



The IEEE

# Newsletter

The Magazine of the North Jersey Section

Field Trip, Friday, October 18

Newark Airport Tour

ALAN H. STOLPEN  
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UNION

8088 517020

NJ 07083

Volume 15, Number 2  
October, 1968

## CALENDAR

Wednesday, October 9

North Jersey Computer — **Computer Data Handling In The Small Hospital**, Arnold Auditorium, Bell Telephone Laboratories, Murray Hill, N. J. 8:00 P.M.

Wednesday, October 16

New York Power and Industrial Group — **Auto Plant Assembly Tour**, General Motors, Assembly Division, Linden, N. J. 7:15 P.M.

Metropolitan Instrumentation and Measurement Group — **Electrical Transducers for Non-Electrical Measurements, Lecture Series**, Vail Hall, New Jersey Bell Telephone Company, 540 Broad St., Newark, N. J. 7:00 P.M.

New York ComTech — **Field Trip (I) to N. Y. Telephone Co. Facilities**, 228 East 56th Street, N. Y. C. 2:00 P.M.

Thursday, October 17

North Jersey Reliability — **Established Reliability Resistors, Their Place and Roll in the Future**, Governor Morris Hotel, Morristown, N. J. and MEPCO Plant. 6:30 P.M.

New York Power & Industrial Group — **Low-Cost Conversion of Overhead to Underground**, Union Carbide Building, 270 Park Avenue, N. Y. C. 6:30 P.M.

Metropolitan Engineering Management Group — **The Engineer as Entrepreneur**, United Engineering Center, 345 East 47th Street, N. Y. C. 7:30 P.M.

New York ComTech — **Field Trip (II) to N. Y. Telephone Company Facilities**, 228 East 56th Street, N. Y. C. 2:00 P.M.

Friday, October 18

North Jersey Section — **Newark Airport Tour**. Bus leaves Public Service 6:45 P.M.

Monday, October 21

North Jersey Automatic Control Group — **Application of Maximum Principle and Optimal Control Theory in the Water Pollution Problem**, General Precision Plant #3, 1150 McBride Avenue, Little Falls, N. J. 8:00 P.M.

Tuesday, October 22

New York Power and Industrial Group — **Computer Design of Electrical and Mechanical Building Systems**, General Electric Company, 570 Lexington Avenue, N. Y. C. 6:30 P.M.

Metropolitan Instrumentation and Measurement Group — **Fluidics, A One-Day Seminar for the Electrical Engineer**, Wooman Auditorium at Cooper Union Engineering and Science Building, 51 Astor Place, N. Y. C. 9:00 A.M.

Wednesday, October 23

North Jersey ComTech — **Communications Networks Management**, Arnold Auditorium, Bell Telephone Laboratories, Murray Hill, N. J. 8:00 P.M.

See pages 6 & 7 for North Jersey Lectures



## The IEEE Newsletter

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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 1968-1969



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### Executive Committee Meeting

Verona Public Library,

OCTOBER 2, 7:30 P.M.

NOVEMBER 6, 7:30 P.M.

## Section Will Tour Newark Airport

Towering above Newark Airport is a 1.5 million dollar, 150 foot high control tower built by the Port of New York Authority. The tower (see cover) is used by the Federal Aviation Agency to control air and ground aircraft movement at the busy New Jersey terminal. About 90 FAA electronic and air traffic control specialists staff the tower and maintain the complex electronic network around the clock.

Located near the center of the 2,300-acre airport between the two active runways, the tower affords FAA controllers the best possible view of runways, taxiways and ramp areas.

The tower and related installations contain about \$1,000,000 worth of federal air traffic control electronic equipment, including radio transmitters and receivers, direction finders and air surveillance radar. In addition, navigational aids including two instrument landing systems, associated approach lighting systems and a telecommunications network are operated from the tower.

On Friday evening, October 18, 1968, the North Jersey Section will sponsor a tour of the facilities of Newark Airport, including a visit to the control tower. A Port of New York Authority guide will conduct the group throughout the tour.

Chartered bus transportation will be available from Public Service Terminal in Newark. The bus will also stop at the main passenger terminal at the airport to pick up those who wish to park their cars in the airport parking lot.

