



The IEEE

Newsletter

The Magazine of the North Jersey Section

IEEE INTERNATIONAL CONVENTION AND EXHIBITION

New York City, March 23-26

MARCH, 1970

Safety Subject of Multi-Group Meeting

The first North Jersey Multi-Group meeting will feature three speakers on the various aspects of engineering safety.

Dr. Hans von der Mosel, presently Professor of Medical Electronics at Columbia University, will discuss medical engineering safety. Involving more than the obvious need to keep hospitals functioning during power failures, medical safety runs the gamut of problems from successful machinery operation by inadequate personnel to error detection in computer diagnosis, where technician alone and doctor alone are unaware of the error.

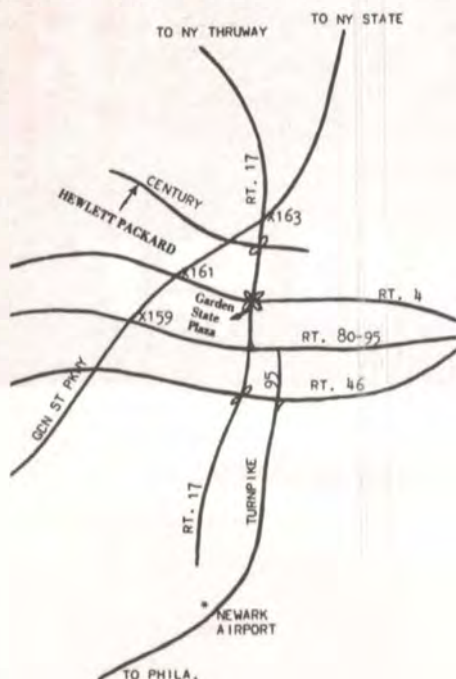
Dr. Max Weiss, of Bell Telephone Laboratories, Murray Hill, will follow with a discussion of legal and legislative problems arising from engineering errors. Some of these problems are current news items, such as microwave ovens, television radiation, and lasers.

The final talk, by John Boettger, Senior Engineer for Public Service Electric & Gas Company in Newark, will be on Instrument Systems for Nuclear Power Plant Safety. Dr. Boettger is lead engineer for installation of Public Service nuclear plants.

Time: Thursday, March 12, 8:00 P.M.

Place: Hewlett Packard Auditorium, West 120 Century Rd., Paramus, N.J.

Pre-Meeting Dinner: 6:30 P.M. (Dutch Treat) Cambridge Inn, Route 17, Garden State Plaza, Paramus, N.J.



Wednesday, March 4

Transmission and Distribution Group — Cable Testing, Union Carbide Corporation, 270 Park Avenue, New York City, Third Floor Meeting Room. 6:30 P.M.

Thursday, March 5

New York Communications Group — Computer Systems for the Communications Engineer, the first of six lectures comprising Part III of this program to be given in March and April, The Little Theater, New York Telephone Company, 140 West Street, New York City. 6:30 P.M.

Tuesday, March 10

North Jersey Communications Technology Group — Western Union's Plans for an All Digital Network, Mr. Russell G. Dewitt, Speaker, Computer Sciences Corp., South 60, Route 17, Paramus, N. J. 8:00 P.M. Pre-Meeting Dinner: Cambridge Inn, Garden State Plaza, Paramus, N. J. 6:00 P.M.

Thursday, March 12

North Jersey Power Group and Morris County ASME — Peaking Units, Mr. Kurt Brenner, Speaker, Punch Bowl Room, Jersey Central-New Jersey Power and Light Headquarters, Route 24, Morristown, N. J. 7:30 P.M.

North Jersey Multi-Group Meeting — Engineering Safety, Three Speakers, Hewlett-Packard Auditorium, West 120 Century Road, Paramus, N. J. 8:00 P.M. Dutch Treat Pre-Meeting Dinner: Cambridge Inn, Garden State Plaza, Route 17, Paramus, N. J. 6:30 P.M.

Saturday, March 14 and Saturday, March 21

New York Power and Industrial Division — Backstage Inspection Tour of the New York Metropolitan Opera House, 11:00 A.M., followed by reserved seat performance of: "La Fanciulla del West," on March 14, and "La Traviata," on March 21, Lincoln Center, New York City. Wives invited.

Wednesday, March 18

North Jersey Section G-AP/GMTT — Communication From Deep Space Probes, Mr. J. S. Cook, Speaker, Arnold Auditorium, Bell Telephone Laboratories, Murray Hill, N. J. 8:15 P.M. Pre-Meeting Dinner: Wally's, Watchung, N. J. 6:15 P.M.

Princeton Section, Magnetics Chapter — Video Recording Techniques, Mr. J. D. Rittenhouse, Speaker, Rutgers University, New Brunswick, N. J., Murray Hall, Room 208. 8:00 P.M.

North Jersey Section Reliability Group — Computer Use in Failure Analysis, Mr. Kenneth G. Blemel, Speaker, Singer-General Precision, Kearfott Division, Plant No. 3, 1150 McBride Avenue, Little Falls, N. J. 8:00 P.M.

Monday, March 23 through Thursday, March 26

Annual IEEE International Convention and Exhibit — New York Coliseum, 59th Street and Broadway, and the New York Hilton Hotel, 1335 Avenue of the Americas, New York City. Technical Program: 9:30 to 12:00 Noon and 2:00 P.M. to 4:30 P.M., daily. Exhibits: 10:00 A.M. to 8:00 P.M., daily. Early Registration: New York Hilton Hotel, Sunday, March 22, 2:00 P.M. to 8:00 P.M.

Monday, March 23

Annual First Night Reception, IEEE Convention — Grand Ballroom, New York Hilton Hotel, 1335 Avenue of the Americas, New York City. 5:30 P.M. to 7:30 P.M.

Eta Kappa Nu Award Dinner — Sutton Ballroom North, New York Hilton Hotel. Cocktails: 5:30 P.M. Dinner: 6:00 P.M. to 8:00 P.M.

