The IEEE
Newsletter
The Magazine of the North Jersey Section

ANNUAL DINNER DANCE HONORING NEW FELLOWS AND AWARD WINNERS
Governor Morris Inn, February 21, 1970

(For additional details see Page 10 or write:
P. O. Box 666, Mt. Arlington, N. J. 07856 Phone (201) 398-5524)

FEBRUARY, 1970

Microwave ICs

The state-of-the-art of microwave integrated circuits (MICs) has advanced significantly in the past several years. Nearly every medium and low-power microwave function has been performed with MICs. The various technologies and circuit techniques used in current MICs will be discussed. Electrical and material design considerations will be given. Examples of circuits will be shown. Examples of subsystems and systems constructed with MIC components will be presented.

A talk on Microwave Integrated Circuits will be presented in the February meeting of the North Jersey Section of G-MTT/G-AP by Dr. Harold Sobol, 1970 G-MTT National Lecturer.

Harold Sobol is the Manager, Microwave Microelectronics, RCA Components Division, Somerville, New Jersey.

He received his BSEE at CCNY, MSE and Ph.D. from the University of Michigan. From 1952 to 1959 he worked on radar and traveling-wave tube studies at the Willow Run and Electron Physics Laboratories of the University of Michigan. In 1960 he joined the IBM Watson Research Center and was involved in work on high-speed super-conducting circuits. In 1962 he joined RCA Laboratories and worked on plasmas, klystrons, solid-state devices and microwave integrated circuits. He was head of the Microwave Integrated Circuits Group at RCA Laboratories until February, 1968, when he assumed his present position.

Time: Thursday, February 26, 8:15 P.M.
Place: Arnold Auditorium, Bell Telephone Laboratories, Murray Hill, N.J.
Dinner: Wally's, Watchung, N.J. 6:15 P.M.

MEETINGS CALENDAR

Tuesday, February 17
North Jersey Section, Communications Technology Group – **Optical Transmission in Atmosphere, presented by Dr. Mani Subramanian,** Bell Telephone Laboratories, Whippany, New Jersey, Seminar Room 1H–009, 6:00 P.M. Dinner following.

Saturday, February 21
North Jersey Section – **Annual Dinner Dance Honoring New Fellows,** Governor Morris Inn, Morriwtown, New Jersey. 6:00 P.M.

Thursday, February 26
North Jersey Section G-MTT/G-AP – **Microwave Integrated Circuits,** Bell Telephone Laboratories, Murray Hill, New Jersey. 8:15 P.M.

Wednesday, March 4
Joint Meeting of Metropolitan Group PMP and Working Group on Packaging Computer Elements – **Packaging Power Devices** – IEEE Headquarters, West Room, 10th Floor, 345 E. 47th Street, New York City. 10:00 A.M.

Wednesday, March 18
North Jersey Section G-MTT/G-AP – **Communication From Deep Space Probes,** Bell Telephone Laboratories, Murray Hill, New Jersey. 8:15 P.M.

Report From The: POWER GROUP

The primary activity of the Power Group Chapter of the North Jersey Section-IEEE is our monthly program meetings. The Group Chapter Executive Committee develops these programs with the aim of serving our members. The meetings, hopefully, are presented to provide the members an opportunity to participate in the discussion of current topics in the power field. The meetings also provide some social moments during which members may develop some new professional contacts.

The topics for meetings this year cover a wide range of technical subjects. The September meeting dealt with the effects on power systems due to solar flares. In October the Power Group hosted a number of students at a panel discussion of power for the future. Construction of transmission lines was expertly presented in our November meeting. In January the meeting topic is the use of time-sharing computer systems for engineering problem solving. The subjects under consideration for future meetings include (1) molded rubber high voltage connections; (2) peaking generation; and (3) system reliability.

The members are urged to comment on meeting content and presentation techniques. The Executive Committee will gladly receive your criticisms so that our programs can be developed to more specifically meet your interests. Please make your recommendations known on the topics and speakers which you think would match the interests of the majority of our members.

Over the years the Executive Committee has spent much time discussing several other problems of group operation. We would like to receive suggestions from the members on:

How can meeting attendance be improved?
What other services can the Group Chapter provide the members?
What activities can the Section pursue to serve the members of the Power Group?

Call me – I would like to hear your ideas.

Rudolph D. Stys, Chairman – Power Group

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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.

NORTH JERSEY SECTION OFFICERS 1969-1970

M. M. Irvine

Optical Transmission in Atmosphere

Dr. Mani Subramanian, of the Bell Telephone Laboratories, Whippany, New Jersey, will give a talk on Optical Transmission in Atmosphere, sponsored by the Communications Technology Group, North Jersey Section.