The tour will be restricted to 49 people (capacity of the bus) so reservations will be filled on a first come-first served basis. Children attending this tour must be at least eight years old. A reservation ticket will be sent to the first 49 subscribers and a refund will be sent to the others.

### Tour Schedule

6:45 P.M. — Leave Public Service Terminal, 80 Park Place, Newark.

7:30 P.M. — Meet other members at Airport Passenger Terminal and begin tour.

9:30 P.M. — Complete tour; return to Airport Passenger Terminal.

10:00 P.M. — Arrive back at Public Service Terminal in Newark.

Mr. William Kelly

c/o Public Service Electric and Gas Co.

80 Park Place, Room 8343-M

Newark, New Jersey

MA 2-7000, Ext. 3162

Please send.....tickets, at one dollar each, for the Airport Tour to:

Name.....

Address.....

City.....

I will meet the bus at .....the Airport,

.....Public Service Terminal.

Enclose stamped, self-addressed envelope and make check or money order payable to North Jersey Section IEEE.

## How About You?

Active participation is an essential ingredient of any organization. If the IEEE doesn't do what you want it to do, it is your right to speak out. You can effect change by participating in its activities.

The only way the program committee can make effective plans for programs you want is for you, the membership, to voice your opinion and provide ideas.

Many IEEE functions are designed to include the families of members and provide an interesting and entertaining "night out." For example, on September 17, 1968, there was a tour of Eastman Kodak Company and an inspection of Newark Airport, including the control tower is planned for October 18, 1968.

Many IEEE members are utilizing the technical and social activities available for their education and pleasure. How about you?

Joseph W. Fink, Jr.

Chairman, Program Committee

## Reliable Resistors — Their Place & Role In The Future

The N. J. Reliability Group Chapter is planning a series of tutorial sessions on Reliability for the 1968-69 season. The first of these sessions will be a meeting sponsored by MEPCO, Inc. on the subject "Established Reliability Resistors — Their Place and Roll in the Future."

The meeting which is scheduled for October 17, 1968 will begin with a buffet dinner hosted by MEPCO at the Governor Morris Hotel in Morristown, New Jersey. Following the dinner will be a tour of the MEPCO Plant and an open discussion on "Established Reliability Component Specifications".

The meeting is open to all, and additional information may be obtained by calling either Mr. G. H. Ebel at the Conrac Corp., 226-7777 or Mr. J. H. Gerth at Bell Telephone Laboratories, 386-4191.

*Time:* Thursday, October 17, 1968, 6:30 P.M.

*Place:* Governor Morris Hotel, Morristown, New Jersey and MEPCO Plant.

## Handling Computer Data In The Small Hospital

An approach to providing a low-cost computer data handling system for small hospitals will be explored at the October 9th meeting of the North Jersey Computer Group.

Hospitals find it difficult to maintain an orderly flow of information. Sometimes, a doctor's request for tests or medication is not carried out or is carried out improperly. Often the results of such procedures do not get back to the doctor in reasonable time or are in a form difficult for interpretation. From a computer point of view this is a data storage and retrieval problem.

The National Institute of Health has awarded a three-year contract to the Methodist Hospital in Brooklyn to solve the problem at a cost low enough to be useful in small hospitals. Professor Charles Doersam of The Polytechnic Institute of Brooklyn is in charge of this project which has been underway for a year and a half. Under the program, they are installing a PDP-8 computer with a Potter RAM memory and pro-

vision for one hundred remote terminals at the hospital. Some of the terminals are located in the hospital laboratories for connection with the analysis equipment; others are designed to interact with the hospital personnel. Professor Doersam will describe the reasoning behind such a system and the problems of implementation.

### About the Speaker

Professor Doersam is an Associate Professor at the Polytechnic Institute of Brooklyn. He received his BS and MS degrees from Columbia University.

*Time:* Wednesday, October 9, 8:00 P.M.

*Place:* Arnold Auditorium, Bell Telephone Laboratories, Murray Hill, N. J.

*Dinner:* Wally's Tavern on the Hill, Watchung, N. J. 6:00 P.M. No reservations required.

## Computer Design of Building Systems

The New York Power and Industrial Division is planning a general meeting at which the topic will be "Computer Design of Electrical and Mechanical Building Systems." Discussion will center around the use of computers and programming for preliminary building design. Included will be electrical feeder calculations, protective devices panel scheduling, energy analysis (determination of degree hours), optimum insulation thickness, simulation of heat pump system, and pounds of sheet metal in ductwork.

