



The IEEE

Newsletter

The Magazine of the North Jersey Section

NORTH JERSEY SECTION

IEEE FELLOW AWARDS



Robert A. Baker



Anthony M. Casabona



Donald A. Chisholm



Eugene I. Gordon



Richard W. Hamming



Herbert W. Lensner



H. A. Stone, Jr.

To be honored at

ANNUAL BANQUET AND DANCE

Robert Treat Hotel

Newark, N. J.

Saturday, February 17, 1968 — 6:00 P. M.

See page 7 for reservations

Wheeler Laboratories, Inc.

Subsidiary of Hazeltine Corporation
Consultation — Research — Development
Radar and Communication Antennas
Microwave Assemblies and Components
Laser Devices and Applications
Harold A. Wheeler and Engineering Staff
Main office:
Great Neck, N. Y. HUnter 2-7876
Antenna Laboratory: Smithtown, N. Y.

JOINT MEETING NORTH JERSEY SECTION POWER GROUP AND NORTH JERSEY SECTION COMPUTER GROUP

Date:

Tuesday, January 16, 1968

Time:

7:30 P.M.

Place:

Room 3171-A
Public Service Electric and
Gas Company
80 Park Place
Newark, New Jersey

Topic:

SECURITY AND
DISPATCH COMPUTERS

Mr. Henry Y. Tsien of the Electric Engineering Department, Public Service Electric and Gas Company, will give a talk on the technical features of the Public Service dispatch computer and data acquisition systems. Mr. Tsien will also cover the software consideration for time-sharing, data display and the PJM dispatch computer.

Mr. Peter Van Olinda of the System Planning and Development Department, Public Service Electric and Gas Company, will cover security applications. This topic will include the monitoring of transmission line voltages and loadings, calculating the effect of possible contingencies and the scheduling of outages.

The program will be concluded with a short demonstration of the Public Service dispatch computer if consistent with the activities of the load dispatcher at that time.

Refreshments will be served following the program.

Joint Metropolitan Instrumentation and Measurement

RATIOMETRIC TECHNIQUES

New York Joint Chapter on Instrumentation and Measurements, of IEEE, will sponsor a full day symposium on Ratiometric Measurement Techniques on February 27, 1968 to be held at the Western Union Auditorium, 60 Hudson Street, New York, New York.

Discussion of D.C. Ratiometric Techniques will be the subject of the morning session, starting at 9:00 A.M. The afternoon will be given to similar A.C. measurements, to standards for inductance and capacitance, and to servo and resolver bridges.

A detailed agenda and form for registration will appear in next month's issue.

Executive Committee Column

Hi Fellows —

The North Jersey Area is without a doubt one of the most fertile fields for engineering talent of any Section of the United States. Our Section is indeed fortunate to have within its boundaries many names of both individuals and corporations which are of world reputation in the fields of communication, instrumentation, equipment manufacturing, and systems engineering. And if this were not enough, data recently released on the State of New Jersey reveal that this state continues to stand as a leader in corporate expenditures for research and development that is done within our State, and planned expenditures for the next several years will continue at a very high level. We can only conclude from this that the North Jersey Section will continue to grow, not only in numbers but in the professional achievement of its membership for the foreseeable future.

With this in mind, it is no wonder that the North Jersey Section is singularly honored each year by having several of its members elected to the grade of Fellow, the highest form of professional recognition the Institute can confer on its members. This award is made by invitation only, and the individuals so elected achieve this high honor only through the efforts of a great many people. While it is not possible to find out just how many of our members are nominated in the North Jersey Section in any given year, it is nevertheless true that many more are nominated than are elected each year.

It is interesting to note that there is more than one method by which a Fellow nomination can be made. One is through the efforts of individuals who take it upon themselves to draft the nominating petition and send it directly to Headquarters. The other is through the action of the Section Awards Committee who, over a period of an operating year, will review many candidates and prepare and submit their own nominating petitions. It is then in the hands of the National Awards Committee to review all the petitions that are submitted and from these select only a handful of the most deserving individuals who are then elected to the Fellow grade.

The several individuals elected from the North Jersey Area this year, as in previous years, typify the truly diversified cross section of the engineering talent with which this Section is so richly endowed. The North Jersey Section Executive Committee, in the name of the entire Section membership, offer the new Fellows our warmest congratulations and best wishes for continued success. It is in the work of men such as these that we find the true value and meaning of IEEE.

And to those who have worked so hard, and contributed so much, and have failed for one reason or another to achieve recognition at this time, we can only say, "keep trying." After all, that is what the profession of engineering is all about.

