



The IEEE

# Newsletter

Published monthly except June and July by the North Jersey Section of the Institute of Electrical & Electronics Engineers, Inc. Office of Publications: 399 Howard Boulevard, Mount Arlington, N. J. 07856

Volume 19      October 1972      No. 3

## NEWSLETTER STAFF

Editor.....Robert McMillan  
Editor-Elect.....John Zieger  
Managing Editor.....M.M. Perugini  
Student Activities Editor.....Gary Woerner  
Associate Editor.....Raymond Vaccari  
Member, Editorial Staff.....Charles Giardina  
Chairman, Publications.....Raymond Dusault

## Newsletter Deadline

Deadline for receipt of material is the 20th of the second month preceding 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 111, Mt. Arlington, N. J. 07856, Phone: 398-5524.

Subscription: \$0.75 per year through dues for members; \$1.50 per year for non-members.

Second Class Postage Paid  
at Mount Arlington, 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.

## SECTION OFFICERS 1972-1973

Chairman.....Carl C. Torell  
Vice Chairman.....Harlan J. Perlis  
Treasurer.....John Gerth  
Secretary.....James F. Kampschoer  
Member-at-Large.....Max J. Schindler  
Member-at-Large.....Peter F.B. Jackson  
Jr. Past Chairman.....Robert G. Sokalski

## CALENDAR OF NORTH JERSEY/METROPOLITAN GROUP MEETINGS

**October 10** — "Digital Facsimile Systems," Michael Haber and Paul Boros, Communications Society, 8:00 PM, ITT Laboratories, Tower Auditorium, 500 Washington Ave., Nutley, N.J. Pre-meeting dinner at Copperhood Restaurant, 1 Park Ave., Lyndhurst, N.J., 6:00 PM.

**October 11** — "Reliability Physics for Component Evaluation," Reliability Group, 8:00 PM, Singer, Kearfott Division, Research Center Conference Rooms 1-A and 1-B (Plant 3), 1225 McBride Avenue, Little Falls, New Jersey. Pre-meeting dinner at Town Tavern, 10 Van Ness Avenue, Little Falls, N.J., 6:00 PM.

**October 11** — "Trends in Hospital Electrical Safety," Dr. Dan Weinberg, Metropolitan Group on Engineering in Medicine and Biology, 8:00 PM, Rockefeller University South Laboratory Building, Room 204, York Ave., and 66th St., N.Y.C. Pre-meeting dinner at Tower Building Cafeteria, Rockefeller University, 6:00 PM.

**October 17** — "Drone Guidance," Metropolitan AES Group Meeting, 8:00 PM, ITT Defense Space Group Auditorium, 500 Washington Ave., Nutley, New Jersey (Main lobby entrance near base of Microwave Tower), Pre-meeting dinner at Copperhood Restaurant, 1 Park Ave., Lyndhurst, N.J. (Just south of Rt. 3 exit), 6:15 PM.

**October 17** — "True RMS Measurements," Metropolitan I&M Group, 9:00 AM to 4:00 PM, Alumni Center, Newark College of Engineering, 323 High St., Newark, N.J.

**October 18** — "Computer and Society," Control System Group, 8:30 PM, Bell Telephone Laboratories, Whippany Road, Whippany, N.J. Pre-meeting dinner at Rod's 1890's Ranch House, Rt. 24, Convent Station, N.J.

**October 19** — "Power Industry — Student Night," Power Engineering Society, 7:15 PM, Newark College of Engineering, Intersection Bleeker and Summit Streets, Newark, N.J. Pre-meeting free buffet at Student Center Cafeteria, 6:30 PM.

**October 19** — "Feed Forward Control," The Microwave Theory and Techniques; Antennas and Propagation Group, 8:00 PM, ITT Avionics Auditorium, 500 Washington Ave., Nutley, N.J. Pre-meeting dinner at Copperhood Restaurant, 1 Park Ave., Lyndhurst, N.J., 6:30 PM.

**October 23** — "Ombudsman Program," Multi-Group, 8:00 PM, Bell Laboratories, Whippany Road, Whippany, New Jersey. Pre-meeting dinner at Rod's 1890's Ranch House, Madison Avenue, Convent Station, 6:30 PM.

