IEEE

The Newsletter

The Magazine of the Northern New Jersey Section

Volume 10 DECEMBER, 1963 Number 4

Meeting
JOINTLY SPONSORED NORTH JERSEY SECTION and PTGAC
"Nervous System Information Processing"
WED., DECEMBER 11, 1963
ARNOLD AUDITORIUM
BTL, MURRAY HILL, N. J.

Western Electric
Kearny Works
INSPECTION TRIP
Kearny, N. J.
Thursday, December 19, 1963

IEEE NEWSLETTER
North N. J. Section
P. O. Box 241, Morristown, N. J.

NEW

Megohmmeter

2,000,000-Megohm Direct-Reading

TWO TEST VOLTAGES 100v — EIA standard voltage for measurements of resistors above 100 kilohms

500v — For the measurement of insulation resistance

SAFE . . . Toggle switch on top of instrument lets you remove voltage without disturbing range-switch setting. In addition, a warning light indicates when voltage is on the terminals

★ Both Guard and Ground Terminals are Provided

Range:

0.5 to 200,000 megohms at 100 volts and to 2,000,000 megohms at 500 volts.

Accuracy:

From ±3% at low-resistance end of each decade to ±12% at high resistance end, up to 50,000 megohms. There can be an additional ±2% error at the top decade.

Calibration:

Adjustment is provided for standardizing the calibration at 500 volts.

Power Requirements:

105-125 (or 210-250) volts, 40-60 cycles, 25 watts. Will operate on frequencies up to 400 cycles.

Type 1862-C Megohmmeter, $310 (in U.S.A.) — rack model also available at same price.

This instrument is useful for the measurement of insulation resistance of rotating machinery, transformers, cables, capacitors, appliances, and other electrical equipment.

For high-resistance measurements to 10^{13} ohms at lower voltages, the Type 1230-A Electrometer is available at $460.

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LOCAL SERVICE AND REPAIR

For your convenience, the New York Office has a Service Department, manned by factory-trained service engineers. This Department can supply prompt and efficient repairs or recalibration of any G-R equipment. Consideroble time can be saved by taking advantage of these facilities.

EDITORIAL NOTES

CONGRATULATIONS, GUS

Our congratulations to Gus Karger of the North Jersey Section. He recently received the NATIONAL ACHIEVEMENT AWARD which was presented at Utica, New York by the Ninth National Communication Symposium. This award is presented to young engineers who have demonstrated a distinct promise of achieving future national stature. The award was made "in recognition of outstanding engineering contributions to the communication system field and service to the local and regional organization."

Mr. Karger is associated with ITT Communication Systems, Inc., Paramus, N. J. where he is currently conducting studies of communication networks for command and control systems on behalf of the U.S. Air Force. He has presented talks and written several papers on topics concerning communication systems.

Gus has for several years been a member of the executive committee of the North Jersey Section of the Institute of Electrical and Electronics Engineers and currently serves as Chairman of the North Jersey Chapter of the Professional Group on Communication Systems.

He is a graduate of Louisiana State University and has been on active duty with the USAF as an instructor in radar and meteorological systems.

GOOD LUCK, BERNIE

With next month's NEWSLETTER, Bernard Meyer officially becomes Editor. Actually, in the post of Managing Editor, he assumed almost all of the responsibility of running the magazine this last September. We wish him luck and take this opportunity to thank him for his help during the past few years.

We're sure that Bernie can use more help in putting out future issues. If you're interested in serving on THE NEWSLETTER staff, drop Bernie a line at P.O. Box 241, Morristown, N. J. The work isn't that hard and you'll learn something. MMP

COMING SECTION MEETINGS

December 11, 1963:

L. D. Harmon of BTL will speak on "Artificial Neurons" at the Bell Laboratories Auditorium at Murray Hill. This talk will be jointly sponsored by the Section and by the PTGAC. Pre-meeting dinner will be at Wally's Tavern-On-The-Hill.

December 19, 1963:

The jointly sponsored field trip to the Western Electric Plant at Kearny will be conducted as previously scheduled.

January 15, 1964:

There will be two principal speakers, R. N. Southgate and C. G. Troxell, at the Public Service Auditorium in Newark preceding the inspection of the Switching Station. Bus transportation will be provided between the two locations.

THE COVER

Sketch made from microscopic observation of a single nerve cell from the cortex of a cat's brain. This is very similar to the nerve cells of any animal, including man. Cells of this type may have as many as 4-5,000 inputs.

The

Newsletter

Published monthly by the North Jersey Section of the Institute of Electrical & Electronics Engineers, Inc.

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P.O. Box 241 - Morristown, N. J.
Telephone: JEfferson 9-4909

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ABOUT ADDRESS CHANGES

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 records of membership are changed when Headquarters notifies us of any change.

REPORT ALL ADDRESS CHANGES TO: INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS, BOX A, LENOX HILL STATION, NEW YORK 21, N. Y.

PTG

COMMUNICATIONS SYSTEMS

Plans Trip

The Chapter wishes to announce that the field trip scheduled for April or May was in the preliminary planning stage. The field trip as originally planned, the "UNICOM Trip", will not be held. The announcement of another trip will be made as soon as all details are completed.

Award to Local Member

Dr. Ivan S. Coggeshall was presented the Achievement Award by the PTG on Communication Systems at the Ninth National Communications Symposium, which was held at Utica, N. Y., November 6-9, 1963.

The Achievement Award was presented to Dr. Ivan S. Coggeshall for his contributions to the science and techniques of communication systems. Dr. Coggeshall, pioneer in transmission by wire, radio and submarine cable, held the position of Assistant Vice-President, International Communications, Western Union Telegraph Co., until his retirement in 1961.