J. G. O'GRADY

Vice Chairman

North Jersey Section

North Jersey Section Spring 1968 Study Group Electrical Underground Residential Distribution

Time:

7:00-9:00 P.M. starting Wednesday
February 21, 1968

Location:

Jersey Central Power &
Light Company
Headquarters Building
Madison Avenue (Rt. 24) at
Punchbowl Road
Morristown, New Jersey

The Registration Fee will be:

Early registration (before February 14, 1968)	
Members	\$20.00
Non-Members	\$25.00
Late registration	
Members	\$25.00
Non-Members	\$30.00

Registration forms will be available in the February issue of the Newsletter or can be obtained by writing or calling:

MR. J. C. GASS

Allis-Chalmers Mfg. Co.

2222 Morris Avenue

Union, New Jersey

Phone: 687-3700

MR. P. E. WATSON

Jersey Central Power & Light Co.

Madison Ave. at Punchbowl Road

Morristown, New Jersey

Phone: 539-6111, Ext. 417

The following sessions are planned:

FUNDAMENTAL CONCEPTS AND SYSTEM DESIGN

Session #1

Wednesday, February 21, 1968

The evolution of U.R.D., its significance today and its future

CABLE DESIGN AND APPLICATION

Session #2

Wednesday, February 28, 1968

Primary, secondary and service cable de-

Continued on Page 5

Published monthly except July & August by the North Jersey Section of the Institute of Electrical & Electronics Engineers, Inc. Office of Publication: 9 Little John Road, Morris Plains, N. J.

Volume 14 January, 1968 No. 5

Deadline for all material is the 25th of the second month preceding the month of publication.

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

Editor David T. Wiener
Business Manager M. M. Perugini
Feature Editor Fred T. Grampp
Student Activities Editor Alan H. Stolpen
Associate Editor Martin Hollander
Associate Editor Emil C. Neu

NORTH JERSEY SECTION OFFICERS 1967-1968

Chairman Bernard Meyer
Vice Chairman Joseph G. O'Grady
Treasurer Merle M. Irvine
Secretary Herbert E. Blaicher, Jr.
Member-at-Large Robert G. Sokalski
Member-at-Large Carl C. Torell
Past Chairman Stephen A. Mallard

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

1968

January 3 February 7
March 6 April 3
May 1 June 5

All IEEE Members Welcome

CALENDAR

Wednesday, January 10

Page

NORTH JERSEY — AUTOMATIC CONTROL

8:00 P.M. — "Holography" by M. H. Zambuto of Newark College of Engineering, at Arnold Auditorium, Bell Telephone Laboratories, Murray Hill, N. J.

Thursday, January 11

JOINT METROPOLITAN — ELECTRON DEVICES

8:00 P.M. — "Recent Progress in Junction Lasers" by L. A. D'Asaro of Bell Telephone Laboratories, at General Telephone and Electronics Labs, 208-20 Willets Point Boulevard, Bayside, L. I., N. Y.

Tuesday, January 16

NORTH JERSEY — POWER GROUP

NORTH JERSEY — COMPUTER GROUP

7:30 P.M. — "Security and Dispatch Computers" by H. Y. Tsien and P. Van Oinda of Public Service Electric and Gas Company, at Room 3171-A, Public Service Electric and Gas Company, 80 Park Place, Newark, N. J.

Thursday, January 25

NEW YORK POWER AND INDUSTRIAL DIVISION

1:00 P.M. — Visit to Ford Assembly Plant at Mahwah, N. J.

Saturday, February 17

NORTH JERSEY SECTION

6:00 P.M. — Annual Dinner Dance and Reception honoring the newly elected Fellows of the IEEE — Robert Treat Hotel, 50 Park Place, Newark, N. J.

Wednesday, February 21

NORTH JERSEY SECTION 6 LECTURE SERIES

7:00 P.M. — Fundamental Concepts and System Design at Jersey Central Punchbowl Room, Madison.

Tuesday, February 27

JOINT METROPOLITAN INSTRUMENTATION AND MEASUREMENT

9:00 A.M.—D.C. Ratiometric Techniques, Western Union Auditorium, New York.

Wednesday, March 6

Spring 1968 Lecture series starts

Tuesday, March 19

JOINT METROPOLITAN GAES

Luncheon at 68 international convention sponsored by Aerospace and electronic systems.

re Technipower's
CM-95 Series
power modules

they're loaded!

Technipower's DC-DC point-of-load regulators are packed with unique extras. E.G.:

- Full 1.5 ampere capability;
- Fully operational, no extras;
- Many output voltages available, either pos.-common or neg.-common.
- Input and output terminals insulated from case;
- Protected against output shorts;
- \$30 each — much less in quantity!

