

1967 IEEE

INTERNATIONAL CONVENTION

March 20-23

**New York Hilton Hotel
and Coliseum**

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The IEEE

Newsletter

The Magazine of the North Jersey Section

NORTH JERSEY SECTION

TOUR OWENS ILLINOIS GLASS FACILITIES

See page 5

Volume 13 / Number 7

MARCH 1967

North Jersey

SPRING STUDY GROUP

CONTROL CIRCUITS WITHOUT ELECTRICITY

A 4-lecture series to show electrical engineers how to design machine control circuits that use no electricity.

Are you interested in a system that eliminates the hazards of shock, fire, heat and explosion? Would you like to increase by tenfold the reliability of your control system? Would you like to eliminate completely all solenoids and limit switches?

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REGISTRATION INFORMATION

- TIME: 7:00 - 9:00 P.M. Starting April 4, 1967 and ending April 25, 1967.
- LOCATION: Public Service Electric and Gas Company, Room 3171A, 80 Park Place, Newark, New Jersey.
- REGISTRATION \$20.00 to members of IEEE, ASME, ASCE, AIME, etc. \$25.00 to non-members.
- FEE: For advance registrants (registration received at least one week before first session) there will be a \$5.00 discount. Fee includes \$10.00 Manual on Air Circuitry Design.

REGISTRATION FORM

Name Tech. Society

Firm Position

Address Phone

Check or Money Order Enclosed: Member \$15.00 — Non-Member \$20.00

Send Registration Forms to:

MR. J. ZEMKOSKI, Room 6315
Public Service Electric and Gas Company
80 Park Place, Newark, New Jersey 07102

Please make checks payable to: North Jersey Section IEEE.

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ABOUT ADDRESS CHANGES

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.

NEWSLETTER STAFF

Editor: A. R. D'heedene
School Affairs Editor: Gene R. O'Brien
Associate Editor: David Wiener
Associate Editor: Fred T. Grampp
Advertising Manager: M. M. Perugini

Executive Committee Meeting

at Verona Public Library
Wednesday, April 5, 7:30 P.M.

North Jersey Section IEEE Executive Committee 1966 - 1967

Section Officers

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Publicity M. H. Nuechterlein
Program Carl Torell
Student Affairs Prof. J. W. Earle

CALENDAR

See
Page

Wednesday, March 8

NORTH JERSEY SECTION 5
7:15 P.M. — Tour of Owens Illinois Glass Facilities in North Bergen.

NEW YORK — POWER

"Role of Computers in Transmission and Distribution"—3rd Floor Meeting Room, Union Carbide Building, 270 Park Avenue, New York City.

Tuesday, March 14

JOINT METROPOLITAN — GEMB 10

8:00 P.M. — "Computer Analysis in Medicine" — Dr. C. A. Carceres of U. S. Public Health Service at the Rockefeller University, New York City.

Wednesday, March 15

NEW YORK — POWER AND INDUSTRIAL 8

6:30 P.M. — "High Rise Vertical Transportation"—Speakers from Port Authority and Otis Elevator at Con. Edison, Irving Place, New York City.

Thursday, March 16

NEW YORK — COMPUTER 8

7:45 P.M. — "Parallel Processing Computer Trends" by Dr. Meir Lehman of IBM at IBM, 590 Madison Avenue, New York City.

Saturday, March 18 (or March 25)

NEW YORK — POWER AND INDUSTRIAL 5

11:00 A.M. — Backstage Tour of New Metropolitan Opera House.

Monday, March 20

START OF IEEE INTERNATIONAL CONVENTION 10

Wednesday, March 22

University of Minnesota Annual Alumni Meeting at 12:30 P.M. 5

Monday, March 27

NEW YORK COMTECH

7:00 P.M. — First of a Series of Lectures on energy sources in "Little Theatre" — N. Y. Telephone Building, 140 West Street, New York City.

Wednesday, March 29

JOINT METROPOLITAN — ENGINEERING MANAGEMENT 6

7:00 P.M. — First of a six session course on "Financial Aspects of Management" at Little Theatre of N. Y. Telephone Building, 140 West Street, New York City.

Tuesday, April 4

NORTH JERSEY SECTION — SPRING STUDY COURSE 2

7:00 P.M. — First of four lectures on "Control Circuits without Electricity" at Public Service Electric and Gas Company, 80 Park Place, Newark.

Thursday, April 13

NORTH JERSEY — RELIABILITY 8

"Computer Aides to Electronic Circuit Reliability Analysis" by H. M. Wall of IBM.

JOINT METROPOLITAN — ELECTRON DEVICES 8

2:00 P.M. — Tour of RCA Laboratories at Princeton.