The speaker will be Mr. Clarence Tsung, Director of Research, Syska and Hennessy, Inc.

*Time:* Tuesday, October 22, 1968, 6:30 P.M.

*Place:* General Electric Company, 570 Lexington Avenue, New York City.

## Electron Devices Sets Meeting Dates

The New York Metropolitan Chapter of the IEEE Electron Devices Group has established meeting dates and locations for the coming year as follows:

*November 14, 1968, 8:00 P.M., ITT, Nutley, N. J.*

*January 9, 1969, 8:00 P.M., GT&E, Bayside, N. Y.*

*February 27, 1969, 8:00 P.M., ITT, Nutley, N. J.*

*April 10, 1969, Tour of IBM Laboratory, Yorktown, N. Y.*

*May 22, 1969, 8:00 P.M., United Engineering Center, N. Y. C.*

## Fluidics Seminar Is For Electrical Engineers

The New York Joint Chapter on Instrumentation and Measurement is sponsoring a one-day seminar on Fluidics. The seminar will cover the following topics: Introduction to Fluidics, Theory of Operation, Hardware, Test Methods and Instrumentation, Applications, Hybrid Systems, Interfacing, and Advantages and Limitations. The program will be divided into morning and afternoon sessions with each session being followed by a question and answer period.

The fast-growing art of Fluidics has advanced to the point where it is beginning to challenge the supremacy of electronics in instrumentation and control applications. There are fluidic equivalents for many of the electronic circuit elements and components, and the number of applications in which fluidics is compatible with electronics is rather impressive.

The seminar will be conducted by Dr. Edward L. Rakowsky, Senior Staff Scientist in the Fluidics Department of the Aerospace Research Center, Kearfott Group of General Precision, Inc. Dr. Rakowsky has had more than 16 years of experience in the field of fluid dynamics and heat transfer.

*Time:* Tuesday, October 22, 1968; 9:00 A.M. to 4:30 P.M.

*Place:* Wooman Auditorium at Copper Union Engineering and Science Building, 51 Astor Place, New York City.

*Fee:* \$5.00 Technical Society Members; \$6.00 Non-Members.

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### REGISTRATION — FLUIDICS SEMINAR

Karl O. Sommer  
Consolidated Edison  
4 Irving Place  
New York, New York 10003

Name.....

Firm.....

Business.....

Technical Society Affiliation.....

Make checks payable to "New York Joint Chapter Instrumentation and Measurement."



## Applying Optimal Control To Water Pollution Problems

The October meeting of the North Jersey Automatic Control Group will detail how continuous Maximum Principle of Pontryagin for deterministic systems is applied to the thermal pollution problem of rivers. The control variable is temperature and the index of performance is a function of the dissolved oxygen. For heavily organic polluted rivers, the resultant optimal temperature profile is a skewed, bell-shaped curve. A model of the thermal energy balance was used to establish plausible implementation policies. Both digital and analog computers were employed in obtaining numerical results.

### About the Speaker

Burton Davidson received his B.S. (1958) and M.S. (1960) degrees in chemical engineering at Syracuse University and his Ph.D. (1963) at Northwestern University, Evanston, Illinois. Dr. Davidson was an Assistant Professor of San Jose State College. Since 1964, he has been a member of the faculty of Rutgers University where he holds the rank of Associate Professor of Chemical Engineering.

Professor Davidson has conducted and supervised research for consecutive heterogeneous petrochemical reactions, dissolved oxygen dispersion in estuaries



Dr. Burton Davidson

and streams, and thermal pollution analysis. He has published papers on a wide range of subjects and has made significant contributions in the field of environmental science.

Dr. Davidson is an active member of AIChE and ASCE.

**Place:** General Precision Plant # 3 Auditorium, 1150 McBride Avenue, Little Falls, N. J.

**Time:** Monday, October 21, 1968, 8:00 P.M.

**Pre-Meeting Dinner:** 6:00 P.M. at Burns Country Inn, 955 Valley Road, Clifton, N. J.

## Communications Network Management Talk Set

At the Communications Technology Group's October 23 meeting Mr. Robert S. Lindsay of American Telephone & Telegraph Company will discuss "Communication Networks Management."

