The IEEE
Newsletter
The Magazine of the North Jersey Section

INSPECTION TRIP

NEWARK AIRPORT CONTROL TOWER

Including a Tour of the Communications and Lighting Facilities and a Visit to a Hangar

FRIDAY, APRIL 23, 1965
7-10 P.M.

APRIL 1965 Volume 11 / Number 8

North Jersey Section IEEE Executive Committee

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Vice Chairman ..... Walter L. Glomb
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Group Electronic Computers (EC) ..... D. Perry
Group Microwave Theory & Techniques (MTT) ..... B. Mindes
Group Power (P) ..... Herbert Blaicher

Executive Committee Nominations — 1965-66

The Nominations Committee of the North Jersey Section of the IEEE presents the following slate of officers for 1965-66.

For Chairman
Walter L. Glomb

For Vice-Chairman
Stephen A. Mallard

For Treasurer
James W. Gordon

For Secretary
Joseph G. O'Grady

For Members-at-Large
Bernard Meyer and Herbert Blaicher
(See March Issue for Biographies)

Additional nominations may be made by presenting a petition signed by not less than twenty-five (25) voting members of the North Jersey Section to the Executive Committee not later than 1st of May. The petition must certify that the persons nominated have agreed to serve if elected.

Election of Officers will take place at the General Meeting in May unless the Executive Committee decides that a special ballot is required.

About The Cover:

View of the $1,500,000, 150 ft. high control tower of Newark Airport built by the Port of New York Authority. About 90 FAA Electronic and Air Traffic Control specialists man the tower and maintain the equipment around the clock.

The IEEE **Newsletter**

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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 membership records are changed when Headquarters notifies us.

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

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Executive Committee Meetings

at Verona Public Library

April 7
May 5
June 2

Wednesday, April 28

Joint: Component Parts—Reliability

7:30 P.M.—Integrated Circuits

Dr. Francis Hugle,
Stewart-Warner,
Sunnyvale, Calif.

At Stevens Institute of Tech. See p. 5

CALENDAR

Tuesday, April 6
N. Y. Communications and Electronics Div.
7:00 P.M.—"Special Engineering Applications" Lecture Series
Western Union Auditorium, 160 W. Broadway, N. Y. C. See March issue

Thursday, April 8
N. Y. Aerospace & Navigational Electronics
8:00 P.M.—"Aircraft Accident Information"
Jerome Lederer, Cornell-Guggenheim Aviation Safety Center
At Willkie Memorial Auditorium, 20 W. 40th St., N. Y. C.
6:30 P.M.—Pre-meeting dinner at Old Seidelberg Restaurant See p. 10

Monday, April 12
Joint: N. Y. Communications Technology and Engineering Management
7:00 P.M.—"Engineering Education and Utilization" Lecture Series
Western Union Auditorium, 160 W. Broadway, N. Y. C. See March issue

Tuesday, April 13
N. Y. Bio-Medical Engineering
8:00 P.M.—"Thermal Measurement of Blood Flow"
Richard W. Stow, Ph.D., Dept. Phys. Medicine, Ohio State Univ.
At N. Y. Academy of Sciences, 2 E. 63rd St., N. Y. C. See p. 8

Thursday, April 15
N. Y. Computer
8:00 P.M.—"The General Electric Computer Line"
J. Leventhal, G. E. Eastern Region, Computer Dept.
At United Engineering Center, 345 E. 47th St., N. Y. C.
6:00 P.M.—Pre-meeting dinner — Flower Drum Restaurant See p. 10

Saturday, April 17
N. Y. Power & Industrial Division
10:00 A.M.—J. F. Kennedy Airport Inspection Trip
Meet at the airport. Send for tickets See p. 8

Monmouth Subsection
Conference on Statistics and Quality Assurance
Monmouth College, W. Long Branch See p. 4

Tuesday, April 20
Communications Technology
8:00 P.M.—"The International Telecommunications Union"
W. E. Bloecker, Amer. Tel. & Tel. Co.
At ITTFL Auditorium, Nutley, N. J.
6:00 P.M.—Pre-meeting dinner at the Penguin Inn
Make reservations See p. 9

N. Y. Electromagnetic Compatibility
8:00 P.M.—"EMC Instrumentation"
Guy D. Johnson, U.S.A.E.C., Fort Monmouth
At Grumman Aircraft Corp., Bethpage, N. Y. See p. 9

Wednesday, April 21
Microwave Theory & Techniques
8:00 P.M.—"Recent Developments in Solid State Microwave Generators"
B. C. De Loach, Jr., Bell Tel. Labs.
At Arnold Auditorium, Bell Tel. Labs.
6:30 P.M.—Pre-meeting dinner at Wally's Tavern See p. 6

Joint: N. J. Section and Power
7:00 P.M.—"The 121 MW Turbine-Generator Unit, Sewaren Station"
J. A. Delistovic, Public Service Elect. & Gas Co.
At Public Service Electric & Gas Co., Newark, N. J. See p. 5

Thursday, April 22
Engineering Writing & Speech
8:00 P.M.—"Turning Words into Dollars"
Panel of speakers from book and magazine publishers
At Kearfott Div. Aud., 1225 McBride Ave., Little Falls
6:00 P.M.—Pre-meeting dinner: Pomptonian Restaurant
Make reservations See p. 6