Tuesday, April 18

JOINT METROPOLITAN — GEMB 9

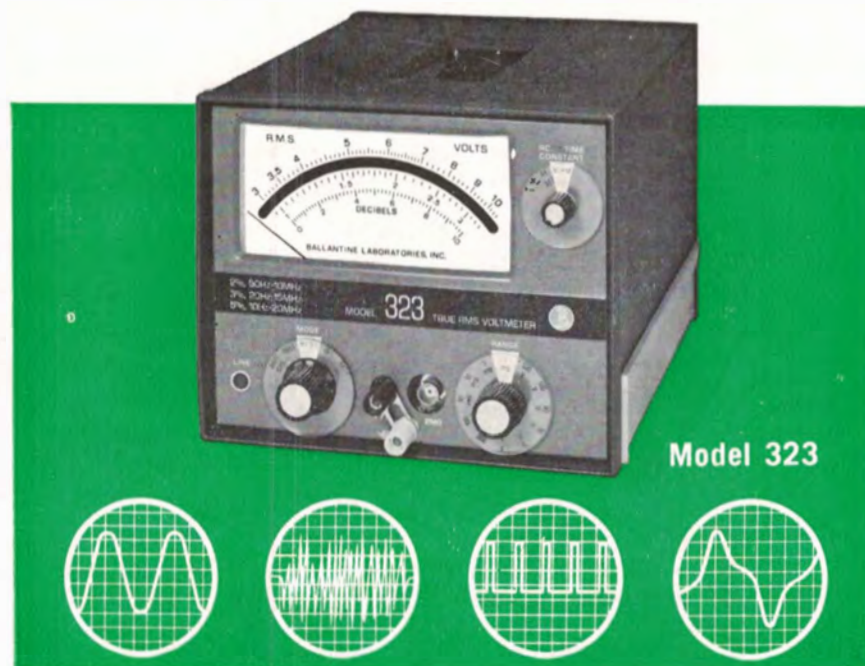
8:00 P.M. — "Biomedical Applications of Neutron Activation Analysis" — Dr. Vincent P. Guinn, General Atomic Division of General Dynamics Corp. at the Rockefeller University, New York City.

Wednesday, April 19

NORTH JERSEY — MTT 10

6:30 P.M. Dinner — 8:15 P.M. "High Resolution Radio Astronomy" by Dr. J. W. Findlay, Director of National Radio Astronomy Observatory at Bell Telephone Laboratories, Murray Hill, New Jersey.

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The Uses of a Professional Society

Our readers are urged to read the four-page article beginning on page 35 of the December 1966 issue of the Spectrum by W. G. Shepherd, past President, entitled "The Uses of a Professional Society." A summary, omitting many important ideas, might be expressed: "If an engineering society is to be effective, it should not be hampered by traditions handed down from societies formed to serve other objectives. Rather, it should reflect the needs of a membership that includes not only those who contribute to the field in a scholarly way but also those who implement science and technology for the public benefit."

1967 McDOWELL AWARD TO J. W. BACKUS

John W. Backus, IBM Fellow, has been named as recipient of the 1967 W. W. McDowell Award of the IEEE Computer Group. It was announced today by the Computer Group Awards Committee. The award, the second in an annual series, will be presented to Mr. Backus at the Spring Joint Computer Conference at the Banquet on the evening of April 19, 1967 in Atlantic City, New Jersey.

Mr. Backus was selected for this award for his early and continuing contribution to the field of higher level languages, in particular for his conception and leadership resulting in the completion of the first FORTRAN projects; and for his work in syntactical forms incorporated in ALGOL.

Mr. Backus' concern with higher level languages dates back to IBM SSEC Computer in 1948. Spurred by the difficulty of programming that machine, he was instrumental in preparing an interpretive system for the IBM 701. After these early endeavors Mr. Backus prepared specifications of the FORTRAN language and led the group which prepared the version which became available for the IBM 704 in 1954.

In addition to his work on FORTRAN Mr. Backus also made strong contributions to the development of the International Algorithmic language which eventually became known as ALGOL. The so-called Backus, or Backus-Naur, form of a language has been a formalizing tool greatly aiding the development of ALGOL.

John Backus is at present on a five year appointment as an IBM Fellow, in which capacity he is now associated with Electrical Engineering Department of the University of California at Berkeley.

The W. Wallace McDowell Award has been established by the IEEE Computer Group through a grant by the IBM Corporation in honor of its Vice-President, W. Wallace McDowell, for his contributions to computer development. The award, which consists of a certificate and \$500.00 in cash is presented annually by the IEEE Computer Group to an individual whose professional work has been outstanding in technology, programming, education, or management in the computer field. This year marks the second presentation of the award, the first award being in 1966 to F. J. Corbato of Massachusetts Institute of Technology.

North Jersey Section

A TOUR OF THE OWENS ILLINOIS GLASS FACILITIES

Wednesday, March 8, 1967 at 7:15 P.M.

The North Bergen plant of Owens Illinois houses their glass container manufacturing facilities. Raw materials which consist of sand, soda ash, and limestone are mixed and fed into four furnaces where they are melted down. Through gravity action the molten glass is placed into a forming machine (the modern equivalent of a glass blower) where glass containers are formed in sizes varying from small medicinal bottles to gallon jugs. The containers are then annealed, inspected, packed in corrugated boxes and shipped to the customer.

The tour will cover all these operations and will last approximately one hour and twenty minutes, beginning promptly at 7:30 P.M. The Owens Illinois Glass plant is located in North Bergen, N. J. at 2220 91st Street, just west of Rt. 1-9, approx. midway between Rt. 46 and Rt. 3. Those planning to attend should mail in the reservation slip before March 3, or call Mr. Franco on 843-2400 — Ext. 4272.

RESERVATION SLIP

ALBERT G. FRANCO
Communication Systems, Inc.
South 60, Route 17
Paramus, New Jersey 07652

I plan to attend the Owens Illinois Tour on March 8, 1967. I will bring guests.