The objective of network management is to help get the best long distance telephone service through most efficient and effective use of the telephone circuits and switching equipment. Some techniques used to achieve this are: exercising control in periods of disaster, facility failures, and high traffic volume; rerouting traffic that encounters busy trunklines; and making check of adequacy circuit and machine facilities.

Mr. Robert S. Lindsay is with the American Telephone and Telegraph Company, Long Lines Department, National Center of Network Management in New York City where he is engaged in engineering, planning and implementation work. Mr. Lindsay began his Bell System career with the Pacific Telephone & Telegraph Company in 1947. He has been involved in many aspects of telephone technology including switching systems and Network management.

**Time:** Wednesday, October 23, 8:00 P.M.

**Place:** Arnold Auditorium, Bell Telephone Laboratories, Murray Hill, N. J.

**Dinner:** Wally's Tavern, Watchung, N. J. 6:15 P.M. Reservations not required.

## Laser Lectures In N. Y.

The New York ComTech group will offer a six-lecture series on Lasers at the Little Theater in The New York Telephone Co. Bldg. at 140 West Street in Manhattan, starting November 6. The program to be offered is:

Nov. 6 — *Laser Theory and Applications — Introduction*. Speaker: W. V. Smith, IBM.

Nov. 13 — *Laser Theory and Application (cont'd)*.

Nov. 20 — *Holography*, Dr. Mauro Zambuto, Newark College of Engineering

Dec. 4 — *Laser Theory and Application (cont'd)*.

Dec. 11 — *Ultraviolet Techniques and Applications*.

Dec. 18 — *Infrared Techniques and Applications*.

Additional speakers for the lectures will be drawn from the following companies: Siemens America Corp., RCA, IBM, Bell Telephone Labs, and GT&E.

Additional information may be obtained from Mr. A. Karman of RCA, at 212-689-7000, Ext. RJ224. Checks should be made payable to the Communication Technology Group Chapter NY Section IEEE. Enclose a stamped self-addressed envelope with your order.

### LASER LECTURE SERIES

Mr. A. Karman  
RCA Frequency Bureau, Room 730  
60 Broad Street  
New York, N. Y. 10004  
Check one:

.....Member IEEE (Fee \$8.00/6 lecture course)

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# INTRODUCTION TO DIGITAL TECHNIQUES

This 8-week course will serve as an introduction to digital technology, primarily for those with little or no previous experience in the field. There are no prerequisites but the course will be conducted at a level sufficient to give the student a thorough introduction to digital techniques. The techniques discussed are not restricted to computer design as such but are applicable to a rapidly increasing number of technical areas.

## **October 16, 23, 30 — Switching Algebra**

The first three lectures will discuss Switching Algebra, a simple yet precise form of notation extremely useful in describing digital operations.

## **November 6 — Logic Circuits**

A detailed discussion of the various forms of circuitry used as building blocks to implement the functional relationships defined by means of the switching algebra. Emphasis will be on currently available integrated circuit modules.

## **November 13, 20 — Binary Arithmetic**

The lectures will introduce the concepts of binary arithmetic and discuss how decision making is done in a digital manner.

## **November 27 — Digital Design**

This lecture will be a description of the digital design process. Drawing on the material previously developed the following topics will be covered: formulation of requirements, choice of circuitry to be employed, development of logic equations, and solutions to commonly encountered circuit problems.

## **December 4 — Application of Digital Techniques**

This concluding lecture will discuss specific areas in which digital techniques are particularly useful: accurate waveform generation, information transfer, storage and display, and control applications. Also covered will be how electrical and mechanical parameters are converted into digital form by means of analog to digital converters and digital transducers.

**INSTRUCTOR** ..... **Mr. A. Richardson, ITT Avionics**

**TIME** ..... 7:00 - 9:00 P. M. — Wednesday nights — October 16 to December 4, 1968.

**PLACE** ..... ITT Federal Laboratories, 500 Washington Avenue, Nutley, N. J.

**FEE** ..... \$25.00 Members (IEEE, NJPE, etc.); \$35.00 Non-Members; \$5.00 Discount for early registration

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## **REGISTRATION FORM — INTRODUCTION TO DIGITAL TECHNIQUES**

Send To: Mr. J. Zemkowski  
Public Service Electric & Gas Company  
80 Park Place  
Newark, N. J. 07101 Phone: 622-7000, Ext. 3008

Name.....Tech. Society.....