**October 24** — "Transducer Study Group," Metropolitan I&M Group, N.J. Bell Telephone Company, 30 Evergreen Place, East Orange, N.J., 7:45 PM to 9:45 PM.

**October 26** — "Professional Engineering Licensing," Power Engineering Society, 8:00 PM, Jersey Central Power & Light Co., Madison Ave., (Rt. 24) at Punch Bowl Road, Morristown, N.J., Punch Bowl Room.

## Digital Facsimile System

Michael Haber and Paul Boros of Comfax Communications Industries, Inc., will discuss a recent development in digital facsimile systems. The system employs variable velocity scanning, lending itself to computer as well as microform applications.

*Time:* Tuesday, October 10, 8:00 PM.  
*Place:* ITT Laboratories, Nutley, N.J., Tower Auditorium.

*Pre-Meeting Dinner:* Copperhood Restaurant, 1 Park Ave., Lyndhurst, N.J. 6:00 PM.

## Feed Forward Control

The Microwave Theory and Techniques/Antennas and Propagation Group of the North Jersey Section will present Dr. H. Seidel of Bell Laboratories discussing the striking applications of feed forward. Experimental results will be shown in the areas of: unlimited error correction, extremely wideband systems having large error degeneration, and microwave applications with large transit time traveling wave tubes.

*Time:* Thursday, October 19, 8:00 PM.  
*Place:* ITT Avionics Auditorium, 500 Washington Ave., Nutley, N.J.  
*Pre-Meeting Dinner:* Copperhood Restaurant, 1 Park Ave., Lyndhurst, N.J., 6:30 PM.

## Power Student Night

The North Jersey Section of the Power Engineering Society will sponsor its fifth annual Student Night program on Thursday, October 19 at Newark College of Engineering, Newark, New Jersey.

The New Engineer in the Power Industry will be the evening's topic. A.J. Magyer, Manager of System Planning, Jersey Central & New Jersey Power and Light Companies, will act as moderator for the panel of recent engineering graduates from the power industry. The panel will outline various engineering challenges and career opportunities available in system planning, design engineering, system operations and equipment applications.

A free buffet will be held at the NCE Student Center Cafeteria at 6:30 PM. and the formal meeting will follow in the Ballroom at 7:15 PM.

*Time:* Thursday, October 19, 7:15 PM.  
*Place:* Newark College of Engineering, Intersection Bleeker and Summit Sts., Newark, N.J.

*Pre-Meeting Free Buffet:* Student Center Cafeteria, 6:30 PM.

## Ombudsman Program Covers Computers

Donald B. Steig, Information Systems Manager of Hoffman LaRoche, will speak on the Ombudsman program initiated by ACM in order to combat the "blame the computer syndrome" at a Multi-Group meeting at Bell Laboratories, Whippany, New Jersey on Monday, October 23 at 8:00 PM.

An Ombudsman traditionally is a non-governmental individual to whom any citizen may take complaints. The Ombudsman will listen, examine, and try to obtain redress of an injustice or amends for a grievance. The IEEE Computer Society, DPMA and other organizations are cooperating with ACM in the effort involved.

In addition to outlining the accomplishment and current status of the Ombudsman program, Mr. Steig will solicit discussion on ways in which Multi-Group members may participate in this or similar programs in North Jersey.

*Time:* Monday, October 23, 8:00 PM.  
*Place:* Bell Laboratories, Whippany Road, Whippany, New Jersey.  
*Pre-Meeting Dinner:* Rod's 1890's Ranch House, Madison Avenue, Convent Station, 6:30 PM.

## Cable Flame Tests

The Power and Industrial Division announces a meeting to discuss Flame Tests currently used by various utilities. Further discussion will be centered on the needed cable and tray systems to minimize flame propagation.

*Time:* Wednesday, October 11, 6:30 PM to 8:30 PM.  
*Place:* Union Carbide Building, 270 Park Avenue, New York City.

## Professional Engineer

John W. Gregorits, Chief of the Engineering and Sciences Division at Picatinny Arsenal, will be the guest speaker at a joint meeting of the North Jersey Section of the Power Engineering Society and the Morris Subsection of the ASME.