Name

Address

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New York Power and Industrial

NEW MET TO HOST TOUR

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

Many new innovations were designed and built solely for the new Met. The mainstage 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. These huge backcloths travel on a track around the entire stage depicting motion and depth.

The tour has been arranged for Saturday Morning, March 18, 1967, at 11:00 A.M. (If the response is great enough, a second trip may be arranged for the following Saturday, March 25, 1967, at 11:00 A.M.).

In conjunction with the tour a very limited block of tickets has been reserved for our group for the matinee performances of *Madama Butterfly* on March 18 and *La Traviata* on March 25. All tickets are \$13.50 each. Because of the short supply of tickets, requests must necessarily be limited to two and must be received by March 4. Tickets will be assigned in order of receipt of request, regardless of date selected.

All requests must be accompanied by a stamped self-addressed envelope and by a check or money order also if opera tickets are being requested. Every effort will be made to have the ticket for the opera performance agree with the date of the ticket for the inspection tour but because of the limited number of opera tickets available, this may not be possible.

Please send filled-in form and self-addressed stamped envelope to:

FRANK FARINELLA
Public Service Electric and Gas Co.
Room 7323, 80 Park Place, Newark, New Jersey 07101

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

Name

Company Street

City Zip Code Telephone

TOUR:

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☐ March 18 only ☐ March 18 or 25 ☐ March 25 only

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MINNESOTA E.E. ALUMNI MEETING

The I.E.E.E. Annual Minnesota Alumni meeting will be held 22 March 1967 at the Henry Hudson Hotel, 12:30 P.M. Dr. W. G. Shepherd, Minnesota's V.P. Academic Administration is the national President of I.E.E.E.

Address reservations to J. Harry DuBois, Box 259, Clifton, N. J. 07015 or telephone 201 - 473-4108.

PROFESSIONAL ENGINEERS PLAN CONFERENCE

The New Jersey Society of Professional Engineers will conduct its 43rd annual Conference and Exhibits in Atlantic City on the first weekend of May. The exhibition hall and the conference rooms of the Deauville Motel-Hotel will be the scene of the meeting.

Last year over 800 attended the conference. Plans for a larger registration this year are enhanced by the program which has been arranged. Mr. Ralph Nader, the auto safety critic, has accepted an invitation to speak at the Friday luncheon. Mr. Nader, interviewed recently in the *American Engineer*, has stated, "Instead of doctors patching and lawyers compensating, engineers should work toward prevention of casualties in automobiles."

Other highlights of the three-day program will include a Symposium on Mass Transit on May fourth, Thursday; the annual Delegates Meeting of the Society on Friday, the fifth; and a Saturday morning meeting arranged by and for young engineers which will deal with an engineer's entrance into private practice.

Another important feature is the exhibition of engineering services and products. Between 50 and 60 separate exhibits are usually available for visitation by those in attendance.

All activities of the Conference are open to guests as well as members. The Saturday Young Engineers' program is especially suited for students. If any of the North Jersey Student Branches' members are interested in visiting the Conference, he should notify the Student Affairs Editor by telephoning 565-6546 in Newark during normal business hours.

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STUDENT PAPERS ARE INVITED

Once again the Metropolitan Student Council of the IEEE is inviting students to submit papers for its annual Student Prize Paper Contest. The Council is supported by the North Jersey, New York, and Long Island Sections. Since 1955 it has awarded prizes of \$200, \$100, \$75, and \$50 to the students whose papers are adjudged to be the best four, respectively, on the basis of both the written and oral presentations which are required of the finalists.

The content of the student's paper should be related to or deal with an area of engineering with which the IEEE is concerned. The 1967 MSC contest will be concluded on April 22.

In past years our Section's Student Branches have been well-represented with entries. For the first time, this year the Evening Branch at NCE will partake in the Metropolitan contest. As a prelude to that contest, the NCE Evening Branch chairman, Vince Rendenna, has announced a local contest with the same rules being applied as in the MSC contest. The prizes for this contest will be \$50, \$25, and \$25 for the first three papers, respectively.

All students in the North Jersey Section's Student Branches are invited to submit papers for the contest administered by the Metropolitan Student Council. In addition to the potential immediate benefits of winning a prize, each student can anticipate the favorable reaction by a potential employer upon learning of the student's participation in such a contest.

New York Industrial Electronics and Control Instrumentation

SYMPOSIUM ON MANUFACTURE OF INTEGRATED CIRCUITS

Mr. J. P. Lienesch, Chairman of Group, announced today that plans have been completed for a Special One-Day Symposium to be held June 5, 1967 in the United Engineering Center, New York City.

The theme of the Symposium focuses on the "Manufacture of Integrated Circuits." Papers have been invited for the following key sessions of current concern: Automated Mask Production, Diffusion, Water Probing, Quality Assurance and Testing.

Mr. J. E. Casey, of Leeds & Northrup Company, serves as Symposium General Chairman. Mr. A. J. Hornfeck, of Bailey Meter Company, and Dr. E. Mittelman, Consulting Engineer and Physicist, are jointly serving as Symposium Program Chairmen.

Symposium Registration information may be obtained and Advance Registration arrangements made by contacting Symposium Registration Coordinator:

B. S. HINES (Miss)
7830 Hasbrook Ave., Phila., Pa. 19111

Joint Metropolitan Engineering Management

"FINANCIAL ASPECTS OF MANAGEMENT"

Whether you are concerned with more recognition from higher management or reviewing what you learned years ago, here is a course that has been specifically designed to be of practical value to you.