The adverse role played by the constituents of and turbulence in the atmosphere on optical beams greatly influences the system design considerations. While the attenuation affects the distance and reliability of the communication link, the scattering due to turbulence causes intensity scintillation, coherence degradation, beam dancing, beam bending, image dancing and breathing effects. The talk will address itself to the practical design considerations in minimizing the degradation due to atmospheric effects by and optimal choice of both the mode of operation and optical components. There will be a brief description of the proposed 10.6 micron Laser Communication and Propagation Links (a joint effort by NASA Goddard Space Flight Center and Bell Telephone Laboratories) between ATS F synchronous satellite and ground.

Mani Subramanian received his B.Sc. in Physics (1953) from Madras University, India, Diploma in Electronics (1956) from Madras Institute of Technology, India, and M.S.E.E. (1961) and Ph.D. (1964) from Purdue University, Lafayette, Indiana.

His past experience includes positions at Electronics Research Institute, India, Assistant Professor of Electrical Engineering at Purdue University, and consultant to Bell Telephone Laboratories. At present, he is a Member of the Technical Staff at Bell Telephone Laboratories, Whippany, New Jersey.

Dr. Subramanian's earlier research in microwaves involved work on receivers, parametric amplifiers, ferroelectric materials, and propagation in plasma media. His work in quantum electronics includes nonlinear optics and cathololuminescence. Presently he is studying the effect of turbulent media on laser beams, with primary interest on optical communication through atmosphere.

Time: Tuesday, February 17, 6:00 P.M.
Place: Seminar Room 1H–009, Bell Telephone Laboratories, Whippany, N.J.
Dinner: After meeting, about 7:30 P.M.

For additional information contact: J. F. Kampschoer (201) 386–4135, or R. W. Unold (516) 575–2241.

Packaging Power Devices

In this era of integrated circuitry, the cost of packaging power devices has remained relatively high. This Joint Meeting of the Metropolitan Group PMP (Parts, Materials, and Packaging) and Working Group on Packaging Computer Elements will be concerned with methods for packaging power devices, including high power dissipating LSI chips if pertinent information is available.

Time: Wednesday, March 4, 10:00 A.M.
Place: IEEE Headquarters, 345 East 47th Street, New York City, New York, West Room, 10th Floor.

Notice to North Jersey Section Members

The Nominations Committee for the North Jersey Section IEEE would welcome nominations for the following:

For Institute Committees and Boards for 1971, nominations close June 1, 1970;

For North Jersey Section Officers for the July 1, 1970 to June 30, 1971 year, namely: Chairman, Vice-Chairman, Treasurer, Secretary and two Members-at-Large, nominations close April 30, 1970 with the election to be held at the May Section meeting.

It is assumed that anyone making such a nomination would have first contacted the person to be nominated, securing his permission for the nomination and his assurance that he would serve if elected.

Nominations can be sent to S. A. Mallard, Chairman of the Nominations Committee, Room 6110, Public Service Electric & Gas Co., 80 Park Place, Newark, N.J. 07102 or telephoning him at (201) 622–7000, Ext. 2117.

Carl C. Torell, Secretary
North Jersey Section

Communication From Deep Space Probes

The March meeting of the North Jersey Section of G-MTT/G-AP will feature a talk on the prospects and problems of deep space communications. The speaker will be Mr. J. S. Cook, Director of the Military Communications Research Laboratory at BTL.

Not long ago BTL completed a study (partially funded by the National Aeronautics and Space Administration) of the problems and limitations associated with sending information at high data rates (e.g., 10^6b/s) back to earth from space probes as much as 10^9 miles away. Particular attention was given to the comparative advantages offered by the use of different transmission frequencies. Microwave, millimeter wave, and light frequencies were considered. The study, intended to determine fruitful avenues for exploratory development, lead to some interesting conclusions that will be discussed.

J. S. Cook, Director of the Military Communications Research Laboratory, joined Bell Telephone Laboratories in 1952 after receiving BS and MS degrees in Electrical Engineering at Ohio State University. Until 1960 he was associated with the Electronics Research Department where he engaged in experimental work on traveling wave tubes, electron optics, coupled systems, and parametric amplification.

Since then he has been associated with the Military Research Area where he has been responsible for phased-array and other microwave antenna work, atmospheric propagation studies, laser research and various satellite communication studies.

Mr. Cook is a senior member of the IEEE.

Time: Wednesday, March 18; 8:15 P.M.
Place: Arnold Auditorium, Bell Telephone Laboratories, Murray Hill, New Jersey.
Pre-Meeting Dinner: 6:15 P.M., Wally's, Watchung, New Jersey.

Report From The: GMTT/AP GROUP

On October 15, 1969, GMTT/AP launched the year's activities with a colorful talk on the optics of insect eyes from an antenna and wave propagation point of view. The speaker, Dr. Gary D. Bernard, Assistant Professor of Ophthalmology and Engineering at Yale University, was given an enthusiastic reception at a pre-meeting dinner at Wally's Tavern in Watchung, New Jersey. Dr. C. P. Wu, the '69/'70 GMTT/AP Program Chairman, extended an invitation to the wives of our professional audience in the Newsletter publicity on this talk and managed to attract 10 wives away from their Wednesday night bridge games and social conferences. Fifty-seven people attended the meeting, which was held in BTL's Arnold Auditorium in Murray Hill, and participated in a vigorous question and answer period following the talk.

