

The IEEE

Newsletter

The Magazine of the North Jersey Section

Reliability of Computer Power Sources

ALAN H. STOLPEN
2037 BALMORAL AVE
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Volume 15, Number 9
May, 1969

MODELS 180 & 180R AM Signal Generators provide for fast, precise alignment of complex RF radio and TV circuitry. Model 180 covers 2 to 400 MHz; Model 180R: 5 to 475 MHz. Direct reading scales and dials, and individually calibrated frequency dials. Manual or automatic controls provide accurate output voltages at all levels. Solid state supply delivers regulated voltage to oscillator. Provision for external pulse modulator. Convenient stacking or rack mounting panels.

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CALENDAR

Tuesday, May 6

Metropolitan Instrumentation and Measurement — **Magnetic Measurements**,
Hearthstone Motor Inn, Route 46, Parsippany, N. J. 10:00 A.M.

Wednesday, May 14

North Jersey Computer — **Computers in Education**, Arnold Auditorium, Bell
Telephone Laboratories, Murray Hill, N. J. 7:30 P.M.

Thursday, May 15

North Jersey Section and North Jersey Reliability — **Reliability of Computer
Power Sources**, Bell Telephone Laboratories, Whippany, N. J. 8:00 P.M.

Wednesday, May 21

North Jersey Power Group — **Supervisory Control for Power Distribution**, Pub-
lic Service Electric and Gas Company, Room 3171A, 80 Park Place, New-
ark, N. J. 7:30 P.M.

Princeton Magnetics — **Cylindrical Domains in Orthoferrites**, Arnold Auditor-
ium, Bell Telephone Laboratories, Murray Hill, N. J. 8:00 P.M.

Thursday, May 22

Metropolitan Area Electron Devices Group — **IGFET Integrated Circuits: A
Look at the Present and Prospects for the Future**, United Engineering Cen-
ter, 345 East 47th St., New York City. 8:00 P.M.

Monday, May 26

New York Technical and Scientific Activities' Committee and Stevens Institute
of Technology — **Computer-Aided Device Analysis and Design Seminar**,
Stevens Institute of Technology, Hoboken, N. J. 9:00 A.M.

IGFET Integrated Circuits

IGFET integrated circuit technology will be *G. T. Cheney's* topic of discussion at the May meeting of the Electron Devices Group - N. Y. Metropolitan Area Chapter. Particular emphasis will be placed on fabrication technology, IGFETs as integrated circuit elements, and IGFETs as compared with bipolar transistors. Current levels of complexity and performance for IGFET integrated circuits will be reviewed. From this base of information, the prospects for the near future in the areas of performance, circuit complexity and new applications will be considered.

Mr. Cheney received his A.B. in 1960 and his M.S. in 1964 from San Diego State College. Since 1964 he has worked for Bell Telephone Laboratories investigating the properties of metal-insulator-semiconductor devices, and designing

beam-lead discrete transistors and integrated circuits. He is currently supervisor of Digital IGFET Circuits Group.

The annual election of officers for the coming year will take place immediately preceding Mr. Cheney's talk. Entered by the nominating committee are R. Edwards of Bell Telephone Laboratories, Chairman; H. Veloric of Radio Corporation of America, Vice-Chairman; and F. Drago, General Telephone and Electronics Laboratories, Secretary. Additional nominations will be accepted from the floor, provided that at least two seconds are received.

Time: Thursday, May 22, 1969; 8 P.M.

Place: United Engineering Center, 345 East 47 Street, New York, N. Y.

Pre-Meeting Dinner: 6:00 P.M.; Copain Restaurant, 1st Avenue at 50th Street, New York, N. Y.

The IEEE Newsletter

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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 1968-1969



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ON THE COVER: Reliability of power sources for computer installations like this EAL 8900 Hybrid Computing System at the Manned Space Center, Houston, is the topic at the annual meeting of the North Jersey Section.

Reliability of Computer Power Sources

The North Jersey Reliability Group will be host at the annual meeting of the North Jersey Section that is to be held at 8:00 P.M. on May 15, 1969 at Bell Telephone Laboratories, Whippany, New Jersey.