COURSE DETAILS

The "Financial Aspects of Management" are covered in six weekly 2-hour sessions. These include lectures, visual aids, practice sessions and the exchange of views. Material will be discussed which is basic to the practices of any company. Illustrative and workshop examples are drawn from different types of industries (commercial, defense oriented, etc.)

The course, given by a distinguished consultant in the field, C. Richard Gunzer, is sponsored by the Metropolitan Chapter of the Engineering Management Group. Classes will meet from 7:00 to 9:00 P.M. at the Little Theater of the New York Telephone Company, 140 West Street, New York City. Sessions will be held each Wednesday, starting March 29, 1967 and ending May 3, 1967.

COURSE OUTLINE

- SESSION 1 — Essentials of financial statements: income statements and balance sheets. Explanation of income and expenses, assets, liabilities and equities.
- SESSION 2 — Evaluation of risk, profitability and potential of a business. Utilization of common measures, such as ratio analysis.
- SESSION 3 — The nature and objectives of cost accounting. Application of various methods used in ascertaining costs.
- SESSION 4 — Cost — Volume — Profit relationships. Techniques for analyzing fixed and variable costs for pricing decisions.
- SESSION 5 — Profit planning with budgetary control. Preparation and integration of departmental budgets for the accomplishment of company objectives.
- SESSION 6 — Cost analysis for managerial decisions. Employment of the factors studied in previous lectures to determine the optimum course of action.

REGISTRATION

The fee for Metropolitan Chapter members is \$24 and \$28 for non-members; advance registration (postmarked no later than March 21, 1967) is \$20 for Chapter members and \$24 for non-members. These fees cover tuition, textbook and bound lecture notes.

INSTRUCTOR BIOGRAPHY

Mr. Gunzer brings to this course 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. For the past seven years, Mr. Gunzer has been a lecturer at the University of Connecticut. He is also the author of "Reasonable Executive Compensation" and other books and technical articles. Mr. Gunzer is a Certified Public Accountant and a member of several professional accounting associations.

ADDITIONAL INFORMATION

If you have any questions please call S. Kramer, General Instrument Co., (212) 388-6416.

REGISTRATION FORM (Please Print)

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Indicate with ☐ IEEE Member
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NOTE: Make check payable to "Metropolitan Chapter — EMG." Mail to R. Colen, Hewlett-Packard Corp., 100 Locust Avenue, Berkeley Heights, N. J. 07922.

Frank Polkinghorn Leaves North Jersey for California

Frank Polkinghorn, for many years an active member and historian of the North Jersey Section of the IEEE, has left the area for California. The Section, for which he worked so long and tirelessly, would like to say thank you and best wishes for a happy and productive future to match a most productive past.

Starting with the Pacific Telephone and Telegraph in 1925, he spent two years in operations before joining Bell Telephone Laboratories in 1927. For twenty years he supervised a research department group that designed high frequency radio equipment for trans-oceanic telephony.

During World War II he worked on military systems, designing radar and communication equipment.

From 1948 to 1950, he was on leave of absence in Tokyo, Japan, as Director of Research and Development of the Civil Communication Section of the Supreme Command Allied Powers in charge of all communication research in Japan.

He retired from Bell Laboratories on August 1, 1962, after thirty-seven years with the System. His position at the time of retirement was "High Frequency Radio Consultant on the Mercury Project."

His contributions to the North Jersey Section have been legion. Having been instrumental in its founding in 1953, he served as Treasurer in 1952-1953, Vice-Chairman in 1953-1954, and Chairman in 1954-1955. He continued his work in various committees, most recently having been responsible for history and procedures.

His contributions to the national organization have been equally important. He has served as a member of the committees on Admissions, Nominations, Section and the National Convention as well as High Frequency receivers. He was a director of the Institute in 1957 - 1958. His extensive professional experience and society activity have earned him Fellow grade in the IEEE and AAAS as well as honorary membership in the Institute of Electronic Communication Engineers of Japan.

Good luck, Frank, in whatever you do and thank you for your counsel and guidance.

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Register for our New York CAREER CENTER by filling in the coupon below and mailing it today to our representative at the address shown.

You'll receive registration forms that let you arrange personal private interviews with us while you're in New York the week of March 19th through 24th. If, by chance, you're not planning on attending the IEEE Show in New York that week, register anyway by sending the coupon. We'll see that you're considered for the very next CAREER CENTER in your vicinity.

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☐ I do not plan on attending the IEEE Show. However, please send me a complete information kit so that my qualifications will be con-

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Date:

Wednesday, March 15, 1967

Time:

Refreshments: 6:00 - 7:00 P.M.

Meeting: 6:30 P.M.

Place:

Con Edison Co.
4 Irving Place, N. Y. C.
19th Floor Auditorium

Speakers:

Mr. Carl K. Panero

Engaged by the Port of New York Authority as Planning Architect for the World Trade Center. Mr. Panero will briefly review the over-all Project and then discuss the physical arrangement of the elevators in the 110-story Towers, including the unique sky-lobby system. Mr. Panero received a Degree of Bachelor of Architecture from Pratt Institute, and is a member of the American Society for Public Administration, the American Institute of Architects, and New York Society of Architects.