Regulation $\pm 0.5\%$ for full 30% input or full load change, $\approx 200:1$ input ripple attenuation, $\pm 5\%$ output v. adj., operation to 95°C case temp.

Write or call for information



TECHNIPOWER

Benrus Center, Ridgefield, Connecticut 06877

A BENRUS Subsidiary

Rep: Instrumentation Sales Co., Box 403, Ridgewood, N.J. 07541. 201-G15-5210



**Joint Metropolitan
Electron Devices
RECENT PROGRESS IN
JUNCTION LASERS**

Presented by:

L. A. D'ASARO
Bell Telephone Laboratories, Inc.
Murray Hill, New Jersey

Date and Time:

Thursday, January 11, 1968
at 8:00 P.M.

Place:

General Telephone and
Electronics Labs
208-20 Willets Point Boulevard
Bayside, Long Island, N. Y.

Pre-Meeting Dinner:

Kam-Fong Restaurant (6:00 P.M.)
19-11 Francis Lewis Boulevard
(near Willets Point Boulevard)
Whitestone, Long Island, New York

Abstract:

The junction laser has several properties more favorable for widespread use than other lasers: submillimeter dimensions, rugged construction, internal pumping from a current source and low inherent cost. Better thermal design and the use of diamond as a heat sink material has increased the maximum temperature for continuous operation to 200°K. The talk will review the above aspects and also improvements in mode control, power output, and the recent discovery of Q-switching.

Biography:

L. A. D'Asaro received the B.S. and M.S. degrees in physics from Northwestern University, and the Ph.D. from Cornell University.

Since 1955 he has been at Bell Telephone Laboratories, Murray Hill, New Jersey, where his work has been on semiconductor devices.

**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

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 —

**Student Affairs
Student Chapter of The Month
Newark College of Engineering
Day Branch**



The Newark College of Engineering Day Student Branch boasts of an Executive Committee with wide and varied interests. From left to right, seated, they are: Mr. Steve Hoffman, Branch Vice-Chairman, who is also a brother of Pi Kappa Phi and Phi Eta Sigma (the Freshman Honor Fraternity), and Mr. Pat Parkinson, Branch Chairman, the 1966 Annual Students Night coordinator. In addition to his IEEE duties, Pat Parkinson is the Chairman of the Operating Board of the NCE Student Center, a brother of Pi Kappa Phi, a pledge of Omicron Delta Kappa (National Leadership Fraternity), and a member of the 1967 Collegiate Who's Who.

Standing behind the Branch Chairman and Vice Chairman, from left to right are: Mr. Stan Jarocki, the Branch Business Manager, whose other activities include the Photo Club and the Association of Computing Machines; Mr. Herb Ohlandt, the Branch Secretary, who also serves as Vice-Chairman of the Metropolitan Student Council of the IEEE; Mr. James Earle, Branch Faculty Advisor and coordinator of the 1967 Annual Students Night; Mr. Clark Gellings, the Branch Program Committee Chairman, who has recently been elected Chapter President of Alpha Phi Omega (the National Service Fraternity), and is Treasurer of the NCE Photo Club; and Mr. George Estell, Coordinator of the Branch EE Test File Committee, who is also a brother of Sigma Pi Fraternity.

Members of the Executive Committee not shown in the above photograph include: Mr. Rick Donnelly, Branch Treasurer, who also serves as Secretary of Pi Kappa Phi; Mr. John Skurka, the "Feedback Committee" Chairman, who is also Vice-President of the Theater Club; and Mr. Dick Comerford, the Publicity Committee Chairman, who serves as Chapter President of Sigma Delta Sigma, and is a pledge of Eta Kappa Nu, the Electrical Engineering Honor Fraternity.

With an active membership in excess of 200 students, the Newark College of Engineering Student Branch of the IEEE is the largest student branch in Northern New Jersey.

The prime objectives of the NCE Day Student Branch fall in the areas of student participation programs, Student-Faculty "Feedback" meetings, and Electrical Engineering Test Files.

The Program Committee, under the leadership of Clark Gellings, has brought forth a fine array of speakers of general interest to Electrical Engineering students. Branch program meetings are open to members and non-members of the IEEE alike, and have been a successful means of increasing the Branch membership in the past. Topics presented this past fall included Graduate Education, Laser Technology and Applications, Semiconductors, Electronic Equipment Marketing, and System Navigation.

News of Interest

Fairleigh Dickinson University — The Fall student membership drive draws to a close with a record 80% membership in the Class of '69.

Stevens Institute of Technology — Dr. Stanley H. Smith, Assistant Professor of Electrical Engineering has assumed the position of Faculty Advisor to the Student Branch in place of Associate Professor Harold W. Phair.