JANUARY MEETING NOTICE

Subject: Vocoders (with demonstration)

Date: January 23, 1964 Thursday

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

Job Openings for PTGEWS Members

There are several positions open on the North Jersey Newsletter staff. This should be of particular interest to members of the PTGEWS because many of us are technical writers or editors. The openings involve writing, editing, proofreading, and other phases of "newspaper work."

Here's an opportunity to put our training and experience to work on a project that shows results every month. Volunteer by calling or writing Bernard Meyer, 160 Prospect Street, East Orange, N. J. ORange 7-2903.

PTG AUTOMATIC CONTROL

Information Processing in Nervous Systems

Leon D. Harmon of Bell Telephone Laboratories will speak at the December North Jersey Section meeting sponsored by the Professional Technical Group on Automatic Control. The topic is Information Processing in Nervous Systems. The meeting will be held at the Arnold Auditorium, Bell Telephone Laboratories, Inc., Murray Hill.

Recent advances in neurophysiology will be reviewed, with principal emphasis placed on information-processing properties of single cells and on visual and auditory signal encoding. Models of the nervous system and the relationships between biological systems and automata will be discussed.

THE SPEAKER

Leon D. Harmon was born in 1922. He received the BSEE degree from New York University in 1956. From 1950 to 1956 he was on the engineering research staff of the Electronic Computer Project at the Institute for Advanced Study in Princeton, New Jersey.

Since 1956 he has been a member of the technical staff in the Visual and Acoustics Research Department at Bell Telephone Laboratories, Inc., Murray Hill, New Jersey. His work has included studies in visual pattern recognition and automata. At present he is working on automatic recognition of handwriting and on neural analogs to study information processing in the nervous system.

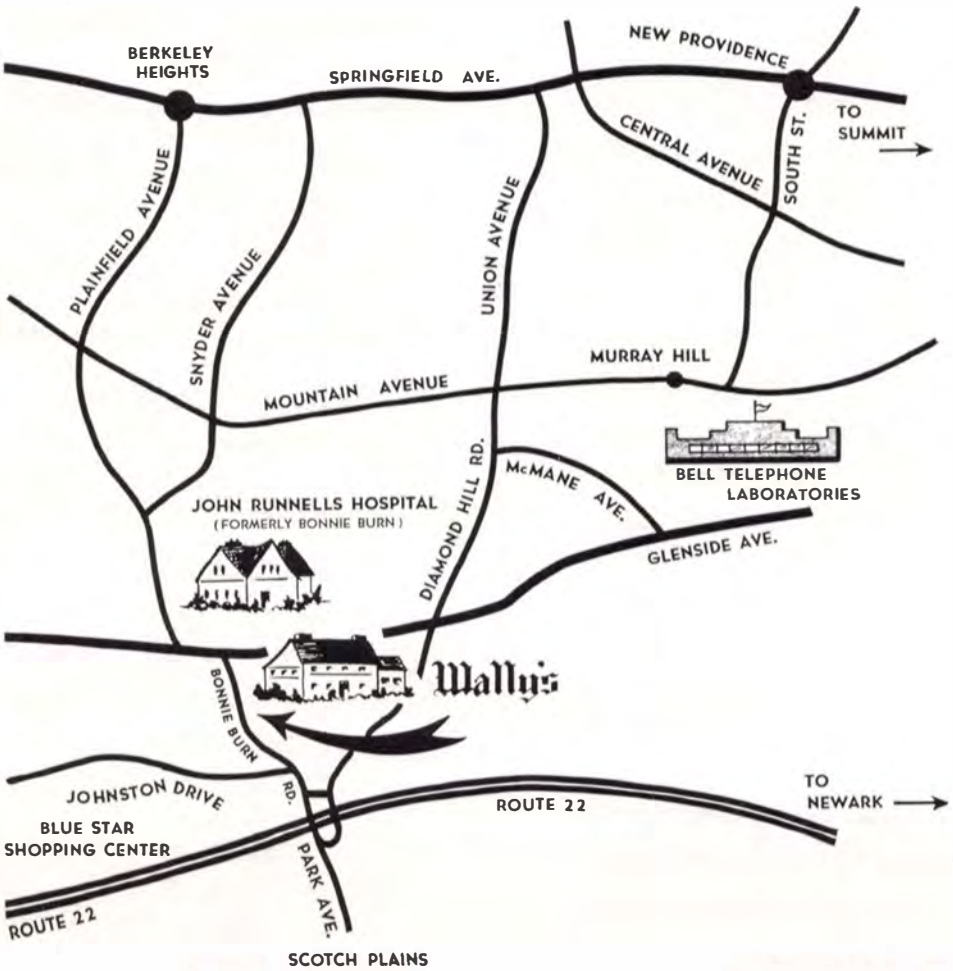
Mr. Harmon is a member of the American Association for the Advancement of Science, the Psychonomic Society, and the Biophysical Society.

MEETING NOTICE

Subject:	Information Processing in Nervous Systems
Speaker:	Leon D. Harmon Bell Telephone Laboratories, Inc.
Place:	Arnold Auditorium Bell Telephone Laboratories, Inc. Murray Hill, N. J.
Date:	Wednesday, December 11, 1963 at 8:00 P.M.
Pre-Meeting Dinner:	6:00 P.M. at Wally's Tavern On-The-Hill

ALL ARE WELCOME

All PTGAC members are invited to monthly executive committee meetings. If interested, please contact Mr. Robert Sokalski at CA 6-4000.



Coming Events

January 15, 1964—Field Trip

There will be two principal speakers, R. N. Southgate and C. G. Troxell, at the Public Service Auditorium in Newark preceding the inspection of the Switching Station. Bus transportation will be provided between the two locations.

February 19, 1964—Students' Night

D. G. Fink, General Manager of the IEEE will speak at the Students' Night to be held at the Fairleigh Dickinson "Little Theater" in Rutherford. Premeeting dinner will be at the Cooper Hood Restaurant.