A panel discussion on the topic "Reliability of Computer Power Sources" will be presented with *Edmund J. Thimme*, Assistant to the Vice President of Electric Operations, Public Service of New Jersey serving as moderator. Various approaches for providing an acceptable power source to meet the special requirements of computers will be treated by Mr. Thimme and the other members of the panel.

The Reliability Group will also elect a slate of officers for 1969-70 and vote on by-laws that have been drafted. Members who are being proposed for elective offices by the Nominating Committee are as follows: Chairman - *George Ebel*, Conrac Corporation; Vice-Chairman - *Emil C. Neu*, Stevens Institute of Technology; Secretary - *Gregor Hetzel*, Bell Telephone Laboratories; Members - at - Large - *Raj Misra*, Newark College of Engineering, *John Clayton*, Aircraft Radio Corporation and *Richard Jacobs*, Consultant Service Institute.

Time: Thursday, May 15, 1969; 8 P.M.
Place: Bell Telephone Laboratories, Whippany, New Jersey.

Additional Information: Call R. Haiken at 256-4000 Ext. 2959.

Family Meeting on Computers in Education

Husbands and wives are invited to hear *Mr. Arthur Kaupe, Jr.*, Director, Systems Design Div., Westinghouse Learning Corporation, discuss Computers in Education.

The role of the computer, present and future, will be reviewed with emphasis on its overall effect on education. Much of current educational technology research is directed towards a recognized need for tailoring our educational programs to the capability, needs and goals of the individual student. Computers are being used in various ways to achieve this individualization.

Mr. Kaupe's ten year experience includes the design of general and special-purpose computers. He has developed special input-output systems to facilitate use of computers by high school students and he is currently developing computer information systems for PLAN (Programmed Learning According to Needs).

Time: Wednesday, May 14, 1969; 7:30 P.M.

Place: Arnold Auditorium, Bell Telephone Laboratories, Murray Hill, N. J. Non-members welcome. Admission free.

Pre-meeting Dinner: 6:00 P.M. at Wally's Tavern, 154 Bonnie Burn Road, Watchung, N. J.

Supervisory Control For Power Distribution

The May meeting of the North Jersey Power Group will be devoted to a presentation on "Supervisory Control for Power Distribution Apparatus". Several modes of control for devices such as capacitors, reclosers, customer water heaters and transformer tap changers will be included. Emphasis will be placed on reliability, security, economics and future developments.

Three Speakers will lead the presentation. *Paul Schirmer* is Applications Manager for Quindar Electronics, Inc. *Alexander Konash* is Manager of Microwave & Special Product Applications for Motorola Communications and Electronics Inc. *Ray Chatfield* is District Sales Manager for Sigma Instruments Inc.

Time: Wednesday, May 21, 1969; 7:30 P.M.

Place: Public Service Electric & Gas Company, Room 3171A, 80 Park Place, Newark, N. J.

Computer-Aided Device Analysis and Design

On May 26, 1969, the New Technical and Scientific Activities' Committee (N. Y. Section, IEEE) and Stevens Institute of Technology will sponsor a seminar on "Computer-Aided Device Analysis and Design."

About the Program

The electronics industry pacesetter today is the device designer. As the demand for more optimum devices increases, he is forced to seek more specific solutions to the problems encountered in device design and analysis.

Only with the computer is this more detailed knowledge available to the device designer, and the importance of computing and numerical techniques takes on new dimensions in this field.

To keep you abreast of these developments, five experts will discuss the computer-aided design of bipolar, unipolar and avalanche devices. In addition, the afternoon panel discussion provides a free exchange of thought in this exciting technology. Audience participation is welcomed and encouraged.

Speakers and Topics

"A Self-Consistent Regional Approach for Computer-Aided Transistor Design," Dr. R. B. Schilling, RCA Electronic Components Division, Somerville, N. J.

"Device Modeling for Computer Analysis," Dr. H. K. Gummel, Bell Telephone Laboratories, Murray Hills, N. J.

"Unified Theory of Computer-Aided Device and Process Design," Dr. H. N. Ghosh, IBM Components Division, Hopewell Junction, N. Y.