Dr. Robert Geldmacher, Chairman of the Department of Electrical Engineering has presented the Stevens Tech. Student Branch with a private E.E. Laboratory for use by Branch members on individual and group projects.

In December 13 the Student Branch was bussed to Fishkill, New York by the IBM Corporation for a tour of their Components Plant.

URD

signs for direct burial, duct, and cable in conduit systems

TERMINATIONS AND SPLICING

Session #3

Wednesday, March 6, 1968

Termination design theory: electrical and physical

TRANSFORMER DESIGN AND APPLICATION

Session #4

Wednesday, March 13, 1968

Transformer design criteria

SYSTEM SECTIONALIZING AND PROTECTION

Session #5

Wednesday, March 20, 1968

INSTALLATION PRACTICES OPERATION AND MAINTENANCE

Session #6

Wednesday, March 27, 1968

Coordination with other utilities

HIGH RISE APARTMENT DISTRIBUTION SYSTEMS (Vertical U.R.D. Systems)

Session #7

Wednesday, April 3, 1968

THREE PHASE COMMERCIAL AND HIGH DENSITY GARDEN APARTMENTS THE APPLICATION OF U.R.D. PRACTICES

Session #8

Wednesday, April 10, 1968

MANAGEMENT GAMES SEMINAR

JANUARY 25 - APRIL 18, 1968

NOW! MANAGE YOUR OWN COMPANY

The Metropolitan Chapter, Engineering Management Group/IEEE is sponsoring a MANAGEMENT GAMES SEMINAR designed to help you learn, by operating a simulated company, the financial aspects of corporate management. You learn in your own home. And you learn, not by the usual reading of dry textbook material, but by actually making operating decisions for a realistic company and competing, in a simulated environment, against similar organizations.

For six two week periods, beginning January 25, 1968 you make all the operating decisions for a simulated company. A few of these are:

- Production Levels
- Research and Development Budget
- Advertising Expenditures
- Selling Price and Period of Payment

Each of these six periods represents two months of simulated time. For each period, you will mail your decisions to the ANALYSIS CENTER. The ANALYSIS CENTER will, in turn, inform you (on the basis of your decisions in relation to your competitors) how many units

you sold in the previous period and other financial data. From this information you will prepare the forms which define the state of your company—the Balance Sheet, Income Sheet and Cash Balance Form.

NO PRIOR UNDERSTANDING OF ACCOUNTING IS REQUIRED

You will be provided with all the information and background you need to operate your company. The materials you will receive include:

1. A set of forms for your Company.
2. A booklet "Managing a Company" which defines in detail the company you will operate and provides step-by-step instructions for completing the forms.
3. A booklet "Corporate Financial Reporting" which provides a simplified, easy to read description of corporate accounting principles.
4. "What is a Business?", a brief article defining business, its aims and responsibilities.
5. "Hints for Decision-Making", a brief article describing break-even analysis, a technique which will aid you in making your managerial decisions.

It is not necessary to attend any meeting in order to participate. Your materials are all self-explanatory. However, for those who have questions or comments regarding their materials there will be an Introductory Meeting on Thursday, January 25, 1968 at 8:00 P.M. at the United Engineering Center, 345 East 47th Street, New York City.

REGISTER NOW!

NEED FURTHER INFORMATION?

CALL HANK OPPENHEIMER

(203) 327-2000

or

HUGH MULLEN

(212) 929-9117

REGISTRATION

Registration fee for members of IEEE is \$20. The fee for non-members is \$24. Registration after January 15th is \$5 additional. The registration fee includes all material and forms, which will be mailed to the Registrant. Make checks payable to "Metropolitan Chapter EMG/IEEE" and remit to:

EMG Management Games Seminar

c/o H. N. Oppenheimer

198 East Garden Road

Larchmont, New York 10538

I wish to register for the EMG Management Games Seminar. Please send me all materials necessary for my participation. I understand the fee is \$20 for members of IEEE and \$24 for non-members. A check for \$ _____ is enclosed.

Name _____

Address _____

City _____

State _____ Zip _____

Telephone No. _____



**MEASURE
100,000 VOLTS AC or DC**

Kilovoltmeters

Completely transistorized with anti-drift circuitry for sensitivity in the order of a few microamperes for minimum circuit loading. Large 6-inch precision mirror scale meter, ideal for lab or field testing. Panel mounted trimmers provide for recalibration when required. Accuracy is $\pm 1\%$ of full scale on DC, $\pm 2\%$ of full scale on 60 cycles. Probe accuracy is $\pm 2\%$ on the 5 and 10 KV range and $\pm 4\%$ on the 50 and 100 KV range.