Mr. Gregorits will discuss the history of the engineering society, the role of the state board and the engineering license law, and the New Jersey examination and give some hints on how to prepare for it. A question and answer period will follow.

*Time:* Thursday, October 26, 8:00 PM.  
*Place:* Jersey Central Power & Light Co., Madison Ave., (Rt. 24) at Punch Bowl Road, Morristown, N.J.

## Component Reliability

The North Jersey Section of the Reliability Group Chapter will present Edward J. Emery speaking on "Reliability Physics Approach to Component Evaluation" on Wednesday, October 11 at 8:00 PM. The meeting will be held at Kearfott Division, Little Falls, New Jersey.

The speaker will explore some of the modern tools and methods that have been found to be suited to the evaluation of component parts and the analysis of associated failure mechanisms. The reliability physics approach will be described. Particular devices that are discussed include linear and digital integrated circuits, tantalum capacitors, ceramic capacitors, and transformers. Evaluation techniques to be discussed are the scanning electron microscope (SEM), high temperature accelerated aging and radiographic examination. Slides include graphs, photomicrographs, and SEM and X-ray photographs.

Edward J. Emery is a Unit Head in Reliability Component Engineering for Singer, Kearfott Division.

*Time:* Wednesday, October 11, 8:00 PM.  
*Place:* Singer, Kearfott Division, Research Center Conference Rooms 1-A and 1-B (Plant 3), 1225 McBride Avenue, Little Falls, New Jersey.  
*Pre-Meeting Dinner:* Town Tavern, 10 Van Ness Avenue, Little Falls, N.J., 6:00 PM (Contact Victor T. Kalata, 256-4000, Ext. 2062).



## Drone Guidance

Navigation and Guidance for Remotely Piloted Vehicles will be discussed at the October 17th meeting of the Metropolitan New York-North Jersey Chapter-AES Group. The speaker will be Arthur R. Tuppen, Senior Technical Consultant, ITT Avionics Division. Meeting time is 8:00 PM.

Innovations in defense systems have resulted in a requirement for a stand-off capability to perform reconnaissance, electronic countermeasures, air-to-air and air-to-ground missions. A currently planned approach to provide such capability is the use of low-cost, pilotless vehicles which must be able to adapt, or be adapted, to a variety of missions and changing mission environments. Typical mission profiles will be discussed and from these profiles, and from associated signal environments, the functional requirements for the navigation/guidance sub-systems appropriate to the pilotless vehicles will be deduced.

Mr. Tuppen is currently heading an ITT Avionics team engaged in the design and development of navigation/guidance systems for missiles and remotely piloted vehicles (RPV's). He is a Senior Member of the AES Group.

*Time:* Tuesday, October 17, 8:00 PM.

*Place:* ITT Defense Space Group Auditorium, 500 Washington Ave., Nutley, New Jersey (Main lobby entrance near base of Microwave Tower)

*Pre-Meeting Dinner:* Copperhood Restaurant, 1 Park Ave., Lyndhurst, N.J. (Just south of Rt. 3 exit), 6:15 PM.

## Employment Workshop

The Metropolitan Student Council (MSC) of IEEE is planning three Employment Workshops designed specifically for engineering students in an engineering or engineering technology school. The program is open to all student members of a professional technical society. The material covered at the Workshops is resume preparation, researching prospective employers, and developing interviewing techniques. Students attending both sessions of a Workshop (mixing will be permitted, i.e., session 1 of Workshop I and session 2 of Workshop III is permissible) will re-

ceive a Student Employment Directory. The Directory will contain names, addresses, job openings and contacts of Companies that have expressed an interest in hiring students through the student employment program.

### SCHEDULE:

*Workshop I (S.U.N.Y. at Stony Brook, Stony Brook, New York);* Session 1 - October 10, 1972, 7-10 PM; Session 2 - October 17, 1972, 7-10 PM.

*Workshop II (Fairleigh Dickinson University, Teaneck Campus, 1000 River Road, Teaneck, New Jersey);* Session 1 - October 26, 1972, 7-10 PM; Session 2 - November 2, 1972, 7-10 PM.