March, 1964—Annual Section Banquet

The Program Committee suggests that the Executive Committee consider Sunday, March 15th for this meeting starting with a cocktail party about 4:00 P.M., followed by dinner about 5:00 P.M. and dancing after dinner. This is the annual affair that presents awards and honors the newly elected Fellows of the IEEE.

EXECUTIVE COMMITTEE REPORT

S. A. MALLARD, *Secretary*

Chairman Vaderson has asked me to use the "Chairman's Corner" this month to discuss the office of Section Secretary.

Essentially the duties of the Secretary are to:

a) maintain the files and records of the Section,

b) handle the Section's correspondence,

c) record the Minutes and Resolutions of the Section's Executive Committee,

d) keep the Regional Director and IEEE Headquarters advised of the Section's activities.

In addition, in this, the first full year of operation for the North Jersey Section IEEE, after the recent AIEE/IRE merger, there falls upon the Secretary, as it does upon all Section officers, the duty to continue the merger of the two former organizations as harmoniously as possible. Along this line, I can report that the education, membership, program and student guidance functions of AIEE and IRE are being successfully blended in the Section. The former IRE Professional Groups are now operating in our IEEE Section. Some of the PTG's, such as Electronic Computers and Engineering Writing and Speech, also have appeal to former AIEE members. Further, Herb Blaicher and Mel Nuechterlein are rapidly formulating a North Jersey Section Professional Technical Group on Power.

Membership now numbers 5,393 as of September 1963, and the Section includes Bergen, Essex, Hudson, Morris, Passaic, Sussex and Union counties.

I have enjoyed serving with the other Section officers these past few months, and look forward to a continuation of the prevailing atmosphere of cooperation and understanding during the remainder of my term as Secretary, in this crucial first year of merger.

NORTH JERSEY SECTION IEEE EXECUTIVE COMMITTEE

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Vice Chairman ..... J. Redmon
Treasurer ..... J. P. Van Duyne
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Communications Systems ..... G. Karger
Electronic Computers ..... D. Perry
Engineering Writing and Speech ..... J. Stacy
Microwave Theory and Techniques ..... H. Engelman

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Business Manager ..... H. Evans
Editor ..... M. M. Perugini
Managing Editor ..... B. Meyer

Executive Committee Meetings

December 4
January 8, 1964
February 5
March 4
April 1
May 6
June 3

MEET THE OFFICERS

CHARLES VADERSEN
Chairman

Charles Vadersen holds the BS and MS degrees in E.E. from New York University, and has been active in Communications Engineering for over 25 years. He started at Bell Telephone Laboratories, where he was active in Transmission Research and Systems Development. During this time he contributed to the development of the VOCODER frequency compression and speech secrecy systems, automatic gain control devices, and acoustical instrumentation.

In succeeding years, he was Chief Engineer of several companies manufacturing communication products. In this capacity he directed the development and design of such products as hearing aids, recording devices, multiplex transmission equipment, telephone switching systems and electro-mechanical components.

In 1957 Mr. Vadersen joined ITT, serving first at the Nutley Laboratories on the Vice President's technical staff, and later as Associate Director of the Digital Systems Laboratory. His work there was in digital data recording and processing, and large scale communication systems. He is currently at the Communication Systems Division of ITT, in Paramus, New Jersey, where he reports to the Vice President as Project Manager of a large R & D contract with the Defense Communications Agency. This work is directed towards the development of digital computer methods for the design, management and simulation of global communication networks.

Chuck Vadersen has worked with the Northern New Jersey Section of the IRE since 1957, serving as Editor of the Newsletter, P.G. Coordinator, Treasurer, Lecture Series business manager and Vice-Chairman.

JOHN K. REDMON
Vice-Chairman

John Redmon has been an Associate Professor in Electrical Engineering at the Newark College of Engineering since February, 1960. He is associated with Public Service Electric and Gas on a part-time basis.

After graduating from NCE with a BS in 1942, he received an MS from Stevens Institute in 1949. Additional graduate work followed at NCE and New York University.

Active in the former AIEE organization since 1953, he has held many positions in that organization including these in the New Jersey Division: Chairman, Educational Committee, Member-at-Large, Secretary, Treasurer, Member of Merger Committee, and Member Student Guidance Committee.

Professor Redmon holds rank of Commander in the United States Naval Reserve and has been selected for promotion to Captain, USNR and has already completed the professional and physical qualifications. He has over 22 years service in the Naval Reserve including two tours of active duty (World War II and Korean Conflict).

He is a Member of Tau Beta Pi, and the Alumni Association of NCE.

JOHN P. VAN DUYNE
Treasurer

John Van Duyne is Engineering Manager at Boonton Radio Corporation, where he is primarily responsible for departmental administration and scheduling and for new product programs and ideas. Before joining Boonton Radio in 1958 he was associated with Westinghouse as Manager of TV Engineering. Prior associations were with DuMont Laboratories and Measurement Corporation.

Since his graduation from Rensselaer Polytechnic Institute in 1944 with a BSEE, he has specialized in circuit design and development.

Van Duyne's professional society activities include serving as Membership Chairman of the NNJ-IRE for 1960-1961 and 1961-1962; Treasurer NNJ-IRE, 1962-1963; and Member of the National Administrative Committee of the Professional Group on Instrumentation, 1960-1963. While a member of this later group he served as Vice-Chairman, organized technical sessions for the 1961 IRE Convention. He now serves the PTGI as Chairman of the Nominating Committee.

John is a member of Eta Kappa Nu, Tau Beta Pi, and Sigma Xi.

PTG AEROSPACE AND NAVIGATIONAL ELECTRONICS

U. S. Supersonic Commercial Transport Program

Date: Thursday, December 12, 1963

Time: 6:30 P.M. (Cocktails & Dinner)

Place: Brass Rail Restaurant
521 Fifth Avenue (43rd St.)
New York City

Subject: **"The U. S. Supersonic Commercial Transport Program"**

Speaker: Mr. John Stack
Vice President
Republic Aviation Corporation

Cost: $5.00 per person (cocktails not included; gratuity & tax included)

NOTE: For advance reservations, please make checks payable to **Samuel Goldstein,** Treasurer of N. Y. Metropolitan Chapter, PTGANE, and mail to Mr. Goldstein at **1 Northern Boulevard, Great Neck, New York or** payment may be made upon arrival.