Insulation test sets

New portable models offer big test set features, combined with compact convenient size. Reads both applied test voltage and leakage current simultaneously. Dual instruments available with both AC and DC measurement facilities.

Beckman® INSTRUMENTS, INC.

Represented by:

GK gawler-knoop co.

14 BEAUFORT AVENUE, ROSELAND, NEW JERSEY 07068
(212) 344-2997 (201) 226-4545

NEW FELLOWS OF THE IEEE
MEMBERS OF THE NORTH JERSEY SECTION

ROBERT A. BAKER

Mr. Baker was elected a Fellow for his outstanding contributions in the design, construction and management of a major electric power system.

Mr. Baker, vice president in Charge of Electric Operation, Public Service Electric and Gas Company, is a native of Reading, Pa. He graduated from Lehigh University in 1930 with a B.S. in electrical engineering, following which he began his career at Public Service as a Cadet Engineer. Holding various positions in the Electric Department since that time, he has been active in the design, construction and operation of electric generating stations.

A licensed professional engineer in New Jersey, Mr. Baker is chairman of the Committee on Power Generation of the Association of Edison Illuminating Companies, and a Fellow of the American Society of Mechanical Engineers.

Mr. Baker serves on the Advisory Board of Hardened Electric Power Systems of the National Academy of Sciences, National Research Council; on the board of directors of the Metals Properties Council of the Engineering Foundation, and on the Board of Directors of the Regional Plan Association. He serves as an advisor to the Department of Interior's Northeast Desalting Team.

A resident of Hackensack, he is president of the Engineer's Club of New York, a member of the Essex Club in Newark, and the Shelter Island Yacht Club.

ANTHONY M. CASABONA

"For his pioneering technical and managerial contributions to navigation and instrument landing systems."

Mr. Casabona, a senior member of the technical staff of the ITT Defense-Space Group, Nutley, is a native of New York City. He lives at 28 Carline Drive, Clifton. He was awarded a bachelor's degree in electrical engineering by the City College of New York in 1941. He joined International Telephone and Telegraph Corporation in New York City in 1941 and pioneered in the development of equipment for mobile instrument landing systems. He later made valuable contributions to the design and development of the first Tacan tactical air navigation system and later was in charge of all Tacan antenna development and production to fulfill ITT's contractual commitments to the U. S. Navy.

Presently he is responsible for the direction of ITT-sponsored engineering in the areas of avionics and communications. He is the author of numerous technical papers and holds more than 30 patents. Mr. Casabona is a member of Tau Beta Pi and Eta Kappa Nu professional societies.

D. A. CHISHOLM

For his technical contributions in the field of microwave electron tubes, and his outstanding leadership in electron and optical device development.

Donald A. Chisholm is Director of the Electron Device Laboratory of Bell Telephone Laboratories, Murray Hill, New Jersey. He is responsible for the development of solid state microwave integrated circuits, electron tubes for Bell System applications such as Picturephone, and also for military applications, gaseous lasers and other optical devices, and the mechanical engineering of these developments.

Since 1953, when he joined the technical staff of Bell Laboratories, Dr. Chisholm has been engaged in development of electron devices. He was first concerned with reflex klystrons and backward-wave oscillators. In 1959 he became head of the microwave tube development department with responsibility for millimeter wave devices, traveling-wave tubes and other high power microwave amplifiers. He was in charge of development of the traveling-wave tubes which were used in the satellite and the ground stations in the Telstar experimental communications satellite project.

A native of Toronto, Dr. Chisholm studied at the University of Toronto and obtained the B.A.Sc. degree in engineering physics in 1949, and a master's and a doctorate in physics in 1950 and 1952, respectively.

He is a member of the American Physical Society and the Institute of Electrical and Electronics Engineers.

Dr. Chisholm is a member of the Advisory Group on Electron Devices, and the Working Group on Microwave Devices (Office of the director of Defense, R&D).

He is also a member of the AD COM Committee of the IEEE; Program Chairman of the 1968 International Electron Device Meeting; and Chairman, Publications Committee, Group on Electron Devices.

Dr. Chisholm lives at Claremont Road, Bernardsville, N. J.

E. I. GORDON

For his scientific contributions in the fields of electro-optics and quantum electronics.

Eugene I. Gordon is head of the Active Optical Device Department at Bell Telephone Laboratories, Murray Hill, N. J. He is responsible for the development of gaseous lasers, optical modulators and detectors and pickup and display devices for the Picturephone® station set.

Since joining Bell Laboratories in 1957, Dr. Gordon has engaged in research in plasma physics, exploratory research on microwave tubes, and more recently research on gaseous lasers. He has directed the development of a new Picturephone camera tube. He recently aided in the development of a "light knife." This device allows surgeons to use the focused beam of a laser as easily as they would

a scalpel.