"A Two-Dimensional Analysis of Junction Field Effect Devices," Dr. D. P. Kennedy, IBM Components Division, Hopewell Junction, N. Y.

"Avalanche Diode Oscillators; Computer and Laboratory Experiments," Dr. D. L. Scharfetter, Bell Telephone Laboratories, Murray Hill, N. J.

Panel Discussion — "Present and Future Problems in Computer-Aided Device Analysis and Design," moderated by Dr. G. J. Herskowitz, Stevens Institute of Technology, Hoboken, New Jersey.

Registration

Advance registration fee for members of IEEE is \$20. The fee for non-members is \$25. At-the-door registration involves an additional \$5 fee.

The registration fee includes luncheon and a copy of the Proceedings, to be published shortly after the seminar.

Make checks payable to "NTSAC" and remit to: Samuel Ponczak, Zone 3A, RCA Electronic Components, Somerville, New Jersey 08876. Acknowledgements, including routes by public transportation or car will be mailed to all registrants.

Time: Monday, May 26, 1969; 9:00 A.M. to 4:30 P.M.

Place: Stevens Institute of Technology, Hoboken, N. J.

North Jersey Members Win IEEE Field Awards

Two important 1969 Field Awards of the IEEE have been won by members of the North Jersey Section. Harry William Houck received the Morris E. Leeds Award "For outstanding contributions to the field of RF Instrumentation." Otto H. Schade, Sr. received the Vladimir K. Zworykin Award "For Broad Technical Contributions to the Electronics and Optics of Television."


The Leeds Award of IEEE was established in 1958 for an individual or group making outstanding contributions in the field of electrical measurement. It is funded by Leeds and Northrup Foundation. The Vladimir K. Zworykin Award of IEEE was established in 1952. This award honors technical contributions in the field of electronic television.

On History and Procedures:

A decade or so ago when, after serving in various offices and places on the Executive Committee, as Regional Director, and on various national committees, I was asked to continue on the Executive Committee, I declined on the basis that the Section should renew itself continually by getting younger men. After it was explained that it was desired to keep from repeating mistakes by having someone on the Committee who knew of past policies and actions, I consented to serve in a new position so that I would not displace a younger man. Asked to name the position, I said "Historian" although I had no intention of writing history. Perhaps it is appropriate here to discuss some of the problems which have continually faced the Executive Committee in which experience has been a helpful factor.

Each year the Executive Committee has many new members who, in the past, have taken the positions with only a vague idea of what they were supposed to do. As a result, mistakes were repeated and important functions omitted or only partially fulfilled. A few years ago Operating Procedures were written which outlined the duties and actions of all members of the Executive Committee in an informal and detailed manner. These Procedures are not unduly restrictive and can be changed quickly by the Executive Committee when a need is seen. Now, when a man is asked to take a position on the Executive Committee, he is handed a copy of the Procedures relating to his job and can see what he is agreeing to do. For the past several years, a special "workshop" meeting has been held soon after each new Committee is appointed which is devoted entirely to the theory and practice of the operation of the Section and these meetings have been found very fruitful.

The function of the Section Executive Committee primarily is to manage the holding of meetings in the Section area. At one time the meetings of the Sections were the most important means of disseminating information and engineers went to the meetings as a ready means of keeping up with the profession. As time has gone on, the number of technical publications of all sorts has increased enormously, the number of meetings has likewise increased and the relative value of going has diminished. In addition, the easy chair and the television set now compete with illustrated technical lectures.

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Harry William Houck

Formerly Vice President and Division Manager of Measurements Division, McGraw-Edison Company, Boonton, New Jersey; Director Sag Harbor Industries; President Measurements Corp., President Armstrong Memorial Research Foundation. Res. Mountain Road, Wallpack, New Jersey; B. New Cumberland, Pennsylvania, April 11, 1896.

Interested in radio since 1909; 1909-1917/1963-1969 operated amateur wireless station. Calls 3AHK (WB2KEE).

