1968 IEEE

INTERNATIONAL CONVENTION

March 18-21

New York Hilton Hotel and Coliseum

The IEEE
Newsletter
The Magazine of the North Jersey Section

North Jersey Microwave Theory and Techniques

Instrumentation For Radio Astronomy

See Page 9

Volume 14 March, 1968 No. 7

STUDENT NEWS

News of Interest

Fairleigh Dickinson University 1967 Annual Students Night

North Jersey Section

The 1967 Annual Students night was held at Fairleigh Dickinson University on Friday, December 8, 1967. Speakers and Section officers were invited to a dinner at the Fairleigh Dickinson Student Commons prior to the start of the 7:30 meeting.

The meeting was opened by Student Chairman Irving Zaks of Fairleigh Dickinson with the introduction to the assembled group of Mr. Bernard Meyer, Chairman, North Jersey Section; Mr. Joseph G. O'Grady, Vice Chairman, North Jersey Section; Mr. Alan H. Stolpen, Student Activities Editor, North Jersey Newsletter; Mr. James Earle, Student Activities Director, North Jersey Section; and Dr. Scheit, Chairman, Fairleigh Dickinson University Electrical Engineering Department.

The speakers of the evening were all graduates of schools in the North Jersey area and their talks were based on a common theme — the development of the engineer from undergraduate to professional contributor. The speakers were: Mr. Gene R. O'Brien of Western Electric, BSEE '62 NCE, MBA '67 Rutgers Past Student Affairs Editor, North Jersey Newsletter, Member Alumni Association NCE; Mr. Stephen A. Baer of Bell Laboratories, Holmdel, BSEE '63 FDU, MSEE '65 Rutgers University; Mr. Lewis Kaufer of Public Service Electric and Gas Company, Newark, BSEE, FDU, MSEE candidate, NCE; Mr. George R. Wheatley, Business Relations Manager of AT&T, New York City, ME '53 SIT; Dr. Thomas Walsh, of RCA Laboratories, Princeton, BSEE '58, PhD Physics '63; Mr. John Peterson, Foundery Electromechanical Enterprises, Inc. MSEE '62 SIT, MBS '64 University of Pennsylvania; and Mr. William Fuschetto of the U. S. Army Electronics Command, Fort Monmouth, BSEE '63 FDU.

Refreshments, courtesy of the North Jersey Section, were served at the conclusion of the meeting.

The Student Branches wish to express their thanks to the speakers for an enlightening program, and also to the several industrial firms in the area who generously donated the door prizes. These prizes included General Electric Transistor Handbooks donated by Mr. Murray Norton of the Philadelphia office and Mr. R. Rue of the New York office of G.E.; Hewlett-Packard Vector Voltmeter Slide Rules donated by Mr. Barnes of the Englewood office of the RMC Sales Division; RCA Transistor Handbooks and Designers Handbooks donated by Miss Elinor McElivee of the Harrison Plant of RCA; Motorola Transistor Handbooks donated by Mr. Les Figular of the Bergen Mall, Paramus sales office of Motorola; ITT Reference Data Handbooks for Radio Engineers donated by Mr. Walter Glamb of the Nutley Plant of ITT; Ballantine Laboratories Slide Rules donated by Mr. A. W. Parks of the Boonton Plant of Ballantine; and Westinghouse Atomic Notes and Calendar donated by Mr. E. Gregory of the East Orange office of Westinghouse.

CALENDAR

Stevens Institute of Technology: March 20

The Student Branch is sponsoring a bus trip to the IEEE International Convention and Exhibition on Wednesday, March 20. The group will leave the campus at 11:45 A.M., taking public transportation to the Coliseum. The Branch will fully subsidize both the transportation and the Exhibition admission fee.

Professional Group Officers

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JOINT METROPOLITAN GAES

Luncheon At '68 International Convention

The IEEE Group on Aerospace and Electronic Systems is sponsoring a luncheon meeting during the International Convention of the IEEE. You are cordially invited to attend.

Date:
Tuesday, March 19, 1968

Time:
12:00 Bar Opens (Cash Bar)
12:30 Lunch

Place:
Warwick Room — Warwick Hotel
54th Street and Avenue of Americas
(Across from New York Hilton)

Speaker:
JAMES C. ELMS
Director — NASA Electronic Research Center

Subject:
"The Space Program Today"

Tickets:
Tickets are $7.50 each person. Tables seating 10 people are available for company sponsored tables.

Reserve Tables and Obtain Tickets From:
MR. J. LANE WARE
ITT Avionics Division
390 Washington Avenue
Nutley, New Jersey 07110
Telephone 201 - 284-3781

MAKE RESERVATIONS EARLY

NEW YORK COMPUTER

Storage: Mass or Mess?

Mass data storage, one of the fastest changing areas in computer technology, will be surveyed in a tutorial review covering the growth, status and trends of this specialty during an evening meeting of the N. Y. Chapter of the Computer Group on March 12.

