U. S. Steel's Unisphere at World's Fair

The IEEE
Newsletter
The Magazine of the North Jersey Section

A Day at the World's Fair

SATURDAY, JUNE 20, 1964

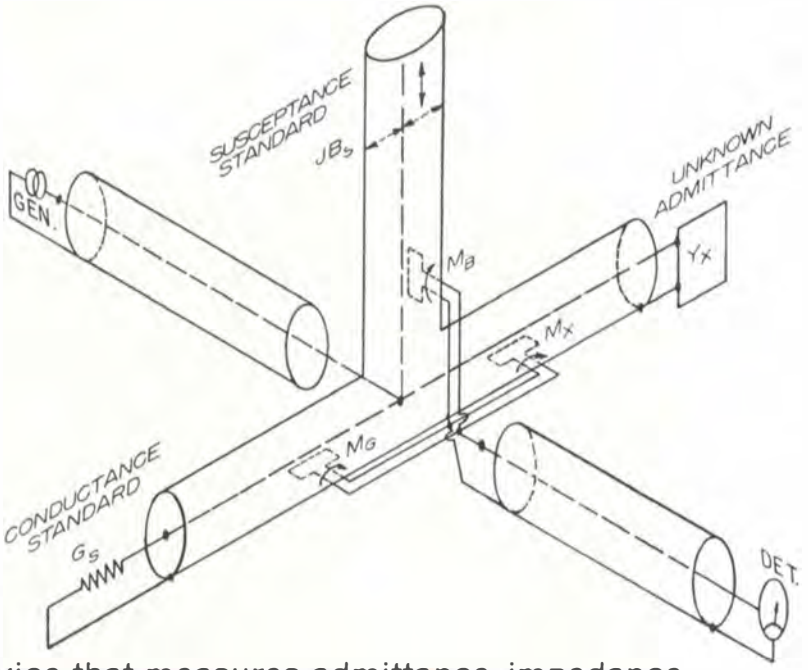
Check in Time 9:15 A.M. at Bell Exhibit

See Page 5 for Details

J U N E 1 9 6 4

Volume 10 / Number 10

WHAT IS IT?



A fundamental device that measures admittance, impedance, and can be used as a VSWR meter over a 20- to 1500-Mc range.

Simple in design . . . the device consists of three branch coaxial lines . . . one line contains a conductance standard, another contains a susceptance standard, and the third line connects to the unknown under test. An external voltage source feeds all three lines at their common junction point. Each of the three lines contains an adjustable loop which can be individually rotated to permit sampling of the field within each line. The outputs of these loops are connected in parallel to a null detector.

A voltage null is obtained when the loops in the conductance and susceptance arms are oriented so that their outputs produce a vector sum that counterbalances the conductive and susceptive components of the unknown. A multiplying factor is established by the third loop in the arm leading to the unknown. The multiplying factor times the calibrated settings of the conductance and susceptance loops give directly the value of the unknown. Or, if you prefer, you can add a ¼-wavelength line just ahead of the unknown and get your answer *directly* in resistance and reactance.

WHAT IS IT? The instrument described above, the Type 1602-B Admittance Meter, $325. In U.S.A.

It is a compact device that offers unmatched speed, accuracy, simplicity, and convenience for both component measurements and impedance matching. Range is up to 10,000 millimhos for conductance or susceptance, and 5000 ohms for resistance and reactance. Basic accuracy is 3%. Because the operating principle is so fundamental, the 1602-B can be used with additional accessories for a wide variety of measuring situations. Available are: a Balun for measurements on balanced lines and circuits; a Component Mount for shielded measurements of components at high frequencies; Terminations for the measurement of reflection coefficient; and a complete line of coaxial adaptors to work with any coaxial system from Microdot to 3⅛-inch rigid line.

A wide variety of oscillators and detectors are also available.

Would you like to know more? Please write for complete information.

GENERAL RADIO COMPANY
WEST CONCORD, MASSACHUSETTS

Sales Engineering Office in NEW YORK: Broad Avenue at Linden, Ridgefield, New Jersey
George G. Ross • J. P. Eadie • Tom H. Mujica • Richard K. Eskeland
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LOCAL SERVICE AND REPAIR

For your convenience, the New York Office has a Service Department, manned by factory-trained service engineers. This Department can supply prompt and efficient repairs or recalibration of any G-R equipment. Considerable time can be saved by taking advantage of these facilities.

