyano, M. C.	8
Donnelly, H. J.	19	Galpern, H. N.	29
Dortort, I. K.	13	Ganapathy, S.	33
Douglas, J. F. H.	40	Gangel, M. W.	36
Drenning, J. W.	17	Gardner, R. M.	10
Dubberly, C. A.	31	Garratt, S. J.	23
Dubois, E. J.	19	Gaudette, A.	25
Duehne, H. H.	23	Gazzana-Priaroggia, P.	12
Duff, C. K.	16	Gerring, F. H.	24
Duke, C. A.	29	Geyger, W. A.	34
Dyer, R. F.	32	Gibson, J. E.	14
Dzik, A.	26	Gilman, S. F.	31
		Gipslis, P. W.	38
Eckman, D. P.	38	Claser, R. H.	39
Eirich, F. R.	22	Glenn, W. E.	14
Eisiminger, C. I.	8	Glinski, G. S.	25
Elbling, I. H.	27	Gloor, R. D.	33
Elco, R. A.	10	Godovanik, D.	33
Elgerd, O. I.	40	Goff, L. E.	37
El-Serafi, A. M.	8	Goldberg, L. J.	32
Emling, J. G.	38	Gomulkiewicz, P.	16
Ender, R. C.	36	Gootgeld, K. M.	11
Endicott, H. S.	13	Gordon, K. H.	14
Endsley, D. L.	18	Gould, L. A.	35
Enslow, G.	26	Grace, F. B.	21
Enticknap, R. G.	28	Graham, D. C.	7
Erbe, J. R.	39	Graham, L. J.	16
Esch, H.	19	Grannemann, W. W.	18
Estoppey, R. F.	15	Gray, P. E.	27
Evans, B.	27	Grebe, J. J.	22
Evans, G. G.	39	Greene, W. B.	13
		Greenwood, A.	16 & 25
Farhi, S.	12	Griffin, D. R.	20
Farry, O. T.	16	Griffin, J. H.	24
Feder, H. S.	39	Griffith, D. C.	32
Feild, A. L., Jr.	39	Gross, E. T. B.	27
Feldman, J. M.	17	Groves, S.	12
Fiegel, H. E.	29	Gruber, J. R.	11
Filopowsky, R.	24	Guenard, P.	30
Findlay, D. A.	29		
Fischer, P. P.	22	Hagadorn, M. W.	26