Abstract

To help understand the problems related to the supersonic commercial air transport program, the historical background will be traced. The reasons for such a machine will be discussed and its place in our industrial structure will be reviewed.

Biography

John Stack, formerly Director of Aeronautical Research for the National Aeronautics and Space Administration, joined Republic Aviation Corporation as a Vice President in May 1962. In his capacity as Director of Engineering, he is in charge of the company's scientific and engineering activities. He is also a director of the corporation.

During Mr. Stack's 35 years in aeronautical research, he has received numerous awards for his contribution in the aeronautical and space fields.

Mr. Stack has been a member of the joint NASA—Department of Defense —Federal Aviation Agency Task Group on supersonic transport development since its inception and, until leaving government service, was a member of the Three Man Steering Group. He served on the Cook Committee of the FAA until January 1963 to assist in the formulation of the SST Program.

Component Lectures

The Winter Lecture Series on Components sponsored by the Communication and Electronics Division, Education Committee, will begin a course of six lectures on January 14, 1964.

This series will cover a detailed discussion and analysis of capacitors and relays. Basic and theoretical exposition will be followed by information on the latest state of the art and methods of specifying for each of the components.

This is the second of three series on components being presented by the Education Committee for the '63-'64 year. The course is of a tutorial nature offering complete continuity and presented at a graduate university level. All design and systems engineers as well as students are invited to attend.

Extensive notes on the contents of the lectures are presented to each one in attendance and represent a valuable desk top reference for all systems and circuit design engineers.

The costs for 6 lectures are as follows:

Members of Professional Societies	$10.00
Non-members	$12.00
Students	$ 1.00

The course is presented at:

Place: Western Union Auditorium
160 West Broadway
(at Worth Street)
New York City

Time: Tuesday evenings,
7 to 9 P.M. for six
consecutive weeks.

For further information and to register for the course, write or phone:

I. J. Sobel
Sonotone Corporation
Elmsford, New York
Telephone: 914 - LY. 2-9600

Inspection Trip

Western Electric Kearny Works

Kearny, New Jersey

(Joint Trip With New York Section)

Thursday
December 19, 1963

Leave
8:30 A.M. From N. Y.
9:15 A.M. From N. J.

The trip will include tours through the cable manufacturing, apparatus, wiring and equipment shops.

The trip will be about five hours long and **free lunch will be provided by the Western Electric Company.**

The trip is limited to 50 persons with advance registration required.

No private passenger cars will be allowed at the plant. Transportation will be by special bus provided for this purpose.

The special bus will leave New York from West 31st Street on the south side of Penn. Station at 8:30 A.M. Round trip fare from New York $1.50.

The special bus will leave from the Pine Street side of the Public Service Building, 80 Park Place at 9:15 A.M. Round trip fare from Newark $1.00.

Make checks payable to Power & Industrial Division, New York Section AIEE. No request will be considered after December 13, 1963.

Thomas J. Comerford
Public Service Elec. & Gas Co.
90 Park Pl., Room 247
Newark, N.J.

Please send me ..... ticket(s) for the inspection trip to the Western Electric Company. I will take the bus from Penn. Station in New York and have enclosed check ( ) money order ( ) in the amount of $ .....
(Price in this category is $1.50 per ticket.)

Please send me ..... ticket(s) for the inspection trip to the Western Electric Company. I will take the bus from the Public Service Building in Newark and have enclosed check ( ) money order ( ) in the amount of $ .....
(Price in this category is $1.00 per ticket.)

Name .....

Address .....

Enclose stamped self-addressed envelope

Microelectronics: Its Story

The Communications and Electronics Division of the New York Section IEEE will be presenting the third lecture of their Fall Series on Wednesday, December 18. The meeting will be held in the United Engineering Center and will commence at 7:00 P.M. sharp.

The speaker for the evening is Mr. Edward Keonjian of American Bosch Arma Corporation, Garden City, New York. He will speak on "Microelectronics: Its Birth, Infancy, and the present surge toward Maturity," a subject that is of ever-increasing importance in the nation's missiles and space communications programs. It can also have far-reaching effect on all our lives when the technological "spin-off" or benefits can be used for commercial and industrial applications.

Mr. Keonjian's paper represents the efforts of many years of being intimately involved in the development of microelectronics, from theoretical studies to practical applications. He will show that the ever increasing complexity of modern electronic equipment and the demands for higher and higher reliability, lower cost and ease of maintenance of the equipment were chiefly responsible for the birth of a new and fascinating era in electronics, originally termed "microminiaturization."

The infancy of this new field has been largely a practical enterprise, guided by experience. However, new fundamental relations are emerging. Although scattered and sometimes still vague, these relations are beginning to form a pattern: a general theory and practice of what is now known as "Microelectronics."

Recent remarkable developments in this field have made available many microelectronic devices and circuits as off-the-shelf items and design of fully operational microelectronic equipment became feasible. Thus, the surge of microelectronics toward maturity is in process.

Mr. Keonjian will review the important steps in the development of this field, the state-of-the-art of existing microelectronics concepts and the problems associated with each of them. Micropower Electronics, an outgrowth of microelectronics, will also be discussed in the light of the results of the international electronics symposium, held this summer in Europe.

In view of current interest in space electronics, a field that is rapidly requiring new developments in microelectronics, a well attended meeting and stimulating discussion period can be expected.