The review will be given by Dr. Albert S. Hoagland, a pioneer in direct-access mass storage, which is making possible the efficient on-line multi-terminal common-base systems now changing the pattern of computer use.

Dr. Hoagland is manager of input-output systems and technology for the Research Division of IBM (Yorktown Heights). He was instrumental in developing IBM's Ramac and 1301 disk files and initiated early work on a high-density replaceable disk file.

A Fellow of the IEEE, Dr. Hoagland will argue that despite greatly increased activities in electron and optical-beam addressable storage, magnetic recording appears secure as the basic mass-data-storage technique. He will also discuss general design considerations in mass storage devices.

The meeting will be held in the second-floor auditorium of National Cash Register Co., 50 Rockefeller Plaza at 7:45 P.M. It will be preceded by a no-reservations needed dinner at Schraffts restaurant, 21 W. 51st Street at 6:00 P.M.

The IEEE **Newsletter**

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Volume 14 March, 1968 No. 7

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All communications concerning The Newsletter, including editorial matter, advertising, and mailing, should be addressed to:

THE NEWSLETTER
c/o Staff Associates
P.O. Box 275 — Morris Plains, N. J.
Telephone: 398-5524

Subscription: 75¢ per year through dues for members; $1.50 per year for non-members
Second Class Postage Paid
at Morris Plains, N. J.

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

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NORTH JERSEY
SECTION OFFICERS
1967-1968

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Executive Committee Meetings
at Verona Public Library
First Wednesday of Month
7:30 P.M.

1968

March 6 April 3
May 1 June 5

All IEEE Members Welcome

EXECUTIVE COMMITTEE COLUMN

FINANCIAL STATEMENT

At the close of every calendar year your Section is required to submit to Headquarters a Financial Statement giving an account of all monies received and disbursed during the year. The following excerpts are from the reports to Headquarters for the years 1965, 1966, and 1967.

	1965	1966	1967
Received from IEEE Headquarters	$ 5,725.50	$ 5,670.80	$ 6,329.28
Newsletter			
Received	7,600.39	8,867.29	7,467.44
Disbursed	11,084.69	11,144.98	10,439.12
Net Loss	(3,484.30)	(2,277.69)	(2,971.68)
Education Courses			
Received	5,015.25	5,487.00	10,545.00
Disbursed	3,540.56	1,480.76	7,713.19
Net Gain	(1,474.69)	(4,006.24)	(2,831.81)
Section and Group Chapter Meeting Expenses	4,439.71	2,210.61	1,625.03
Other			
Received	2,256.00	2,625.06	1,758.16
Disbursed	1,921.50	3,100.44	3,038.41
Net	(334.50 gain)	(475.38 loss)	(1,280.25 loss)
Total for Year			
Receipts	20,597.14	22,650.15	26,099.88
Disbursements	20,986.46	17,936.79	22,815.75
Net	(389.32 loss)	(4,713.36 gain)	(3,284.13 gain)

Other includes Standing Committees, Executive Committee, Section Banquet, N. Y. Metropolitan Student Council and Joint Chapter Support and Interest from Savings Account.

Assets	12/31/65	12/31/66	12/31/67
Checking Account Balance	4,816.51	8,812.81	6,583.30
Savings Account Balance	11,177.80	11,894.86	17,408.50
TOTAL	$15,994.31	$20,707.67	$23,991.80

M. M. IRVINE
Treasurer
North Jersey Section I.E.E.E.

CALENDAR

Wednesday, March 6 Page

NORTH JERSEY — GMTT 9
8:15 P.M. — Instrumentation for Radio Astronomy, Arnold Auditorium, Bell Telephone Laboratories, Murray Hill, N. J.

Tuesday, March 12

IEEE & ASME 4
6:30 P.M. — Elements of Nuclear Engineering. First of a series of ten lectures to be held at Vail Hall, New Jersey Bell Telephone, 540 Broad Street, Newark.

Thursday, March 14

JOINT METROPOLITAN ELECTRON DEVICES
8:00 P.M. — Ultra High Speed Planar Germanium Transistors and Integrated Circuits, International Telephone and Telegraph Laboratories, Nutley. 4

Tuesday, March 19

JOINT METROPOLITAN GAES
12:00 — Luncheon Meeting, Warwick Hotel, 54th Street and Avenue of the Americas (Across from New York Hilton), New York City. Topic: "The Space Program Today" 2

Wednesday, March 20

STEVENS INSTITUTE OF TECHNOLOGY
is sponsoring a bus trip to the I.E.E.E. convention. 2

Saturday, March 23 & 30

NEW YORK P & I DIVISION
11:00 A.M. — Backstage tour of the Metropolitan Opera House. 10

Monday, March 25

NEW YORK COMMUNICATION TECHNOLOGY
6:30 P.M. — System Aspect of Visual Communications. First of a series of six lectures. 9

Wednesday, March 27

NEW YORK POWER & INDUSTRIAL
6:30 P.M. — Elevators — Present and Future, Con Edison Auditorium (19th Floor) 4 Irving Place, New York. 9

JOINT METROPOLITAN ELECTRON DEVICES

Ultra High Speed Planar Germanium Transistors and Integrated Circuits

Presented By:

DR. H. N. YU
IBM
T. S. Watson Research Center
Yorktown Heights, New York

Date and Time:

Thursday, March 14, 1968
at 8:00 P.M.