LIST OF AUTHORS

<i>Author</i>	<i>Page</i>	<i>Author</i>	<i>Page</i>
Hague, C. S.	16	Jackson, E.	31
Halacsy, A. A.	16	Jackson, S. P.	30
Hale, H. W.	21	Janoff, C.	14
Hally, H. G.	21	Jenkinson, G. H.	14
Ham, D. M.	12	Johnson, I. B.	40
Hamilton, A. R.	26	Johnson, L. M.	37
Hansen, A.	23	Jones, B.	23
Hansen, A., Jr.	7	Jones, S.	13
Hapgood, K. E.	40	Jones, T. F., Jr.	41
Happ, W. W.	26	Jordan, S. C.	28
Harbaugh, W. E.	31	Jorgensen, O. A.	32
Harbourt, C. O.	7	Joseph, P.	28
Harder, E. L.	38	Junga, F.	26
Harmon, R. W.	29		
Harms, H. B.	33	Kalman, R. E.	11
Harnden, J. D., Jr.	28 & 33	Kaplan, L. L.	26
Harris, W. A.	41	Kasper, F. J.	33
Harrison, E. B.	33	Kauffield, L.	31
Harshbarger, C. K.	22	Kerber, W., Jr.	40
Harvey, L. M.	8	King, E. R.	26
Hayes, J. B.	11	King, R. B.	34
Hayner, P. F.	39	Klapper, J.	7
Hayward, W. S.	39	Klinger, E. H.	17
Hazan, E.	40	Knauss, D. E.	9
Heck, F. M., Jr.	24	Kochenberger, R. J.	36
Hedges, H. G.	16	Kooi, C. F.	26
Herbst, R. T.	35	Koppel, H. H.	29
Herder, D. J.	40	Kotheimer, W. C.	16
Hermach, F. L.	15	Kowalik, R. F.	36
Herr, D. L.	36	Kozak, S.	12
Herskind, C. C.	7	Kuba, R. E.	19 & 23
Hickman, C. E.	11	Kuo, T. H.	15
Hiers, C. W.	21	Kusters, N. L.	16
Higgins, F. A.	37	Kuwahara, K.	12
Hileman, A. R.	8 & 21	Kwast, V. B.	29
Hill, E.	22		
Hinkein, D. J.	18	LaForest, J. J.	37
Hitch, J. W.	30	Laird, J. A.	8
Hochgraf, L.	28	Lakshmi-Bai, Mrs. C.	19
Hogan, J. E.	9	Lane, C. M.	15
Hoff, R. E.	13	Lane, L. J.	8
Hoffman, A. S.	20	Lang, W. Y.	7
Hoffman, D. C.	16	Langdon, W. R.	26
Hollander, G. L.	8	Langlois, C. A.	16
Hollomon, T. H.	9	Lantz, A. D., Jr.	37
Holm, R.	40	Larson, C. V.	26
Homan, M. E.	9	Larson, R. E.	25
Horine, J. W.	9 & 23	Larsson, Y.	25
Houghton, G. K.	32	Leagus, Miss D. C.	35
Howard, J. D., Jr.	32	Lee, T. H.	25
Howard, P. L.	24	Leedham, C. D.	14
Howatson, A. M.	25	Le Gendre, V.	26
Huggins, O. R.	37	Lehner, L. L.	30
Huggler, L. R.	28	Leliakov, I. P.	22
Hughes, J. A.	36	Leondes, C. T.	19
Hugo, R. V.	21	Lerner, R. M.	28
Humphrey, A. J.	26	Levine, S.	21 & 35
Husock, B.	10	Lewis, J.	28
		Liechty, M. D.	16
Ishihara, O.	28	Linde, L.	22
		Lindquist, J.	25
Jaccodine, R. J.	26	Linke, S.	36
		Lippel, B.	21