N. Y. Electron Devices
8:00 P.M.—"GaAs Injection Lasers"
Mr. Goldstein, M.I.T. Lincoln Laboratory
At ITTFL Auditorium, Nutley, N. J.
6:00 P.M.—Pre-meeting dinner at Copperhood Restaurant See p. 9

Friday, April 23
N. J. Section
7:00 P.M.—Newark Airport Inspection Trip
Meet at Newark Public Service Terminal or at the airport
Send for tickets See p. 5

SIXTH NEW YORK CONFERENCE ON ELECTRONIC RELIABILITY

The Sixth N. Y. Conference on Electronic Reliability will be held at the Carnegie Foundation Building, N. Y. C. on *Friday, May 21, 1965.*

This conference is sponsored by the Metropolitan N. Y. Groups on Reliability, Component Parts, Product Engineering and Production, Basic Science, and the Society for the Advancement of Management.

Advance registration fee, which includes a luncheon and one copy of the Proceedings, is $8.00 for IEEE members and $10.00 for non-members. Registration may be made by sending a check payable to the N. Y. Conference on Electronic Reliability to Mr. E. Murphy, Sperry Gyroscope Company, Great Neck, N. Y.

The Conference Program will consist of Six Sessions as follows:

Session 1. — TUTORIAL-STATISTICAL TECHNIQUES
Moderator: G. J. Levenbach, Bell Telephone Laboratories

Session 2. — SYSTEMS EFFECTIVENESS
Moderator: Stanley A. Rosenthal, Kollsman Instrument Corp.

Session 3. — PARTS AND MATERIALS IN A SPACE ENVIRONMENT
Moderator: F. McGinnis, Sperry Gyroscope Company

Session 4. — MAINTAINABILITY
Moderator: Charles W. Russell, Aerospace Corp.

Session 5. — BASIC FAILURE MECHANISMS IN ELECTRONICS
Moderator: Dr. R. P. Misra, Newark College of Engineering.

Session 6. — BASIC FAILURE MECHANISMS IN ELECTRONICS
Moderator: Paul S. Darnell, Bell Telephone Laboratories

ANNOUNCEMENT
1st MONMOUTH CONFERENCE ON STATISTICS AND QUALITY ASSURANCE

co-sponsored by
ASQC — METROPOLITAN SECTION
IEEE — MONMOUTH SUBSECTION
MONMOUTH COLLEGE

Saturday, April 17, 1965
at
MONMOUTH COLLEGE
Cedar Avenue at Norwood Avenue
N. J. Route No. 71
West Long Branch, New Jersey

The topics discussed will include: QUALITY CONTROL, DATA ANALYSIS, OPERATIONS RESEARCH-RELIABILITY and ANALYSIS OF EXPERIMENTS. Contact:

H. STEINER, c/o Math Department, Monmouth College, West Long Branch, New Jersey 07740.

EXECUTIVE COMMITTEE COLUMN
Communications Technology

Colin Cherry says, in his delightful and instructive book *On Human Communications:* "Man has evolved a host of different systems of communication which render his social life possible . . ." Further, Cherry states: "Communication renders true social life practicable, for communication means organization. Communications have enabled the social unit to grow, from the village to the town, to the modern city-state, until today we see organized systems of mutual dependence grown to cover whole hemispheres. Communication engineers have altered the size and shape of the world."

Within the IEEE we have the National Group on Communications Technology. Their interests may be summarized as: "Radio and wire telephone, telegraph, and facsimile in marine, aeronautical, radio-relay, coaxial cable, and fixed station services."

Within the framework of the National Group on Communications Technology there is the North Jersey Chapter, which now has a membership of 336. This relatively large membership is appropriate when one considers that this particular area is one of the foremost in the world for work in the art and science of telecommunications. Many new techniques and devices were conceived here, others were developed, improved, manufactured, and first used here. We can go back to such names as Edison, Morse, Vail, DeForest, Armstrong; to the early installations of telegraph, telephone, point-to-point radio, and radio broadcasting systems; and finally we come to the present rapid developments in space communications, lasers, semiconductors, data transmission, TV broadcasting, and many, many others.

The Chapter organization must develop a program to fit the needs of its members; we recognize that it is difficult for today's busy engineer to get to all meetings. Yet, as I see it, engineers must stay abreast of advances in three different ways: (a) in the *general* field, (b) in their *specialty*, and (c) in the field of *new techniques, devices,* and *materials* that may have application in their specific field. For example, communication engineers *ought to be aware* of what is going on in radio astronomy, frequency allocation, computers, etc.; they certainly *must be aware* of what is happening in their specialty, e.g. radio communications, wire communications, modulation techniques, and they *should also know* about new primary power sources, new type tubes, new semiconductors, new cables, new techniques of heat dissipation, etc.

It is true that as engineers progress in their careers they usually move from the "specific" to the "general"; nevertheless they should not lose touch with the "specific" nor should they fail to look ahead to the "general". It is to be hoped that specialization does not reach such an extreme that we become the human counterpart of the ant colony or the bee colony, each working in, and knowing only, a strictly circumscribed field of activity.

The Executive Committee of the N. J. Chapter of GCT has thought about these problems — both philosophically and practically. We know that there are many meetings, but we also know that when even a limited number of our members learn something worthwhile at a small, perhaps intimate, meeting, this is an important service performed. Our mission, then, is to have Chapter meetings ranging from the specific to the general, to have liaison with nearby Chapters to avoid conflicts, to take maximum advantage of joint meetings, and to work with the Section's other Group Chapters to augment the total program.