Place:

International Telephone and Telegraph Laboratories
Nutley, New Jersey

Pre-Meeting Dinner:

Copperhood Restaurant (6:00 P.M.)
South of Route 3 at Park Avenue Exit

Abstract:

Because of higher carrier mobility in germanium than that in silicon, higher frequency performance with germanium devices has been predicted and realized. Some aspects of the fabrication technology of germanium planar transistors and integrated circuits, their characteristics as well as their sub-nanosecond switching performance will be described.

Biography:

B.S. — 1953, M.S. — 1954, Ph.D. — 1958 in electrical engineering from the University of Illinois. Dr. Yu worked on high speed computer design at the Digital Computer Laboratory, University of Illinois as research assistant from 1954 — 1957. He then joined IBM in the Applied Logic Department at the research laboratory in Poughkeepsie. He was engaged in exploratory solid state device work in the Advanced System Development Division from 1959 to 1962. He is currently working on high speed device technology as a research staff member at the Watson Research Laboratory.

EDUCATION COURSE
Sponsored by North Jersey Sections of
AMERICAN SOCIETY OF MECHANICAL ENGINEERS
and
INSTITUTE OF ELECTRICAL AND ELECTRONIC ENGINEERS

ELEMENTS OF NUCLEAR ENGINEERING

STARTING MARCH 12th, 1968

This series of lectures has been designed for all engineers, regardless of their background, as a fundamental course in nuclear engineering. The course will be a sequel to last year's offering, INTRODUCTION TO NUCLEAR ENERGY, with a semi-mathematical approach being used. Attendance at the course given last year is not a prerequisite for this year's course.

The course will commence with a basic review of atomic and nuclear theory to allow an orderly transition to the body of the course which will cover nuclear engineering.

The lectures on nuclear engineering will include the fission process, multiplication factor, long and short term reactivity effects, thermal and hydraulic engineering as applied to reactors, reactor fluid systems, fuel cycle and management, engineered safeguards, and safety analyses.

The lectures will be given by Mr. Frank D. Hutchinson and Mr. David C. Purdy of Gibbs and Hill, Inc., a consulting engineering firm that is a pioneer in the engineering and design of control station nuclear power plants. Both men have an extensive nuclear engineering background.

Ten meetings to be held Tuesdays from 6:30 to 8:30 P.M., starting March 12, 1968.

Location: Vail Hall, New Jersey Bell Telephone Building, 540 Broad Street, Newark, New Jersey.

Fee: Members $25.00, Non-Members $30.00, $10.00 of which is applicable to membership dues of ASME or IEEE. There is a $5.00 discount for registration received at least one week before the first session.

Registration is limited to the first 120 applicants.

Fill in the form below for advanced Registration. Registration also at the first meeting, space permitting.

ADVANCE REGISTRATION—ELEMENTS OF NUCLEAR ENGINEERING

Make Check or Money Order payable to —
A.S.M.E., North Jersey Section.
Mail to:

MR. R. P. DOUGLAS
Public Service Electric & Gas Co.
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80 Park Place
Newark, New Jersey 07101

FOR ADDITIONAL INFORMATION CALL
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Home Phone _____

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Enrollment No. _____

Fee Pd. _____ **Cash** **Check** **M.O.**

Date _____

By _____

When the right job at the right salary in the right place comes up...