LIST OF AUTHORS

<i>Author</i>	<i>Page</i>	<i>Author</i>	<i>Page</i>
Little, C. W.	22	Morgan, R. E.	33
Leslie, J. R.	32	Morgan, W. S.	8
Locke, I. E.	41	Morley, R. E.	17
Loferski, J.	34	Morzenti, O. J.	35
Lorentson, H. S.	37	Moss, R. W.	26
Louttit, C. C.	29	Moyer, D. F.	9
Love, V. E.	15	Mozina, A. L.	39
Luoma, E.	14	Mulligan, J. H., Jr.	13
Lynch, P. D.	30	Murakami, R.	28
		Myers, R. T., Jr.	11
Mabbey, C. A.	24		
MacCarthy, D. D.	37	Nagy, A. F.	33
MacIndoe, R. C.	15	Nahi, N. E.	34
Machlis, J.	22	Nasar, S. A.	38
Majjala, W. A.	26	Neff, H. P.	11
Majmuder, H.	33	New, T.	31
Malthaner, W. A.	39	Newgard, P. M.	25
Maltzer, I.	30	Newton, G. C., Jr.	36
Mandelcorn, L.	13	Nigol, O.	32
Manson, D. M.	10	Nilsson, E.	12
Mapham, N. W.	31	Nolan, E. E.	11
Margolis, H. B.	33	Norman, R. S.	20
Mark, H. F.	22	Nugent, J. E.	12
Marshall, A. E.	16	Nycz, J. C.	15
Martin, T. L., Jr.	41		
Martin, W. J.	21	O'Donohue, J.	14
Martiny, W. J.	33	Ohashi, K.	29
Mathes, K. N.	13	O'Keefe, J. J.	35
Mathers, M. G.	21	Olive, D. W.	33
Mathwich, H. R.	27	O'Neil, J. E.	37
Mayo, C. R.	14		
McBrien, E. F.	7	Pakala, W. E.	37
McCaron, S. I.	32	Palandri, G.	12
McCoy, R. M.	33	Pande, H. C.	33
McCue, J. J.	20	Pare, T.	23
McCullough, C. H.	37	Patel, M. P.	11
McFee, R.	19	Patapoff, H.	23
McGee, R. R.	19	Patterson, W. N.	28
McGowan, E. J.	13	Patton, A. D.	36
McKinley, J. L.	21	Paule, J.	25
McLeod, J. H.	25	Payne, F.	38
McNabb, J. E.	36	Pendergast, H. E.	20
McNees, S. G.	31	Penney, G. W.	10 & 17
McVey, E. S.	14	Perkins, J. F., Jr.	13
Melas, C. M.	24	Perry, C. C.	27
Metzner, J.	18	Peshel, R. L.	24
Michael, D. T.	17	Peterson, S.	22
Michaelis, J. L.	22	Pettit, D. L.	29
Mildner, R. C.	22	Pidhayny, D. D.	14
Miles, T.	30	Pohl, R. V.	7
Miller, J. G.	20	Pohm, A. V.	18
Miller, R. L.	36	Polansky, R. B.	9
Miller, W. S.	22	Polk, H. K.	21
Mills, R.	22	Pollack, L.	27
Mina, R. R.	34	Porter, V. J.	35
Mintel, F. W.	41	Powell, A. H.	25
Mitchell, J. C.	26	Preiss, R. J.	38
Mittman, R. B.	25	Preist, D.	30
Mollerhoj, J. S.	12	Price, A.	36
Montross, R. C.	23	Pugh, P. S.	21
Moore, W. J. M.	16	Putnam, G. F.	39
Moorman, R. V.	9		
Morgan, K.	18	Rabinovici, B. M.	7