(Calendar continued on page 3)

The IEEE Newsletter

Published monthly except July and August by the North Jersey Section of the Institute of Electrical & Electronics Engineers, Inc. Office of Publication: 9 Little John Road, Morris Plains, N. J.

Volume 16 March 1970 No. 7

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Deadline for all material is the 25th of the second month preceding the month of publication.

All communications concerning the Newsletter, including editorial matter, advertising, and mailing, should be addressed to:

THE NEWSLETTER

c/o Girard Associates, Inc.

P.O. Box 666

Mt. Arlington, N. J. 07856

Phone: 398-5524

Subscription: 75¢ per year through dues for members; \$1.50 per year for non-members.

Second Class Postage Paid

at Morris Plains, N. J.

REPORT ALL ADDRESS CHANGES TO:

INSTITUTE OF ELECTRICAL AND ELECTRONICS
ENGINEERS INC., 345 EAST 47th STREET
NEW YORK, N. Y. 10017

It is not necessary to inform the North Jersey Section when you change your mailing address. The NEWSLETTER and other section mailings use a list provided by IEEE's national headquarters in New York. This means the Section has no need to maintain a mailing list or addressing plates. Section membership records are changed when Headquarters notifies us.

NORTH JERSEY SECTION OFFICERS 1969-1970



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Instrumentation For Air Pollution Control

An evening meeting on "Air Pollution Control Instrumentation" will be presented by the Joint Chapter on Instrumentation and Measurement on Tuesday, April 7, 1970.

The speaker will be Dr. Edward F. Ferrand, Director-Bureau of Technical Services, New York City Department of Air Resources, Environmental Protection Administration. Dr. Ferrand will discuss the aerometric network operated by the City of New York. Emphasis will be on

the instrumentation used by the Bureau and on principles of operation. The need for improved equipment in the air pollution field will also be covered.

A guided tour through the facilities of the Control Center will follow the talk.

Because of limited capacity, please notify Mr. John J. Dietz, Thomas A. Edison Industries, 51 Lakeside Avenue, West Orange, N. J. 07052. Phone: (201) 736-1000, Ext. 571.

Time: Tuesday, April 7, 6:30 P.M.

Place: Room 21E, Engineering Building, Cooper Union, 51 Astor Place, N.Y.C.

CALENDAR — (Continued from page 2)

Wednesday, March 25

Annual Banquet, IEEE Convention — Grand Ballroom, New York Hilton Hotel. Doors open 6:30 P.M. Banquet: 7:15 P.M.

New York Power and Industrial Division and the Automatic Control Group — Automated Material Handling, Messrs. A. Tallscott and F. C. Groepler, Speakers. Consolidated Edison Auditorium, 19th Floor, 4 Irving Place, New York City. Refreshments: 6:00 P.M. Meeting: 6:30 P.M.

Tuesday, April 7

New York Joint Chapter on Instrumentation and Measurement — Air Pollution Control Instrumentation, Dr. Edward F. Ferrand, Speaker, Room 21E, Engineering Building, Cooper Union, 51 Astor Place, New York City. 6:30 P.M.

Wednesday, April 8

New York Communication Technology Group — Color TV—Principles and Servicing, first in a series of seven lectures held at the Auditorium, 32 Avenue of the Americas, New York City. 6:30 P.M. to 8:30 P.M.

Tuesday, April 14

Instrumentation and Measurement Group — Oceanographic Instrumentation, start of seven-session lecture series, Consolidated Edison, 4 Irving Place, New York City. 7:00-9:00 P.M. (Complete details in April Newsletter) Contact H. Perlis at NCE, (201) 645-5492, or 645-5472.

Thursday, April 16

New York Metropolitan Chapter, Engineering Management Group — The Engineers are Restless, A Study in Motivation, Mr. Robert N. Ford, Speaker, Engineering Societies Building, 345 East 47th Street, New York City, Room 125. 7:30 P.M. Non-members welcome.

Monday, April 20

New York Metropolitan Chapter, Engineering Management Group — Financial Aspects of Management, first of five weekly two-hour sessions, Long Island Graduate Center of the Polytechnic Institute of Brooklyn, Farmingdale, Long Island, New York. 7:00 P.M. to 9:00 P.M.

Computer Use In Failure Analysis

At the March meeting of the North Jersey Reliability Group, Mr. Kenneth G. Blemel, president of Panalogic Inc., Rochester, New York will present a talk entitled "Failure Modes and Effect Analysis Using Computers." The meeting is to be at Singer-General Precision, Kearfott Division, Plant No. 3, 1150 McBride Avenue, Little Falls, New Jersey.

Methods for handling reliability predictions, failure mode and effect analysis and maintainability apportionments with a digital computer will be discussed. This powerful tool can remove much of the tedious and routine tasks of reliability and maintainability and thus allow more time for improving equipment design.

Mr. Blemel is a graduate of The University of Cincinnati with a B.S. in Applied Mathematics. As a statician, mathematician and reliability engineer with 14 years experience in the field of computer



aided engineering, Mr. Blemel is well qualified to speak on the topic of the meeting. All members as well as non-members interested in this subject are encouraged to attend.

Time: Wednesday, March 18, 1970; 8:00 P.M.

Place: Singer-General Precision, Kearfott Division, Plant No. 3, 1150 McBride Avenue, Little Falls, N.J.

Additional information: Call G. H. Ebel (201) 226-7777.

Communication From Deep Space Probes

The March meeting of the North Jersey Section of G-MTT/G-AP will feature a talk on the prospects and problems of deep space communications. The speaker will be Mr. J. S. Cook, Director of the Military Communications Research Laboratory at Bell Telephone Laboratories.

Not long ago BTL completed a study (partially funded by the National Aeronautics and Space Administration) of the problems and limitations associated with sending information at high data rates (e.g., 10^6 b/s) back to earth from space probes as much as 10^9 miles away. Particular attention was given to the comparative advantages offered by the use of different transmission frequencies. Microwave, millimeter wave, and light frequencies were considered. The study, intended to determine fruitful avenues for exploratory development, lead to some interesting conclusions that will be discussed.