Firm.....Phone.....

Address.....Zip.....

Check Enclosed:

Member: \$20.00.....; \$25.00 after Oct. 9 .....

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Please make checks payable to: North Jersey Section, IEEE



# SPEED READING AND COMPREHENSION

This eight-session course is designed to help engineers to keep abreast of the literature in their fields, and of their general reading. It improves reading speed and retention through skills taught and practiced. It releases reading power held back by inefficient habits and attitudes. Engineers may expect improved speed in their reading, greater comprehension and retention of information, and an insight into the process of reading which will foster continuing individual growth.

**October 14 — Introduction to Speed Reading**

**October 21 — Organization as an Aid**

**October 28 — Paragraph Patterns and Functions**

**November 4 — Eye Movements**

**November 18 — Graphic Aids to Understanding**

**November 25 — Technical Aids to Understanding**

**December 2 — Reading to Remember**

**December 9 — Broadening Horizons**

**INSTRUCTOR** ..... **Mr. E. E. Coing, Assistant to Director of Educational Work, Public Service Electric & Gas Co.** Former member of N. Y. U. School of Commerce faculty, he has over 30 years experience teaching courses for business and industry.

**TIME** ..... 6:30 P. M. to 8:30 P. M. — Monday nights — Starting Oct. 14 and ending Dec. 9, 1968. (There will be no meeting on Nov. 11, 1968)

**PLACE** ..... Public Service Electric & Gas Co., 80 Park Place, Newark, N. J.

**FEE** ..... \$30.00 for members (IEEE, ASME, NSPE, etc.) \$40 for non-members, \$10 of which is applicable to IEEE membership dues.

\$5.00 discount for early registration.

Text material will be supplied.

Registration will be limited to the first 40 applicants.

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## REGISTRATION FORM — SPEED READING

Send To: C. G. Engstrom  
Public Service E & G Co.  
90 Park Place, Rm. 244  
Newark, N. J. 07101 Phone: 201 - 622-7000, Ext. 2603

Name..... Tech. Society.....

Firm..... Phone.....

Address.....

Check Enclosed:

Member \$25.00 ..... \$30.00 after Oct. 7 .....

Non-Member \$35.00 ..... \$40.00 after Oct. 7 .....

Make checks payable to North Jersey Section IEEE.

## N. Y. Group Plans Phone Office Trips

The General Activities Committee of the New York Section's ComTech Group Chapter has planned two October field trips to the New York Telephone Company's facilities at 228 East 56th Street, New York City, in conjunction with the theme "The Evolution of the Central Office."

Each of the trips will include lectures and tours on the panel, crossbar and ESS Central Office configuration. Each trip can only accommodate twenty

people. All attendees will make their own luncheon and transportation arrangements. Convenient bus and subway transportation is available.

**Time:** October 16 and 17 (Wednesday and Thursday), 2:00-4:00 P.M. All scheduled attendees will meet promptly at 2:00 P.M.

**Place:** Lobby of the New York Telephone Company Building at 228 East 56th Street, New York City.

**Reservations:** Call Frank Astorino at PLaza 2-6000, Ext. 219 to register for either one of the two dates available. Reservations will be made on a first-come first-served basis.

## Instrumentation and Measurements Slates Transducer Lectures

The IEEE Joint Metropolitan Chapter on Instrumentation and Measurements will hold a fall Lecture Series on "Electrical Transducers for Non-Electrical Measurements."

An electrical transducer is a device which senses a phenomenon and converts the measurement into an electrical output signal. The non-electrical measurands considered comprise the more prominent physical and chemical phenomena which are of interest to engineers. Each lecture discusses the properties of the measured quantity, the principle of operation of the various transducers, the static and dynamic characteristics of the devices, and some typical engineering specifications and applications. For the purpose of presenting the best over-all picture of electrical transduction the lectures have been grouped by measured quantities rather than by principle of operation. This gives a degree of autonomy to each lecture. At the same time, this grouping allows for greater flexibility in description of device performance.