LIST OF AUTHORS

<i>Author</i>	<i>Page</i>	<i>Author</i>	<i>Page</i>
Radue, P. F.	32	Scheda, F. A.	37
Ragazzini, J. R.	11	Scheer, G. B.	22
Rama Mohan Rao, K.	40	Scherer, E. H.	20
Ramsdell, R.	17	Schieman, R. G.	18
Ranallo, M. L.	39	Schindler, M.	38
Rea, D.	35	Schmitz, C. W., Jr.	12
Redington, T. R.	34	Schmidt, W. G.	18
Reed, G. B.	21	Schneider, D. B.	24
Reed, M. B.	21	Schoebel, K. W.	24
Reed, R. E.	30	Schuller, M.	7
Reichman, J.	32	Schulz, M. W., Jr.	16
Reiffen, B.	18	Schupack, M.	37
Reifschneider, P. J.	23	Schwartz, J. D.	33
Reingold, I.	38	Scott, B. B.	41
Reis, N. J.	21	Seaman, J. T.	17
Reiser, R. D.	20	Segal, J.	9
Rekasius, Z. V.	14	Sellers, A. H.	40
Reps, D. N.	36	Sellers, G. A.	35
Retallack, R. L.	40	Semon, W.	9
Rettig, E. C.	7	Sepahban, A. H.	35
Ricitiello, M.	17	Seward, G. J.	11
Riebs, R. E.	21	Shair, R. C.	24
Rietz, E. B.	21	Shamis, S. S.	13
Rippin, J. F., Jr.	33	Shaneman, V. C.	37
Rivas, L. A. F.	24	Shankel, D. F.	37
Robbins, J. D.	41	Sharbaugh, A. H.	25
Roberts, C. A.	29	Sharp, R. A.	41
Robertson, L. M.	37	Shattuck, D. P.	30
Robinson, M.	10	Shaw, H. J.	38
Robinson, M. D.	25	Shepherd, R. V.	18
Roeder, K. D.	20	Shepherd, W.	40
Roerty, D. F.	15	Shobert, E. I., II	40
Rogers, D. F.	8	Shonnard, J. R.	11
Rogers, T. H.	41	Shuba, J. P.	36
Rohlf, A. F.	29	Shull, J. R.	14
Roley, R. D.	31	Siegel, A.	31
Rolsma, B.	7	Simeon, A.	18
Romzick, L. H.	12	Simmons, G. F.	21
Rosenthal, C. W.	35	Sittner, R. W.	19
Ross, A. T.	11	Slemon, G. R.	22
Ross, H. C.	25	Sluss, J.	30
Ross, D. T.	31	Smay, T. A.	18
Roumanis, S. J.	7	Smith, B. H.	31
Rowe, I. H.	22	Smith, F. W.	24
Rowell, R. M.	15	Smith, H. H.	34
Rubel, W. L.	19	Smith, J. C.	37
Rubenstein, A. S.	8	Smith, L. E.	29
Rundstedt, R. J.	41	Smith, P. L.	17
Russell, J. B.	41	Smith, R. W.	21
Ryan, J. W.	25, 33 & 36	Smith, S. V.	33
		Sollecito, W. E.	39
Sabih, D.	7	Sommer, R. A.	7
Saelens, R. G.	26	Somos, I.	13 & 32
Sage, A. P., Jr.	36	Sparks, D. W.	28
Sager, G.	30	Sparrow, K. M.	15
Saltzberg, B.	20	Spears, A. B.	26
Samusenko, A. G.	13	Spencer, L. B.	36
Sanborn, C. B.	18	Sprengling, G. R.	13
Sandell, D. H.	37	Springfield, T. W.	37
Sanders, R. P.	36	Sridhar, R.	14
Sarikas, R. H.	36	Stafford, D. E.	27
Schaefer, D. L.	26	Stage, S.	25
Schaefer, R. A.	32	Stair, J.	23