RODNEY D. CHIPP
Chairman, N. J. Chapter
Communications Technology

REGISTRATION FORM
MONMOUTH CONFERENCE

Name .....
Company .....
Address .....
City ..... State .....
Member:
ASQC ..... IEEE .....
other Society .....

Registration fee, including lunch: $5 (Make checks to "Metropolitan Section-ASQC"). Limited dining facilities require early registration.

The nearest Garden State Parkway exits to the area are exits 109 (Red Bank); 105 (Eatontown-Long Branch) and 102 (Asbury Park). State routes 35 and 36 and other roads offer easy access to the area. There is good train and bus service from points in the greater New York area.

Joint Meeting: North Jersey Section and Power Group

THE 121 MEGAWATT GAS TURBINE GENERATOR UNIT SEWAREN GENERATING STATION PUBLIC SERVICE ELECTRIC AND GAS COMPANY

Mr. John A. Delistovic, Assistant to Mechanical Engineer, Public Service Electric and Gas Company will be guest speaker at the April joint meeting of IEEE Power Group and North Jersey Sections of IEEE and ASME.

The meeting will be held at *7:00 P.M. on April 21, 1965* in the Public Service Electric and Gas Company auditorium, 90 Park Place, Newark 1, New Jersey.

Mr. Delistovic will discuss peaking capacity requirements for an electric system, description of various types of peaking units, reasons for selecting a gas turbine, considerations for selecting this particular unit and a general description of the Sewaren Gas Turbine Plant design.

During the past 14 years Mr. Delistovic has worked in various capacities, on all phases of engineering for large central electric generating plants. He served as the Public Service Engineering Department's field representative during the construction, start-up and de-bugging phases at the Bergen and Mercer Generating Stations. He was project manager for the No. 1 Gas Turbine-Generator Unit which was installed at Essex Generating Station in 1963 and is currently project manager for the 121-MW Gas Turbine-Generator Unit.

Mr. Delistovic is a registered professional engineer in New Jersey and New York; is a member of the National Society of Professional Engineers and of the Hudson County Chapter of the New Jersey Society of Professional Engineers, and is a member of the ASME.

Joint: Component Parts Reliability Group

Integrated Circuits — Cost and Reliability Considerations

Meeting Notice

Date: Wednesday, April 28, 1965

Time: 7:30 P.M.

Place: Stevens Institute of Technology
Seminar Room
4th floor Stevens Center
Hoboken, New Jersey

Speaker: Dr. Francis Hugle
Director of Research and Development
Stewart-Warner
Sunnyvale, California

For details see February 1965 issue

North Jersey Section Field Trip:

TOUR OF NEWARK AIRPORT CONTROL TOWER, LIGHTING FACILITIES, AND HANGAR

On Friday evening, April 23, 1965, the North Jersey Section will sponsor a tour of the facilities of Newark Airport. Included in the tour will be a visit to the control tower, an inspection of the runway lighting, and a visit to one of the hangars. Guides will be provided by the Port Authority to conduct our group throughout the tour, and be available to answer questions along the tour route.

Newark Airport handles one of the largest traffic loads of any airport in the United States. It embodies elaborate systems of communication and electronic instrumentation to control this air traffic for both Visual and Instrument Flight Conditions.

For the convenience of the membership, charter bus transportation will be available from the Public Service Terminal in Newark, with an extra stop being made at the west end of the main passenger terminal to pick up those who wish to park their cars in the airport parking lot. However, good parking facilities are available in Newark adjacent to the Public Service Terminal, and parking at this location is recommended as a first choice.

ITINERARY

Leave Public Service Terminal,
Pine St., Newark — 7:00 P.M., promptly
Leave Airport Passenger Terminal
and start tour — 7:30 P.M.
Return to Passenger Terminal,
9:30 P.M.
Return to Pine Street, Newark,
9:45 P.M. (approx.)

A nominal charge of 75 cents per person is required for the use of the charter buses, which is the only transportation the Port Authority will permit on the field.

For tickets and information write:
Mr. Robert Messerschmidt
New Jersey Bell Telephone Company
Room 1000
540 Broad Street
Newark, New Jersey 07101

Please send ..... tickets at $0.75 each for the Airport Tour to:

Name .....

Address .....

I will meet the bus at: ☐ The airport ☐ Pine Street, Newark.

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

Reservations will be accepted up to April 15, 1965.

Engineering Writing and Speech Group

TURNING WORDS INTO DOLLARS

The meeting is set for 8:00 P.M. on *Thursday, April 22nd,* at the Kearfott Division auditorium, General Precision, Inc., 1225 McBride Avenue in Little Falls (just off Route 46.)

A panel of speakers from engineering book and magazine publishers will discuss the various markets available to engineers, compensation for manuscripts, specific topics of current interest for textbooks, paperbacks, chapters, or articles, and job opportunities in the editorial field. Anyone who has ever thought about writing a book or article, or coordinating the writing of a book as editor, will find the discussion both stimulating and useful. As an added attraction, several samples of recent engineering books will be given away, free of charge.