On Thursday, November 13, 1969, GMTT/AP welcomed Dr. R. W. Damon who, as the 1969 MTT National Lecturer, spoke on "Pretersonics – Springs, Magnets and Microwaves." Dr. Damon, Head of the Solid State Science Laboratory at Sperry Rand Research Center, Sudbury, Massachusetts, was welcomed by several old friends at Wally's during a pre-meeting dinner. The attendance at the meeting was a disappointing 27 but we attribute this to an unfortunate competition with the Long Island GMTT Phased Array Seminar which was held that same day. Dr. Damon enjoyed an extensive question and answer period which exemplified the enthusiasm for the Pretersonic technology.

On Tuesday, December 2, the officers of GMTT/AP met to plan the meeting schedule for the remainder of the active year. It is expected that Dr. Harold Sobol of RCA, Somerville, and GMTT National Lecturer for 1970, will accept our invitation to speak on Microwave Integrated Circuits and Devices in February. Mr. J. S. Cook, Director of BTL's Military Communications Research Laboratory, has accepted an invitation to speak on the Future of Satellite and Space Communications in March. Plans to invite a speaker to cover the Computer Aided Design of Microwave Circuits were firmed up for May.

An important topic discussed during the GMTT/AP meeting on December 2 concerns a one-day seminar which is being planned for the latter part of May. It is expected that all speakers who would participate in the May Seminar will be contacted for a commitment during December and preliminary plans for publicity and meeting arrangements will be submitted to the North Jersey Section meeting in January. The May Seminar will be a successful event only if we gain the full cooperation and support of our North Jersey GMTT/AP membership. We intend to invite the membership of all local chapters to attend the May Seminar. Look for further information concerning the May Seminar in subsequent Newsletter articles.

G. C. Di Piazza
Chapter Chairman, GMTT/AP

Annual Student Paper Prize Contest

Now is the time for student members to start on that Prize Paper for the Metrepolitan Student Council Prize Paper Contest. Each year the Metropolitan Student Council sponsors a Student Prize Paper Contest. The contest will be on Saturday, April 25th, Fairleigh Dickinson University, Teaneck campus.

Students attending schools in the New York, North Jersey, and Long Island Sections of the IEEE with Student or Student Associate Branches of IEEE are eligible.

The prizes to be presented are: First – $200; Second – $100; Third – $75; Fourth – $50.

A $25.00 prize will be presented to the author of the paper judged best in each local Student Branch that is a member of the MSC.

Winners of this contest become eligible for the national contest sponsored by the IEEE. In the past three, New York regional winners have won this national contest.

Papers should cover technical and engineering aspects of a subject reasonably within or related to the areas with which the IEEE is concerned, and with which the author is familiar, either from his courses, his hobbies, his summer work, etc. The work need not be original in engineering content but should be original in treatment and concise in coverage of the author's contribution to that subject.

The deadline for submission of papers is 4 P.M., March 18th and should be submitted to the Contest Secretary: Mr. Eugene I. Weitz, Room 1076, American Electric Power Service Corp., 2 Broadway, New York, New York 10004. For further details consult your Branch Counselor.

IEEE
NORTH JERSEY SECTION
LECTURE SERIES
SPRING 1970

BASICS OF ELECTRICAL SYSTEM PROTECTIVE DEVICES

An eight-session study course to aid engineers in the commercial, industrial and utility fields. The course will cover the basic principles of operation, application, selection and coordination of electrical protective devices in common use today. The course will include data on fuses, motor overload relays, molded case and low voltage power circuit breakers, and protective relays. The sessions will be presented by C. K. Blizard, Assistant Director, MULTI-AMP Institute.

Starts February 17, 1970

MULTI-AMP Institute
61 Myrtle Street
Cranford, New Jersey

ENGINEERING ECONOMICS

This eight-session study group is intended to give to the student the tools to correctly solve many of the "run-of-the-mill" economic problems. The sessions will be devoted primarily to a presentation of the Revenue Requirements technique for measuring the profitability of ventures and relative economy of alternative proposals. Financial Mathematics, Depreciation, and Income Taxes are among the topics which will be considered. This study group should be of particular interest to financial, accounting and engineering personnel.

Starts February 25, 1970

Public Service Electric & Gas Company
80 Park Place (Room 3171A)
Newark, New Jersey

AN INTRODUCTION TO ASTRONOMY

A four-lesson course with lectures given by members of Amateur Astronomers, Inc. Viewing sessions using 6-inch refraction and 12-inch reflector are related.