He was appointed to his present post in 1964.

A native of New York City, Dr. Gordon graduated Magna Cum Laude from the City College of New York and received the B.S. degree in physics in 1952. He also received the Ph.D. degree in physics from the Massachusetts Institute of Technology in 1957.

He is a member of the American Institute of Physics, the Institute of Electrical and Electronics Engineers, Phi Beta Kappa, and Sigma Xi.

Dr. Gordon has been granted five patents. He is the author of numerous published technical articles.

Dr. Gordon lives at 14 Braidburn Way, Convent, New Jersey.

R. W. HAMMING

For contributions to numerical analysis, information coding and improved operation of computing centers.

Richard W. Hamming is Head of the Computing Science Research Department at Bell Telephone Laboratories, Murray Hill, New Jersey.

A native of Chicago, Illinois, Dr. Hamming received the B.S. degree in 1937 from the University of Chicago, the M.A. in 1939 from the University of Nebraska and the Ph.D. in 1942 from the University of Illinois.

Dr. Hamming was a mathematics instructor at the University of Illinois from 1942 to 1944, and an assistant professor at the University of Louisville from 1944 to 1945. From 1945 to 1946 he was a member of the staff of the Los Alamos Laboratory in New Mexico where he worked on atomic bomb computations.

Since joining Bell Laboratories in 1946, Dr. Hamming has specialized in the use of numerical methods for solving problems on large-scale computing machines. He has also been engaged in the design of large-scale computers, and holds a patent for error detecting and error correcting codes. He has edited several journals and is the author of a book "Numerical Methods for Scientists and Engineers," published by McGraw-Hill in April 1962.

From 1960 to 1961 he was a Visiting Professor at Stanford University. He is presently a Professor at the City College of New York teaching a course in numerical analysis. He previously taught this course at New York University.

Dr. Hamming is a founder and past president of the Association for Computing Machinery. He is also a member of the American Association for the Advancement of Science, the Society of Industrial and Applied Mathematics, the Mathematical Association of America, the American Mathematical Association, and the Institute of Electrical and Electronics Engineers.

He is a member of the Board of Directors of Scientific Data Systems, Santa Monica, California.

Dr. Hamming lives at 571 Fairmount Avenue, Chatham, N. J.

H. A. STONE, JR.

For contributions to the development of advanced components for communications systems.

Henry A. Stone, Jr., is director of the Reliability Engineering Center at Bell Telephone Laboratories, Whippany, N. J.

Mr. Stone joined the technical staff of Bell Laboratories in 1936. His early work was in the development of loading coils and inductors for military components and for the development of high power magnetic networks for radar.

After the war, he supervised inductor development and the development of apparatus for non-linear magnetic devices. In 1958, he was appointed director of component development, and in 1960 he assumed direction of the development of passive military components. He was appointed to his present post in 1966.

A native of New York City, Mr. Stone received the B.S. degree in physics from Yale University in 1933.

He is the author of a number of published technical articles and has been granted four patents on circuits and devices.

Mr. Stone is a member of the Institute of Electrical and Electronics Engineers.

Mr. Stone lives in Bernardsville, New Jersey.

HERBERT W. LENSNER

"For outstanding contributions in the field of protective relaying for electric power systems, utilizing power-line carrier and microwave pilot channels."

Mr. Lensner is a senior design engineer in the Relay Department of the Westinghouse Electric Corporation, Newark. Born in Lakewood, Ohio, he graduated from the Case Institute of Technology with Bachelor and Master degrees in electrical engineering. Following his graduation in 1939, he joined Westinghouse as a graduate student at the company's East Pittsburgh Works. He transferred to Newark the following year.

Mr. Lensner lives at 85 Renshaw Avenue, East Orange, with his wife Eleanor. Their daughter Janet, a graduate of Western Reserve University Nursing School, is a nurse in Houston, Texas. Their son David, a graduate of the University of Delaware, is a physicist at the Naval Air Development Center near Philadelphia.

Biography of Major General Latta

William B. Latta was born in El Paso, Texas on October 25, 1914. His military career began in 1933 when he enlisted in the Army. He subsequently won a competitive appointment to West Point and was graduated as a 2nd Lieutenant in July, 1938. His first assignment was to Fort Monmouth, N. J. in the 51st Signal Battalion. In September, 1939 he was transferred to Fort Sam Houston, Texas to assist in the activation of the 62nd Signal Battalion.