J. S. Cook, Director of the Military Communications Research Laboratory, joined Bell Telephone Laboratories in 1952 after receiving BS and MS degrees in Electrical Engineering at Ohio State University. Until 1960 he was associated



with the Electronics Research Department where he engaged in experimental work on traveling wave tubes, electron optics, coupled systems, and parametric amplification.

Since then he has been associated with the Military Research Area where he has been responsible for phased-array and other microwave antenna work, atmospheric propagation studies, laser research and various satellite communication studies.

Mr. Cook is a senior member of the IEEE.

Time: Wednesday, March 18; 8:15 P.M.

Place: Arnold Auditorium, Bell Telephone Laboratories, Murray Hill, New Jersey.

Pre-Meeting Dinner: 6:15 P.M., Wally's, Watchung, New Jersey.

Western Union Plans All Digital Network

The Northern New Jersey Communication Technology Groups will sponsor a meeting on the subject of "Western Union's Plans for an All Digital Network" on Tuesday night, March 10, 1970. The speaker will be Mr. Russel G. DeWitt who is the Manager of Transmission Systems Engineering for Western Union.

A Digital Transmission Network has the same advantages over an Analog Network that a Digital Computer has over an Analog Computer—greater accuracy and more flexibility. Other advantages are that Digital Communication Terminal Equipment is less expensive and continuing to decrease in cost. Digital transmission can be used successfully on facilities not suitable for analog transmission. Computer controlled digital switching using time slot interchange can be introduced into a digital transmission network with significant gains in switching economy, reliability, flexibility (all types of traffic such as telegraph, voice, facsimile, 2400 BPS data, 4800 BPS data, 50 KBPS data, etc. can be handled by the same switch), and ease of maintenance. Also, a digital network eliminates expensive modems and makes more efficient spectrum utilization for the transmission of digital signals.

About the Speaker

Russell G. DeWitt received the B.S.M.E. in 1950 from Rutgers University and the M.S.M.E. from Columbia University in 1951. Following a tour of duty in the U.S. Army in Korea and Japan, he received the M.S.E.E. from Columbia University in 1957 and then completed all pre-thesis work for the doctorate.

After many years at Bell Telephone Laboratories, where he worked on Pulse Code Modulating, Computer Data Networks, Time Division Multiplexing and Digital Switching, he joined Western Union in 1966 where he has been Manager of a group which is engaged in creating a Western Union Nationwide all Digital Network.

Time: Tuesday, March 10; 8:00 P.M.

Place: Computer Sciences Corp., South 60 Route 17 (across from Garden State Plaza), Paramus, N. J.

Pre-Meeting Dinner: 6:00 P.M. at Cambridge Inn, Garden State Plaza, Paramus.

Additional Information: Call George Parowski at (201) 529-4600, Ext. 2460.

Gas Peaking Units

The North Jersey Power Group and the Morris County Subsection of ASME will co-sponsor a meeting on gas turbine electrical generating units. In recognition of changing system load characteristics and the increasing demand for electric energy, several utilities in the metropolitan area are engaged in a program of installing gas powered peaking turbines. Kurt Brenner, the speaker, will emphasize engineering design, operating flexibility and economics of jet and industrial type turbine powered generators. The demonstrated usefulness and future application of these units will also be described.

Kurt Brenner is Assistant to the General Superintendent of Generation at Public Service Electric and Gas Company. He received his B.S.M.E. from Stevens Institute of Technology. Mr. Brenner is a member of the ASME. Since 1963 he has been actively involved in the gas turbine program of P.S.E. & G. Co.

Time: Thursday, March 12; 7:30 P.M.

Place: Punch Bowl Room, Jersey Central-New Jersey Power and Light Headquarters, Route 24, Morristown, N.J.

Notice of Nominations

The Nominations Committee for the North Jersey Section IEEE would welcome nominations for the following:

For Institute Committees and Boards for 1971, nominations close June 1, 1970.

For North Jersey Section Officers for the July 1, 1970 to June 30, 1971 year, namely: Chairman, Vice-Chairman, Treasurer, Secretary and two Members-at-Large, nominations close April 30, 1970 with the election to be held at the May Section meeting.

It is assumed that anyone making such a nomination would have first contacted the person to be nominated, securing his permission for the nomination and his assurance that he would serve if elected.

Nominations can be sent to S. A. Mallard, Chairman of the Nominations Committee, Room 6110, Public Service Electric & Gas Co., 80 Park Place, Newark, N.J. 07102 or telephoning him at (201) 622-7000, Ext. 2117.

*Carl C. Torell, Secretary
North Jersey Section*

Video Recording Techniques

The fundamental aspects of magnetic video recording for devices ranging from simple unsophisticated home TV needs to complex studio type equipment will be the topic of discussion at the Princeton Section's Magnetics Chapter meeting. Basic equipments will be described, and their subsystems discussed, including, modulation techniques, servos, and record/reproduce processes.

The speaker, J. D. Rittenhouse is presently Manager of Design and Development for Recording equipment in the Defense Communications Systems Division of RCA, at Camden, New Jersey. He received his B.S.E.E. from Drexel Institute of Technology (Industry Co-operative Program) and the M.S.E.E. from the University of Pennsylvania.

Time: Wednesday, March 18, 1970; 8:00 P.M.

Place: Murray Hall, Room 208, Rutgers University, New Brunswick, N.J.

Pre-Meeting Dinner: Alumni-Faculty Club, 199 College Avenue, New Brunswick, N.J. 6:00 P.M.

For reservations please contact: Mrs. Helen Yefko, Department of Electrical Engineering, Rutgers University. 247-1766 Ext. 6325.

Cable Testing

Speakers at the March meeting of the Transmission and Distribution Group will discuss cable testings before and after installation. Special techniques and precautions for testing cables of various voltage ratings will be emphasized. Also discussed will be criteria for determining the quality of the cables being tested.

The speakers at this meeting will be Arthur C. Seale Jr. of Long Island Lighting Company, and Dave Silver of General Cable Company.

Time: Wednesday, March 4, 1970; 6:30 P.M.

Place: Union Carbide Corporation, 270 Park Avenue, New York, 3rd Floor Meeting Room.