Mr. James J. Browne

Engaged in management engineering for the Port of New York Authority in the Operations Standards Division and the Internal Consulting Group. Mr. Browne will discuss the methods and techniques employed in computer simulation of Elevator operations for the World Trade Center. Mr. Browne is a mathematician with operational research experience.

Mr. John J. McHale

Engaged in the Engineering Division of the Otis Elevator Company as a Senior Electrical Engineer and Project Coordinator on Special Installations such as the World Trade Center. Mr. McHale will discuss the engineering problems inherent in High Rise Vertical installations. Mr. McHale graduated with a B.E.E. from The Cooper Union and is a member of the American Management Association.

Mr. George Strakosch

Engaged by the Otis Elevator Company in General Sales as Manager of Special Installations. Mr. Strakosch — an expert in Traffic Analysis — will discuss elevator service requirements in high rise installations. Mr. Strakosch graduated with a B.S. in Electrical Engineering from the Drexel Institute of Technology and with a M.B.A. from New York University.

North Jersey Reliability

The second meeting of the North Jersey Reliability Chapter was held at the Newark College of Engineering on January 19. Mr. E. W. Kimball of the Martin Company, Orlando, Florida, gave an interesting talk entitled "Dormancy and Storage Failure Data" in which he summarized work being done for Rome Air Development Center on the collection and analysis of non-operating failure data for electronic parts. A lively discussion followed the talk.

The next meeting, originally scheduled for March 16, has been moved to April 13 so

that Mr. H. M. Wall of IBM, Waltham, Massachusetts, can be with us to discuss computer aides to electronic circuit reliability analysis. Watch for more details in the April Newsletter.

Joint Metropolitan ELECTRON DEVICES

Thursday, April 13, 1967 — 2 P.M. - 4 P.M.

Tour of RCA Laboratories, Princeton, N. J.

Highlighting Major Activities and Facilities.

Register before April 1 by sending \$2.00 to:

J. SCHLAER
General Telephone and
Electronics Labs
Bayside, New York

N. Y. Computer Group PARALLEL PROCESSING COMPUTER TRENDS

The March 16 meeting will be devoted to a discussion of developments and trends in parallel processing. This powerful concept promises greatly increased computer performance, but requires advances in both hardware and system design.

These promises, requirements and advances will be discussed at the meeting by Dr. Meir Lehman, research scientist at IBM's Yorktown Heights laboratories. Dr. Lehman, a Columbia University faculty member is an authority on parallel processing and is active in this specialty at IBM.

The meeting will be held March 16, 7:45 P.M. at IBM, 590 Madison Ave. (57th St.) N. Y. C. The pre-meeting Dutch-treat dinner will be at Schrafft's, at 625 Madison Ave. at 6:00 P.M.

CHAIRMAN'S CORNER

Technical Obsolescence

We hear much these days of "Technical Obsolescence" — that those of us who have been out of school for a few years have been rendered somewhat useless to ourselves, our employer and, to our profession. This has been brought about because skills taught when we were being educated are being replaced by new ideas which have been developed by our exploding technology. This is particularly disquieting if one sees that half, or more, of his working years still lie ahead. Each of us at one time or another during our careers have been forced to make an "agonizing reappraisal" of ourselves and our talents in light of just such developments. Rather than sit back and await whatever fate brings our way, we should each devise our own plan for self improvement. IEEE can, and should be a vital part of our continuing education.

Membership in the Group or Groups of your choice will bring opportunities to meet with other engineers within the same discipline. However, it takes active members of the Groups to perform the necessary committee work required to carry out the programs which we can attend, whether members of the Group or not.

Within North Jersey Section we also have an active Education Committee which plans and provides Educational services which the local schools cannot provide. But the manpower required to plan, organize, and run these sessions requires a large and active committee. Not many years ago we had such a committee, and a vigorous educational program. Recently, it has been difficult to obtain the new active members to expand our local educational program. We, on your Executive Committee are deeply disturbed by the situation for two reasons:

By not maintaining a strong education program we are contributing to our own "Technical Obsolescence."

Since the monies realized from our study groups are an important source of income for the Section, any curtailment of the Educational Program will cause a corresponding curtailment of other Section Activities.

If you are interested in participating in this vital section service, why not discuss your interest with your own Company Management. Let them know that they too have a stake in supporting educational activities within the North Jersey Section. These programs will help to provide the opportunity for the continuing education required for engineers already employed, and help to create an atmosphere for learning which will attract new engineers. After obtaining management's support, contact the Chairman of the Education Committee, John Zemkoski.* You will be warmly welcomed.

There is an old saw which says that you get out of an organization in direct proportion to effort you put into it. That applies to your membership in IEEE, as well.

* Mr. Zemkoski's address is:
Public Service Electric and Gas Co.
80 Park Place, Newark, N. J. 07101
MA 2-7000, Ext. 3008.

H. E. BLAICHER, JR.

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Series PM-95 and F/FD-115 modules were recently tested by an independent lab and proved fully qualified for MIL environment applications.

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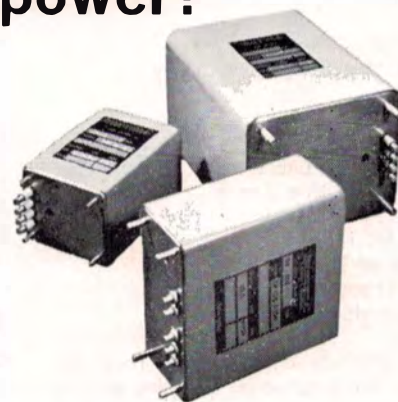


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Changes in Membership Requirements

The Institute has simplified the procedure for attaining the Associate grade of membership. Instead of three references, only one reference in IEEE at the grade of Member or higher is required. This endorsement can be obtained at the time the applicant prepares the application form or if the endorser's name is provided IEEE Headquarters will obtain the endorsement. This change will make it relatively simple for qualified individuals to join the Institute while they are attending IEEE meetings at either the local or national level.