Professional experience: 1917-1919 World War One, U. S. Signal Corp Laboratory In Paris, France; original development work of superheterodyne method of reception with the late Major Edwin H. Armstrong. Later designed the first second harmonic super-heterodyne broadcast receiver to be placed in commercial production; 1922-1923 Consult-

ing Engineer; 1923-1931 Chief Engineer, Dubilier Condenser and Radio Corp., where his research and development of capacitors made practicable the filter systems used in modern radio receivers; 1931-1933 Federal Telegraph Co., Special research and development, Consulting Engineer through 1937, and Measurements Corp. to 1967.

His pioneer work on alternating-current-operated radio receivers resulted in many patents. Over 88 patents issued to date, in the field of Electronics. Life Member and Fellow IEEE, Fellow Radio Club of America, Engineers' Club, New York City, former manager IRE. In 1941 the Radio Club of America awarded him the coveted Armstrong Medal. In 1955 awarded Marconi Memorial Medal of Achievement, VWOA. Presently consulting research and development engineer.

Considerable study has been put into how to serve the membership better by increasing the attendance at meetings. Of course the most important things are to have timely topics and authoritative speakers. But with increased specialization, timely topics are apt to be deeply involved in some specialty and consequently of interest to a decreasing fraction of the total audience. This was recognized in the formation of the various Technical Groups. These groups have prospered, somewhat at the expense of the general Section meetings.

Special notices of meetings have been found to increase the attendance but are too expensive to be universally used. They would be unnecessary if members, when they read the Newsletter, would note the meetings they desired to attend in a pocket diary.

Meetings should be held at points convenient to the membership. The North Jersey Section serves an area extending between the Hudson and Delaware Rivers and from the New York line south to nearly Princeton. Meetings near the edges of the area are likely to be attended only by those nearby. The center of gravity of the I. R. E. membership some fifteen years ago was near Upsala College in East Orange. By 1962 it had moved west to the northern part of Livingston. No doubt it is now further west and will continue to move west for some years. By holding meetings near the center of gravity, the greatest number will be served but some will still have to travel long distances.

Experience has indicated that holding meetings at the same place and on the same day of the month is helpful in increasing attendance. The member gets in the habit of setting aside this date and does not have to figure out where to go each time. But the multiplicity of meetings now being held and the concentration of specialties in particular areas tends toward a diversity of meeting places.

The statistics show that Sections with a large membership do not have a correspondingly large meeting attendance. This is partially due to the difficulty in traveling in congested areas but to a larger degree probably to the individual member feeling increasingly lost in an alien crowd. This has been successfully overcome in specific cases by emphasizing the social aspect of the meetings and perhaps serving refreshments to persuade members to linger and get acquainted.

Meeting attendance certainly is a function of Section leadership which the Executive Committee is constantly and aggressively trying to give. The Committee, however, does not have all the answers and welcomes suggestions from any member.

Frank A. Polkinghorn, *Chairman
History and Procedures Committee*

Otto H. Schade, Sr.

Otto H. Schade was born and educated in Germany. He came to this country in 1926. Five years later he began his long association with the RCA Tube Department in its Harrison plant. Since 1938, he has specialized in television circuits, camera tubes, picture tubes, and the analysis of television system performance.

From 1944 to 1957 he worked on a unified general method of image analysis and specification, including practical methods for measuring the spatial frequency spectrum and fluctuation levels (noise) of optical, photographic and electronic image system components and the eye. He later had the responsibility for the thermal and electrical design of nuvistor tubes, requiring an extension of electron tube theory and refined methods for calculating the characteristics of close spaced electron tubes. More recently he has developed an accurate method for calculating the resolving power of television and photographic systems to assist in the evaluation of high definition T.V. systems. He has developed a new electron optic providing minimum aberrations and uniform focus in T.V. camera tubes with larger (50 x 50 mm) image surfaces developed for the Air Force Systems Command. Dr. Schade has been awarded 80 patents and has presented or published more than 30 papers on electron tubes, circuits, and image evaluation.

In 1946 he received the company's highest citation, the RCA Victor Award of Merit, for his contribution in the field of television. He has also received numerous other honors including the Modern Pioneers Award of the National Association of Manufacturers (1940), the Morris Liebmann Memorial Prize of the Institute of Radio Engineers (1950), the Fellow Award of the IRE (1951), and also the Fellowship Award of the S.M.P.T.E. (1951). He is also the first recipient of the David Sarnoff Gold Medal Award of the Society of Motion Picture and Television Engineers. This award was received in 1951.