Starts February 17, 1970

William Miller Sperry Observatory
Union College
1033 Springfield Avenue
Cranford, New Jersey

(See Details and Registration Forms on Following Pages)

IEEE NORTH JERSEY SECTION LECTURE SERIES–SPRING, 1970

Basics of Electrical System Protective Devices

An eight-session study course to aid engineers in the commercial, industrial and utility fields. The course will cover the basic principles of operation, application, selection and coordination of electrical protective devices in common use today. The course will include data on fuses, motor overload relays, molded case and low voltage power circuit breakers, and protective relays. The sessions will be presented by C. K. Blizard, Assistant Director, MULTI-AMP Institute.

February 17–INTRODUCTION
Importance of Electrical Protection - Continuity of Service - Integrated Operations - Available Short Circuit Currents are High - Magnitudes of Fault Currents - What are Electrical Protective Devices - Basic Theory of Operation - Ideal Selection of Electrical Protective Devices.

February 24–FUSES AND MOLDED CASE CIRCUIT BREAKERS
Theory of operation - Interpretation of Manufacturers Time Current Curves.

March 3–LOW VOLTAGE POWER CIRCUIT BREAKERS
Theory of Operation - Interpretation of Manufacturers Time Current Curves.

March 10–PROTECTIVE RELAYS (Overcurrent)
Theory of Operation and Application - Use of Current Transformers - Interpretation of Manufacturers Time Current Curves.

March 17–PROTECTIVE RELAYS (Undervoltage and Percentage Differential).
Theory of Operation and Application - Use of the Time Characteristic Curves for Undervoltage Relay.

March 24–MOTOR PROTECTION
Types - Selection of Protection; Overload, Short Circuit - Use of Heater Selection Tables.

March 31–GUIDE LINES FOR COORDINATION

April 7–PROBLEMS AND SUMMARY
Discussion of Problems - Good Design - Coordination - Maintenance

TIME: 7:00-9:00 P.M., Tuesday evenings starting February 17, 1970.
PLACE: MULTI-AMP Institute, 61 Myrtle Street, Cranford, New Jersey
FEE: $30.00 to Members (IEEE, ASME, NJSSPE, etc.); $40 Non-Members. A $5.00 discount for early registration applied to both applications if received prior to February 10, 1970.
COORDINATOR: For any information concerning course or location, contact: C. K. Blizard, MULTI-AMP Corporation, 61 Myrtle Street, Cranford, New Jersey 07016, (201) 276-8200.

REGISTRATION FORM–BASICS OF ELECTRICAL SYSTEM PROTECTIVE DEVICES

Send to: *Mr. C. K. Blizard*
MULTI-AMP Corporation
61 Myrtle Street
Cranford, New Jersey 07016 *Phone (201) 276-8200*

Name _____ Tech. Society _____
Firm _____ Position _____
Business Address _____ Phone _____
Home Address _____ Phone _____
Check or Money Order Enclosed:
Member: $25.00.....; $30 after Feb. 10.....
Non-Member: $35.00.....; $40 after Feb. 10.....
Please make check or money order payable to: North Jersey Section IEEE.

IEEE NORTH JERSEY SECTION LECTURE SERIES—SPRING, 1970

Engineering Economics

This eight-session study group is intended to give to the student the tools to correctly solve many of the "run-of-the-mill" economic problems. The sessions will be devoted primarily to a presentation of the Revenue Requirements technique for measuring the profitability of ventures and relative economy of alternative proposals. Financial Mathematics, Depreciation, and Income Taxes are among the topics which will be considered. This study group should be of particular interest to financial, accounting and engineering personnel.

The instructors will be Mr. Bert J. Blewitt, Engineering Economist and Mr. Leonard VanNimwegen, Senior Staff Assistant, of the System Planning and Development Department, Public Service Electric and Gas Company, Newark, New Jersey.

February 25—MINIMUM REVENUE REQUIREMENTS DISCIPLINE (Cost of Money)

March 4—BASIC CONSIDERATIONS IN ECONOMIC ANALYSIS (Depreciation, Income Taxes, etc.)

March 11—FINANCIAL MATHEMATICS

March 18—PROBLEM SOLVING SESSION

March 25—PERIOD OF STUDY

April 1—REPLACEMENT ECONOMICS

April 8—COST OF LOSSES

April 15—GENERAL REVIEW AND PROBLEM SOLVING

TIME: 6:30-8:30 P.M. Wednesday evenings starting February 25, 1970.
PLACE: Room 3171A, Public Service Electric and Gas Company, 80 Park Place, Newark, N. J.
FEE: $30.00 to Members of IEEE, ASME, etc.; $35 Non-Members; $5.00 discount for registrations received prior to February 18, 1970.
COORDINATOR: For any information concerning course or location contact: Mr. John Zemkoski, Room 5326, Public Service Electric and Gas Company, Newark, N. J. Phone: (201) 622-7000.