Join Metropolitan Group on Engineering in Medicine and Biology

BIOMEDICAL APPLICATIONS OF NEUTRON ACTIVATION ANALYSIS

Date:
Tuesday, April 18, 1967

Time:
8:00 P.M.

Place:
South Laboratory Building
The Rockefeller University
66th Street and York Avenue
New York, New York

Speaker:
DR. VINCENT P. GUINN
Technical Director
Activation Analysis Program
General Atomic Division of
General Dynamics Corp.

North Jersey Section

NEW OFFICERS FOR 1967-68 TERM

The Nominating Committee recommends the following slate of officers for the 1967-68 term of office:

Chairman Bernard Meyer
Vice Chairman Joseph O'Grady
Treasurer Merle Irvine
Secretary Herbert Blaicher
Members-at-Large Robert Sokolski,
Carl Torell

Following are pertinent quotes from the By-Laws of the North Jersey Section:

"Additional nominations may be made by a petition signed by not fewer than 25 voting members of the Section and transmitted to the Secretary for submission to the Executive Committee not later than April 30th. The petition must certify that the persons nominated have agreed to serve, if elected." The Section Secretary is Mr. Merle M. Irvine, Bell Telephone Laboratories, Whippany, N. J. "The election of officers shall take place at the May general meeting of the Section unless the Executive Committee decides that a mail ballot is required. In case a mail ballot is used, it shall be sent out to all voting members not later than May 10 and shall be returnable not later than one month from the date of mailing. In the case of a mail ballot the Chairman shall appoint at least three tellers having the approval of the Executive Committee to count the mail ballot within one week after the closing date for returns."

North Jersey MTT HIGH RESOLUTION RADIO ASTRONOMY

Date:

Wednesday, April 19, 1967

Time:

6:30 P.M. — Dinner,
Wally's, Watchung, New Jersey
8:15 P.M. — Meeting

Place:

Arnold Auditorium
Bell Telephone Laboratories, Incorporated
Murray Hill, New Jersey

Speaker:

DR. J. W. FINDLAY
Director of National
Radio Astronomy Observatory,
Charlottesville, Virginia

Abstract:

Several methods have recently been developed by which telescope resolving powers can be as good at radio as they are at optical wavelengths. Although some of these techniques do not give results which are equivalent to the optical astronomer's photograph, they nevertheless have revealed small details of only a few seconds of arc in the structure of many radio sources.

Interferometers have led to the development of synthetic antennas capable of making very good maps of limited areas of sky. Some sources which have been occulted by the moon have been shown to have small sizes or fine structure. The scintillations of radio sources due to the solar plasma can lead to angular size estimates. The latest step will be the use of very long base line interferometers with highly stable, yet independent, phase references at their ends. Since the recently discovered quasi-stellar objects are both small and distant, all these techniques have a strong and immediate astronomical interest.

Speaker:

John Wilson Findlay was graduated with first class honors in physics from Cambridge University, England, in 1937, and received the Ph.D. degree from that University in 1950.

From 1954 to 1956, he was a senior principal scientific officer in the Ministry of Supply in London working on basic electronics research and on development of ground radar for the R.A.F. and Army. Since 1956 he has been employed by Associated Universities, Inc., at the National Radio Astronomy Observatory, Green Bank, West Virginia, where he holds the position of Deputy Director.

He is a member of the Order of the British Empire, a Fellow of the London Physical Society and Institute of Physics, a Senior Member of the IEEE, a member of the American Astronomical Society, and a member of the Space Science Board of the National Academy of Sciences.

Joint Metropolitan G.E.M.B. COMPUTER ANALYSIS IN MEDICINE

Date:

March 14, 1967

Time:

8:00 P.M.

Place:

Rockefeller University,
South Laboratory Building
66th Street and York Avenue
New York, New York

Speaker:

DR. C. A. CACERES
Chief, Instrumentation Field Station
Heart Disease Control Program
Division of Chronic Diseases
Dept. of Health, Education, and Welfare
United States Public Health Service

Dr. Caceres has done much of the work in the area of transmission of electro-cardiographic tracings by long distance telephone lines and for interpretation at diagnostic centers and has organized the implementation of this program in the Department of Health, Education and Welfare.

There will also be a pre-meeting dinner at 5:45 P.M. at Piccolo Mondo Restaurant, 1269 First Avenue (at 68th St.) New York, New York.

1967 IEEE INTERNATIONAL CONVENTION PROGRAM ANNOUNCED

The 1967 IEEE International Convention technical program has been formulated by the Convention Program Committee it was announced today by Donald G. Fink, General Chairman of the Convention. The program includes a number of innovations in organizing the technical sessions.

The Annual IEEE International Convention and Exhibition is the world's largest technical meeting of electrical and electronics engineers. Its program consistently has drawn many thousands of engineers and scientists from throughout the world to discuss and learn about the latest developments in the electrical and electronics field. The 1967 Convention will be held Monday through Thursday, March 20th through 23rd, at the New York Hilton Hotel and the Coliseum.