In 1960, he received the Progress Medal Award of the Society of Motion Picture and Television Engineers for his outstanding technical contribution in the engineering phases of the motion picture and television industries.

In 1965, he received the Journal Award of the S.M.P.T.E. for his paper entitled "An Evaluation of Photographic Image Quality and Resolving Power" published in February 1964. (ST 2482). In 1968, he received the David Sarnoff Outstanding Achievement Award for 1968.

Magnetic Measurements Seminar

The New York Joint Chapter on Instrumentation and Measurement is sponsoring a seminar on Magnetic Measurements on May 6. The program is:

10:00 A.M. to 12:00 Noon

The history of magnetics and magnetic measurements will be discussed by Mr. Jack M. Janicke, Vice President of the Instrumentation Division of RFL Industries, Inc. in Boonton, N. J.

A second speaker (to be announced) will discuss the uses of various magnetic measuring equipment.

A question and answer session will follow these talks.

12:00 Noon to 1:30 P.M.

LUNCH — COURTESY OF RFL INDUSTRIES, INC.

1:30 P.M.

For those who are interested, there will be a field trip to the RFL plant.

Time: Tuesday, May 6, 1969; 10 A.M.

Place: Hearthstone Motor Inn, Route 46, Parsippany, N. J.

Reservations: Attendance will be on a no-charge basis, but will be limited to fifty persons. Reservations should be made with: Mr. Daniel Cotte, Jr., RFL Industries Inc., Powerville Road, Boonton, N. J. 07003.

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Report From The: Reliability Group

In the fall of 1966 a Chapter of G-7 (Reliability) was organized in North Jersey with the authorization given by the North Jersey Section IEEE Executive Committee for formation of such a group. Prior to this, even though in New Jersey a considerable amount of work in the field of Reliability was going on, the members felt unable to attend the meetings in Long Island or even Manhattan because of the distances involved. At that time, of course, there was a Joint Chapter of Greater New York. In all fairness to everybody concerned, the people in Long Island tried their best to accommodate the people in Manhattan as well as in New Jersey by holding one meeting a year in New Jersey and then adjusting meetings between Manhattan and Long Island. This procedure was found to be extremely inconvenient in New Jersey because of the great geographical spread and traffic congestion involved. As a result, when we formed the new chapter, which was organized by Professor R. P. Misra of Newark College of Engineering, Mr. John H. Gerth of Bell Labs, and Mr. Edward F. Mallahan of Bendix Corporation, this new organization started out with programs in which the New Jersey attendance immediately increased to about 800% of what it used to be when the North Jersey people were part of the Greater New York Chapter. Likewise, between the period of 1966 and 1967, the membership of the G-7 Group increased by 15%. This increase is likely to continue for a few years to come if our programs are as effective as most of them have been. The original membership of the G-7 Group on December 31, 1966, amounted to 102 members.

It is obvious that this group has benefited the professionals in Northern New Jersey and provided the stimulus necessary to hold effective programs. As a rule, between five to seven programs a year have been planned and successfully executed. At the last two meetings, the attendance was approximately forty each time.

This group has been offering many stimulating topics to the members of IEEE in general and even those electrical engineers in this area who are not IEEE members will be welcome to come in and get the benefits of informative speakers and lively discussions. In this day and age it is worthwhile to know what is *Reliability*, how it plays an important role in engineering, and what it can do for our society in the future. Fortunately, in this area two academic institutions are also providing advanced courses in the field of Reliability. These are Newark College of Engineering and Stevens Institute of Technology.

To get additional information about this group and the programs, you are always invited to contact Mr. John H. Gerth, present Chairman of the G-7 Chapter of the North Jersey Section, phone number 386-4191 or other officers of this Chapter whose names appeared in earlier issues of the Newsletter.

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Fellow Awards To Edson

In addition to the Fellows listed in February's issue, J. O. Edson of Bell Telephone Laboratories was presented a Fellows Award at this year's North Jersey Section dinner. Mr. Edson, although residing in the Lehigh Valley Section, did the work for which he was honored at the Whippany, N. J. installation. He was honored "For contributions to multiplex communications."