October 16, 1968 — The Design of Sensors for Water Quality Measurements, *Mr. Arthur E. Gealt, Senior Development Engineer, Industrial Division, Honeywell, Inc., Fort Washington, Pa.*

October 23, 1968 — The Application of Radiation Sensing Instruments, *Dr. Robert W. Houston, Director, Industrial Reactor Laboratories, Plainsboro, N. J.*

October 30, 1968 — Principles and Applications of Non-Contact Thermometry by Infrared Techniques, *Mr. John R. Yoder, Head-Advanced Systems Department, Barnes Engineering Co., Stamford, Conn.*

November 6, 1968 — The Sensing of Sound, *Mr. Bernard Katz, Manager Communication Market, B and K Instruments, Inc., Cleveland, Ohio.*

November 13, 1968 — The Sensing of Mechanical Dimension, *Mr. Richard J. Levi, President, Electro-Autosizing Machine Corp., Westwood, N. J.*

November 20, 1968 — The Sensing of Level and Flow, *Speaker from Hagan Controls Division, Westinghouse Electric Corp., Pittsburgh, Pa.*

December 4, 1968 — The Sensing of Motion, *Mr. Walter Christie, Senior Engineer, Navigation and Control Division, The Bendix Corp., Teterboro, N. J.*

December 11, 1968 — The Sensing of Force, Torque and Pressure. *Speaker from Automatic Timing and Controls, Inc., King of Prussia, Pa.*

**Time:** 7:00-9:00 P. M.

**Place:** Vail Hall, N. J. Bell Telephone Co., 540 Broad St., Newark, N. J.

### REGISTRATION FORM

Send registration forms to:

Prof. Harlan J. Perlis  
Newark College Of Engineering  
323 High Street  
Newark, N. J. 07102

or Mr. Daniel W. T. Cotte, Jr.  
RFL Industries, Inc.  
Powerville Road  
Boonton, N. J. 07005

Name ..... Tech. Society .....

Business Address ..... Phone .....

City ..... State ..... Zip .....

Check Enclosed (Member \$20)..... (Non-member \$30)..... (Student member \$1).....

Please make checks payable to: N. Y. Joint Chapter of Instrumentation and Measurements

## Data Transmission Over The Telephone Network

An essential aspect of time-sharing and computer interconnection is the transmission of data over the telephone network, using both private lines and the public telephone system. The problems and techniques of coding, modulation, transmission, error correction and synchronization, for both digital and analog data transmission, will be discussed by Mr. C. J. White of the American Telephone and Telegraph Company at the October meeting of the New York Chapter of the IEEE Computer Group.

Mr. White is a Senior Engineer with the Data Systems Group at A T & T concerned with transmission aspects of voice grade data services.

**Time:** Tuesday, October 22; 7:45 P.M.

**Place:** Auditorium, National Cash Register Company, 50 Rockefeller Plaza (at 51 Street between 5 and 6 Avenues).

**Dinner:** No reservation pre-meeting dinner at Schrafft's Restaurant, 21 West 51 Street, 6 P.M.

## Discussion Group Set

N. Y. Power and Industrial has set meeting nights for five technical discussion groups, to be presented during the coming year. Members, prospective members and other engineers are invited to attend and participate in any of the technical discussion groups.

Transmission and Insulation and Insulated Conductors groups meet in the third floor meeting room, Union Carbide Bldg., 270 Park Ave., N. Y. C. All other groups meet in room 503, Con Ed Bldg., 4 Irving Place, N. Y. C.

**Industrial and Commercial Power Systems**  
Tuesdays — Sept. 24, Oct. 29, Nov. 26;  
Thursdays — Feb. 27, Mar. 27; and  
Tuesday April 29.

**Transmission and Distribution**  
Thursdays — Oct. 17, Dec. 5, Mar. 20  
and May 1.

**Insulated Conductors**  
Thursdays — Oct. 3, Nov. 14; Tuesdays  
— Mar. 4, Apr. 8.

**Substation**  
Tuesdays — Oct. 8, Dec. 3; Wednesdays  
— Mar. 12, Apr. 16.

**System Engineering**  
Thursdays — Oct. 10, Mar. 6, Apr. 10.

Interested parties call Mr. Thomas E. Sharp, Public Service Elec. and Gas Co., 325 County Ave., Secaucus, N. J. 07094.



# NEWSLETTER 1

(First in a series)

## HOW TO USE

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Send insertion orders, copy and instructions to:

IEEE NEWSLETTER

Box 666

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# Student Affairs

## Newark College of Engineering

### EVENING BRANCH

John Funk, Publicity Chairman, has recently assumed the additional duties of Program Chairman.