As initiated last year, the times for scheduling sessions, and the concentration of all technical sessions at the New York Hilton Hotel will be continued. All exhibits will be at the Coliseum.

The technical program continues to emphasize new technologies, new applications of existing technologies, and areas of great current interest to the IEEE membership. It runs the gamut from sessions on Computer-Aided Learning, to System Interfaces for Global Communications, to Integrated Circuits, to New Horizons in Science and Engineering, to Speech Processing.

Commenting on the program, Mr. Fink said: "We think it extremely significant that out of the 312 papers now scheduled for presentation, 281, or roughly 90%, are invited papers. This attests to the hard work put forth by the Groups and committees under the leadership and guidance of the Technical Program Committee in organizing these sessions."

The Highlight Session, a major feature of the program, will be "Exploitation of the World's Oceans — Electronics Role." A panel consisting of outstanding authorities in the field, will discuss the roles of The Electronics Industry, Electronics R & D and Government Agencies."

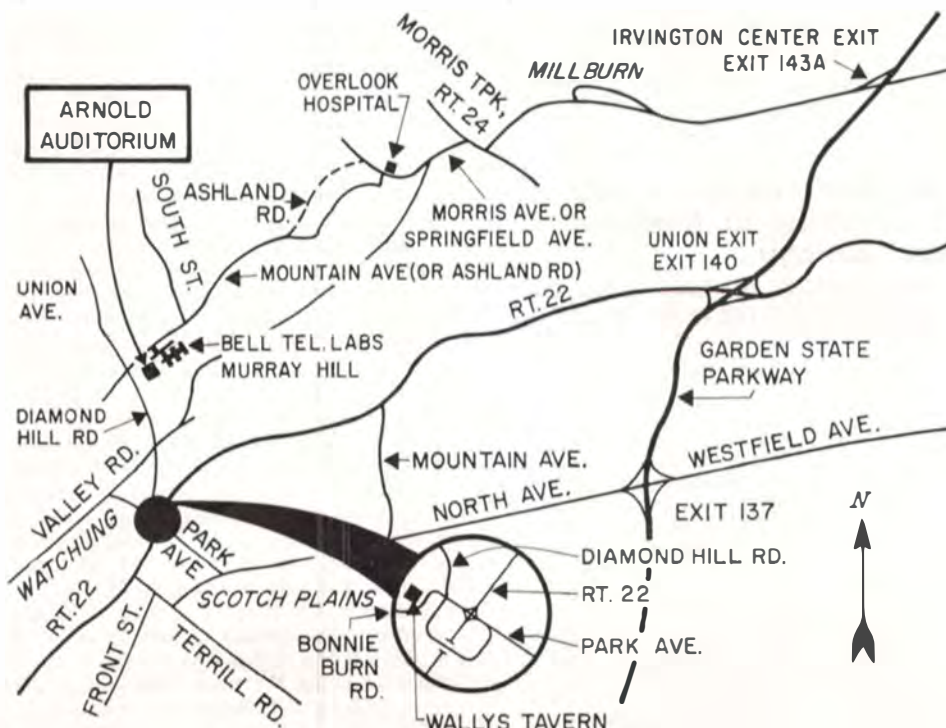
The 1967 IEEE Convention will have three publications. The *Convention Guide* will contain brief abstracts of approximately 40-50 words. A new publication, the *Convention Digest*, will contain a synopsis of 1,000 words, plus illustrations, for each paper or panel discussion. The *Convention Record* will be published after the Convention. Panel sessions derived from transcriptions from stenographic and tape recordings will be included in the Record.

A theatre of educational engineering and scientific films is scheduled at the coliseum. Session hours will be:

Monday — 9:30 A.M. - 12:00 Noon — 2:00 P.M. - 4:30 P.M.

Tuesday, Wednesday and Thursday—9:00 A.M. - 11:30 A.M. — 2:00 P.M. - 4:30 P.M.