MICROWAVE SEMINAR
(Details on page 9)

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NEW YORK HILTON HOTEL		MONDAY MARCH 23		TUESDAY MARCH 24		WEDNESDAY MARCH 25		THURSDAY MARCH 26		FRIDAY MARCH 27 Group Sponsored Meetings	
		9:30 A.M.- 12:00 P.M.	2:00-4:30 P.M.	9:30 A.M.- 12:00 P.M.	2:00-4:30 P.M.	9:30 A.M.- 12:00 P.M.	2:00-4:30 P.M.	9:30 A.M.- 12:00 P.M.	2:00-4:30 P.M.	10:00 A.M.- 12:00 P.M.	2:00-4:30 P.M.
Trinon Ballroom (A)		SESSION 1A Electro-Acousto- Opto-Magneto- Elasto Interactions	SESSION 2A Optoelectronics: New Advances in Light-Emitting Diodes and Other Display Devices	SESSION 3A Achieving MOS- Bipolar Compati- bility	SESSION 4A Integrated Silicon Devices — A Pro- jection Through the 70s	SESSION 5A Solid State Micro- wave Power Sources and Am- plifiers	SESSION 6A Optic-Magneto- Semiconductor Memory	SESSION 7A Integrated Systems — Interconnection Problems	SESSION 8A Integrated Circuits for Consumer Ap- plications		
Mercury Ballroom (B)		SESSION 1B Satellite Com- munications for the 70s	SESSION 2B A Broadband Communications Network of the Next Decade — Cable Television	SESSION 3B Millimeter Wave and Optical Sys- tems: Superhigh- ways for Telecom- munications	SESSION 4B Digital Processing of Analog Signals	SESSION 5B Video Telephones — A New Way of Communicating	SESSION 6B The Digital Mat- ing Call of Com- puters and Com- munications	SESSION 7B Holography	SESSION 8B Recent Advances in Antennas		
Setton Ballroom North (C)		SESSION 1C Computer Tech- niques in Urban Management	SESSION 2C Artwork Genera- tion for Integrated Circuits	SESSION 3C Aeronautics in the 70s	SESSION 4C Ground Traffic Control for the 70s	SESSION 5C Gigabit Digital Circuits	SESSION 6C Lasers in the 70s: Toward Higher Efficiencies	SESSION 7C Recent Trends and Applications of Thermionic Microwave Power Amplifiers	SESSION 8C The Path to Suc- cessful Automa- tion in the Manufacturing Process		
Setton Ballroom South (D)			SESSION 2D Augmentation for the Severely Handicapped	SESSION 3D What's New in Video Displays	SESSION 4D Progress in the Electromagnetic Compatibility Field	SESSION 5D Educational Tech- nology	SESSION 6D Environmental Pollution — Today's Engineer- ing Challenge	SESSION 7D New Directions for Information Theory in the 70s	SESSION 8D Modern Network Techniques for Device, Circuit, and System Design		
Nassau Suite (E)		SESSION 1E Electrography — Electronic Hard- copy	SESSION 2E Power Systems Dynamics — New Aspects and Novel Analysis Methods	SESSION 3E Biocanning in the 70s	SESSION 4E Engineering in Emergency Medi- cine	SESSION 5E Patent Pay for Engineers	SESSION 6E Educational Pro- grams in Industry	SESSION 7E Control Applica- tions in Large- Scale Systems	GROUP E1 MEETING Insulation for Ad- vanced Electronic Systems		
Murray Hill Suite (F)		SESSION 1F Frontiers in Power Engineering	SESSION 2F Acoustics in Oceanography — Navigation and Object Location	SESSION 3F Systems Engineer- ing — How Can We Use It Effecti- vely?	SESSION 4F There's Another Way to Get Your Message Across	SESSION 5F Laser Applications in Manufacture	SESSION 6F Microwave In- tegrated Circuits	SESSION 7F Trends in Com- puter Applications for the 70's	GROUP B MEETING A Slowed-Down Video Facsimile System Design and Application		
Gramercy Suite (G)		SESSION 1G Computer-Contr- olled Testing of LSI	SESSION 2G Software for the 70s	SESSION 3G Interactive Termi- nals — The Search for Cost and Performance	SESSION 4G Computer Graphics in Action	SESSION 5G The Minicomputer Phenomenon	SESSION 6G Prospects for Timesharing in the 70s	GROUP SSC MEETING The Urban — Regional Problem — New Communi- ties for the Year 2000			
			HIGHLIGHT SESSION 2H 8:00-10:30 P.M. Trinon Ballroom Planning for Change		KEYNOTE SESSION 4K 8:00-10:30 P.M. Grand Ballroom The Emerging Seventies					GROUP AC MEETING Regent Room Tutorial Exposition of Estimation and Prediction Techniques in Modern System Theory	
Setton Ballroom South		SESSION 1P 8:30-9:15 A.M. Play/Panel Discussion: The Fatal Abstract		SESSION 3P 8:00-9:15 A.M. Play/Panel Dis- cussion: The Fatal Abstract					GROUP COM TECH MEETING 8:00-10:30 P.M. Solid State Sources for Microwave Trans. Systems	GROUP COM TECH MEETING The Telephone Utility Serving the Electric Power Station	GROUP COM TECH MEETING Advances in Data Communication
NEW YORK COLISEUM Technical Apprentice Sessions Fourth Floor		TA 1 — 10:30 A.M.-1:00 P.M. 2:30-5:00 P.M. How to Get Started in Hybrid ICs		TA 2 — 10:30 A.M.-1:00 P.M. Design and Ap- plication of Microstrip Circuits	TA 3 — 2:30- 5:00 P.M. Applications of Microwave Semi- conductor Devices	TA 4 — 10:30 A.M.-1:00 P.M. How to Reduce Interference in Electronic Equip- ment	TA 5 — 2:30- 5:00 P.M. Applications of In- frared Radiation	TA 6 — 10:30 A.M.-1:00 P.M. Time-Shared Com- puter-Aided Cir- cuit Analysis	TA 7 — 2:30- 5:00 P.M. Using Small Com- puters		
Film Theater Fourth Floor	Continuous Film Theater — 10:30 A.M.-6:00 P.M. — Monday through Thursday										