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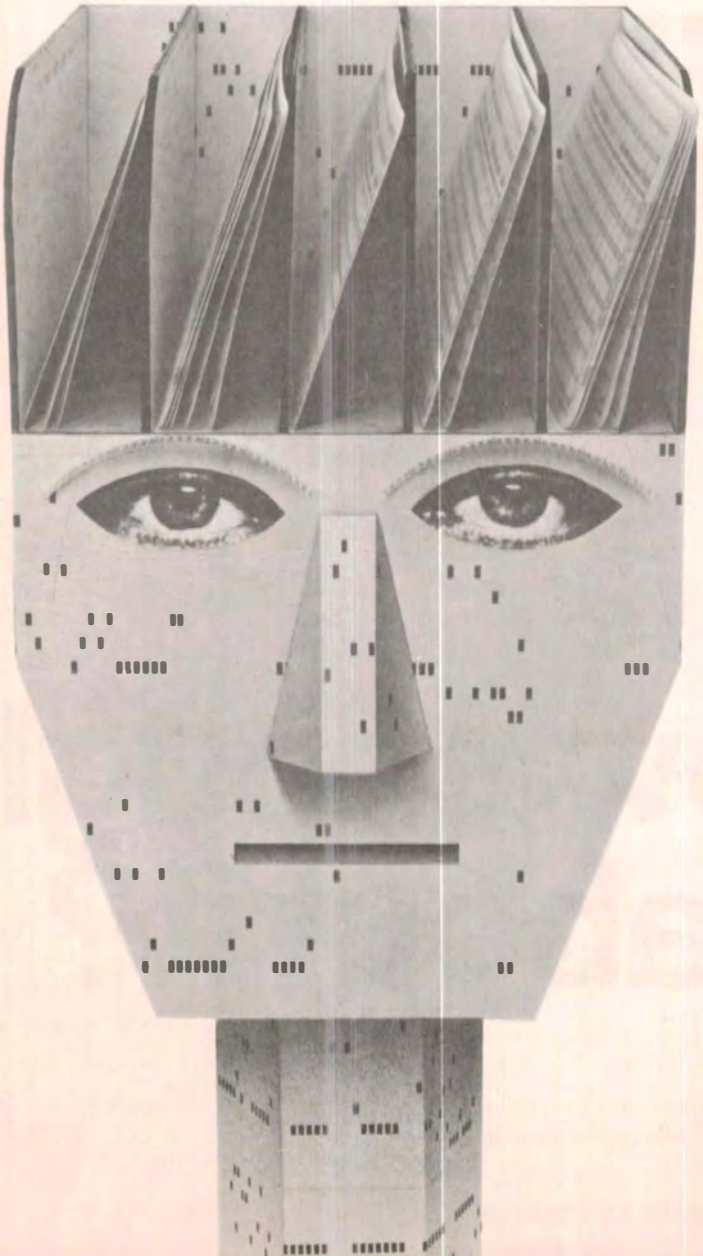

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Project Search is conducted in complete confidence, and there is never any cost to you.

Special: New York Area Program in March
There are over 250 companies with outstanding opportunities for electronic engineers in the New York area. During March, our GE-265 system has been specially programmed to match your qualifications against hundreds of unusual opportunities in this area. Personal attention by our counsellors in Connecticut, NYC, NJ, and Long Island assures discretion and confidence.

M1

PROJECT SEARCH

data sheet

NY Metro Area preference:
☐ LI; ☐ West. ☐ NYC; ☐ Conn; ☐ NJ

(It is most important that your information be complete and accurate and that you TYPE or PRINT LEGIBLY.)

Identity

Name	Date	Have you ever registered with NMR before? If so, when?
Address		Where Can You Be Reached During Interview Days? Phone:
City/Zip	State	Referred By: (If newspaper give name and date; if radio give station)
Home Phone (Include Area Code)	Business Phone (if OK to use)	Present Or Most Recent Employer

Geographical Preference (Check appropriate boxes and complete all blanks)

Depends Upon Opportunity ☐ East Coast ☐ West Coast ☐ Mid-West ☐ South ☐

Other (State)

Would You Consider Any Other Location? Yes ☐ No ☐

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Education

Degrees (List)	Major Field	Year Degree Earned	College or University	Rank in Class: Top Third	Mid Third	Lower Third

Employment Information

Position Desired

Present or Most Recent Position — From — To — Title

Duties & Accomplishments

Previous Position — Employer — City/State — From — To

Duties & Accomplishments

Previous Position — Employer — City/State — From — To

Duties & Accomplishments

General Information (Summarize your overall qualifications and experience in your field. List any pertinent information not included above.)

Current Annual Base Salary	Total Years Of Experience	Date Available	Employed ☐	Unemployed ☐	Self-Employed ☐	
Level of Security Clearance:	U.S. Citizen ☐	Non U.S. Citizen ☐	My Identity May Be Released To:	Any Employer ☐	All But My Present Employer ☐	No Employer ☐

Please include me in the next interview Center in my area ☐

Clip out and mail with a copy of your resume (if you have one). No fee or charges.

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SOME OF THE INTERESTING OPPORTUNITIES IN THE NEW YORK AREA

ELECTRICAL TESTING LABS, INC. at 79th Street and East End Avenue, Manhattan. Seeking project consultants for testing problems. Apply through NMR or direct to Mr. Hoffman Beagle, President.

THE SHELL COMPANIES at 50 West 50th Street, Manhattan. Opportunities for electronic engineers with experience in process control, instrumentation, opsearch and EDP systems at corporate HQ and nationwide locations. Apply through NMR or Mr. Hugh Wynne at 50 West 50th.