Editorial Notes

There will be no issue of "The Newsletter" during July and August. Mark **July 25** on your calendar as the deadline for the **September** issue, and **August 25** as the deadline for the **October** issue.

Like those of you who have followed this year's program, we extend thanks to Roger McSweeny, Program Committee Chairman, for his committee efforts in presenting both varied and interesting subjects for your attention. This is a tangible area for commendation. The members of the Executive Committee, chaired by C. Vadersen, have selflessly contributed their efforts and time to promote the activities of your section.

Through the efforts of the Business Manager and the Editor of "The Newsletter" the objective of getting the publication to you in time for the monthly calendar, has been fulfilled.

At the May General Meeting of the Section, a new slate of officers was elected. In the April and May issues, we printed the slate presented by the Nominations Committee. The slate named:

Chairman: John Redmon; **Vice Chairman:** Walter Glomb; **Treasurer:** Stephen Mallard; **Secretary:** J. W. Gordon; **Members at Large:** Roger McSweeny and John Van Duyne. The balance of the committee will be appointed and the Members of the Committee will be published in the September issue.

As a prelude to summer, we are not going to exhort you to become active in the section. Any attempt to coerce the membership to take part in the planning and operation of the section meets only with resistance and reasons why you can't be active. We'd suggest that you re-examine your thinking and approach the situation in a positive way.

"What can I do to promote interest and activity in the Section?" Membership dues support all the activities of Meetings, Seminars, Publications, and tours. Objectively, what do you derive from your payment of dues?

As we have said before, active, interested members run the section. They are needed not only on the staff of "The Newsletter," but also to staff the many committees and PTGs.

Enjoy your summer.

CALENDAR

June 8, 9, 10
Symposium on Quasi-Optics
Statler Hilton Hotel, N. Y., N. Y.

June 11-12
8th Annual Product Engineering & Production Conference
Pratt Institute, Brooklyn, N. Y.

June 15
Conference on Failure Mechanisms and Reliability
Weston Hall,
Newark College of Engineering,
Newark, N. J.

June 18
PTGEWS
"New Developments in Glass"
7:30 P.M. — Pomptonian Restaurant,
1041 Pompton Avenue (Rte. 23),
Cedar Grove, N. J.

June 19
Long Lines Department—Inspection Trip
2:00 P.M. — AT & T
32 Avenue of the Americas, N. Y.

June 20
A Day at the World's Fair
9:15 A.M. — Check in at Bell Exhibit

June 22
PTG-Power
7:30 P.M. — Elections
Jersey Central Power & Light
Morris Ave. & Punchbowl Rd.,
Morristown, N. J.

June 23, 24
Tour: Time Life Data Center
2:00 P.M. — Time Life Data Center
50-51st Street,
Avenue of the Americas, N. Y.

July 27-31
Random Processes in Communications Systems
Graduate Center,
Polytechnic Institute of Brooklyn

Volunteers Needed for Newsletter and Committees

Executive Committee Meetings

at Verona Public Library

June 3

The IEEE
Newsletter

Published monthly except July & August by the North Jersey Section of the Institute of Electrical & Electronics Engineers, Inc. Office of Publication: 8 Robin Hood Rd., — Morris Plains, N. J.

Volume 10 June, 1964 No. 10

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

THE NEWSLETTER
P.O. Box 275 — Morris Plains, N. J.
Telephone: FOxcroft 6-1580

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ABOUT ADDRESS CHANGES

It is not necessary to inform the North Jersey Section when you change your mailing address. The NEWSLETTER and other section mailings use a list provided by IEEE's national headquarters in New York. This means the Section has no need to maintain a mailing list or addressing plates. Section membership records are changed when Headquarters notifies us.

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

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Microwave Theory and Techniques ..... H. Engelman

Engineering Writing and Speech

New Developments in Glass

The June "family" meeting of the North Jersey PTG on Engineering Writing and Speech will hear a talk "New Developments in Glass." Mr. John Gallup of RCA will discuss new kinds of glass in terms familiar to the ladies, who are especially invited.