SPECIAL EDUCATIONAL OPPORTUNITIES DURING THE CONVENTION — NEW YORK HILTON

TUTORIAL SEMINARS

West Ballroom 8:00-9:30 A.M.	Computers and Patient Care	Mon Tues Wed Thurs
East Ballroom 8:00-9:30 A.M.	Programming	Mon Tues Wed Thurs
Rhineland (South) 8:00-9:30 A.M.	Digital Filters: Design and Application	Mon Tues Wed Thurs

TWO-DAY SEMINARS

Rhineland (North) 9:00 A.M.-5:00 P.M.	Using Quantum Electronics Today	Mon Tues	Monolithic Integrated Circuits: Economics — Design — Applications — LSI	Wed Thurs
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North Jersey Members Win National Awards

Four North Jersey members will be among those receiving awards during the 1970 IEEE International Convention and Exhibition. Major award presentations will be made at the Institute's Annual Banquet on March 25.

The 1970 IEEE founders award—to Morris D. Hooven, Consulting Engineer, Public Service Electric and Gas Company, Newark, New Jersey. This award, established in 1952 is a bronze medal and certificate. To Mr. Hooven the citation reads:

"In recognition of many years of creative leadership in the advancement of electric power systems engineering, and for contributions to the community in engineering education and in the effective uses of water resources."

Morris D. Hooven was born in Weatherly, Pennsylvania in 1897. He spent several years in the Laboratories of Carnegie Steel Company, attending Carnegie Tech and Pittsburgh Colleges at night. In 1920 he received a B.S. degree (magna cum laude) at Bucknell and, upon graduation, went to Westinghouse Corporation as a member of the newly formed radio engineering staff. In 1922 he joined the Public Service Electric and Gas Company in Newark where he accumulated 48 years of varying assignments, now being retained as a consulting engineer on problems concerning the development of natural resources.

He served on the inter-utilities committee which established the Pennsylvania-New Jersey 220KV Interconnection (now PJM) and other inter-company committees developing load studies, operating communications, river basin studies and plant design. Because of his earlier experience in radio he took responsibility within his company for such exploratory work as was then being done in that field. His first Institute papers were presented in 1929—"Radio Interference" before IRE's Fourth Annual Convention at Washington, D.C. and "Procedures for Load Forecasting" before AIEE in New York.

He became president of the Engineers Council for Professional Development in 1957 serving for two years and in all, a total of 13 consecutive years on the council.

The Morris N. Liebmann Award goes to Dr. John A. Copeland:

"For the discovery of the limited space-charge-accumulations mode of oscillation."

John A. Copeland was born in Atlanta, Ga. on February 7, 1941. He received the B.S., M.S., and Ph.D. degrees in physics from the Georgia Institute of Technology, Atlanta, in 1962, 1963 and 1965 respectively.

While attending the Georgia Institute of Technology he worked at the G.I.T. Engineering Experiment Station doing theoretical and experimental research on thin magnetic films. During the summer of 1962 he worked at the Jet Propulsion Laboratory, Pasadena, Calif., where he measured the propagation velocity of magnet

domain walls in very thin permalloy films. In 1965 he joined Bell Telephone Laboratories, Murray Hill, N.J., and has been engaged in research on bulk negative resistance semiconductors. He is currently a member of the technical staff at Bell, and his work includes theoretical studies of space-charge dynamics, thermal noise generation, and interactions of bulk devices with external circuits, as well as experimental studies of devices for high speed logic and millimeter-wave power generation.

Dr. Copeland is a member of the American Physical Society and the Institute of Electrical and Electronics Engineers. He is an associate editor of the IEEE Transactions on Electron Devices.

The Award in International Communication in Honor of Hearnard and Sosthenes Behn was awarded to Dr. Henri Busignies:

"For his outstanding leadership and technical contributions in the fields of electronic technology and communication techniques."

An inventor, a scientist, and an authority on radio navigation and radio direction finding, Dr. Busignies holds more than 140 patents in the air navigation, radar and communication fields. He has been associated with the ITT system for 40 years. Since 1941 when he participated in the founding of the ITT Laboratories, Dr. Busignies has played a major role in the growth of the Corporation's US activities. He has become technical director of its Laboratories in 1949, vice president in 1953, executive vice president in 1954 and president in 1960, when he was advanced to vice president and general technical director of ITT. He served three and one half years as president of ITT Laboratories. He became a senior vice president in 1965.

Dr. Busignies was elected a member of the National Academy of Engineering in 1966 for his work in aerial navigation systems; he serves on the council and as chairman of the project committee. He is a member of the National Inventor's Council and of a number of university and advisory committees.

The David Sarnoff Award goes to Dr. John B. Johnson:

"For fundamental contributions of major importance to electronics and communications."

John B. Johnson was born in Gothenberg, Sweden on October 2, 1887. He received the B.S. and M.S. degrees in physics from the University of North Dakota in 1913 and 1914 respectively. His Ph.D. degree was awarded in 1917 from Yale University. Dr. Johnson worked as a physicist for the Western Electric Co. from 1917 to 1925. In 1925 he joined the Bell Telephone Laboratories. Dr. Johnson retired in February 1969.

Dr. Johnson is a Fellow in the American Physical Society and the Institute of Electrical and Electronics Engineers. He holds memberships in the American Association for the Advancement of Science, the Franklin Institute and the Radio Club of America. He was awarded the Longstreth Medal from the Franklin Institute.

Management Meeting Covers Restless Engineers

The Engineering Management Group will have as the topic for the April meeting "The Engineers are Restless," a study in motivation. Factors involved in dealing with people, motivating subordinates, and understanding one's own actions will be discussed.

The speaker will be Robert N. Ford, Personnel Director, Manpower Utilization, American Telephone & Telegraph Company. This is a new function in the Bell System, encompassing studies in the utilization of personnel, together with advice and training in this field.