James O. Edson is a supervisor in the Digital Systems Department at Bell Telephone Laboratories, Whippany, N. J. He is in charge of the digital circuit studies group.

An electrical engineer, Mr. Edson joined Bell Laboratories, the research and development unit of the Bell System, in 1929. He initially worked on carrier telephone repeaters. He contributed to much of the early work on distortion and impedance properties of feedback amplifiers. He later worked on pulse code modulation development.

He took part in the early studies of T-1 Carrier (a PCM system) and also worked on low speed data systems for use on telephone lines.

In 1962, he was named supervisor of a group doing exploratory development of solid state coder operating at 112 megabits per second. He assumed his present post in 1965.

Mr. Edson has been granted 29 patents and is the author of published technical articles. A native of Kansas, he received the B.S.E.E. degree from the University of Kansas in 1929.

Cylindrical Domains in Orthoferrites

Cylindrical magnetic domains sometimes called bubbles, exist in a variety of uniaxial single crystal magnetic oxides. The application of cylindrical domains in memory and logic will be stressed. A color movie will be shown.

The talk will be given by Mr. A. H. Bobeck of Bell Telephone Laboratories. *Time:* Wednesday, May 21, 1969; 8 P.M. *Place:* Arnold Auditorium, Bell Telephone Laboratories, Murray Hill, N. J. *Pre-meeting Dinner (no-host):* Wally's Tavern on the Hill, 154 Bonnie Burn Rd., Watchung, N. J.

Summer Meeting of Power Group

The summer meeting of the Power Group of the Institute of Electrical and Electronics Engineers will be held in Dallas June 22-27.

According to R. S. Miner, manager of distribution for Dallas Power & Light Company and chairman of the 1969 summer meeting, the theme of the conference will be "Reliability."

Planned social activities for delegates, their wives, and families include trips to the Six Flags Over Texas amusement park, a rodeo, a barbecue, and a visit to the world famous Neiman-Marcus Department store.

Technical papers will be presented on electrical power system subjects related to reliability and other topics of general interest to electrical engineers.

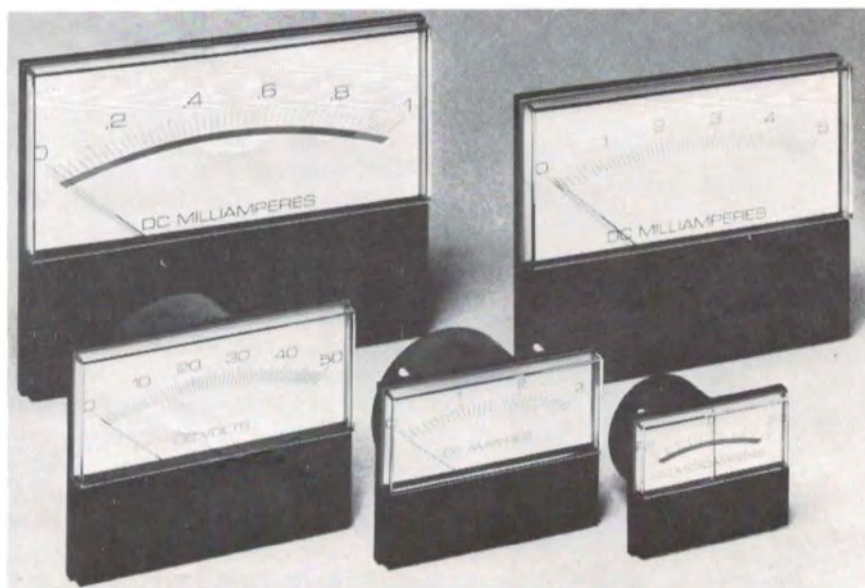
The meeting will be held in the Sheraton-Dallas, Statler-Hilton, and Holiday Inn Hotels, all near the downtown area of Dallas. More than 1,000 engineers are expected to attend.

HAROLD R. TERHUNE

Harold R. Terhune, Standards Administrator for Quindar Electronics, Inc., died on January 4th in Upper Montclair, N. J.