The program will be moderated by Stephen Scrupski, Senior Editor of EEE magazine, Mactier Publishing Corp. Panel members will include George Novotny of John Wiley & Sons; Daniel Fischel, Handbook Editor for the McGraw-Hill Book Co., Jerry Eimbinder, Solid-State and Micro-electronics Editor of Electronics magazine; and Oliver P. Ferrell, Editor of Popular Electronics magazine.

Free refreshments will be served after the meeting. The pre-meeting dinner will be held at 6:00 P.M. at the Pomptonian Restaurant, Route 23 (opposite the Meadowbrook) in Cedar Grove. For dinner reservations, call Steve Scrupski at (212) MO 1-0450 or Mrs. Ann Cook at (201) HU 5-3900, Ext. 2119.

Power & Industrial Division

Spring Stag Get-Together May 19 — 165th Reg. Armory

Mark May 16 as the deadline date for reservations for the "Spring Stag Get-Together" staged annually by the Power and Industrial Division of the New York IEEE.

This year's affair takes place Wednesday, May 19 at the 165th Regiment Armory, Lexington Avenue between 25th and 26th Streets, Manhattan.

continued on page 9

Microwave Theory & Techniques Group

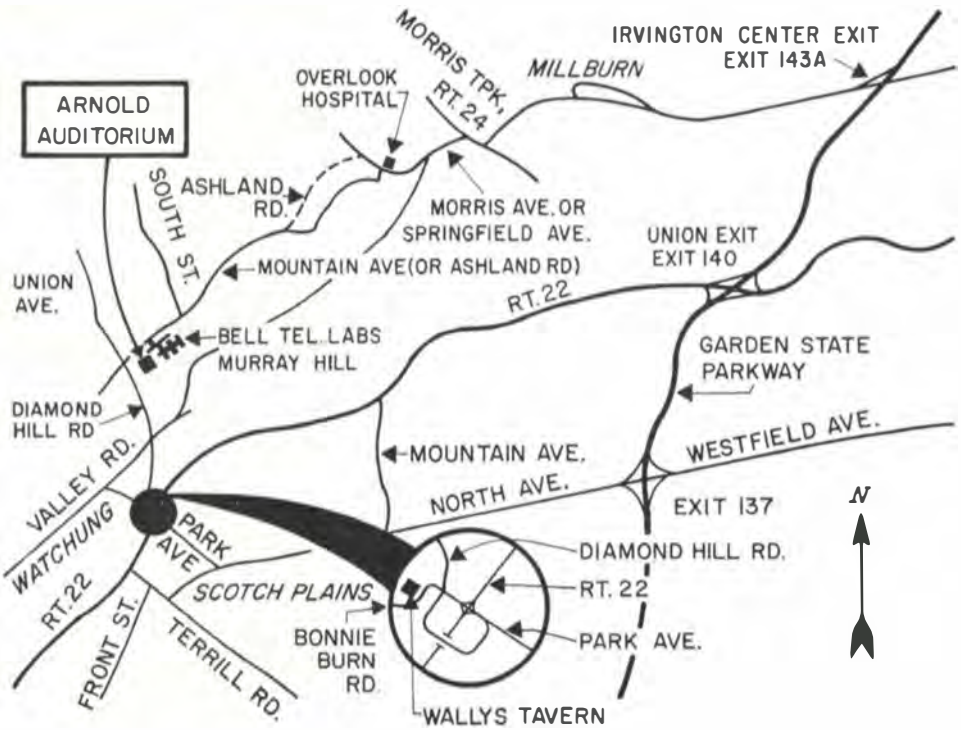
RECENT DEVELOPMENTS IN SOLID-STATE MICROWAVE GENERATORS

Mr. B. DeLoach will give the *April 21* MTT talk at 8:00 P.M. in the Arnold Auditorium of the Bell Telephone Laboratories.

The means of generating microwave power from solid-state devices will be surveyed. In addition to transistor oscillator-harmonic generator systems and tunnel diode oscillators, some of the more recent work on "Gunn oscillators" and silicon transit-time oscillators will be discussed. This will include a description of device physics and its relationship to performance and potentialities.

A pre-meeting dinner will be held at Wally's Tavern at 6:30 P.M.

Bernard C. De Loach Jr., received BS and MS degrees in Physics from Auburn University in 1951 and 1952 respectively. He obtained his PhD degree in Physics from Ohio State University in 1956. He became a member of the technical staff of the Bell Telephone Laboratories in 1956 and has conducted investigations on microwave parametric amplifiers, microwave filters, and microwave solid-state devices. He is currently the supervisor of a microwave diode group in the Semiconductor Device Development group at Bell Telephone Laboratories.



professional notices

FELLOWS AND AWARD WINNERS HONORED AT *NORTH JERSEY SECTION BANQUET*

Professor John K. Redmon, chairman of the North Jersey Section, opened the official program and introduced the award winners. Mr. M. D. Hooven, past president of IEEE, talked on the significance of the Fellow award. Mr. S. Fishman, chairman of Awards Committee, read and presented citations to the Fellows. Mr. Walter L. Glomb, chairman of the dinner-dance committee was commended for his efforts on behalf of the Section. Principal speaker of the evening was Donald G. Fink, manager of IEEE.

The *photograph at left* shows, standing, from left to right — John K. Redmon; A. Sidney Brookes, *Public Service*, J. Earl Thomas, Jr., *General Instrument:* new Fellows; Donald G. Fink; Alanson W. Parkes, *Ballantine Laboratories*, John Schwanhausser, *Public Service:* Section Award winners; S. Fishman.