*Workshop III (New York University) University Heights Campus, Bronx, New York);* Session 1 - November 11, 1972; 9-12 noon; Session 2 - November 18, 1972, 9-12 noon.

## Hospital Safety

The Metropolitan Chapter IEEE Group in Engineering in Medicine and Biology will present a talk by Dr. Dan Weinberg of IBM on "Recent Trends in Hospital Electrical Safety" on Wednesday, October 11 at 8:00 PM in the Rockefeller University South Laboratory Building, Room 204, York Avenue and 66th Street, New York City. A pre-meeting dinner in the Tower Building Cafeteria, Rockefeller University will be held at 6:00 PM.

With the development of new materials and electronic techniques even a patient with an artificial electrical path to his heart can be protected while in general areas of a hospital. Special environmental protection is still required in areas where catheters are manipulated and certain equipment used. The overall problems connected with writing codes which provide adequate protection, but do not inhibit design will be discussed.

Dr. Weinberg has represented the IEEE on the Committee on Hospitals of the National Fire Protection Association since 1965. His first published papers on electrical hazards in cardiology appeared in *Electrical Engineering and Circulation Research*. As a registered professional engineer he has practiced in Ohio, Connecticut and North Carolina. He is now with the Data Processing Division of IBM.

*Time:* Wednesday, October 11, 8:00 PM.

*Place:* Rockefeller University South Lab-

oratory Building, Room 204, York Ave., and 66th Street, New York City.

*Pre-Meeting Dinner:* Tower Building Cafeteria, Rockefeller University, 6:00 PM.

*On November 8, the GEMB Group will feature a "Symposium on Medical Device Regulation: Pro, Con and When." Four panelists representing the government, individual manufacturers and their associations will speak.*

## Power Systems

The Power and Industrial Division is sponsoring a series of four technical discussions concerning industrial and commercial power systems. The meetings will be held in New York City on Thursdays October 12, December 7, February 15, and April 5.

*Time:* Thursday, October 12, 6:30 PM to 8:30 PM.

*Place:* Consolidated Edison Co. Building, 4 Irving Place, New York City.

## Computer and Society

The North Jersey Control System Group and the Multigroup will hold a joint meeting on October 18, 1972. The speaker, Dr. Michael J. Rabins, will discuss the positive and negative feedback loop casualties that characterize some current problems of Society. Consideration of the Forrester-type models and simulations of such problems as well as pro and con arguments of applying this approach to real world problems will be presented.

Dr. Rabins is a professor of systems engineering and director of the Department of Operations Research Systems Analysis at Brooklyn Polytechnic Institute. His academic degrees are B. S. in M. E., Massachusetts Institute of Technology, 1953; M. S. in M. E. Carnegie Institute of Technology 1954; Ph. D. in M. E., University of Wisconsin, 1959. Prof. Rabins is also co-author with Takahashi and Auslander of *Control* (Addison-Wesley, 1970).

*Time:* Wednesday, October 18, 8:30 PM.

*Place:* Bell Telephone Laboratories, Whippany Road, Whippany, N. J.

*Pre-meeting dinner:* Rod's 1890's Ranch House, Rt. 24, Convent Station, N. J.



## Telephone Switching

The IEEE New York Communications Society will hold a lecture series in the fall of 1972, and winter and spring of 1973 on Telephone Switching Systems and Components. This series of lectures will cover traffic theory computations necessary to engineer a telephone switching system. Discussion of functional characteristics such as signaling, numbering plans, transmission and alternate routing will be included.

For further details, see September *Newsletter*, or write Mr. K.K. Clarke, Clarke-Hess Communication Corp., 43 West 16th St., New York, N.Y. 10011.

## Insulator Engineering

The New York Section, Power and Industrial Division will hold a technical discussion meeting on Tuesday, October 17, 1972.

**Time:** Tuesday, October 17, 6:30 PM.

**Place:** Consolidated Edison Co., 4 Irving Place, New York, N.Y.

## True RMS Measurements

A seminar on True RMS Measurements, sponsored by the Metropolitan Joint Chapter on Instrumentation & Measurements, will take place on October 17.

The seminar will be a state-of-the-art look at True RMS measurements and instrumentation.