BURROUGHS CORPORATION—ELECTRONIC COMPONENTS DIV., Plainfield, New Jersey. Sales engineers, digital and logic circuit designers, memory designers, semiconductor and integrated circuit specialists. Apply through NMR or Mr. Daniel Altiere, Personnel Supervisor.

WESTERN UNION, Manhattan and New Jersey. Communications engineers, programmers, systems analysts, and mathematicians. Apply through NMR or contact Mr. Charles Naramore at 60 Hudson Street in Manhattan.

RECONNAISSANCE DYNAMICS, Bethpage, Long Island. Radar and antenna systems engineers, data processing and display engineers, solid state reliability engineers. Apply through NMR, attn.: Mr. Bergen.

HAMILTON STANDARD,
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PRODUCT DIVERSIFICATION in Space Systems, Bio-Medics, Digital Data Systems, Guidance Systems, Flight Controls, Electron Beam Machines and Ground Support Equipment continues to create new positions in this Division of United Aircraft Corporation—Design—Analysis—Product Development—Reliability—Instrumentation. Located midway between Hartford, Connecticut and Springfield, Massachusetts. Send resume to:

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PERKIN-ELMER CORPORATION, Wilton, Connecticut. Electronic engineers and Physicists interested in optics, lasers, precision instruments, infra red and chromatography for aerospace, medical, textile and agricultural applications. One of the nation's fastest growing technical companies situated in pleasant rural surroundings in southern Connecticut. Apply to Mr. Russell Byles, Perkin-Elmer Corp., 50 Danbury Road, Wilton, Connecticut or mail in NMR data sheet.

REFLECTONE ELECTRONICS DIV., Otis Elevator Co., 2051 West Main Street, Stamford, Conn. Openings in system design and development of digital hardware. Also programming on real time simulation operations. Work involves computer simulation of operations to determine hardware and software requirements. Mail in NMR data sheet or contact Mr. John Gemperli at Reflectone.

NMR

POWER & INDUSTRIAL DIVISION

Elevators — Present and Future

At the March general meeting of the Power and Industrial Division Elevators —Present and Future will be discussed. The first speaker will be Charles W. Lerch, President of Charles W. Lerch & Associates, Elevator Consulting Engineers. Mr. Lerch will discuss the future of vertical transportation including the tower-like office building of tomorrow. He will also cover the future of the elevator industry with respect to standards of performance, design, manufacture, construction and maintenance.

The next speaker will be John Lusti, Chief Engineer of the Otis Elevator Company. Mr. Lusti's subject will be supervisory control of elevator systems. He will discuss how and why elevator systems determine what to do in response to passenger demand. Mr. Lusti will be followed by William C. Sturgeon, Editor of Elevator World magazine. Mr. Sturgeon will discuss the European lift industry with particular emphasis on standardized units including stock-piling, production — line flow, assembling packages, material flow to and upon the job and the packaged penthouse and shaftway.

Mr. John Suozzo, Manager of the Engineering Department of the Elevator Division of Westinghouse Electric Corporation will round out the program. Mr. Suozzo will discuss the motion control section of the elevator system with particular emphasis on the electrical control system.

The details for the meeting are:

Topic:
"Elevators—Present and Future"

Place:
Con Edison Auditorium (19th Floor)
4 Irving Place
New York, N. Y. 10003

Date:
Wednesday, March 27, 1968

Time:
6:30 P.M.
Refreshments served 6:00-6:30 P.M.

NEW YORK CHAPTER
COMMUNICATION TECHNOLOGY GROUP

VISUAL COMMUNICATIONS

With voice communication now very much a way of life, we as a society are looking toward broader horizons. Many times we have heard the expression "a picture is worth a thousand words." In a series of six lectures on "VISUAL COMMUNICATIONS", we will investigate how you can get this picture from one place to another without mailing it. These lectures will be presented by the Communication Technology Group, New York Chapter, on Monday nights beginning March 25, 1968. These lectures will start at 6:30 P.M. at a location to be announced later.

The lectures are:

1. March 25, 1968 — System Aspect of Visual Communciations — Mr. Ray W. Gast — New York Telephone Company
2. April 1, 1968 — PICTUREPHONE Service Speaker to be announced
3. April 8, 1968 — Slow Scan Television Systems Speaker to be announced
4. April 15, 1968 — Space Television Systems Speaker to be announced
5. April 22, 1968 — Educational Television (ETV) Systems Speaker to be announced
6. April 29, 1968 — Community Antenna Television (CATV) Systems Speaker to be announced

Make check payable to "Communication Technology Group, New York Chapter, IEEE." Registration fees for the full series are:

$5.00 for IEEE members, $8.00 for non-members, and $1.00 for full-time students. Register early as the audience size will be restricted. Tickets for the attendees will be distributed at the first lecture.

MR. PAUL LENNER
Room 1230
New York Telephone Company
330 Madison Avenue
New York, New York 10017

Please enroll me in the Communication Technology Group's Lecture Series on "Visual Communications."