REGISTRATION FORM—ENGINEERING ECONOMICS

Send to: *Mr. John Zemkoski*
Room 5326
Public Service Electric and Gas Company
Newark, N. J. *Phone: (201) 622-7000*

Name _____ Tech. Society _____
Firm _____ Position _____
Business Address _____ Phone _____
Home Address _____ Phone _____
Check or Money Order Enclosed:
Member: $25.00.....; $30 after Feb. 18.....
Non-Member: $30.00.....; $35 after Feb. 18.....
Please make check or money order payable to: North Jersey Section IEEE.

IEEE NORTH JERSEY SECTION LECTURE SERIES—SPRING, 1970

Introduction to Astronomy

A four-lesson course called "An Introduction to Astronomy" will be held at the William Miller Sperry Observatory on the campus of Union College, 1033 Springfield Avenue, Cranford, New Jersey. Registration will be limited to forty people.

Lectures will be given by members of Amateur Astronomers, Inc.

February 17
THE SUN AND ITS FAMILY
E. T. Pearson - President A.A.I. - Engineer - P.S.E. & G. Co.

February 24
THE STARS
Mr. Pearson

March 3
EXTERNAL GALAXIES AND COSMOLOGY
Patrick J. White - Assistant Director of Sperry Observatory - Past President A.A.I. - Vice Principal, Perth Amboy Schools

March 10
RADIO ASTRONOMY
Kenneth D. Smith - Past President A.A.I. - Engineer (Retired), Bell Telephone Laboratories

It is expected that lectures will be followed by viewing sessions with members of the A.A.I. demonstrating and assisting the class in the use of the 6-inch refractor and 12-inch reflector installed in the Observatory Domes. Should the weather cooperate, the wives are cordially invited to attend the sessions and participate in the viewing.

TIME: 8:00 P.M. Tuesday evenings starting February 17, 1970.
PLACE: William Miller Sperry Observatory, Union College, Cranford, N. J.
FEE: $15.00 to Members of IEEE; $20.00 to Non-Members
COORDINATOR: For any information concerning course or location, contact: J. W. Fink, Jr., Public Service Electric & Gas Company, 200 Boyden Avenue, Maplewood, N. J. 07040, (201) 621-6800, Ext. 726.

REGISTRATION FORM—AN INTRODUCTION TO ASTRONOMY

Send to: *Mr. J. W. Fink, Jr.*
Public Service Electric & Gas Company
200 Boyden Avenue
Maplewood, New Jersey 07040 *Phone: (201) 621-6800 Ext. 726*

Name _____ IEEE Member _____
Firm _____ Position _____
Business Address _____ Phone _____
Home Address _____ Phone _____
Check or Money Order Enclosed:
Member: $15.00.....; Non-Member: $20.00.....
Please make check or money order payable to: North Jersey Section IEEE.

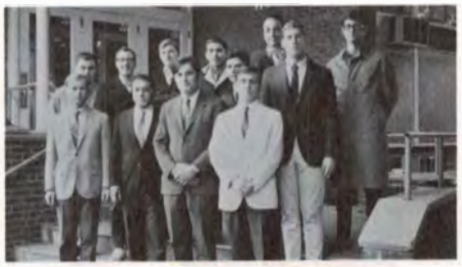
This Month's Student Chapter

Fairleigh Dickinson University
Current Goals & Activities
by Robert K. Asdal, Chairman

The executive board of the IEEE day branch, Fairleigh Dickinson University, consisting of Robert Asdal, Chairman; Pat Cerchie, Vice Chairman; Ted Dehann, Secretary; John Tobak, Treasurer; and Don Upmal, ICC Representative, has developed plans for an extensive lecture and field trip program. This is planned to be an important part of both the Fall and Spring semesters. Also an orientation program was initiated for incoming engineering students whereby the IEEE in cooperation with the ASME and Industrial Engineering Club sponsored "Lab Day." Typical lab experiments and projects were set up and presented by upperclassmen as part of a guided tour through the engineering facilities of the University. In addition to providing an early insight to various aspects of engineering, "Lab Day" also helped freshmen meet upperclassmen and instructors on an informal basis.

Other activities of the Fairleigh Branch included participation in "Day at the Races," held at Freehold Raceway September 27. Six student members attended this event sponsored by the North Jersey Section. The Power Group meeting held October 22 at Newark College of Engineering attracted 33 interested students from Fairleigh Dickinson. The Teaneck campus of FDU hosted the first Metropolitan Student Council meeting November 8. Present plans of the Branch include holding the annual regional student paper contest finals in April 1970 at F.D.U. Perhaps one of the most important functions of the first semester was a drive to obtain rag dolls as Christmas presents for children in local hospitals. Through the joy of giving the Branch made this past Christmas a merry one for many youngsters who could not be home for the holidays.