Seated, from left to right are — John E. Karlin, *BTL*, Harry R. Seelen, *RCA*, John R. Hefele, *BTL*, John W. Emling, *BTL:* new Fellows; M. D. Hooven; A. G. Kandoian, *ITT*, Henry Busignies, *ITT:* Award winners.

Not present: Charles H. Hoffman, *Public Service*, new Fellow; Harald T. Friis and John G. Ferguson, Award winners.

Right-hand photograph shows Chairman John K. Redmon congratulating Mr. A. G. Kandoian upon his winning a national engineering award.

Letter To The Editor:

This is the time of the year for annual banquets. Dinners are given for this and for that, and most of them are humdrum affairs featuring canned chicken and peas over biscuit and the droning on of one chairman after another — each patting the other chairmen on the back for a job "well done."

There is one notable exception to this pattern — the Annual Section Banquet of the North Jersey Section in honor of the Fellows. The banquet was held this year on February 20.

Good food, generous drinks, short and interesting comments from the head table — just long enough to do sufficient honor to the award winners — a fine orchestra, and a chance to renew old acquaintances and make new friends. And all of this in a pleasant surrounding. Those who failed to attend this one really missed something. But considering the size of the turn-out, it appears that the word did get around.

In short, the dinner committee deserves a large vote of thanks for a job "well done." I can hardly wait until next year.

Very truly yours,
Alfred E. Hirsch, Jr.

NOMINATIONS FOR 1965-66 OFFICERS OF G-COMTECH

Officers for the 1965-66 year of the North Jersey Chapter of the IEEE Group on Communications Technology will be elected at the technical meeting sponsored by the Chapter on Tuesday, April 20th. The Nominating Committee of R. McSweeny, I. S. Coggeshall, and T. H. Crowley has selected the individuals whose biographies appear below.

Additional nominations may be made at the meeting.

For Chairman ..... A. A. Roetken
For Vice-Chairman ..... J. Harvey
For Secretary ..... G. Helder
For Financial and Facilities Officer ..... M. Westheimer

A. A. Roetken is a Radio Consultant in the Electronic Systems Research Laboratory of the Bell Telephone Laboratories at Murray Hill, New Jersey. He received the B.S. and M.S. degrees in Electrical Engineering at Ohio State University in 1927 and 1929. In 1929 he joined the Bell Telephone Laboratories as a member of the Radio Research Department where he became engaged in problems relating to radio-telephone applications within the Bell System.

During World War II, Mr. Roetken participated in the development of pulse-transmission multiplex microwave-repeater systems for use by the armed forces. Following the war he took part in developing the wideband microwave repeater systems which formed the basis for the present Bell System microwave transmission network. After a period as head of a special projects group in transmission and systems research, he acquired his present position in 1961.

Mr. Roetken is a Fellow of the IEEE, an associate of Sigma Xi and a member of the Research Society of America. He is registered as a Professional Engineer in the State of New York.

Jack Harvey (S-'49, A-'52, M-'56, SM-'57), was born in Tarkio, Missouri. He received the BSEE degree in 1951 from the University of Missouri.

In 1951 he joined ITT Federal Laboratories, from which he was on leave from 1952 to 1954 for duty in the U. S. Army Signal Corps. He is now a Member of the Technical Staff of Sichak Associates, Nutley, N. J.

George K. Helder received the B.S. degree in business from the University of Colorado in 1952. After three years in the Navy, he returned to Colorado and graduated with a B.S.E.E. degree in 1958. At that time he joined the Bell Telephone Laboratories, and continued his education at N.Y.U. where he received the M.S.E.E. degree in 1960.

Mr. Helder was first engaged in telephone transmission in the exchange or local area. More recently, as Supervisor of Toll Transmission Engineering, he has been engaged in the problems of transmission on long distance calls, particularly the problem of echo on long delay satellite circuits. His work in this field led to the development of an echo suppressor which will be used on the circuits of Early Bird, the first commercial communication satellite. He is presently engaged in studies to evaluate the transmission performance of satellite circuits for trans-Atlantic telephony.

Mr. Helder is a member of the I.E.E.E., Tau Beta Pi and Eta Kappa Nu.

Manfred Westheimer was born in Karlsruhe, Germany. He received his BEE degree from Pratt Institute, Brooklyn, N. Y. in 1951 and his MEE degree from the Polytechnic Institute of Brooklyn in 1955.

In November 1955 he joined Microwave Services, Inc., then of New York, N. Y., as a staff consultant. He worked on various communications projects and, in 1960, became project engineer. In 1962 he became chief engineer of MSI. In November 1962 Mr. Westheimer joined Communication Systems Incorporated, Paramus, N. J., formerly ITT Communication Systems, Inc. and since January 1965 a subsidiary of Computer Sciences Corporation. At CSI he has worked on system engineering aspects of point-point as well as ground/air/ground communication systems, and has held the position of task manager on a long-haul communications project.

Mr. Westheimer has been active in the PTGMTT and has been on the Facilities Committee of the North Jersey Chapter of the Communications Technology Group since 1962. In 1964 he served as Financial and Facilities Officer of that Chapter.

N.Y. Power and Industrial Division

INSPECTION TRIP
J. F. KENNEDY INTERNATIONAL AIRPORT

SATURDAY, APRIL 17, 1965
Tour Starts — 10:00 A.M.