Mr. Ford received his Ph.D. from the University of Pittsburgh in 1940, and joined the Bell System several years later. In the past few years, he has become particularly interested in the relation between job enrichment and work motivation. In addition to several articles on the subject, he has recently had published a book, "Motivation Through the Work Itself" (Amer. Mgmt. Assoc., N.Y.C., 1969) which reports the experimental results and gives rather precise steps on how-to-do-it.

Members and non-members are invited.

Time: Thursday, April 16, 1970; 7:30 P.M.

Place: Engineering Societies Building, 345 East 47th Street, New York City, Room 125.

Lecture Series Financial Aspects of Management

Co-sponsored by the Engineering Management Group and Polytechnic Institute of Bklyn.

Five weekly 2-hour sessions from 7:00-9:00 P.M. at the Long Island Graduate Center of the Polytechnic Institute of Brooklyn, in Farmingdale, Long Island. Mondays starting April 20, 1970 and ending May 18, 1970. Sessions include lectures, practice sessions, and exchange of views.

Course Outline

1. **Essentials of Financial Statements:** Income statements and balance sheets. Explanation of income and expenses, assets, liabilities and equities.
2. **Evaluation of Risk, Profitability and Potential of Business:** Utilization of common measures, such as ratio analysis. The nature and objectives of cost accounting. Application of various methods used in ascertaining costs.
3. **Cost — Volume — Profit Relationships:** Techniques for analyzing fixed and variable costs for pricing decisions.
4. **Profit Planning with Budgetary Control:** Preparation and integration of departmental budgets for the accomplishment of company objectives.
5. **Cost Analysis for Managerial Decisions:** Employment of the factors studied in previous lectures to determine the optimum course of action.

Instructor: C. Richard Gunzer is a distinguished consultant in this field, and brings a wealth of industrial experience in conjunction with teaching ability. Since 1951, he has specialized in consulting on financial and cost problems for industry. Prior to private professional practice, he served in an executive financial capacity with Republic Aviation and Curtiss Wright. He is also the author of "Reasonable Executive Compensation" and other books and technical articles. Mr. Gunzer is a Certified Public Accountant and member of several professional accounting associations.

Registration: The fee for IEEE members and alumni of Polytechnic Institute of Brooklyn is \$35.00; for others it is \$40.00. These fees cover tuition, textbook, and lecture notes.

To register, send check to Stanley Kramer, 14 Thunderbird Drive, Oakland, N.J. 07436. Make check payable to EMG/IEEE.

Metropolitan Student Council Report

A meeting of the IEEE MSC was held in December at the Heights Campus of New York University. The topic of the meeting was the student prize paper contest and Student Activities Day to be held April 25, 1970 at Fairleigh Dickinson University. A committee consisting of Pat Cerchio and John Tobak assisted by Dr. Ernest Wantuch FDU IEEE Advisor were chosen to organize the Day.

Present at this meeting were representatives from New York University, Fairleigh Dickinson University, Cooper Union, Manhattan College, Pratt, New York Institute of Technology, Union County Technical Institute, and RCA. It was good to see such a fine turn-out. All schools in the MSC are urged to send representatives to these bi-monthly meetings to express views for growth and activity.

A subsequent luncheon meeting was held February 7th to plan current activities. To obtain details of forthcoming meetings, contact Tom McKernan, MSC Secretary at Manhattan College 212-884-9051.

National IEEE Student Prize Paper Award Won By Local Winner

First prize in the Institute-wide Contest was won jointly by MICHAEL LEFKOWITZ of Brooklyn, New York and DAVID I. OURST, Douglaston, New York, for their paper entitled "Design of a Limited-Vocabulary Speech Recognition System." Messrs. Lefkowitz and Durst, previously winners of the 1969 Metropolitan Student Council Annual Student Paper Contest at Newark College of Engineering, each will receive a certificate and a trip to New York City to receive their prize; they will divide a cash award of \$100.00.

Presentation of the Award will take place at the IEEE Directors' Reception March 24, 1970 at the New York Hilton. The reception is one of the important occasions of the IEEE International Convention and Exhibition, which is the outstanding annual event of the year for the Institute's members, numbering over 160,000 throughout the world and making IEEE the world's largest engineering society.

A Seminar RECENT HIGHLIGHTS IN MICROWAVE ENGINEERING

DATE: THURSDAY, MAY 28, 1970
PLACE: NEWARK COLLEGE OF ENGINEERING
TIME: 1:00 P.M.—5:30 P.M.

AGENDA

<i>Introduction</i> 1:00–1:10	<i>G. C. DiPiazza</i> <i>Chairman, GMTT/AP</i>
<i>Trends in Solid State Devices and Circuits</i> 1:10–1:50	<i>Mr. B. E. Berson</i> <i>Group Leader</i> <i>Solid State Devices—RCA</i>
<i>Acoustics and Microwaves</i> 1:50–2:30	<i>Dr. A. A. Oliner</i> <i>Chairman, Electrophysics Dept.</i> <i>Polytechnical Inst. of Brooklyn</i>
<i>Feed Forward Amplifiers</i> 2:30–3:10	<i>H. Seidel, Supervisor</i> <i>Solid State Device Studies Group</i> <i>Bell Telephone Laboratories</i>
<i>Coffee Break: 3:10–3:30</i>	
<i>Signal Processing Antennas</i> 3:30–4:10	<i>Dr. A. A. Ksienski</i> <i>Professor of Electrical Engineering</i> <i>Ohio State University</i>
<i>Solid State Radar – Fact or Fancy</i> 4:10–4:50	<i>A. M. Briano, Manager, Technical Staff, Missile Systems Division</i> <i>Raytheon Company</i>
<i>Miniature Lumped Element Circulators</i> 4:50–5:30	<i>C. E. Barnes, Supervisor</i> <i>Microwave Ferrite Devices Group</i> <i>Bell Telephone Laboratories</i>

REGISTRATION FEES

	ADVANCE REGISTRATION	LATE REGISTRATION
Members	\$ 6.00	\$ 8.00
Non-Members	8.00	10.00
Students	1.50	1.50

ADVANCE REGISTRATION FORM – MICROWAVE SEMINAR

Send to: *Dr. C. P. Wu*
Bell Telephone Laboratories, Room 2B-222A
Whippany, New Jersey 07981

Name _____
Technical Society _____
Address _____

Check or Money Order Enclosed:

Member:	\$ 6.00.....	\$ 8.00 after May 15.....
Non-Member:	\$ 8.00.....	\$ 10.00 after May 15.....
Student:	\$ 1.50.....	