### DAY BRANCH

Robert E. Wavra, Vice Chairman and Program Chairman has distributed an IEEE questionnaire to the entire Electrical Engineering student body for the purpose of determining student attitudes towards various types of IEEE sponsored programs. Some of the topics mentioned include: Lunch time movies; Speaker programs; Field trips; Evening get-togethers (and parties).

Mr. Wavra also requested volunteers to serve on the following committees: Publicity; Program; Test File; Membership; Metropolitan Student Council.

## Stevens Institute of Technology

The IEEE Student Laboratory is scheduled to receive a lathe and a drill press in order to enhance its technical facilities.

Several student members have been spending their spare (?) time in the lab working on digital circuit projects using integrated circuits donated to the laboratory by the various semiconductor manufacturers having sales offices in Northern New Jersey.

### Calendar

#### Newark College of Engineering Evening Branch

*October 1* — General Branch Meeting at 5:30 P.M. Room to be announced on campus.

*October 15* — An Executive Committee Meeting in the IEEE Office at 5:30 P.M.

*October 29* — The first Feedback Session of the term will be the feature of a General Branch Meeting to be held in Room 312 of the Student Center at 5:30 P.M. Student "gripes" will be entertained by the Electrical Engineering Department Chairman, Dr. Frederick A. Russell and Department Assistant Chairman, Professor Robert E. Anderson. All Electrical Engineering students are welcome. Refreshments will be served.

#### Stevens Institute of Technology

*October 9* — An Executive Committee Meeting, followed by a General Branch Meeting will be held in Buchard Auditorium at 12:30 P.M.

## The Engineer as Entrepreneur

If you have ever thought about starting your own technical products business but have balked because you did not quite know how to go about it, then you will not want to miss the year's first meeting of the Metropolitan Chapter of the Engineering Management Group.

Mr. H. A. Augenblick, President of Microlab/FXR, will describe what it is like for the employed engineer to become the owner of his own business. Drawing extensively from his own experience, Mr. Augenblick will stress the critical considerations the aspirant must make, the personal attributes which may be desirable, and some pitfalls which should be avoided. Upon concluding, the speaker will gladly answer questions. *Time:* Tuesday, October 17, 7:30 P.M.

*Place:* Room 125, United Engineering Center, 345 East 47th Street, N. Y. C.

## Putting Power Lines Underground

The question of when circumstances will dictate that overhead lines should be put underground is plaguing many utilities. How the conversion can best be done with the least cost, minimum replacement of equipment and least inconvenience to the public will be the topic of discussion at an October 17th Discussion Group meeting of the New York P & I Group. Speakers from Consolidated Edison, Jersey Central Power & Light, Long Island Lighting and Public Service Electric and Gas will be heard. *Time:* Thursday, October 17, 6:30 P.M. *Place:* Union Carbide Building, 3rd Floor Meeting Room, 270 Park Avenue, N. Y. C.

## Practical Legal Guidance

The Educational Committee of the North Jersey Section of the ASME will present a series of lectures starting in late October to provide practical legal guidance on aspects of law that touch our daily, personal lives.

The course will consist of approximately eight two-hour lectures touching on such vital personal topics as: Contracts, Wills and Estates, Real Es-

tate, Agency, Estate and Inheritance taxes, Negotiable Instruments, Negligence Liability, Trusts and Forms of Business Ownership.

This course is designed to inform you of your personal legal obligation, with the possibility of avoiding costly legal entanglements.

For further information and for application forms contact: Mr. G. Slifer, Public Service E. & G. Co., Essex Generating Station, 155 Raymond Blvd., Newark, N. J. Phone: 622-7000, Ext. 14-248.

## To See How GM Assembles Autos

The New York Power and Industrial Division has arranged for a tour of the General Motors Assembly Division in Linden on October 16, 1968. The tour is limited to 50 persons so those who are interested should contact Frank R. Postma, c/o The Okonite Company, 1144 Clifton Avenue, Clifton, New Jersey 07013.

*Time:* Wednesday, October 16, 7:15 P.M.

*Place:* General Motors Assembly Division, Route #1, Linden, New Jersey. Entrance is opposite Linden Airport entrance and next to Gordon Distillers Plant; Park in GM parking area; Patrolman at plant will have further directions and information.