LIST OF AUTHORS

<i>Author</i>	<i>Page</i>	<i>Author</i>	<i>Page</i>
Stamm, J. J.	14	Vance, P. A.	8
St. Andre, J. W.	17	Vanderleck, J. M.	32
Stansbury, C.	12	Voelker, F.	31
Starr, W. T.	13	Vogeler, R. B.	8
Steenek, R.	28	Vojinovic, M. M.	33
Stegenga, A.	11	Von Fuchs, G. H.	16
Stephens, P. A., Jr.	11	Voyles, J. L.	12
Stillwagon, R. E.	19	Vyssotsky, V. A.	31
Stone, B. L.	17		
Storm, H. F.	30	Wagner, C. F.	21
Stowell, P. A.	14	Wagner, C. L.	8
Straka, C. J.	20	Wagner, H. H.	21
Stratford, R. P.	16	Wagner, R. N.	22
Stremler, F. G.	27	Wald, L. D.	17
Stricker, S.	29	Walker, A. P.	15
Strom, C. A., Jr.	28	Walker, H. P.	20
Stumbo, R. W., Jr.	37	Wall, L. A.	34
Stuve, L. R.	15	Walters, G.	33
Summers, T.	18	Walton, C. A.	21
Sutton, C. T. W.	12	Walton, H. M.	37
Sutton, H. B.	11	Wang, P. K. C.	23
Sutton, H. J.	38	Warburton, J. A.	20
Sutton, L. G.	31	Ward, P. L.	25
		Washburn, S. H.	31
Tabor, P. M.	15	Watson, P. K.	25
Taft, C. K.	11	Watson, W. H.	19
Talaat, M. E.	26	Weaver, L. E.	36
Talbott, G. D.	9	Webb, R. C.	22
Talcott, D. F.	15	Wechsler, K.	17
Talcott, R.	30	Weddendorf, W. A.	23
Taylor, E. R. Jr.	37	Weden, C. V.	31
Temes, G. C.	38	Weed, H. R.	14 & 30
Temoshok, M.	8	Weeks, R. W.	22
Tevonian, R.	8	Weiss, G.	35
Thaler, G. J.	11	Welt, M. A.	30
Theall, C. E., Jr.	13	Weppeler, H. E.	27
Thomander, V. S.	15	Westrom, A. C.	8
Thomas, D. H.	26	Whepley, E. A.	8
Thomas, J. B.	17, 18, & 39	Whisnant, R. A.	31
Thomson, K. R.	35	White, D. R.	25
Thomson, F. T.	23	White, H. B.	37
Thomson, T. W.	39	Wickersham, P. B.	24
Thurell, J. R.	32	Wickland, J. S.	34
Tiemann, J. J.	7	Wildi, P.	21
Tillman, J. D.	11	Wilkerson, A. W.	23
Timlin, T. N.	35	Willardson, F. W.	41
Todd, G. F.	18	Willett, C. F.	19
Tou, J.	28	Williams, A. D.	15
Tou, J. T.	11	Williams, E. M.	17
Trickey, P. H.	37	Williams, H. T.	17
Troutman, P. H.	39	Williams, J. E.	37 & 40
Truesdell, F. W.	12	Williams, T. R.	39
Trump, J. G.	10	Willihnganz, E.	24
Tunis, A. C.	30	Winters, H. M.	34
Turner, W. W.	37	Wisser, G. R.	26
		Wolk, J. K.	39
Ulmer, R. M.	32	Wolkstein, H. J.	38
		Wong, E.	18
Vadhanaphuti, B.	11	Wood, J. D.	12
Van Bennekom, C. F.	15	Wood, R. E.	22
Van Emden, B. M.	33	Wright, D. F.	12
Van Lint, V. A. J.	34	Wulkan, A. A.	29
VanNess, J. E.	20 & 24	Wusteney, H. H.	7

LIST OF AUTHORS

<i>Author</i>	<i>Page</i>	<i>Author</i>	<i>Page</i>
Wynne, W. T.	20	Yudkin, H. L.	18
Yamamoto, M.	29	Zamer, R.	15
Yamamoto, Y.	28	Zimmerman, S. W.	33
Yerk, R. G.	37	Zitelli, L. T.	30
Yingst, T. E.	31	Zobel, E. S.	40