Please make check or money order payable to: North Jersey Section IEEE

COLOR TV – PRINCIPLES AND SERVICING

The Communication Technology Group, IEEE New York Section, presents its Spring 1970 Lecture Series on a topic of interest to every owner of a color television receiver and anyone contemplating buying or building a color set. The object of this seven lecture series is twofold: first to acquaint the audience with the transmission and reception of the color signal and secondly to emphasize basic and specialized servicing techniques of color receivers. The courses are designed to appeal to engineers as well as laymen, students and do-it-yourselfers. However, it must be pointed out that in view of the vast amount of material to be covered, a rudimentary knowledge of electronics is essential.

April 8 – COLOR TV TRANSMISSION

Transmission of the color TV signals from the studio camera through station equipment to the broadcast antenna.

Speaker: R. Butler, National Broadcasting Company, Inc.

April 15 – COLOR TV RECEPTION

Tracing of the color signal from the home antenna through the receiver with emphasis on the color circuitry.

Speaker: W. I. Spero, Sylvania Electrical Products

April 22 & 29 – RECEIVER ALIGNMENT, ADJUSTMENT AND COMPONENT REPLACEMENT

Topics covered from the standpoint of in-the-home maintenance with limited test equipment.

Speaker: R. H. Niclas, RCA Service Company

May 6 – SELECTION AND USE OF TEST EQUIPMENT

Use of test equipment ranging from the simple VTVM to more sophisticated apparatus such as the signal and dotbar generators.

Speaker: W. G. Kuster, RCA Service Company

May 13 – TROUBLE SHOOTING TECHNIQUES

Diagnosis of circuit troubles manifested by problems with the color picture.

Speaker: W. G. Kuster, RCA Service Company

May 20 – PANEL DISCUSSION

A panel consisting of two or more of the speakers will answer various questions from the audience about specific problems encountered.

Speakers: To be announced

TIME: 6:30-8:30 P.M., Wednesday evenings starting April 8, 1970

PLACE: Auditorium at 32 Avenue of the Americas, New York, N. Y.

FEE: Members – \$15, Non-Members – \$20, Students – \$5.

Partial enrollment at \$5 per lecture will be accepted, space permitting.

INFORMATION: For additional information contact A. F. Karman, RCA Frequency Bureau,
60 Broad Street, Room 730, New York, N. Y. – (212) 586-3000, Ext. RR3002.

REGISTRATION FORM—COLOR TV – PRINCIPLES AND SERVICING

Send to: *Mr. J. N. Rice, American Telephone & Telegraph Company,
195 Broadway, Room 1131-B, New York, N. Y. 10007*

Name

Firm Position

Business Address Phone

Home Address Phone

Check or money order enclosed:

Member: \$15.00..... Non-Member: \$20.00..... Student: \$5.00.....

Partial enrollment (circle those desired) Lecture 1 2 3&4 5 6 7 \$5.00 Per Lecture.....

Please make check or money order payable to: Communication Technology Group, N. Y. Section IEEE

Tour To North Jersey Brewery Planned

The Power & Industrial Division, New York Section, is sponsoring an inspection tour of the Newark, N.J., facilities of Anheuser-Busch. Restricted to IEEE members only, the 2½ hour tour will include a movie and snack at the Rathskeller.

This tour has been well-attended in the past so early reservations are suggested.

Will Tour Backstage "At The Met"

The officials of the Metropolitan Opera House have again graciously consented to be the host of members of the IEEE and their wives at a backstage tour of their facilities.

The new innovations were designed and built solely for the new Met. The main-stage is a huge platform divided into seven lift sections, each capable of moving up or down independently or conjunctively. In addition, there are three large stage wagons off-stage, each permitting the erection of an entire scene, and capable of being rolled into position on the main stage. The Met also has two cycloramas--huge backcloths traveling on a track around the entire stage for depicting motion or depth.

The tours have been arranged for Saturday morning, March 14 and 21, 1970,

Please send form and stamped self-addressed envelope to:

*Mr. M. Lipinski
80 Park Place, Room 7341
Newark, New Jersey 07101*

For backstage inspection tour of the Metropolitan Opera House please send to:

Name _____

Address _____

Phone _____

Tour - 2 tickets for ☐ March 14 only ☐ March 14 or 21 ☐ March 21 only

Opera - Enclosed is my check or money order for \$27.00 made out to P&I Division, New York Section IEEE for two tickets for the Saturday matinee opera performance on

☐ March 14 only ☐ March 14 or 21 ☐ March 21 only

Priorities for requests for all tickets will be assigned in order of receipt of request, regardless of date selected. No requests can be honored or acknowledged without a stamped self-addressed envelope.

Tickets and directions can be obtained from William Patterson, Okonite Company, 1114 Clifton Avenue, Clifton, N.J. 07013.

All requests must be received by April 10, 1970 and only those accompanied by a stamped, self-addressed envelope will be acknowledged and honored.

Time: Wednesday, April 22; 7:00 P.M.

Place: Anheuser-Busch Brewery, Routes 1 and 9, Newark, N. J.

at 11:00 A.M.

In conjunction with the tour a very limited block of tickets has again been reserved for our group for the matinee performances of La Fanciulla del West on March 14 and La Traviata on March 21. Pairs of tickets are \$27.00 and check or money order made out to P&I Division, New York Section, IEEE, must be received by March 7. Because of the short supply of tickets, requests must be necessarily limited to one pair.

Eating facilities are available at the Top of the Met and the Grand Tier in Lincoln Center.

Requests for reservations for either the tour or the Opera performance will be handled on a first come-first served basis. And, please, no phone calls. Only those requests accompanied by a stamped self-addressed envelope (plus the check or money order for Opera tickets if requested) can be honored or acknowledged.