Edward Keonjian is a Staff Scientist at Arma Division, American Bosch Arma Corporation, Garden City, New York, where he is responsible for the co-ordination of Arma's activities in microelectronics and related fields. He joined Arma Division in 1957 as a senior electronics engineer, and has contributed substantially to the development of microminiaturization concepts as applied to the inertial guidance and control of missiles and space craft.

Mr. Keonjian obtained his BS and MS degrees in Electrical Engineering from the Leningrad Institute of Electrical Engineering in 1932. Thereafter, he taught courses in Electrical Communication at the Institute and later, from 1949 to 1951, at the City College of New York. Prior to joining American Bosch Arma, he served six years (1951-1957) as a development engineer in advanced solid state circuitry for the General Electric Company (Electronics Laboratory), Syracuse, N. Y.

Mr. Keonjian has been active as Chairman of Microelectronics Advisory Committee of the Electronic Industries Association, a member of IEEE subcommittee on Microsystem Electronics, and a member of NATO's Advisory Group for Aeronautical Research and Development (AGARD). A senior member of the Institute of Electrical and Electronic Engineers, he holds twenty-seven U. S. and foreign patents, primarily in solid state electronics.

Reminder

The Education Committee of the Power and Industrial Group of the IEEE will present professional engineering review courses this Spring. The following courses will be presented: Structural Planning and Design, Electrical Engineering and Applications, Engineering Economics and Practice. In addition, review courses on Basic Engineering Science and Mechanical Engineering will be given.

INTEGRATED CIRCUITS

A Seminar to inform interested engineers in the New York Metropolitan Tri-state Area of the most recent and important developments in microelectronics will be held Wednesday, January 15, 1964, at Stevens Institute of Technology in Hoboken, New Jersey. The all-day affair is sponsored by the New York Chapter of the Basic Sciences Division of the IEEE. Six invited technical papers will be presented; three in the morning beginning at 9:30 A.M., and three in the afternoon commencing at 1:30 P.M. A round table discussion will follow the afternoon session. The papers have been chosen to meet the broad demands placed on today's electronic circuits designers and application engineers. A luncheon for those in attendance will be held between morning and afternoon sessions.

Morning Session

The first feature in the morning is a paper entitled "Development of Silicon Thin Film Active Devices" by Dr. Egon Rasmanis of the Sylvania Microelectronics Laboratory. Mr. Harold Borkan of the RCA Laboratories will then discuss "The Insulated-Gate Thin-Film Transistor as a Circuit Element," stressing circuit applications of this promising device. "A Practical Consideration of Microcircuits for Linear Systems" follows, delivered by Manfred Kahn, Section Head of the Printed Circuits Laboratory for Sprague. This session will be moderated by Dr. Gerald J. Herskowitz of the Bell Telephone Laboratories.

Afternoon Session

The afternoon session, moderated by Dr. Ralph W. Wyndrum, Jr. of the Bell Telephone Laboratories, will begin with a talk on "The Production of Thin Film Circuits" by Dr. R. E. Thun, Manager of the Film Electronics Development Department at I.B.M. Mr. D. A. MacLean, Head of the Film Component Department of Bell Laboratories will consider the fabrication processes, tolerances and applications of "Tantalum Film Circuits." He will be followed by Dr. Jan Narud, of Motorola Semiconductor Products, who will present "The MECL Logic Integrated Circuit Concept." A short discussion period, with audience participation will follow each paper. The day will conclude with a panel discussion on integrated circuits, which will be open to questions from the audience.

Registration Information

Registration fee for the Seminar is $10.00 for members of the IEEE and $12.50 for non-members. The luncheon will be included in the registration fee. Registration at the conference will cost $1.00 additional.

Registration should be completed by mail before December 15, 1963. Remittance may be made by check, payable to the New York Chapter of the Basic Sciences Division and mailed to Dr. Gerald J. Herskowitz, Bell Telephone Laboratories, Room 2C-169, Murray Hill, New Jersey.

OPTIMAL STOCHASTIC CONTROL THEORY
January 6-10, 1964

The Polytechnic Institute of Brooklyn will present a one week course entitled, OPTIMAL STOCHASTIC CONTROL THEORY at the Graduate Center, Route 110, Farmingdale, L. I., the week of January 6, 1964.

This general technical area is one of growing importance and constitutes a fundamental core of modern research in control theory. Every control system, by its nature, contains elements of uncertainty which can often be treated as probabilistic effects. This course deals with the problem of optimal control in the presence of such effects. The theory of optimal stochastic control is not as well known as its deterministic counterpart and has seen even fewer applications.

The lecturers in this program will be Professors R. F. Drenick, P. Dorato and L. Shaw of the Electrical Engineering Department, Polytechnic Institute of Brooklyn.

The tuition for the program will be $200.00 and the registration limited to 40 students. Further information may be obtained by writing to:

C. E. Moore, Director
Continuing Professional Studies
Polytechnic Institute of Brooklyn
333 Jay Street,
Brooklyn, N. Y. 11201

IEEE Winter Lecture Series:
Managing An Engineering Organization

As the electronics industry continues its expansion and consolidation, the administration of organizations of highly skilled engineers and scientists has begun to attract special attention because of the unique management problems involved. Although recent Study Group sessions have concentrated on technical aspects of interest to IEEE members, this growing maturity of the industry suggests that people engaged in making technical decisions should also be well aware of how their organization is held together, from "engineer-manager" on down. For example, an introduction to the art and science of personnel administration as practiced in the electronics industry is of value in day-to-day dealings with other engineers, as well as a measure of one's own professional standing.

The talks are presented by a group of specialists in their representative fields who are actively engaged in applying their engineering and management backgrounds in managing an engineering organization.

The series, entitled "Managing an Engineering Organization", will be held at Western Union Auditorium, 160 W. Broadway, New York City (four blocks south of Canal Street), during January and February. Adequate street parking is available after 6:00 P.M. The IRT (7th Ave.) Franklin Street stop is one block north.