Major General Latta returned to Fort Monmouth in October 1940 to attend the Signal School. In February,

ANNUAL DINNER DANCE HONORING NEW FELLOWS

The North Jersey Section Annual Dinner Dance and Reception honoring the newly elected Fellows of the Section will take place on Saturday, February 17, 1968, at 6:00 P.M., in the Georgian Room of the Robert Treat Hotel, 50 Park Place, Newark, New Jersey.

This year, unlike previous years, the dinner will be preceded by a cocktail hour and reception. The price of the dinner includes cocktails as well as a full course prime rib dinner. Following the presentation of the awards, there will be dancing until 1:00 A.M. Adequate parking is available at several nearby locations.

THE LADIES ARE INVITED!

This year, the North Jersey Section is singularly honored to have as the guest speaker, Major General William B. Latta, commander of the United States Army Electronics Command at Fort Monmouth, New Jersey. Major General Latta will speak on the subject, "Fort Monmouth — Highlights of a Half-Century."

For reservations, write, enclosing a stamped, self-addressed envelope, to

MR. J. G. O'GRADY

Public Service Electric and Gas Company

200 Boyden Avenue

Maplewood, New Jersey 07040

(Phone: (201) 621-6800, Ext. 57-702)

Please forward tickets at \$9.75 each to

Name

Street

Town State Zip

1942 he was assigned to Washington, D. C. as Special Assistant to the Chief Signal Officer of the Army. In August 1942 he joined the Planning Group as Executive Officer to the Signal Officer of the Western Task Force. He later took command of the 1st Armored Signal Battalion at Casablanca, French Morocco. In February 1945, he rejoined the staff of Headquarters Seventh Army as Chief of the Communications Division. In May of 1945, he became Signal Officer, XXI Corps in Germany.

In September 1945, Major General Latta returned to the United States for assignment as Chief of the Communications Division of Headquarters 1st Army at Fort Bragg, North Carolina. In April 1946, he was ordered to Washington, D. C. for assignment to the Organization and Training Division (G-3) of the War Department General Staff. In September 1948 Major General Latta was assigned as a student at the Graduate School of Business Administration, Harvard University, and graduated with distinction with the degree of Master of Business Administration.

In September 1950 Major General Latta became Chief of the Chicago Office of the Signal Corps Procurement Agency. In February 1951, he was assigned to the Office of the Chief Signal Officer in Washington, D. C. and in June, 1952 he was assigned to the Signal Corps Supply Agency at Philadelphia. In August 1954 Major General Latta was transferred to Taiwan as the Chief Signal Advisor to the Army Section and to the Chief of MAAG, Taiwan. In August 1957 he became Chief of the Material Maintenance Division in the Office of the Deputy



Major General
William Braden Latta

Chief of Staff for Logistics in Washington, D. C.

Major General Latta returned to Europe for assignment as Army Signal Officer of Headquarters Seventh Army at Stuttgart, Germany, in July 1961.

Major General Latta assumed duty as Deputy Chief of Staff for Communications and Electronics, Headquarters North American Air Defense Command and Headquarters Continental Air Defense Command in August 1962.

In October 1965 Major General Latta returned to Fort Monmouth to assume his current duties as Commanding General, U. S. Army Electronics Command.

AD-YU ELECTRONICS, INC.
249 TERHUNE AVE., PASSAIC, N. J. 07055
PHONE: (201) 472-5622

PHASE METERS
0.001 Hz to 18 GHz

DELAY LINES
Variable-Fixed

VIBRATION ANALYSIS

North Jersey — Automatic Control HOLOGRAPHY

Speaker:

DR. MAURO H. ZAMBUTO
N.C.E., Newark, N. J.

Date and Time:

January 10, 1968 at 8:00 P.M.

Place:

Arnold Auditorium
Bell Telephone Laboratories
Murray Hill, N. J.

Pre-Meeting Dinner:

6:00 P.M.
Wally's Tavern on the Hill
Bonnie Burn Road
Watchung, N. J.

The techniques of holography, the science of producing images by wavefront reconstruction, are currently being considered for a number of technological applications. A qualitative description of the general principles of holography will be followed by a report on the speaker's investigation of the holography of moving objects and its application to precision measurement of velocities and displacements. A demonstration of the technique will be given.