Chapter of the month Officers: (From left) Ted Dehaan, Secretary, Robert Asdal, Chairman; Dr. Earnest Wantuch, Advisor; Don Upmal, ICC Representative; Pat Cerchie, Vice-Chairman; John Tobak, Treasurer.



Several Members of the FDU Branch

Student's Night

The North Jersey Section sponsored the 1969-1970 Students' Night at Fairleigh Dickinson University on December 2nd as reported by Professor James W. Earle of Newark College of Engineering, Student Activities Chairman.

Dr. Ernest Wantuch, FDU IEEE Advisor, served as Chairman of the meeting. In attendance were Dr. Shick, Chairman of the EE Dept. FDU; Dr. Stanley Smith, IEEE Advisor, Stevens Institute of Technology; and Professor Earle.

Representing the Student Branches were Mr. Robert Asdal, Chairman FDU Student Branch and Mr. Wayne R. Monsees, Chairman of the Stevens Student Branch.

Students attending the meeting were given industry donated door prizes such as RCA Radiotron Handbooks, Hewlett-Packard Impedance Slide Rules, ITT Handbook, and Tektronix Information Handbook.

The principal event of the evening was a panel composed of the chief engineers of several of the leading New Jersey Engineering companies. They described the characteristics that they would look for when hiring a new engineer. In addition to grades, the characteristics mentioned were participation in IEEE activities, prize paper contests, other extra-curricular activities, summer work in industry, etc. They were particularly interested in students who had done their "homework"—had prepared for their employment interview by reading about the work of the corporation to which they were applying.

STUDENTS' NIGHT: (From left) J. Fornenza, H. Morgrasstin, Dr. Wantuch, A. Popkin, B. Taylor, and D. Wheeler

Speakers included Mr. Dick Wheeler, Stevens '66, of Prosodyne Co., New Brunswick; Mr. Bob Taylor, NCE '68, of Hewlett Packard; Mr. Popkin, Stevens '60, of the Federal Communications Commission; Mr. Harvey Morgrasstin, NCE '61, of General Electric; Mr. Joe Forlenza, FDU '56, of the Norman Bragar Company; and Mr. Phil Ciorciari, FDU '68, of the Picatinny Arsenal.

A most interesting evening included a delicious dinner. Following the speakers presentations, a lively discussion was led by Dr. Wantuch. Many thanks to FDU IEEE Branch for an enjoyable and informative evening.

J.L. Blackburn

R.S. Engelbrecht

W.L. Glomb

L. Himmel

A.A. Lundstrom

J.W. McNall

L.W. Morrison

E.E. Sumner

E.K. Van Tassel

Annual Section Dinner Honors New Fellows

The North Jersey Section Annual Dinner honoring the newly elected Fellows of the Institute who are members of the North Jersey Section will be held on Saturday evening, February 21, 1970, at the Governor Morris Hotel, Whippany Road, Morristown, New Jersey.

The guest speaker will be Mr. T. W. Landrum, Vice-President, Westinghouse Lamp Divisions.

A Dutch Treat Cocktail hour will begin at 6:00 P.M., followed by dinner (Roast Beef) at 7:00 P.M. Following the presentation of the awards there will be dancing until 1:00 A.M.

Honored guests include:

J. L. BLACKBURN
R. S. ENGELBRECHT
W. L. GLOMB
L. HIMMEL
A. A. LUNDSTROM
J. W. McNALL
L. W. MORRISON
E. E. SUMNER
E. K. VAN TASSEL

NORTH JERSEY DINNER—FEBRUARY 21, 1970

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

H. E. Blaicher
Jersey Central Power & Light Company
Madison Avenue at Punch Bowl Road
Morristown, New Jersey 07960 (201) 539–6111 Extension 487

Please forward.....tickets at $7.50 each to (Checks payable to N.J. Section IEEE):

NAME.....

STREET.....

TOWN.....STATE.....ZIP.....

I would like to share a table with the following:

.....

.....

New Fellows of the IEEE – North Jersey Section

John L. Blackburn

"For contributions in the application of protective relaying to large electric power systems."

John L. Blackburn, Manager, Relay and Instrument Systems, Westinghouse Electric Corporation, joined the Westinghouse staff in 1936, and has been at the Newark plant since 1937. He was born in Kansas City, Missouri, and is a graduate of the University of Illinois, where he received his Bachelor of Science Degree in Electrical Engineering in 1935.

He has been conducting lecture courses at the graduate level at New York University, Polytechnic Institute of Technology and Stevens Institute of Technology, since 1948. The courses include Protective Relaying as Applied to Power Systems, and Power Transmission and Distribution. He is presently an Adjunct Professor of the Graduate School at Newark College of Engineering.

He is a licensed Professional Engineer; Chairman of the I.E.E.E. Power System Relaying Committee, and his favorite hobby is stamp collecting. He is the Treasurer of the China Stamp Society and the American Society of Polar Philatelists.