Registration Information

Registration should be made in advance. Make checks payable to "Communications and Electronics Division, New York Section, IEEE", and send with a stamped, self-addressed envelope to Mr. F. Sellinger, American District Telegraph Company, 155 Sixth Avenue, New York 13, New York.

Lecture #1—January 13
ENGINEERING ORGANIZATION

ROBERT R. MANLEY
President
Robert Manley and Associates

ABSTRACT

Mr. Manley will discuss corporate management techniques for the management of engineering projects which are most likely to optimize the attainment of company objectives, and the programming and control of the projects to assure their success.

The techniques to be described have been used to evaluate programs in engineering, applied research, and development in profit-oriented organizations. Among the parameters to be discussed are the qualifications of technical personnel, decision making processes, vertical vs. horizontal organization, end-product potential, patent protection, novelty of the project.

BIOGRAPHY

Mr. Manley received his BSEE from the University of Wisconsin. He is currently a director of the Society for Professional Management Consultants, Inc., and is a past officer of the Association of Management Consultants, Inc. He is a member of The American Rocket Society, The Instrument Society of America, The American Marketing Association and American Statistical Association. He has been a delegate to the first Pan-American Marketing Congress and attended the 1962 London Instrument, Electronic and Automation Exhibition and the 1959 and 1963 British RECMF Electronics Shows in connection with client projects. Mr. Manley is President of Robert Manley and Associates, Inc., headquartered on Wall Street. He has been employed as a sales engineer for International General Electric and on the management level at Royal McBee (International), and Westinghouse International.

Lecture #2—January 20
ENGINEERING PERSONNEL

R. C. FREMON
Director, Personnel Planning
Bell Telephone Laboratories, Inc.

ABSTRACT

The functions of the personnel organization will be compared to a line manager's duties. A rough dividing line between the individual attentions of line management and those of higher management will be drawn. General personnel practices in the engineering field, including salary administration, professional versus non-professional status, and benefit considerations will be cataloged.

BIOGRAPHY

Mr. Fremon is Personnel Planning Director of Bell Telephone Laboratories, Inc.

Since joining Bell Laboratories in 1941, Mr. Fremon has been associated with personnel activities, including training programs, employment, job evaluation, salary administration, and personnel planning. He became Personnel Manager of New Jersey Operations in 1952. He has been in his present post since 1954 except for one year (1956-57) when he served as Assistant Director of the Bell System Executive Conference for the American Telephone and Telegraph Company.

Mr. Fremon attended Columbia University and received the BA degree from Columbia College and the BS and MS degress from the School of Engineering. He is a member of the New York Personnel Management Association and the American Management Association.

MR. F. D. SELLINGER
American District Telegraph Co.
155 Sixth Avenue
New York 13, New York

Please register the following individuals for the Winter Series "Managing an Engineering Organization":

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Lecture #3—January 27
PHILOSOPHY OF ENGINEERING LEADERSHIP

NORWOOD A. WARNER
Assistant Vice President—Engineering
New York Telephone Company

ABSTRACT

This topic of this series encompasses the philosophy exercised in motivating groups of engineers in their work. The speaker will discuss 1) how work operations can be organized so as to give each individual the opportunity of producing tangible results in the form of reports and specifications, thereby developing a feeling of responsibility and accomplishment; 2) the establishment of quality and quantity of objectives and due dates; and 3) tying together the complete operation by keeping everyone fully informed both as to their internal operations and external relationships.

BIOGRAPHY

Mr. Warner received his BS in Electrical Engineering from New Hampshire University in 1922 and his LLB from New Jersey Law School in 1928.

He has been employed by the New York Telephone Company since 1922 in various engineering assignments and is currently Assistant Vice President-Engineering in the Engineering Staff Organization.

Lecture #4—February 10
HOW MANAGEMENT USES INFORMATION

W. R. LOCKRIDGE
Management Staff
Airborne Instruments Laboratory

ABSTRACT

Management depends upon the availability and use of facts. Information is the basis for decisions—to plan, direct and control operations and to measure results. But information in its raw form is seldom usable. It must be evaluated, analyzed and interpreted to relate it to company operations. Management has definite techniques for processing information in the control of its operation. These include: gathering, sorting, verifying, evaluating, analyzing, interpreting, and reporting.

BIOGRAPHY

Mr. Lockridge is on the Management Staff at Airborne Instruments Laboratory, a Division of Cutler-Hammer, Inc. In 28 years as a line and staff executive, Mr. Lockridge, Cornell AB, LLB, started as a corporation lawyer and subsequently served at Sylvania Electric, Bendix Corporation, New York Air Brake Company, Servo Corporation and Barrington Associates, Inc.

Lecture #5—February 17
COMMUNICATIONS

GEORGE H. MURRAY, JR.
Consultant—Organizational Development
Union Carbide Corporation

ABSTRACT

Communications in management can be defined as understanding. In order for there to be understanding, there first must be an inter-relationship, between two people or between a manager and his organization or among people of an organization.

Communications inter-relationships can be illustrated by an examination of the critical variables in the team concept of business organization. Among these variables are: (1) mutual trust in the integrity of the

(Continued on Page 13)

Talk on Versatile Buffer Set for N.Y. Meeting

The need for communication among a growing variety of computer, communication and storage devices is spurring development of versatile interface equipment. One such system, a prototype communications buffer will be described at the next meeting of the New York Chapter of the PTG on Electronic Computers.

The meeting is scheduled for 8:15 P.M. on Dec. 11 in New York City. It will be held in a fifth-floor classroom of the brand-new Sperry-Rand building at 1290 Ave. of Americas, adjoining Rockefeller Center. There will be a pre-meeting get-together at 6:30 P.M. at Stouffer's Restaurant, 5th Avenue at 52nd street.

The features of the two-rack buffer will be discussed by its designer, Evelyn Berezin, assistant to the vice president, engineering, Digitronics Corp., Albertson, Long Island.