The dinner meeting will be held at the Pomptonian Restaurant, 1041 Pompton Ave. (Route 23, opposite the Meadowbrook), Cedar Grove, New Jersey, at 7:30 P.M., **Thursday, June 18, 1964.** Cost of the London broil dinner, including a cocktail, surprise dessert, and gratuities, is $4.00 per person. For reservations please call Mrs. Cook at RCA Harrison, Hu 5-3900, Ext. 2119 by **Monday, June 15th.**

Subject:

Mr. Gallup will explain several new developments in glass, including light-sensitive glass which darkens on exposure to light, new high-strength glass, and "thirsty" Vycor. He will show a Corning Glass Co. color movie "Engineering With Glass" and will demonstrate several of the new glasses.

Speaker:

John Gallup is the Senior Glass Technologist in Electronic Components and Devices at RCA. He is the author of a number of scientific papers and holds several U. S. and foreign patents in the fields of glass and ceramics.

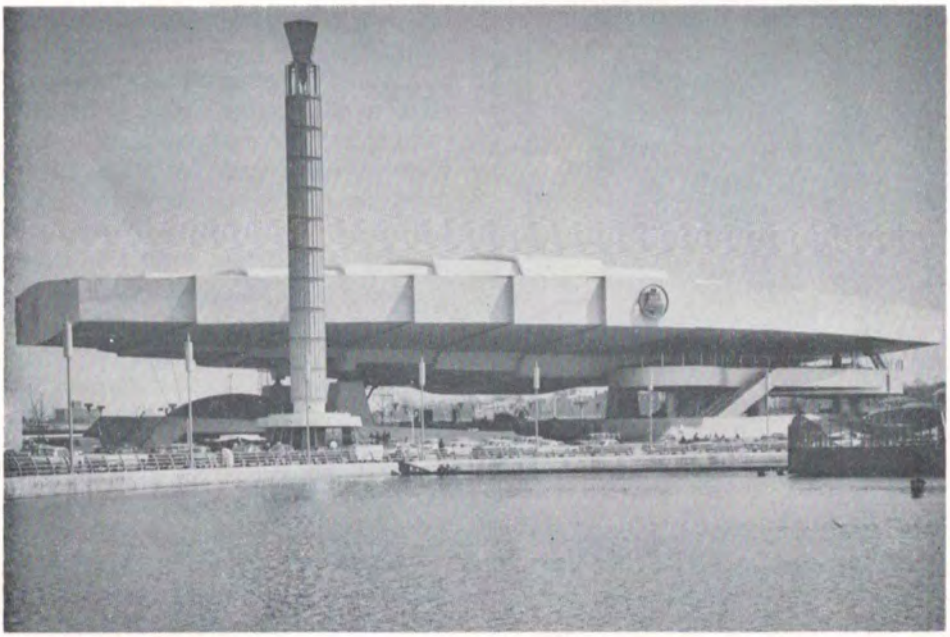
Mr. Gallup received the BS degree in Ceramic Engineering from Alfred University and the MS in Ceramics from Rutgers University. He is a member of several scientific societies and is a licensed Professional Engineer in the State of New Jersey.

Dinner Meeting Notice

Date:	Thursday, June 18, 1964
Time:	7:30 P.M.
Place:	The Pomptonian Restaurant 1041 Pompton Ave. (Route 23, opposite the Meadowbrook, two miles south of Route 46), Cedar Grove, N. J.
Subject:	New Developments in Glass
Speaker:	John Gallup
Reservations:	Mrs. Cook RCA Harrison HU 5-3900, Ext. 2119

NJ - IEEE Presents:

A DAY AT THE WORLD'S FAIR



The Bell System floating wing, 400 feet long, 200 feet wide, 87 feet high, is composed of two major elements; a chair ride and a series of live demonstrations, displays, and audience participation games. The ride tells the story of communication from bongo drums to satellites.

The North Jersey Section of IEEE has arranged a visit to the World's Fair for its members and their families on Saturday, June 20. Selected exhibits and talks will be of particular interest to wives and older children of engineers.