Member, $5.00 ( ) Non-member, $8.00 ( ) Full-time Student, $1.00 ( )

Name _____

Affiliation _____

Mailing Address _____

_____

Telephone _____

Please supply list of all applicants if additional applicants fees are included.

NORTH JERSEY GMTT

Instrumentation for Radio Astronomy

Date:
March 6, 1968

Time:
8:15 P.M.

Place:
Arnold Auditorium
Bell Telephone Laboratories
Murray Hill, New Jersey

Speaker:
MATTHEW T. LEBENBAUM
Airborne Instrumentation Laboratory

Pre-Meeting Dinner:
Wally's Tavern
Watchung, New Jersey
at 6:30 P.M.

The electronic engineer is an essential ally of the radio astronomer in probing deeper and deeper into the universe, but the engineer must have some knowledge of the problems to which his equipment is to be applied. In this lecture, some background will be given as to the origins of this new science, and a 20 minute color-sound movie depicting the various fields within radio astronomy will be shown. The speaker will then talk about work in which his group has been involved in instrumenting astronomers: 1. a world-wide network of solar burst radiometers, 2. an ultra-low noise radiometer system for discrete object investigation and 3. a phased-locked oscillator system for use in a very long base-line interferometry.

Matthew T. Lebenbaum

Received his B.A. Degree from Stanford University and his M.S. from M.I.T. in 1938 and 1945, respectively.

During the war-time years he was associated with the Radio Research Laboratory of Hartford University both in Cambridge and overseas. After the war he joined Airborne Instrumentation Laboratory, Division of Cutler-Hammer, Inc.

At the present time he is Director of the Applied Electronics Division. He has been concerned during this entire period of time with reception techniques, with special emphasis on noise and noise measurement, and the development of low noise receiving systems. His division has made significant contributions to instrumentation for radio astronomers both in the United States and abroad.

1968 Board of Directors Elected by Institute of Electrical and Electronics Engineers

New York—Dr. Seymour W. Herwald, Vice President, Westinghouse Electric Corporation, 3 Gateway Center, P.O. Box 2278, Pittsburgh, Pennsylvania 15230, newly elected President of the Institute of Electrical and Electronics Engineers (IEEE), announced the election by the IEEE Annual Assembly to the IEEE Board of Directors of the following:

Mr. Robert W. Gillette, Division Engineer, Consolidated Edison Company of New York, Inc., 4 Irving Place — Room 1250-S, New York, New York 10003 — (IEEE Director-at-Large.)

Dr. John N. Shive, Director, Education and Training Center, Bell Telephone Laboratories, Inc., Holmdel, New Jersey 07733. Dr. Shive has also been appointed Chairman of the newly created Educational Activities Board. (IEEE Director-at-Large.)

Dr. W. H. Huggins, Professor, Electrical Engineering, The Johns Hopkins University, Baltimore, Maryland 21218. (IEEE Director-at-Large.)

Mr. Glenn A. Fowler, Vice President, Sandia Corporation, P.O. Box 5800, Albuquerque, New Mexico 87115. (IEEE Director-at-Large.)

Dr. Fritz E. Borgnis, Professor, Federal Institute of Technology, Sternwartstrasse 7, 8006, Zurich, Switzerland. (IEEE Director.)

Elected as Vice Presidents by the Annual Assembly held January 4, were Dr. James H. Mulligan, Jr., Chairman, Department of Electrical Engineering, School of Engineering and Science, New York University, Bronx, New York 10453 (IEEE Vice President — Technical Activities) and Dr. F. Karl Willenbrock, Provost, Karr Parker Engineering Building, State University of New York in Buffalo, Buffalo, New York 14214 (IEEE Vice President — Publication Activities).

Dr. William G. Shepherd, Vice President, Academic Administration, 213 Morrill Hall, University of Minnesota, Minneapolis, Minnesota 55455, IEEE's Senior Past President, was elected by the Annual Assembly to serve in the office of Secretary for 1968. Dr. Harold Chestnut was elected by the Annual Assembly to hold the office of Treasurer during 1968. Dr. Chestnut is Manager of Systems Engineering and Analysis of the Research and Development Center, General Electric Company, Building 37-577, One River Road, Schenectady, New York 12305.

Dr. Herwald, along with Mr. Lynn C. Holmes, were elected President and Vice President, respectively, in the Fall of 1967 and assumed office as of January 1, 1968. Mr. Holmes is Assistant to the Director, Research and Engineering, General Dynamics Electronics Division, 1400 North Goodman Street, Rochester, New York 14601.

The following Directors, also elected in the Fall of 1967, assumed office on January 1, 1968:

Dr. Hubert Heffner, Professor of Applied Physics and Electrical Engineering, Division of Applied Physics, W. W. Hansen Laboratories of Physics, Stanford University, Stanford, California 94305 (IEEE Director-at-Large).