Automated Handling Of Materials

A joint meeting of the Power and Industrial Division and the Automatic Control Group of the IEEE will be held on Wednesday, March 25, 1970 on "Automated Material Handling" at Consolidated Edison Auditorium, 19th Floor, 4 Irving Place, New York City at 6:30 P.M. Refreshments will be served at 6:00 P.M.

Mr. A. Tallscott, Manager of the Diversified Systems Division, Otis Elevator Company, will discuss parking and warehousing systems and Mr. F. C. Groepler, Marine Service Manager, Installation and Service Engineering, General Electric Company, will discuss marine containerization.

Mr. Tallscott has designed unique facilities such as a swimming pool type reactor, fully automated parking structure, and free standing antenna systems for long wave transmissions through the Iron Curtain.

Mr. Groepler is responsible for all field service involving General Electric ship-board electrical equipment within the Port of New York and adjoining areas.

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Annual Student Paper Prize Contest

Now is the time for student members to start on that Prize Paper for the Metropolitan Student Council Prize Paper Contest. Each year the Metropolitan Student Council sponsors a Student Prize Paper Contest. The contest will be on Saturday, April 25th, Fairleigh Dickinson University, Teaneck campus.

Students attending schools in the New York, North Jersey, and Long Island Sections of the IEEE with Student or Student Associate Branches of IEEE are eligible.

The prizes to be presented are: First – \$200; Second – \$100; Third – \$75; Fourth – \$50.

A \$25.00 prize will be presented to the author of the paper judged best in each local Student Branch that is a member of the MSC.

Winners of this contest become eligible for the national contest sponsored by the IEEE. In the past, four New York regional winners have won this national contest, including the 1969 winners, David Durst and Michael Lefkowitz.

Papers should cover technical and engineering aspects of a subject reasonably within or related to the areas with which the IEEE is concerned, and with which the author is familiar, either from his courses, his hobbies, his summer work, etc. The work need not be original in engineering content but should be original in treatment and concise in coverage of the author's contribution to that subject.

The deadline for submission of papers is 4 P.M., March 18th and should be submitted to the Contest Secretary: Mr. Eugene I. Weitz, Room 1076, American Electric Power Service Corp., 2 Broadway, New York, New York 10004. For further details consult your Branch Counselor.

Computer Course: Real Time Systems

A course designed to inform the engineer of modern computer systems concepts, without delving into minute mathematical and hardware considerations is being offered by the CommTech Group.

Parts I and II are completed. Part III, now being offered, will cover Real Time Systems and will be held March 5, 12, 26; April 2, 9, 16, and includes:

- 1. *Computer Graphics*, L. Rosler, Bell Labs (3/5/70)
- 2. *Circuit Analysis and Design on time sharing computers*, F. J. Kasper, Bell Labs (3/12/70)
- 3. *Time shared Data Management Systems*, J. M. Wier, Bell Labs (3/26/70)
- 4. *Information Retrieval by Man-Machine Interaction*, N. R. Sinowitz, Bell Labs (4/2/70)
- 5. *Time Sharing and Virtual Memory*, G. Luderer, Bell Labs (4/9/70)
- 6. *Computer Solution of MDF Problems*, J. Wandellak and J. Trygg, Grumman Data Systems (4/16/70)

Fee for all six lectures is \$15 for members; \$20 for non-members. Per lecture fee for members is \$3; for non-members \$4.

For additional information contact Mr. A. F. Boschulte (212) 394-6427. Checks should be made payable to the Communications Technology Group Chapter, N. Y. Section IEEE. In order to enroll, complete and forward the attached order form.

Time: Thursdays, 6:30-8:30 P.M.

Place: The Little Theatre, New York Telephone Company, 140 West Street, N. Y.

COMPUTER SYSTEMS—PART III

To: Mr. D. J. Gillespie
Communications Discipline
105 Madison Avenue
New York, N. Y. 10016

Partial enrollment (Circle those desired):

Lecture 1 2 3 4 5 6

Non-Member IEEE.....Member.....

Membership Number.....

Name.....

Address.....

Phone.....

Report From: YOUR NORTH JERSEY RELIABILITY GROUP

The reliability discipline reaches into almost every area of the IEEE, yet its official scope is stated more simply than that of any other group. Each of the 31 groups presently active in IEEE has an article in its constitution covering that group's field of interest. The Reliability Group constitution states that: "The field of interest of the Group shall be that of Reliability of electrical and electronic equipment."

Once an engineer joins the IEEE he is eligible to affiliate with as many of the 31 groups as he wishes for only a small increase in dues. It is by joining and becoming active in one or more groups that an electrical engineer attains and maintains a professional status.

The North Jersey Reliability Chapter presently holds four meetings a year on various aspects of reliability and maintainability. These meetings are generally tutorial in nature and cover such items as prediction, military specifications, computer aided design, integrated circuits and system aspects. Both long time practitioners and newcomers have profited from the speakers presentations and the informal discussions. It is amazing that more people do not take advantage of the expert, up-to-date information that is available at the chapter meetings. Attendance at the meetings generally runs between 20 and 40. This represents about 20 to 40% of the Reliability Group membership in the North Jersey area.

In addition to receiving notification of local chapter meetings, the dues for joining the reliability group also provide several other direct benefits. Each member receives a copy of the Proceedings of the Annual Symposium on Reliability. The proceedings usually run well in excess of 600 pages and contain many timely, interesting and informative papers to aid engineers in their day to day problems involving reliability. Also the IEEE Transactions on Reliability (usually published quarterly) is mailed to each group member. These transactions are carefully edited papers written by leaders in the field. Members of the reliability group also receive a quarterly newsletter containing current happenings in the field of reliability.

Anyone interested in becoming active in the affairs of the North Jersey Reliability Chapter should call me at Conrac Corporation, (201-226-7777). The North Jersey Reliability Chapter is in the process of reorganizing the executive committee for next year and would welcome the addition of active new workers.

George H. Ebel, Chairman
North Jersey Reliability Group