An Alumnus of Rensselaer Polytechnic Institute in Troy, N. Y., 'Terry' Terhune was a Fellow of the Standards Engineers Society and a Senior Member of the IEEE. He also served as a technical advisor to the U.S. National Committee of the International Electrotechnical Commission.

Mr. Terhune was responsible at Quindar for the establishment and administration of the company's engineering standards program. He had previously been Manager of Standards and International Standards Coordinator for ITT Corporation in Nutley, N. J., and, before that, held a similar position with RCA in Camden, N. J.



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FRANK POLKINGHORN

Frank Polkinghorn was born in Massachusetts, moved to California when he was 7, and took up electrical engineering shortly thereafter. His first interest was in power, working specifically in hydro-electric generation, construction and transmission.

After graduation from Berkeley in 1922 and a further short sojourn in the power field, his high interest in vacuum tubes caused him to join up with the A-P Radio Company, an organization long since absorbed by others.

In 1925 he went with the Bell System and has been connected with the Bell Telephone Laboratories from their formation until his retirement. During the early portion of this period he was occupied almost entirely in radio receiver circuits. Early in the 30's he evinced great interest in ultra high frequency, his interest turning to radar during the war. After the war his interests turned again to high frequency communication circuits interspersed with the experiences that come to all highly qualified and well experienced engineers in whatever field they may be. Two years on the MacArthur staff in Japan in the late 40's and several years in Washington in Defense Department work in the middle 50's helped to round out an already full career.

Although official retirement came in

1962, he still continued his activity on both the East and West coast through consulting work with Communications Systems Inc. During his entire life his devotion to the organized profession has been intense. Living in various locations in the Bloomfield-Montclair-Verona area, he has been active in the Montclair Society of Engineers from the time of its inception, serving with distinction on the Society's Education Committee among others.

His real work, however, has been with the radio engineers where he was listed as early as 1924. He watched the Institute grow from a local body in New York to the great national coverage it achieved during and after World War II. He was the first full-time chairman of the Northern New Jersey Section of IRE when it was formed in 1954. Ever since that time he has been an active member of the working body at any moment that he was in town. A member of both Institutes when the merger took place, he was directed by IRE to initiate the meetings and discussions which resulted in the formation of the North Jersey Section of IEEE and has been on its Executive Committee ever since, presently serving as Historian. Although this duty has extended his interest to 60 cycles he may still be truly described as Mr. High Frequency.

New Jersey Section Award Winners

STEPHEN A. MALLARD

Steve Mallard is an engineer's engineer — even better, — an electrical engineer's electrical engineer. Out of high school, he joined the Navy and finished the War in Radar. Out of the Navy, he started at Stevens, after a series of part-time summer jobs, and achieved his Bachelor's degree in 1948.

Part teacher, part scholar, he received his Master's degree three years later, and in that year, 1951, came with Public Service. He started in Public Service with the Substation Engineers and, within a year or so, transferred to Transmission planning, thence to the field for more practical work. After a few years of experience in the Essex Division Distribution Office, he returned to Newark as a member of the newly established System Planning and Development Department. After varying assignments over the years, he succeeded to the title of System Planning and Development Engineer in November of 1968.

During all of his academic and working years, he was outstanding in his devotion to his profession. He became a member of IEEE in 1949 after the usual years of apprenticeship in Student Branch

work. At Stevens he was a member of Tau Beta Pi. He took out his license to practice engineering early in his career and, as would be expected, became active in the Society of Professional Engineers, both nationally and locally. He is a member of CIGRE, an international organization of experts on high-voltage systems.

His major professional society contributions, however, remain within IEEE. When the Institute organized its Northern New Jersey Section in 1963, Steve was among the dependables who did the chore work. His administration of the North Jersey Section in 1966 and 1967 will for a long time be remembered as the period of growth and consolidation for the Electricals.

His well-earned recognition, however, is based upon an achievement much greater than a one-year performance — outstanding though that might have been —, the gaining of the confidence of his fellows in his ability to carry forward any job within the Institute that might be assigned to him, large or small, with the assurance that job would be done well and in the best interests of the profession.