The Power and Industrial Division has arranged an inspection trip to the J. F. Kennedy International Airport on Saturday morning April 17, 1965. The tour will start at 10:00 A.M. and be completed by 1:00 P.M. To enable the group to move about the field, arrangements have been made to have on hand tour buses. These buses will be for use only on the field. No arrangements will be made for transportation to the field except that parking will be free. Those who attend the trip will be given slips that will enable them to remove their cars from the parking fields at no cost. The cost of the ticket is to defray the expense of hiring the tour bus. All members may feel free to bring along guests if they so desire. The attendance we are sorry to say is limited, so get in your request for tickets early.

Among the planned stops will be one at the Central Power Plant where the hot water and chilled water are generated and sent out into the field's complex distribution system. A hangar of one of the large companies will be visited and an aircraft as well as computer data processing equipment will be viewed in the hangar. No trip is complete, of course, without a stop at the tower and radar equipment areas as well as an electric distribution substation.

If the weather is inclement on Saturday morning, come anyway. All of the group's movements during the tour will be done in the buses.

Richard T. Higgins
Con Edison Company of N. Y., Inc.
4 Irving Place
New York, N. Y. 10003

Please send me ..... ticket(s) for the inspection trip to J. F. Kennedy International Airport.

Enclosed is my check ☐ money order ☐ in the amount of $ .....

Price for the tour bus tickets 1 for $1.00, 3 for $2.00.

I have enclosed a stamped self-addressed envelope as required.

Name .....

Address .....

Phone .....

Make checks or money orders payable to Power & Industrial Division, New York Section IEEE. No request will be honored after April 12, 1965.

N. Y. Bio-Medical Engineering Group

Joint Meeting with the Division of Instrumentation of the N. Y. Academy of Sciences

Thermal Measurement of Blood Flow

Date: **Tuesday, April 13, 1965**
Place: New York Academy of Sciences
2 East Sixty Third Street
New York City
Time: 8:00 P.M.
Speaker: **Richard W. Stow, Ph.D.**
Department of Physical Medicine,
Ohio State University
Subject: Thermal Measurement of Blood Flow

Methods will be described for measuring local tissue blood flow. One of these derives from an analysis of steady state heat transfer; the other involves thermal relaxation in tissue following the introduction of a heat pulse. Instrumentation for the techniques and applications in measuring skin, muscle and internal organ blood flow will be discussed.

Communications Technology Group

THE INTERNATIONAL TELECOMMUNICATIONS UNION

Its First Hundred Years

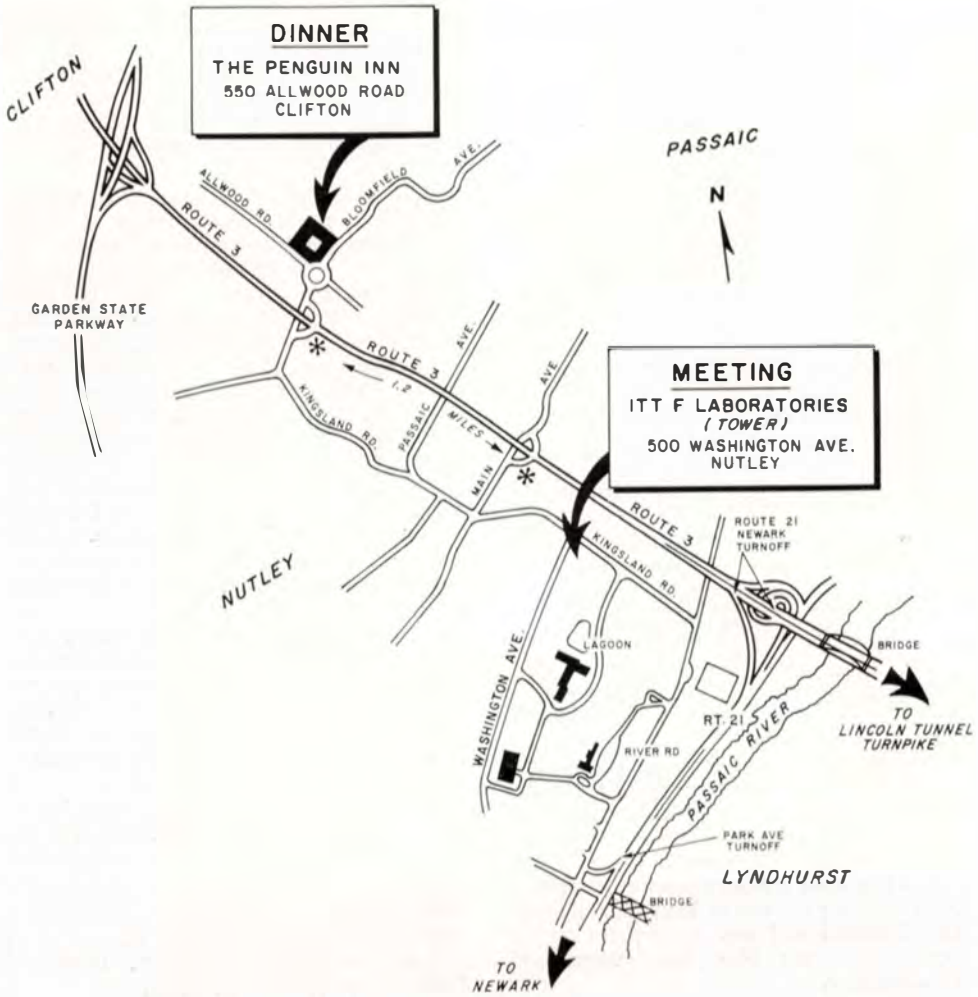
Mr. William E. Bloecker will be the speaker at the April meeting of the Communications Technology group. Mr. Bloecker will trace the evolution of the International Telecommunications Union (ITU) from a bilateral agreement between two European states to regulate telephone traffic into its worldwide scope embracing all methods of telecommunications.