Mr. Charles F. Savage, Manager, Engineering Placement and Professional Relations, General Electric Company, 570 Lexington Avenue, New York, New York 10022 (IEEE Director-at-Large).

Dr. Harry R. Mimmo, Professor, Cruft Laboratory, Harvard University, Cambridge, Massachusetts 02138 (IEEE Regional Director — Region 1).

Mr. Robert G. Elliott, Vice President, Planning, Southern Bell Telephone and Telegraph Company, P.O. Box 2211, Atlanta, Georgia 30301 (IEEE Regional Director — Region 3).

Mr. William T. Sumerlin, Manager, Engineering Reliability, McDonnell Douglas Corporation, Dept. 250, Building 32, Room 201, Box 516, St. Louis, Missouri 63166 (IEEE Regional Director — Region 5).

Mr. Robert H. Tanner, Manager, Scientific Information Services, Northern Electric Laboratories, P.O. Box 3511, Station C, Ottawa, Ontario, Canada (IEEE Regional Director — Region 7).

Mr. Francisco A. Hawley, Technical Manager, Condumex, S. A., Poniente 140 No. 720, Mexico 16, D. F. (IEEE Regional Director — Region 9).

The remaining members are:

Junior Past President

Mr. Walter K. MacAdam, Engineering Vice President, New York Telephone Company, 140 West Street, New York, New York 10007.

Directors-at-Large

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Dr. Edwin L. Harder, Headquarters Engineering Staff, Westinghouse Electric Corporation, Research and Development Center, Pittsburgh, Pennsylvania 15235.

Dr. John G. Truxal, Provost, Polytechnic Institute of Brooklyn, 333 Jay Street, Brooklyn, New York 11201.

Regional Directors

Dr. John G. Brainerd, Director, The

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POWER & INDUSTRIAL DIVISION

BACKSTAGE AT THE (NEW) MET SATURDAYS, MARCH 23 & 30, 1968 AT 11:00 A.M.

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

The 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 — huge backcloths traveling on a track around the entire stage for depicting motion or depth.

The tours have been arranged for Saturday Morning, March 23 & 30, 1968 at 11:00 A.M.

In conjunction with the tour a very limited block of tickets has again been reserved for our group for the matinee performances of Manon Lescaut on March 23 and L' Elisir d'Amore on March 30. All tickets are $13.50 and check or money order made out to P&I Division, New York Section, IEEE must be received by March 8. Because of the short supply of tickets, requests must necessarily be limited to two.

Eating facilities are available at the Top of the Met and the Grand Tier in Lincoln Center.

Requests for reservations for either the tour or the Opera performance will be handled on a first come—first served basis. And please, based on last year's volume of requests, no phone calls. And only those requests accompanied by a stamped self-addressed envelope (plus the check or money order for Opera tickets if requested) can be honored or acknowledged.

Please send form and stamped self-addressed envelope to:

Frank Farinella, 80 Park Place, Newark, New Jersey 07101 — Room 7325.

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

Name _____

Address _____ Telephone _____

TOUR

2 tickets for March 23 only March 23 or 30 March 30 only

OPERA

Enclosed is my check or money order ($13.50 per ticket, limit of two tickets) made out to P&I Division, New York Section IEEE for tickets for the Saturday matinee opera performance on

March 23 only March 23 or 30 March 30 only

Membership News

North Jersey welcomes the following new members to the I.E.E.E.:

ASH, H. M.
AZEVEDO, N. W.
BAUER, W. F.
BROWN, W. F.
BUCHER, PAUL E.
BYRNE, JOHN P.
CHOCIEY, E. F.
CIRRI, E. R.
DIXON, R.
FORSTER, E. O.
GILBERT, E. N.
HERNANDEZ, A.
HIGGINS, E. F., JR
HOFFNER, D. H.
HYMAN, S. E.
JAMES, W. T. 2nd
KAPLAN, R. I.
KERN, ROBERT E.
KOLK, P. E.
KORONKA, S. G.
LJUBICICH, G. A.
LUBARS, H.
McEVOY, J. F.
McCORMACK, B. E.
NEUMAN, D. O.
PATTERSON, W. E.
PERARA, T. E.
SEALER, D. A.
SEVERINO, P. J.
SMITH, G. W.
STRASSER, B. E.
SWANK, J. D. 2nd
SZEBENYI, T. A.
TEICH, R. M.
TIERSTEN, H. F.
TRILLING, R. H.
UNGER, S. H.
WALTON, G. W.
WEIS, THOMAS J.
WITT, WALTER O., JR.
WITTMANN, A. K.