MEMORANDUM

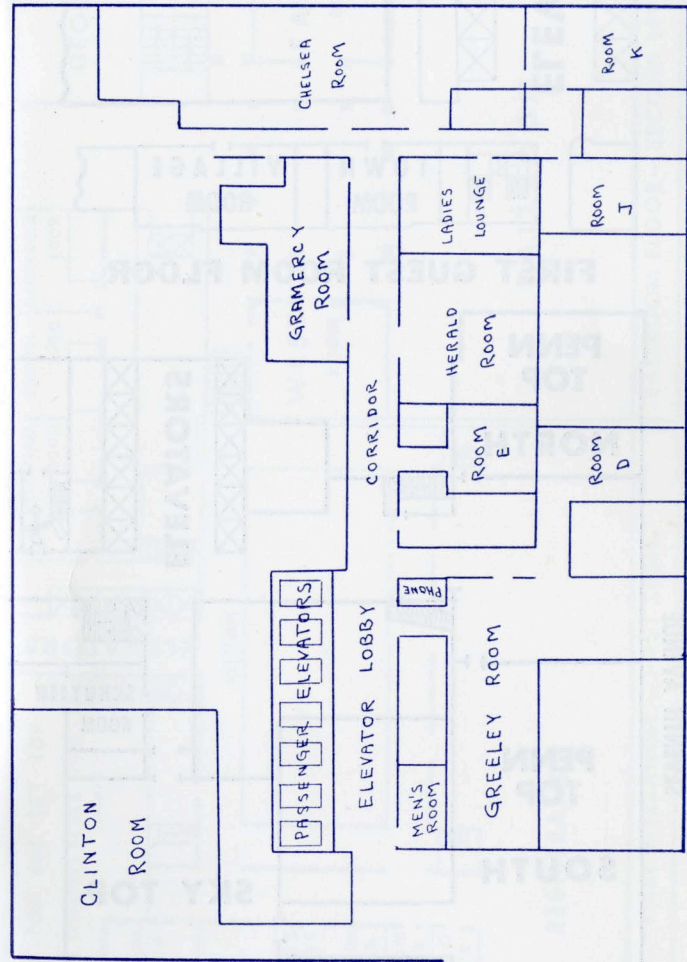
HOTEL GOVERNORS CLINTON



THIRD FLOOR

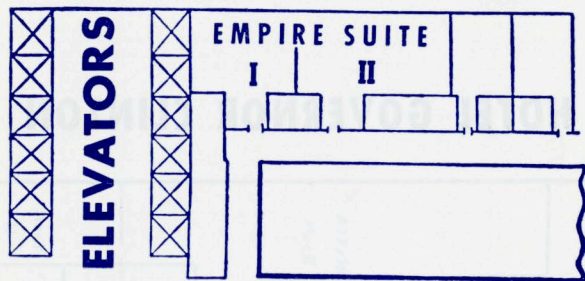
MEMORANDUM

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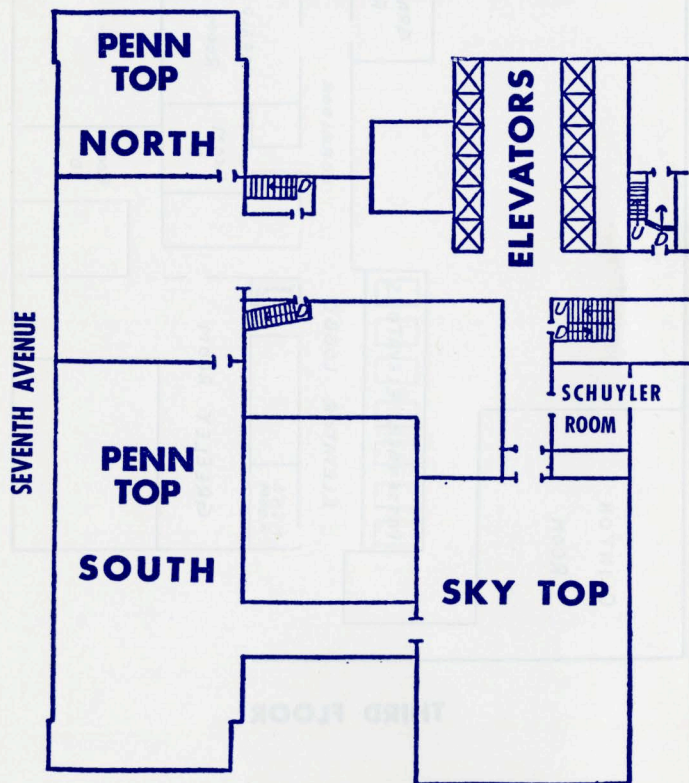