The organization of the ITU, its purpose, its methods of work and its accomplishments will be discussed. Also treated will be the importance of its operations to the communications common carriers of the United States in establishing worldwide communications and the role played by these carriers in its achievement.

William E. Bloecker, International Systems engineer, American Telephone and Telegraph Company, received the degree of B.S. in EE from the University of Pennsylvania in 1922. Since 1948 he has been responsible for coordinating the activities of the AT&TCo in the work of the International Telegraph and Telephone Consultative Committee (CCITT), a permanent organ of the ITU. In this capacity he has represented AT&TCo in technical study group meetings and has served as a delegate in the United States delegations to various preliminary assembly meetings. In 1960, at New Delhi, he was appointed Chairman of a special study commission to develop recommendations for a worldwide telephone dialing network, the first American to hold an international chairmanship in the CCITT.

The meeting will be held at 8:00 P.M. on *Tuesday, April 20, in the ITTF Laboratories auditorium.* The pre-meeting dinner begins at 6:00 P.M. at the Penguin Inn in Clifton. For dinner reservation contact:

M. Westheimer
Communication Systems, Inc.
Paramus, N. J.
843-2400 — X4201 by April 19, 1965



N. Y. Electron Devices Group

GaAs INJECTION LASERS

The April 22, 1965 meeting of the N. Y. Metropolitan Chapter of the ED group, which will be held at I.T. & T., Nutley, N. J. at 8:00 P.M., will feature GaAs injection lasers in radar and communication.

A pre-meeting dinner will be held at 6:00 P.M. at the Copperhood Restaurant.

GaAs injection lasers are efficient, lightweight radiators that can be easily modulated with either short pulses or high-frequency continuous waveforms. These characteristics make them attractive for specialized uses, especially in the space environment. However, one of the important characteristics of GaAs injection lasers is the strong temperature dependence. This factor alone greatly determines the manner in which these radiators should be operated and used in radar and communication. In this talk, the pertinent characteristics of GaAs injection lasers and their capabilities in radar and communication will be discussed and illustrated.

Mr. Goldstein obtained a BA degree in Physics in 1952 from Harvard University and an MS degree in Electrical Engineering in 1956 from Columbia University. From 1956 to 1961, Mr. Goldstein was with the Applied Research Laboratory, Sylvania, Waltham, Massachusetts, and the ITT Laboratories in Nutley, New Jersey, where he was working in the area of radar and statistical communication. Since 1961, Mr. Goldstein has been on the staff of M.I.T. Lincoln Laboratory where he has been closely associated with the Apollo program. He is presently concerned with laser techniques, especially modulation of GaAs injection lasers.

N. Y. Electromagnetic Compatibility Group

EMC INSTRUMENTATION

The New York Metropolitan group on Electromagnetic Compatibility will hold a meeting on *April 20th.* The meeting will be held at Grumman Aircraft Corporation, Bethpage, New York at 8:00 P.M.

Guy D. Johnson, Supervising Engineer, U.S.A. Electronics Command, Fort Monmouth will speak on the Army's current development program in EMC instrumentation.

Mr. Johnson will discuss the Army's current research in automatically swept receivers and microwave spectrum monitors.

For meeting particulars please contact:
A. G. Zimbalatti, 516—LR 2-2493
Ed Steel, 201—272-5500

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The time — 6:00 to 7:00 P.M. for cocktails and socializing, with dinner and entertainment to follow.

Tickets are $5.75. Checks should be made payable to "P & I" Division, New York Section IEEE, and sent to John Floren, Long Island Lighting Company, 175 Old Country Road, Hicksville, N. Y.

Include stamped, self-addressed envelope.

Student Affairs

STUDENTS LEARN OF COMPUTER USES

"The tremendous future of computers is assured" stated *Mr. Paul Palmarozza* at Newark College of Engineering on February 23. The guest speaker from Control Data Corporation highlighted some of the many applications for computers — both in use today and planned for the future. The 1964 NCE graduate addressed the electrical engineering seniors during their monthly IEEE Student Chapter program.

The vast computer installation at Cape Kennedy was cited as one of the many military/scientific applications. From ground pre-check, through all the operations, to rocket burn-out, a computer is on the job. The use of computers for order processing. cost analysis, and other data information has been widely acknowledged. Many firms are learning of even more possibilities. In finance, a computerized message-switching system now connects the floor of the New York Stock Exchange with the many offices of one of its member brokerage firms. Newspapers' typesetting procedures now incorporate computer control.

"We all will be affected by the Weather Bureau's recently planned innovation." Mr. Palmarozza was referring to the order for one of his company's largest models. Observing, digesting, interpreting, and predicting will be among the many duties of this new giant.