Dr. Mauro H. Zambuto

Biographical Note:

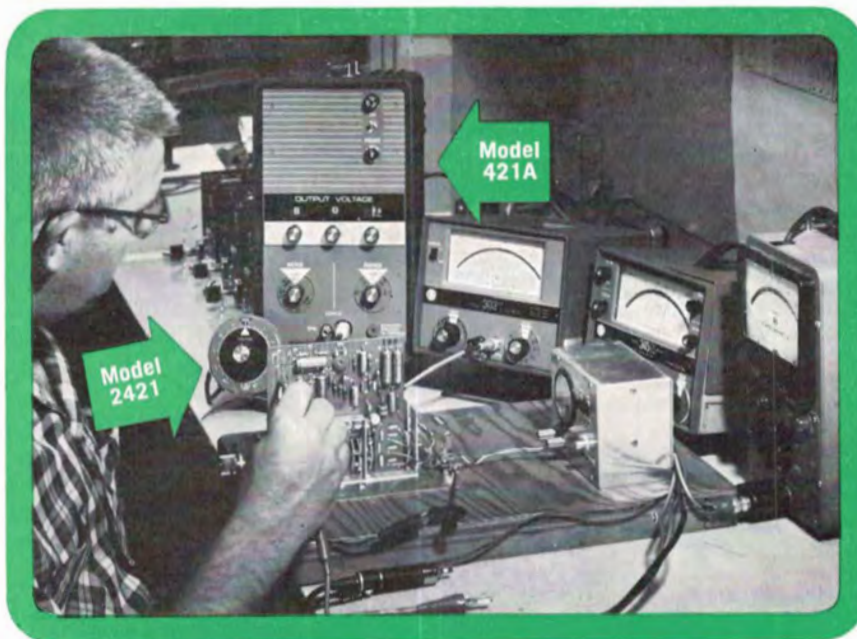
Dr. Zambuto received his Ph.D. degrees from the Universities of Rome and Padua, Italy. He is a Professor of Electrical Engineering and is engaged in laser, quantum electronics, and color perception research at N.C.E., Newark, N. J.

New York Power and Industrial Division Visit to Ford Assembly Plant

See 1968 cars from frame to finish at Ford Assembly Plant, Mahwah, New Jersey on Thursday, January 25, at 1:00 P.M. Bus leaves Hotel Holland, 351 W. 42nd Street at 11:30 A.M., fare \$1.75. Private cars allowed — maps will be supplied. For tickets write to R. Martinsen, Long Island Lighting Co., 175 E. Old Country Road, Hicksville, N. Y. 11801 or call 516 WE 1-6300, Ext. 2291. Trip is limited to 50 adults on a first come, first served basis. Check to be payable to Power and Industrial Division, IEEE N. Y. Section. Include stamped self-addressed envelope.

AC/DC SIGNAL SOURCE

Ballantine Model 421A Precision Calibrator with Model 2421 Error Computer



Model 421A provides an accurate, stable source of voltage in a typical production Q.C. set-up. Other instruments measure levels at several points. Model 2421 Error Computer speeds up measurements by changing the 421A output by an accurately indicated percentage.

Generates \pm DC, or AC at 400 or 1000 Hz, RMS or Peak-to-Peak

The Ballantine Model 421A Precision Calibrator provides an accurately known stable source of ac or dc voltage for calibration of voltage sensitive devices, or for measurements of gain or loss, or as a source for bridges or strain gauges. The output may be + or - dc, or it may be ac at 400 or 1000 Hz, rms or peak-to-peak. Accuracy to 111 volts ac or dc is 0.15%, and from 111 to 1110 volts ac is 0.3%. A high order of stability is obtained by monitoring the input to the attenuator with a bridge circuit whose output compensates for effects of changing line voltage, aging tubes and ambient temperature.

Model 2421 Error Computer is an optional accessory which, when connected to Model 421A, provides for a change in its output up to $\pm 5\%$, as read directly on the dial of the 2421. The device under calibration is fed its nominal voltage by setting the voltage knobs on Model 421A. The dial on the 2421 is then adjusted until the device reads its nominal voltage, and the % error of the device is then directly from the scale of the 2421.

Rack versions of Model 421A are available

Write for Brochure giving full Specifications

If you have a production line Q.C. requirement for a known stable source of dc or ac, and a means for measuring % deviation from a nominal value, the 421A Calibrator and 2421 Error Computer may be exactly what you need. Write us for full details today.



BALLANTINE LABORATORIES INC.
Boonton, New Jersey

CHECK WITH BALLANTINE FIRST FOR DC AND AC ELECTRONIC VOLTMETERS/AMMETERS/Ohmmeters, REGARDLESS OF YOUR REQUIREMENTS. WE HAVE A LARGE LINE, WITH ADDITIONS EACH YEAR. ALSO AC/DC LINEAR CONVERTERS, AC/DC CALIBRATORS, WIDE BAND AMPLIFIERS, DIRECT-READING CAPACITANCE METERS, AND A LINE OF LABORATORY VOLTAGE STANDARDS FOR 0 TO 1,000 MHZ.

Represented by GAWLER-KNOOP COMPANY, 14 Beaufort Avenue, Roseland, New Jersey