The buffer is a multiplexer-demultiplexer system that allows a multiplicity of slow-speed bidirectional terminals access to either a computer or magnetic-tape storage unit. Miss Berezin will discuss a method of controlling data flow and of time-sharing control functions in one central memory.

The first Communications Buffer is operational in a computing system. Other applications are foreseen in communications as well as computing.

Miss Berezin received an AB in physics from New York University in 1946 and worked under an Atomic Energy Commission fellowship to 1951.

The scheduled speaker for the January, 1964 meeting of the PTGEC is Prof. Herbert Teager of Massachusetts Institute of Technology.

The Design Review

On December 9, 1963 the Metropolitan Chapter of the PTG on Reliability will hold a meeting at the Burroughs Corporation, Fourth Floor, 215 Park Avenue (Corner 18th Street) New York City, starting at 7:45 P.M. The program for this meeting will be a panel discussion on various aspects of "The Design Review". The panelists will be James Chin, Sperry Gyroscope Company; Joseph Naresky, Rome Air Development Center; and Louis Zboran, I.T.T. Kellogg. The session will be moderated by Robert Stenecker, Kollsman Instrument Corporation.

In examining the purposes of "The Design Review", Mr. Chin will consider its engineering design and reliability aspects. Mr. Naresky will direct his remarks to the customer's interest in the effectiveness of design review. Mr. Zboran will center his attention on the design engineer's role in this activity. Mr. Stenecker, in addition to acting as moderator, will express some opinions on the role of the design review from a management standpoint.

(Continued from Page 12)

individual; (2) respect for individual differences; (3) commitment by individuals to mutual support of each other in testing the goals of an organization.

BIOGRAPHY

Mr. Murray is a Consultant for Organizational Development at the Union Carbide Corporation, New York City.

His experience includes a number of management assignments. He has been Personnel Director of the Oak Ridge National Laboratory and, later, the Union Carbide—National Carbon Research Laboratory. Prior to his current assignment in New York City, he held the post of Exempt Salary Administrator for Management Personnel Service at UCC.

He has been active in the work of the American Institute of Industrial Engineering and the Society for the Advancement of Management.

He holds a BS in Industrial Engineering from the Georgia Institute of Technology.

Lecture #6—February 24
PERFORMANCE ANALYSIS
A. C. EVANS

Director of Engineering
Weston Instruments & Electronics

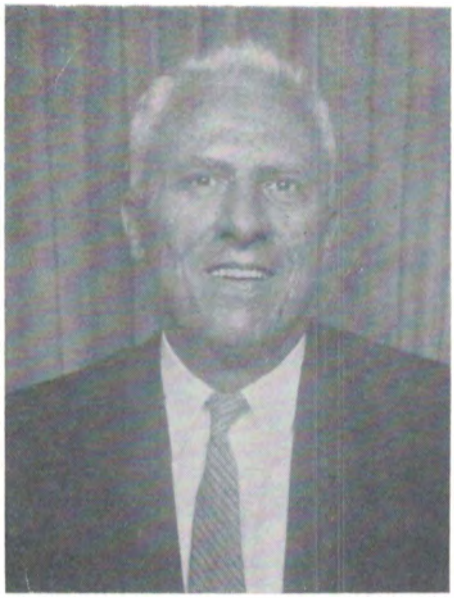
ABSTRACT

Post-completion analysis of the effectiveness and efficiency of an engineering project can be extremely useful to an engineering manager. This evaluation necessarily implies the existence of specific operation objectives. The speaker will consider the problems which are encountered in identifying the results of a project for purposes of comparison with prior goals.

BIOGRAPHY

Mr. A. C. Evans is presently Director of Engineering at Weston Instruments & Electronics Division of Daystrom, Incorporated. His engineering management experience has involved immediate supervision of small engineering groups in both R & D and Product Engineering work, and overall management of a complete engineering organization including management responsibilities for engineering personnel in geographically remote locations.

Mr. Evans holds a BSEE from Rutgers University and an MSEE from Newark College of Engineering. He is active in AMA and IEEE Societies.



Stephen A. Mallard

Secretary

Stephen A. Mallard received his ME in 1948 and his MS in 1951, both from Stevens Institute of Technology. He was an Instructor in Electrical Engineering at Stevens from 1948 to 1951. Mr. Mallard joined the Public Service Electric and Gas Co. in 1951, and has been serving in a number of positions in the Electric Distribution Department and System Planning Department. He is currently engaged in planning developments of future generation, transmission and interconnections.

Mr. Mallard has been active in the former New Jersey Division of AIEE, serving on its Executive Committee, Program Committee, Education Committee and Student Guidance Committee. He is a licensed Professional Engineer in New Jersey, a member of the National Society of Professional Engineers, and a member of Tau Beta Pi.

Mr. Mallard is married, has three children, and lives in Nutley, New Jersey.

ALFRED E. HIRSCH

Member-at-Large

Alfred E. Hirsch, Jr. graduated from Cornell University in 1950, and continued his studies at the University of Maryland and Rutgers Law Schools. He graduated from Rutgers in 1956.

He was a member of the engineering staff of the Hearst Radio organization from 1950 until 1955, working primarily on color television broadcast equipment for station WBAL-TV in Baltimore, Maryland. Since 1955, he has been a member of the Parent Staff of Bell Telephone Laboratories, Inc. He is admitted to practice before the New York, District of Columbia, and U. S. Supreme Court Bars, and is licensed to practice before the United States Patent Office as a Registered Patent Attorney.

In 1958-1959 he served as Publicity Chairman and Member of the Executive Committee of the Northern New Jersey Section of the IRE, was Business Chairman of the Fall Lecture Series in 1961. He was Secretary of the IRE Section in 1962-1963, and is currently a member of the Program Committee.