Probably no one application of the computer could affect each engineer more extensively than the imaginative concept of total management. To the question "Will a computer replace middle management?" Mr. Palmarozza's reply was "This concept employs the computer to analyse great amounts of data and to provide top management with concise and pertinent reports. These systems, however, require a great deal of planning and very careful implementation."

NCE STUDENT BRANCH RAFFLES A MEMBERSHIP

The IEEE Student Branch at Newark College of Engineering recently sponsored a raffle. The winner received free membership as a student member.

The raffle was held in February during the sophomores' orientation when the students were initiated to the courses in their elective department. All the prospective new members were invited to participate. The raffle stimulated greater interest on the part of the sophomores and helped to swell the membership in the branch.

The NCE branch has begun efforts to compile a collection of E. E. Department tests. Upon completion of the project the collection will be available in the school's library.

The tests will be from all the courses offered to the students majoring in electrical engineering. No answers or solutions will be available with the tests. The branch feels that the availability of the printed tests should be enough incentive for the students to solve some of the problems in preparation for their impending test.

N. Y. Aerospace & Navigational Electronics Group

AIRCRAFT ACCIDENT INFORMATION

The April 1965 meeting of the New York Metropolitan Chapter of the Group on Aeronautical and Navigational Electronics (GANE) will be held as follows:

Date:	**Thursday, April 8, 1965**
Time:	8:00 P.M.
Place:	Willkie Memorial Auditorium 20 West 40th Street New York, New York
Subject:	AIRCRAFT ACCIDENT INFORMATION The lecture will review briefly the present status of civilian air safety, then delve into several engineering aspects of accident investigation such as determination of forces, the failure of control systems, the cause of fires. A film showing the test crash of a transport airplane will be shown.
Speaker:	**Mr. Jerome Lederer,** Director Cornell-Guggenheim Aviation Safety Center 468 Park Avenue, S. New York, New York
Pre-meeting Dinner:	6:30 P.M. Old Seidelberg Restaurant 626 Third Avenue (Between 40th & 41st Streets on the West side of Third Avenue)

Biographical Note:

Mr. Lederer graduated from College of Engineering of New York University in 1924 with a B.S. degree in Mechanical Engineering and an M.E. degree a year later. He was Aeronautical Engineer for the U. S. Air Mail Service, Chief Engineer for Aero Insurance Underwriters Co., first Director of Safety Bureau of the Civil Aeronautics Board. During World War II, he was Director of Training of the War Training Institute. In 1947 he initiated the safety programs which are now directed by the Cornell-Guggenheim Aviation Safety Center, and since 1950 has served as Director. Mr. Lederer's distinguished contributions to air safety have been recognized by many awards.

NCE INSTRUCTOR TO DISCUSS COLOR PERCEPTION

Dr. Mauro H. Zambuto of the NCE Electrical Engineering Department will talk to the IEEE Student Branch of Manhattan College on April 7.

Dr. Zambuto's experience in the motion-picture industry is a strong asset in his work. In fact, the Doctor's schedule includes his presentation in Los Angeles, California, to the Society of Motion Picture and Television Engineers a paper on color perception. And following his visit to Manhattan College Dr. Zambuto will give a presentation on April 20 to the New York Society of Photometrists.

N. Y. Computer Group

The General Electric Computer Line

The April meeting of the Computer Group's Metropolitan New York Chapter will feature a talk on the GE Line.

The meeting is one in a series devoted to the equipment and marketing rationale of the major computer manufacturers. The GE story will be told by *Jay Leventhal*, Manager of Sales and Technical Support, Eastern Region, Computer Department.

The meeting will be held on *April 15 at the United Engineering Center*, 345 E. 47th St., N. Y. C. at *8:00 P.M.* There will be a *pre-meeting dinner* for all comers at the Flower Drum Chinese restaurant, 856 Second Ave., N. Y. C., at 6:00 P.M.

P.I.B. MICROWAVE RESEARCH INSTITUTE

SYMPOSIUM ON SYSTEM THEORY

Commodore Hotel, New York City

April 20, 21, 22, 1965

The fifteenth in the Polytechnic Institute of Brooklyn series of international symposia, devoted to "System Theory," will be held at the Commodore Hotel in New York City on April 20-22, 1965. Following the traditional pattern of MRI symposia, it will provide a review of the present status of system theory research and a forum for discussion of the latest outstanding advances of interest to engineers, physicists and mathematicians. The program is organized around an impressive group of invited papers, and includes some contributed papers.

It is the aim of the Symposium on System Theory to present mathematical developments and engineering interpretations of mathematical theory, which together define system theory. In this context, the term "System Theory" includes concepts that are fundamental to problems of control communication, information processing, economic forecasting, etc., as well as those developments in specialized problem areas that show promise of relating to the general class of problems. Although no unifying theory presently exists, it is anticipated that, from these related fields, there will emerge a theory of physical systems — man-made or not — that can accept certain processes as inputs, and from them generate certain other processes as outputs.

The specific topics to be considered are: basic notions of system theory, mathematical representation of systems, dynamic systems (including finite-state machines), systems with random inputs, optimal systems, large-scale systems and the relation of system theory to science and engineering.

The final program listing additional papers, abstracts, registration forms, and information on accommodations are available from:

MRI Symposium Committee
Polytechnic Institute of Brooklyn
333 Jay Street, Brooklyn, N. Y. 11201
Jerome Fox, Symposium Secretary


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