He and his wife of 27 years, Margaret, live in Basking Ridge, N.J. and they have three children. Susan, 25, Joan, 22, and Margot, 19.

Rudolf S. Engelbrecht

"For contributions to parametric, domain and other active microwave devices, and for leadership in the integration of microwave circuits."

Rudolf Engelbrecht is head of the Mobile Telephone Department at Bell Telephone Laboratories, Incorporated, Holmdel, New Jersey. In this position, he is responsible for developing the radio transmission techniques and the solid-state electronics for future high-capacity wireless telephone systems.

After completing his secondary education in Europe, Mr. Engelbrecht received the B.S. and M.S. degrees in Electrical Engineering from the Georgia Institute of Technology in 1951 and 1953. Since joining Bell Laboratories in 1953, he has been engaged in studies of parametric devices, microwave transistor amplifiers, and integrated microwave electronics. In 1964 he became head of the Solid-State Device Electronics Department, exploring the principles and potential applications of new high-frequency and high-speed semiconductor bulk-effect devices. On these topics, he has published a number of papers and has been granted or applied for over fifteen patents. He assumed his present position in October, 1969.

Mr. Engelbrecht has been associated with many professional activities and is presently chairman of the Administrative Committee of the IEEE Group on Electron Devices, and of the 1970 International Solid-State Circuits Conference. He is a member of Eta Kappa Nu, Tau Beta Pi, and a Fellow of the IEEE.

Walter L. Glomb

"For contributions to communication transmission systems, particularly those utilizing satellite repeaters."

Walter L. Glomb is Vice-President and Director of Advanced Development of ITT Defense Communications. Prior to assuming his present position, Mr. Glomb was responsible for space communication system analysis at the division of International Telephone and Telegraph Corporation. He also played a major role at ITT in design and development of earth terminals which operated in conjunction with the Courier, Relay, Telstar, Syncom, Early Bird and Intelsat satellites.

Mr. Glomb received his B.S. degree in Electrical Engineering in 1946 and an M.S. degree in Electrical Engineering in 1948, both from Columbia University. He joined ITT in 1950. He has done graduate work in Communication Theory and Technology at Columbia University, Polytechnic Institute of Brooklyn and Newark College of Engineering.

Mr. Glomb, his wife Bea, and their six children live at 48 Enclosure, Nutley, New Jersey.

Leon Himmel

"For contributions and leadership in the development of aerial navigation."

Leon Himmel is staff assistant to the Office of the President, International Telephone and Telegraph Corporation, New York City. In this position Mr. Himmel serves the corporation by investigating and making recommendations on marketing, technical and general management situations and opportunities.

Before assuming his present position in 1969, Mr. Himmel was president of ITT Avionics Division, Nutley, New Jersey. In his 28 years with ITT, Mr. Himmel has been associated with and responsible for numerous developments in the fields of instrument landing systems, direction finders, radar, Loran, Tacan and Omega navigation systems, reconnaissance and electronic countermeasure systems.

He was graduated from the College of the City of New York in 1942 with a BSEE degree and joined ITT the same year as Junior Engineer. He progressed steadily through a succession of engineering and management positions with ITT's laboratories in Nutley.

Mr. Himmel has been granted 17 patents and has others pending. The author of several technical papers on electronic warfare, Mr. Himmel is a member of the Institute of Navigation, Radio Technical Commission for Aeronautics, Air Traffic Control Association and Tau Beta Pi, the engineering honor society. He lives in Upper Montclair, New Jersey.

Alexis A. Lundstrom

"For original contributions to systems for telephone dialing, and for satellite tracking and guidance."

Alexis A. Lundstrom is head of the Systems Studies Department at Bell Telephone Laboratories, Whippany, N.J. He is responsible for mathematical studies and evaluations of the effectiveness of space systems.

A native of Portland, Oregon, Mr. Lundstrom began his Bell System career there in 1928 with the Pacific Telephone and Telegraph Company. He left in September, 1929, to teach for a year at Oregon State University, where he had received his B.S. degree in Electrical Engineering in 1928.

He joined the technical staff of Bell Laboratories in 1930 and for ten years was engaged in research on transmission and signaling for telephone switching, including the first nationwide dialing system. During and after World War II he engaged in research on electronic computers and radar. In 1952 he became head of a department in charge of special systems studies. In the early 1960's he headed a department responsible for research and

development on the earth station antenna direction system for the ECHO and TELSTAR® satellite projects. More recently he was concerned with guidance equations for rockets which orbited more than 50 satellites.

Mr. Lundstrom has been granted numerous patents in the fields of communications, computers, and radar electronics. He is a Fellow of the Institute of Electrical and Electronics Engineers, and a member of the honor societies Eta Kappa Nu, Phi Kappa Phi, and Tau Beta Pi.