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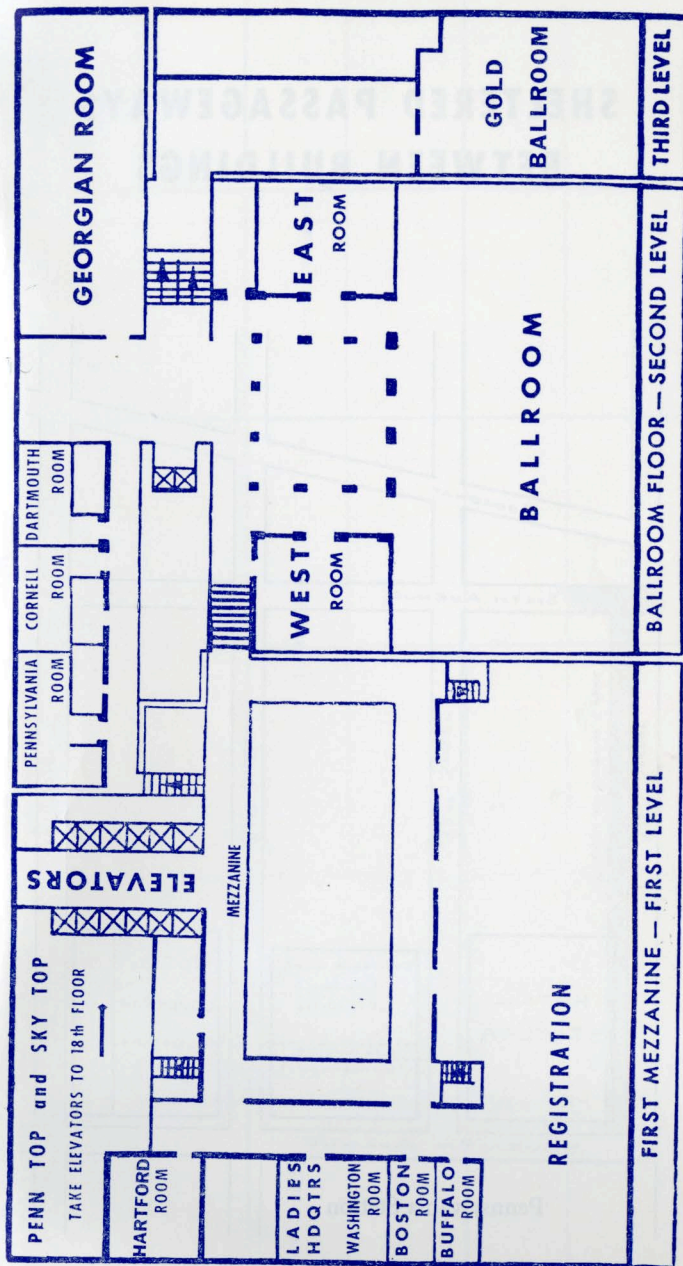
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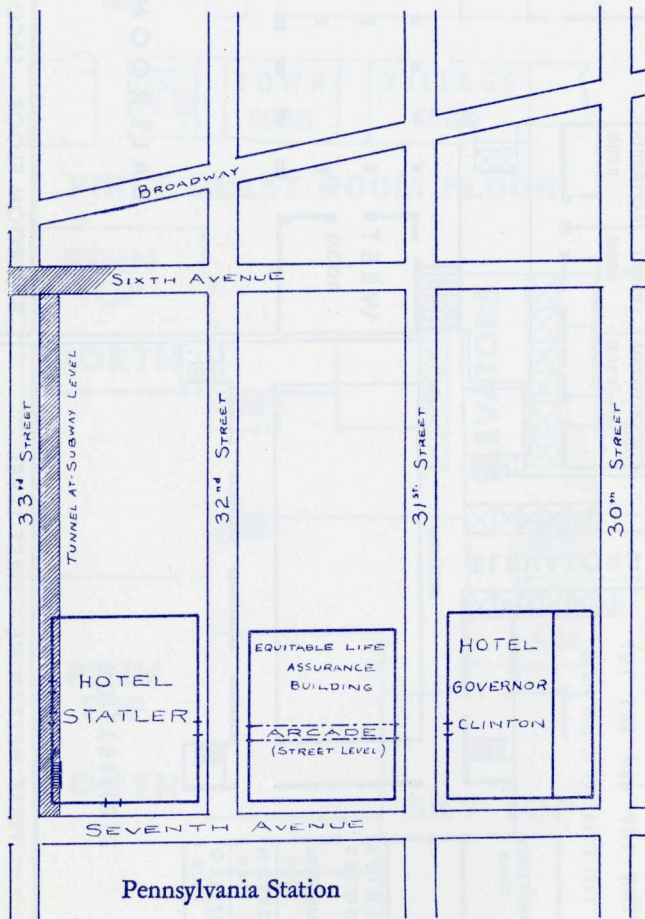