**For Further Information:** (Fees: IEEE Members: \$10.00; non-members \$15.00). In New Jersey: Contact Mr. Ted Barabutes, Westinghouse Electric Corp., 201-465-2293.

**Time:** Tuesday, October 17, 9:00 AM to 4:00 PM.

**Place:** Alumni Center, Newark College of Engineering, 323 High St., Newark, N.J.

## Telecommunications

The IEEE New York Communications Society will hold a lecture series in the fall of 1972 on Customer Telecommunications Systems. The lectures will cover various aspects of customer equipment in terms of traffic, circuit, and equipment design, and features.

Fees are \$20.00 for IEEE Members;

\$25.00 for non-members. For complete details see September *Newsletter*, or write to Mr. J.J. Doyle, N.Y. Telephone Co., 36th Floor, 1411 Broadway, New York, New York 10018.

## Voltage Control

The Power and Industrial Division is sponsoring an October 25 meeting on the subject of Automatic Voltage Drop compensation. The speaker is Fred. S. Royhatyn, Head and Founder of Queensboro Transformer and Machinery Corp.

**Time:** 6:30 PM, Wednesday, October 25, 1972.

**Place:** Consolidated Edison Company of N.Y., Inc., 4 Irving Place, N.Y.C.

**Pre-Meeting Refreshments:** 6:00 PM.

## Environmental Seminar

The Polytechnical Institute of Brooklyn Alumni Association and Polytechnic Institute of Brooklyn will present a day long seminar on Technology for Environmental Survival on Saturday, November 11, 1972 from 9:00 AM to 4:00 PM. at PIB Graduate Center, Farmingdale, NY.

The entire program will be presented from a technological and ecological viewpoint with illustrations how technical aspects affect and apply to environmental controls. Robert J. Knox, Chief of Manpower Development and Training Office of Environmental Protection Agency (Federal government), will be the keynote speaker. His topic will be "The Future of Environmental Manpower."

### SEMINAR - TECHNOLOGY FOR ENVIRONMENTAL SURVIVAL - 11/11/72

**MAIL TO:** Brooklyn Polytechnic Alumni Association, 333 Jay Street, Brooklyn, N.Y. 11201.

Please enroll me in the *Technology for Environmental Survival* seminar. Enclosed is \$5.00 check to order of Brooklyn Polytechnic Alumni Association for lunch and materials.

Name

Address

Home Phone

Bus. Phone

## Magnetics Meetings

The IEEE Magnetics Group, Princeton Chapter will hold its 1972-1973 meeting in Room 218 at Murray Hall, Rutgers University, New Brunswick. Tentative dates and topics for 1972 are:

October 11 — Magnetic Bubble Materials

November 8 — Lunar Magnetism

## Transducer Study Group

A series of lectures sponsored by the New York-North Jersey and Long Island Joint Chapter IEEE — Instrumentation and Measurement has been planned for this fall. The series is devoted to the most up-to-date transducers and will be presented by speakers who are well-known experts in their respective fields.

Lecture dates and topics are listed below:

**OCTOBER 24 Pressure Transducers—** M. Green, Tyco Instruments. A review of modern transducers: signal conditioning; applications; and economics.

**OCTOBER 31 Temperature Transducers & Measurements—** Dr. C. Kemper, Kaye. Fundamentals of thermocouples, RTD, and thermistors; data acquisition systems; precision references; calibration; and applications.

**NOVEMBER 14 Non-contract Temperature Measurement—** H. Kaplan, Barnes Eng. Co.

Theory of I. R. temperature measurement; detectors; calibration; instruments; thermography; infrared microscopes; applications; environmental measurements.

**NOVEMBER 21 Strain Gages & Measurements—** T. Roach, — Picatinny Arsenal. Theory of Operation, basic gages; data acquisition; limitations, and applications.

**NOVEMBER 28 Shock & Vibration Transducers—** A. Orlacchio, Gulton Industries.

Types of accelerometers; signal conditioning charge amplifiers, calibration; measurements and systems; and applications.

**Time:** Tuesdays, October 24, 31, November 14, 21, 28, 7:45 PM to 9:45 PM.

**Place:** N. J. Bell Telephone Co., 30 Evergreen Place, East Orange, N. J.