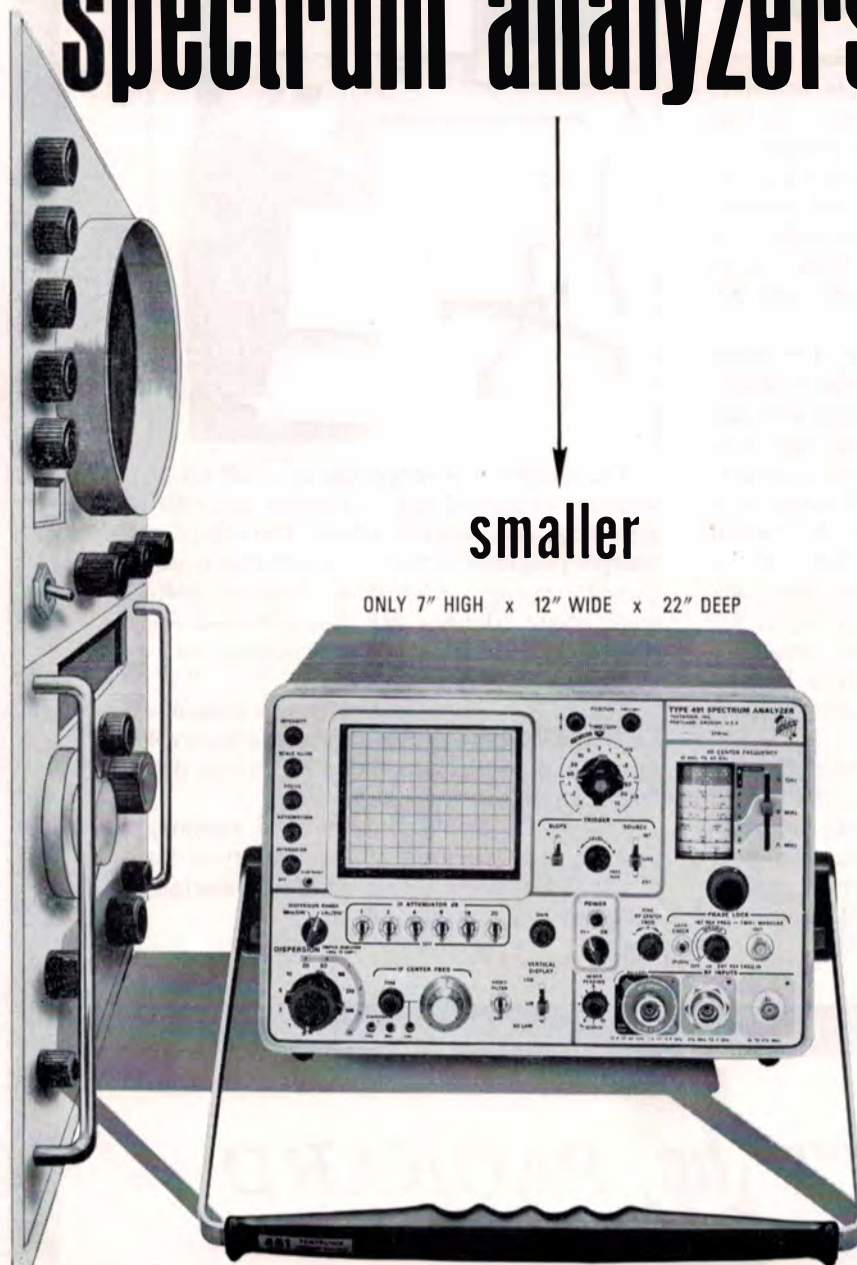
Members of the Technical Program Committee are: A. B. Giordano, Chairman; Edward W. Herold, Vice-Chairman; James F. Shepherd, Vice-Chairman; Richard M. Emberson, Secretary. The other members are W. R. Clark, L. A. De Rosa, A. Dorne, I. G. Easton, P. K. McElroy and H. L. Cooke.



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With oscilloscope-type triggering and sweep circuitry, you can trigger from internal, external or line sources, and have wide choice of sweep rates from 0.5s/div to $10 \mu\text{s}/\text{div}$ in a 1-2-5 sequence. Other features include EMI (RFI) suppression . . . trace intensification of high speed segments of the waveform . . . camera compatibility with the Tektronix Type C-30 for easy, high quality photographs . . . bright display, small spot size, long persistence (P-7) phosphor on a new 4-inch rectangular CRT with 8x10 div (1 div equals 0.8 cm) display . . . and DC-coupled recorder output.

The Type 491 is only 7" high by 12" wide and 22" deep, weighs less than 40 pounds and requires only 55 watts. Yet it has the broad frequency range and high performance you need for most applications. And setup is easy even at waveguide frequencies—just mount one of the external waveguide mixers to your source and couple it to the Type 491 with a flexible cable.

As shown, the carrying handle adjusts for various tilt positions and provides a sturdy support stand. The front panel cover serves as a storage case for the included accessories such as adapters, cables, waveguide mixers and coax attenuators. And the rugged construction of the Type 491 lets you carry laboratory performance to the job.

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NEW INSTRUMENTS

NEW, VERSATILE DIGITAL COMPUTER FROM HEWLETT-PACKARD

Model 2116A is particularly suited in computational power and input/output flexibility to data acquisition, scientific and industrial measurement applications. It is designed to operate in the same environment in which instruments must commonly work and computers can rarely withstand; this includes, for example, ambient temperatures from 0°C to 50°C, line voltage varying $\pm 10\%$ and humidity up to 95%.

In its minimum configuration, consisting of 4096 word memory and teleprinter input/output, the hp 2116A may be used with any of the standard software packages, thus constituting a powerful yet inexpensive computational tool. Its small size (it will stand on a laboratory bench) allows it to be moved where it is needed. And, at any time, the hp 2116A can be expanded in computational power by adding memory capacity (up to 32,768 words), and in input/output capability by adding peripheral devices (up to 59 parallel interrupting channels, with priority control), on a plug-in basis.

Other features of the hp Model 2116A computer are: 16-bit word length, 1024-word page size with 2048 words directly addressable, two directly addressable accumulators, instructions executable in 1.6 or 3.2 microseconds, multiple-step indirect addressing.



The computer is supported by a full set of software (punched tape)—Fortran compiler, assembler, and symbolic editor. The compiler accepts programs written in a universally accepted language, ASA Basic Fortran. Software utility routines are also provided for debugging programs and diagnosing hardware malfunctions.

The 2116A Basic Control System is modular, includes configuration (Prepare Control System) to permit adaptation by user to different input/output arrangements.

The hp 2116A with 4096-word memory and no input/output options is priced at \$22,000. For complete technical information, call your local hp sales office.

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