## New York P & I Plans Six General Meetings

The Power and Industrial Division of the New York Section has announced these six general meetings for the 1968-69 season:

Oct. 22, 1968 — *Computer Services as an Aid to Engineers*

Nov. 19, 1968 — *Review of Blackout and Where Do We Stand*

Dec. 10, 1968 — *Modern Power Interrupters*

Feb. 18, 1969 — *Elevator Control Using Solid State Switching*

Mar. 18, 1969 — *High Reliability of Power Sources*

Apr. 22, 1969 — *Damming the Long Island Sound*



## Report From The: Automatic Control Group

The necessity of meeting a summer publication deadline has precluded my consultation with the executive committee of our group prior to the submission of this article. Each year, this committee of busy engineers attempts to "second guess" the needs and desires of the membership of the Automatic Control Group of the North Jersey Section.

The Automatic Control Group (G23) Chapter of the North Jersey Section is surprisingly small! We have exactly 185 members in a section which has an approximate membership of 6000. National G23 membership automatically registers you in our group chapter. Therefore, before saying anything about our chapter activities it is appropriate to mention something about the national G23 activities.

On a national level the Automatic Control Group became a very strong and dynamic group with the merger of the strong IRE-PGAC and the strong AIEE Feedback Control Committee. As a technical group, it embraces the functions of generating standards, sponsoring and co-sponsoring conferences and conventions, and publishing a transaction and a newsletter. It does exceptionally good jobs in these areas. Besides representing IEEE in the Joint Automatic Control Conference, it is active in the national AACC and the international IFAC activities. It co-sponsors such conferences as: Allerton, Asilomar, and the International Systems Conferences, and it organizes outstanding sessions at NEC and the International Convention. The Automatic Control Group Newsletter is a very informative quarterly publication which averages about 60 pages/year. The Automatic Control Transactions is an extremely valuable bimonthly controls publication which averages 840 pages/year. With the large number of engineers working in and/or having an interest in the broad area of automatic control systems in North Jersey, it is difficult to understand why our group chapter is so small. We would like to see more IEEE members take advantage of the services and activities offered by membership in the Automatic Control Group (G23).

As one of the six technical groups in the North Jersey Section, our primary function has been to provide a program of evening technical meetings on a variety of subjects related to the very broad field of automatic control systems. To add a little social aspect to our gatherings, they are preceded by an informal pre-meeting dinner. Usually, one of our meetings is planned as a joint Group-Section meeting. In addition, where

common interests can be served, we hold joint meetings with other groups. Since 26% of the membership of our group holds membership in the Computer Group, a joint venture, such as the digital filtering meeting of last year is quite successful.

In the recent past, we sent out questionnaires in an attempt to determine the interests of our membership with respect to topics, types of meetings, and meeting nights. At the same time, Terry Sutton used his slide rule, a map, and the membership address roster to compute the centroid for our group. From these studies, it was concluded that Monday evenings appeared to be favored and that it would be desirable to meet in the general vicinity of Clifton. Naturally, engineering compromises are usually made, and we often select a suboptimal meeting policy.

With regard to types of meetings, the greatest interest appeared in tutorial talks with second place going to talks stressing the future applications of advanced control theory. Among the subjects most popular were optimization, nonlinear systems, computer control, new applications, and stability. Of course, these results may not reflect your current views. If you wish to make any suggestions, we would appreciate hearing.

Elsewhere in this NEWSLETTER, you will find the details about our October 21st meeting. Burt Davidson is one of the new breed of chem engineers, and I am certain that you will find his practical application of the Maximum Principle to the everyday problem of water pollution control of great interest. At our November meeting, Gerry Volpe will give a presentation on a very interesting solution to a very tight spec problem: the use of phase-lock loop techniques for the precise speed control of a synchronous motor. You will receive more details on this meeting in the next issue of the NEWSLETTER.

In conclusion, I should like to invite you to join the Automatic Control Group (G23), and, if you are a member to participate in our programs by attending meetings (remember guests are always welcome), by making suggestions, and, if possible, by helping with our committee work. For further information please contact me at Newark College of Engineering, 323 High Street, Newark, N. J. 07102 (201-645-5492).

Dr. Harlan J. Perlis, *Chairman*  
*Automatic Control Group*

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