A welcome is also given to the following members who have been reinstated:

ADAMS, R. T.
ALLEN, H. S., JR.
ALTONJI, E. R.
BERGER, F. B.
CARVELLAS, J. N.
CHERKASKY, S. M.
COMBS, D. F.
CROXVILLE, W. B.
DAGGY, R. L.
DE YOREO, R.
DODDS, W.
DOYLE, E. F.
ERICKSON, J. R.
FARLEY, H. G.
GILLESPIE, H. .S
GREEN, P. R.
GREENQUIST, R. E.
GURNEY, S. P.
HEWITT, H., JR.
HINES, E. D.
IMM, J. J.
JOHNSON, R. J.
KILLEN, D. E.
KOVANIC, E. F.
LEE, WILLIAM, C. Y.
LEE, WILLIAM C. Y.
LIBES, S.
LUCK, J. O.
MacCULLOUGH, T. B.
McCARTHY, J. A.
McLAUGHLIN, J. R.
MERCER, M. C., JR.
MEYERS, J. G.
MILANO, J.
MISRA, R. P.
MOROS, W. A.
NEWHALL, E. E.
OSTRANDER, W. M.
OSWALD, H.
PARKER, A. M.
PENHUNE, J. P.
POLCYN, S. J., JR.
SANDAHL, C. R.
SCHMIDT, W. F.
SCHNEIDER, IRV
SCHRAMM, C. W.
SILVER, A. S.
SLEESMAN, R. B.
SMITH, E. J.
STEGEMAN, A. J.
STREISAND, K.
SUNDBERG, ALF
SWIFT, R. A.
VAUGHAN, C. B.
VEDRAL, J. W., JR.
WOJCIK, R.

Congratulations are due from all of us to the following members who have transfered to a higher grade:

BELCHER, R.
BERRANG, J. E.
BOROSKA, J. G.
CHIRAVALLE, JOHN A.
COLE, ALLAN S.
DANIELE, A.
EHRENBERG, J. R.
ELWELL, A. F.
FORSYTH, GARY F.
FUZZI, G. F.
GLASSMAN, M.
JADACH, R. J.
KLEPACZ, RICHARD J.
KONIG, G. F.
KUBALA, R. S.
KUZMIC, S.
LANDRY, RICHARD J.
LIPSIG, J.
LUST, M.
McGUIRK, F. A., JR.
MEHTA, N. I.
PETRYSIAN, J.
PUZIO, E. A.
RABINER, L.
RAYMOND, HOWARD M. 3rd
SAMMON, A. C.
SANDERS, A. C., JR.
SANZARI, A. J.
SCHWEIZER, J. H.
SCIZAK, BRIAN S.
SEIFER, ARNOLD D.
SIMACEK, W.
SMITH, E. W.
SOLBERG, M. A.
STERLING, R. S.
TIEN, J. M.
USOWICZ, T. W.
WALCUTT, J. G.
WOOD, J. A.
ZELONIS, JOHN R.

MAITLAND McLAREN
Membership Chairman

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Moore School of Electrical Engineering, University of Pennsylvania, Philadelphia, Pennsylvania 19104 (Region 2).

Mr. David M. Hodgin, Collins Radio Company, 5225 "C" Avenue, N.E., Station 106-21, Cedar Rapids, Iowa 52406 (Region 4).

Dr. Stanley F. Kaisel, President and General Manager, Microwave Electronics Division, Teledyne, Inc., 3165 Porter Drive, Palo Alto, California 94304 (Region 6).

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Mr. Haraden Pratt, 2612 Northeast Seventh Street, Pompano Beach, Florida 33062.

Mr. Elgin B. Robertson, Chairman of the Board, Elgin B. Robertson, Inc., 1339 Plowman, Dallas 3. Texas.

Undersea Generator Will Power Transmitter in Float

An undersea radioisotope generator to power an oceanographic buoy platform, which will beam scientific data to ships, airplanes, and satellites, has been delivered to the U. S. Naval Facilities Engineering Command in Washington, D. C.

The buoy platform, containing an Interrogation Recording Location System (IRLS), is an experiment by the U. S. Naval Oceanographic Office to determine the feasibility of locating and obtaining scientific surface data from ocean platforms by unmanned satellites. It is one of several such experiments being conducted in connection with NASA's Nimbus-B weather satellite program.

The radioisotope generator is a 25-watt undersea model produced by Martin Marietta Corporation. Attached to a taut wire moored buoy 76 meters beneath the Atlantic Ocean's surface, the generator will supply electric power to the IRLS inside a surface spar float. The buoy platform, moored off the coast of Puerto Rico, will be instrumented with sensors for making environmental measurements such as sea states, ocean currents, and wind velocities. The IRLS transmitter will telemeter the data from a specially designed antenna mounted on top of the spar float. As NASA's Nimbus-B satellite passes overhead twice a day it will interrogate the platform and store the data for later playback as it passes over a central ground command station. The data will then be relayed to NASA's Goddard Space Center for processing.

If the IRLS experiments are successful, similar unmanned stations using radioisotope power could be placed at remote spots throughout the world to facilitate data collection and telemetering for oceanography.