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PLAN OF HOTEL STATLER

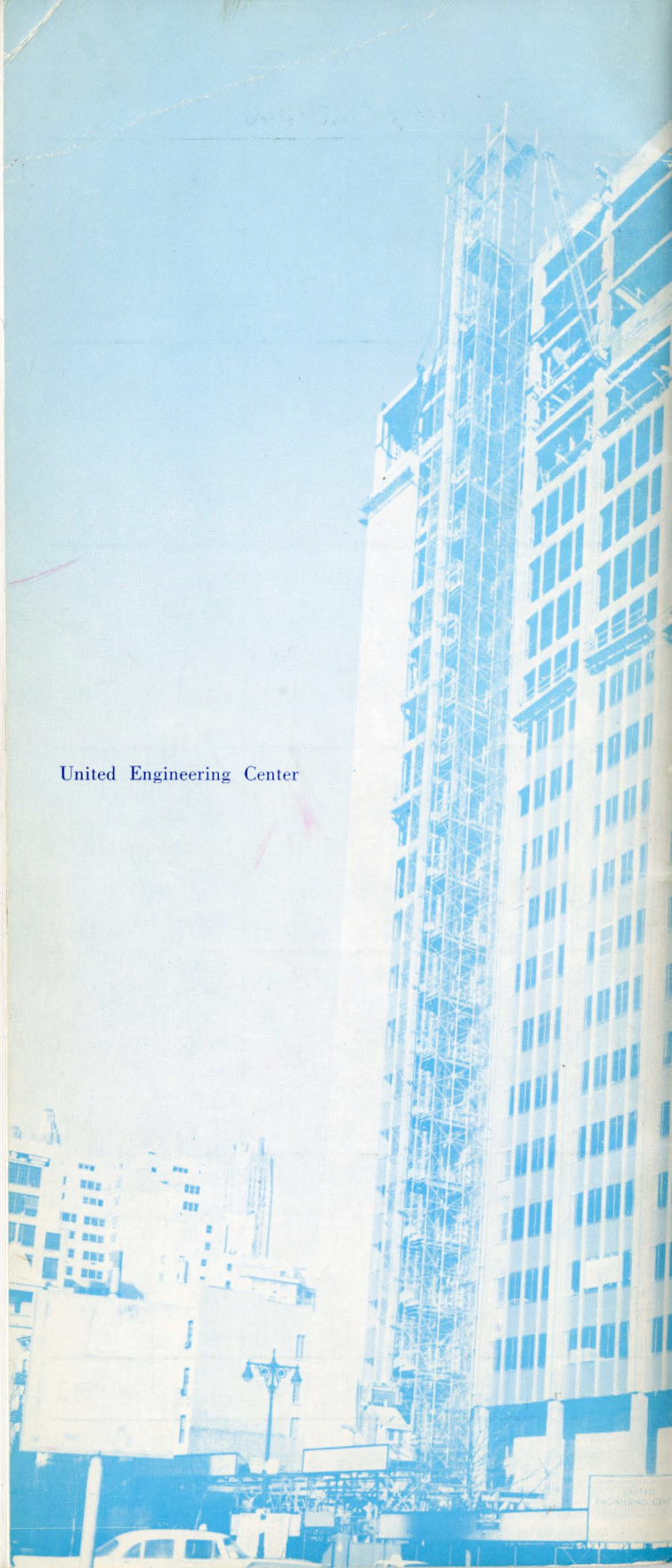
SHELTERED PASSAGeways BETWEEN BUILDINGS



DAILY CALENDAR

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

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