Mr. Lundstrom lives on Indian Terrace in Sparta, N.J.

John W. McNall

"For contributions in microwave technology and for direction of research and development in light sources."

Dr. John W. McNall is Manager, Advanced Development, in the Westinghouse Lamp Division. Dr. McNall is responsible for advanced development activities relating to both light sources and to materials. He joined Westinghouse in 1936 at the Research Laboratories in East Pittsburgh following graduation from Case Institute of Technology. In 1938 he was appointed a research engineer at the lamp division in Bloomfield. Following two years of study, research at Massachusetts Institute of Technology, as a Westinghouse B. G. Lamme Scholarship winner, he received his doctor's degree in physics. He returned to the Lamp Division in 1943 and in 1954 he was promoted to Assistant Director of Research. In 1959 he was named Director of Research and a year later he became Assistant Engineering Manager. In 1963 he was appointed to his present position.

A member of the American Physical Society, the IEEE, the Society of applied Spectroscopy and the Illuminating Engineering Society, Dr. McNall also has taken advanced courses in electrical engineering at the University of Pittsburgh and Steven Institute of Technology.

Dr. McNall resides in West Orange, New Jersey.

Lawrence W. Morrison

"For contributions and leadership in the development of large electronic systems."

Lawrence W. Morrison is Managing Director of Defense Systems at Bell Telephone Laboratories, Whippany, N.J.

Mr. Morrison joined Bell Laboratories in 1931 and was initially engaged in the development of telephone and television terminal equipment for the coaxial cable system. During the war years he was responsible for the development of various radar and fire control systems. After the war he supervised the development of television transmission over Bell System wire and coaxial cable facilities.

He became Military Development Engineer in 1951, and was in charge of certain guided missile developments. He was appointed Director of Guided Missile Development in 1957, and assumed his present post in 1964.

Mr. Morrison is the author of a number of published technical articles and has been granted several patents for his inventions.

He is a Fellow of the Institute of Electrical and Electronics Engineers, and a member of the American Institute of Aeronautics and Astronautics, and the Association of the United States Army.

Born in DeKalb, Illinois, Mr. Morrison received the B.S. degree in Electrical Engineering from the University of Wisconsin in 1930.

Eric E. Sumner

"For contributions to pulse-code modulation, and signal processing systems."

Eric E. Sumner is Executive Director of the Transmission Media Division at Bell Telephone Laboratories, Whippany, N.J. He is in charge of the Transmission Media Engineering Laboratories at Murray Hill, N.J., and Chester, N.J.; The Cable Laboratory at Baltimore, Md.; The Loop Systems Laboratory at Holmdel, N.J. and the Electromechanical Laboratories at Whippany.

Mr. Sumner joined Bell Laboratories in 1948. He has participated in development work on many projects including the card translator, the wire spring relay, trouble recording apparatus, and circuits for electronic switching systems.

For several years, he specialized in transmission systems development work, being responsible for the first commercial pulse-code modulation system for exchange trunks. He was named Director of Transmission Systems Development in 1960 and Director of the Guided Wave Transmission Laboratory the following year.

He was Director of the Underwater Systems Laboratory from 1962 until he was appointed to his present post in September, 1967.

Mr. Sumner received the B.M.E. degree from Cooper Union in 1948 and, while still a student, served there as instructor in Physics in 1947–48. During the summer of 1950 he was a non-resident instructor in Probability and Statistics at Massachusetts Institute of Technology. He later studied at Columbia University receiving the Master's degree in Physics in 1953 and the professional degree in Electrical Engineering in 1960.

Mr. Sumner is a Fellow of the Institute of Electrical and Electronics Engineers and a member of Tau Beta Pi and Pi Tau Sigma. He is also a member of the Acoustical Society of America.

Mr. Sumner and his wife, Joan, live at 47 White Oak Drive, North Caldwell, N.J. They have two children, Eric, Jr., and Hilary.

E. Kenneth Van Tassel

"For contributions to telephone transmission, radar circuitry and applications of digital techniques to data processing."

E. Kenneth Van Tassel, former head of the Data Processing System Control Department at Bell Telephone Laboratories in Whippany, N.J., retired from Bell Labs in 1968.

Mr. Van Tassel joined Bell Laboratories in 1928. For many years he was concerned with the design and development of carrier systems and with the application of carrier transmission to telephone cable. During World War II he worked on military projects, including the development and testing of early warning search radar. After the war he supervised development work on a number of carrier systems. He was concerned with the design of military data processing systems from 1956 until his retirement.

Mr. Van Tassel has been granted seven patents and is the author of a number of technical articles. He is a Fellow of the Institute of Electrical and Electronics Engineers and has been active on several of the Institute's committees for many years.

Born in PawPaw, Michigan, he received his B.S. and M.S. degrees in Physics from Michigan State College in 1926 and 1928, respectively.