His other activities include participating membership in the New Jersey Patent Law Association, American Bar Association, Cornell Society of Engineers, the Cornell Club of Union County, Eta Kappa Nu, and Gamma Eta Gamma. He serves as Area Representative of the Murray Hill Amateur Radio Club. Since 1958, he has been active as a discussion leader for the Great Books Foundation program of Adult Education.

Also active in local civic affairs, Mr. Hirsch was recently elected Chairman of the Association for the Preservation of Residential Summit.

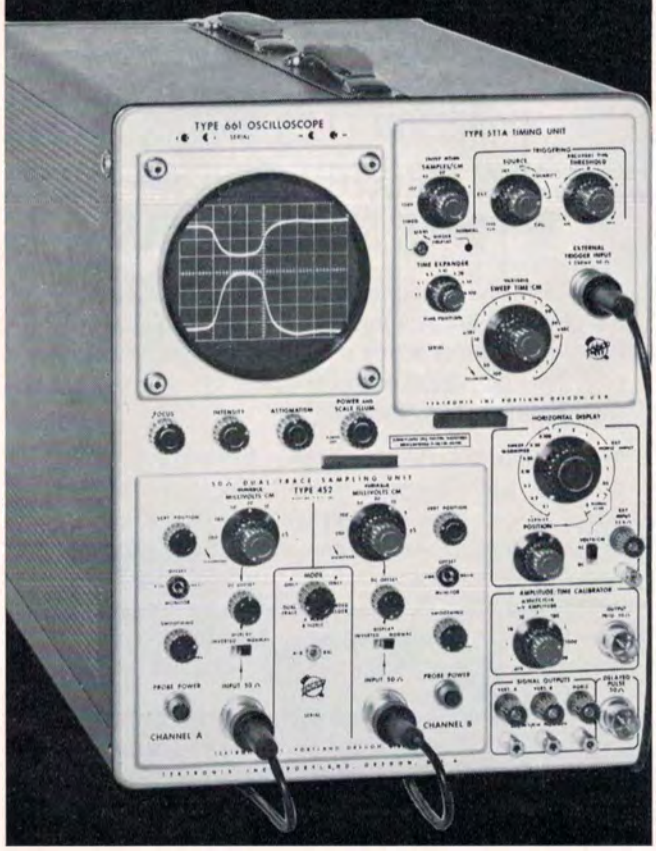
JAMES W. GORDON

Member-at-Large

Mr. Gordon was born in 1920 in Pine Island, Minnesota. In 1942 he received a BEE degree from the University of Minnesota. He joined the General Electric Test Program in 1942. He then had assignments in the Service Engineering, Control Engineering, and Application Engineering Divisions of the General Electric Company. He is presently employed in the East Orange Sales Office as an Application Engineer.

His work with the AIEE has been member and Chairman of the Educational Committee, and he was Member-at-Large, Secretary, Treasurer, and Vice-Chairman of the New Jersey Division.

HIGH-RESOLUTION SAMPLING SYSTEM



RESOLVES fastest present switching transistor risetimes, including commercially available avalanche types (usually limited by the transistor or the transistor case).

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In addition, each dual-trace unit features 2 mv/cm sensitivity, monitorable dc-offset, signal inversion, smoothing control, and 5 display modes.

Also, the Type 661 can be used with a wide range of Tektronix probes, sampling accessories, test jigs and associated instruments to utilize full capabilities of the compact and complete sampling oscilloscope.

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GENERATE X-Y RECORDINGS FROM DIGITAL MAGNETIC TAPE

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The plotting system performs translation, conversion, and graphical presentation of computer prepared data in areas in which a large amount of information is more meaningful when presented in graphical form . . . Typical applications: Fluid flow-studies, thrust and stress analysis, trajectory & orbital data, weather & topographical maps, and business areas such as profit-loss and trend data reduction.

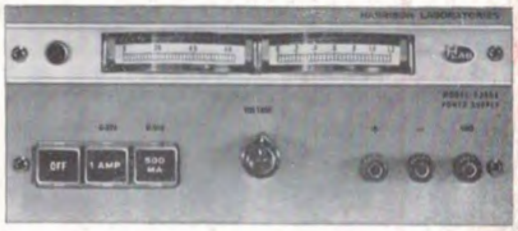
An average plotting speed of 4 inches per second with slewing up to 20 inches per second provides plots quickly with accuracy better than 0.2% of full scale on 11" x 17" graph. The system operates off-line, thereby conserving computer time and eliminating expensive editing hardware.

All system operating commands are written directly on the magnetic tape by the computer programmer, minimizing operator responsibility. Programming documentation and card deck written in FORTRAN II are provided with the system.

Prices of these new Digital Magnetic Tape Plotting Systems from the Dymec Division of Hewlett-Packard Co.:

DY-2035A racked in standard 2-bay cabinet: $25,500.
DY-2035B (in desk-type console): $25,950.

For more specs & application info, just dial your RMC Field Engineer.



HARRISON LABORATORIES
6200 SERIES POWER SUPPLY

HARRISON LABS OFFERS NEW CIRCUITRY CONCEPT IN POWER SUPPLY MODELS

Harrison Labs announces 7 new Power Supply models similarly housed but differing in specifications. Features of the new line are improved circuit design plus new construction techniques which result in high performance, low cost, and versatility.

These "6200" Series Power Supplies were designed for ready use with other units of the same "family" —and as such afford increased voltage and current requirements as well as for applications requiring coordinated or proportional control of a series of supply outputs. This use is accomplished without any external wiring changes. The units may be "stacked" in series up to 300 volts off ground.

Any number of similar supplies may be connected in parallel, achieving a power source of greater current capability than would be possible with a single supply . . . Such a combination features a master single-knob control.

The 6200 Series units can be used in an auto-tracking configuration wherein two or more supplies having a common output bus are controlled from the master supply.

Output VOLTAGE ratings from 18V to 64V. Output current ratings from 0.3 amps to 1.5 amps. Prices from $99.00 to $189.00.

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