The trip will include in the morning tours, available only to IEEE, of the Bell System Exhibit and the Power and Light Exhibit (Tower of Light). After lunch our group will disperse to permit its members and their families to enjoy, on their own, the numerous other Fair attractions.

What We Will See and Hear

The Bell System Exhibit is located at the eastern end of the fairgrounds facing the Pool of Industry. The huge wing-like structure is supported by four slender pylons and appears to be floating in air. A microwave tower rises like a sleek minaret in front of the pavilion.

Inside the "wing" are chair trains on which we will glide past dramatic scenes illustrating the evolution of human communications from tom-tom to satellites . . . and beyond. Individual loud speakers built into the chairs will enable us to hear the narration.

Following the twelve minute ride, escalators will carry us down to an exhibit hall housing displays, live demonstrations, and audience participation games. We will see the patterns of our voices on a television screen, learn how eyes, ears, and voice work, how crystals are made, how electronic switching systems function, how conversations are carried under oceans, and how machines talk to machines over telephone lines. An experimental telephone service which enables callers to see each other will be demonstrated.

In addition to talks by the regular Exhibit staff, we expect to have several Bell engineers explain technical features of the display in informal talks to our group.

Leaving the Bell Exhibit, we will walk around the Fountain of the Planets to the Tower of Light. The exterior walls of the Tower consist of 600 immense aluminum prisms and the building houses the world's most powerful searchlight whose beam is visible for more than 100 miles on clear nights.

We will enter the Exhibit by a moving ramp over a reflecting pool on to a giant turntable which revolves past seven chambers, stopping at each for a new episode of a musical presentation called "The Brightest Show on Earth." These demonstrate the generation and distribution of power and its use in nearly all activities of our daily lives. Following the show, we will form

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Continued from page 5

smaller groups for visits to the Control Center where the Exhibit engineers will explain technical features of the Tower of Light displays in informal talks for NJ-IEEE.

After the Tower of Light we will walk to the nearby Schaefer's Center for lunch in their restaurant. Schaefer's features hand and footprints of 75 celebrities in the pavement and a gallery of outstanding sports photographs as well as excellent food and drink.

Times and Places to Assemble

Our special tour will start from the base of the microwave (TV relay) tower in front of the Bell System Exhibit promptly at **9:30 A.M.** in order to be ahead of the general public who are admitted to the exhibits at 10 A.M. **Please be there at 9:15 for check-in.**

Our tour of the Tower of Light will commence promptly at **11:15 A.M.** Members who are not there at that time will have to wait in line with the general public.

Our luncheon date at Schaefer's Center Restaurant is at **12:30 P.M.** Members arriving late will lose their table reservation.

Reservations for the Day

Participants in these special tours will require identifying badges which will be mailed upon receipt of the coupon below and a self-addressed envelope. To facilitate notification in case there are changes in plans, please fill in your telephone number as well as your complete address.

Reserved tables in a good restaurant are a great advantage on a Saturday at the Fair. Members desiring lunch should forward the coupon below as soon as possible since only the **first 75** can be accepted. Luncheon tickets will be mailed upon receipt of your check.

All reservations must be received by **15 June** to provide time for return mail.

How to Get There and Admission

The easiest way to drive to the Fair from Northern New Jersey is via the George Washington Bridge, Cross Bronx Expressway, Bronx-Whitestone Bridge, Whitestone Expressway, and Van Wyck Expressway to Rodman St. Exit. Turn left after leaving the Expressway into the World's Fair Parking Area which lies between Lawrence St. and the Bell System Exhibit. Allow ninety minutes driving time unless you are familiar with the route, in which case one hour will suffice. World's Fair parking lots open at 8:00 A.M. and the parking charge is $1.50 per day.

The Fair also can be reached via Grand Central Parkway or the Long Island Ex-

Continued on page 7

EXECUTIVE COMMITTEE REPORT

C. W. Vadersen, Section Chairman

The North Jersey Section has now completed its first full year of operations as part of the IEEE. It has been a good year, with our merger problems behind us and, most important of all, with our thinking completely oriented in terms of the policies and objectives of the new organization.

The diligent and conscientious effort of many members of the Section has produced some accomplishments that we hope will be of continuing benefit to succeeding administrations. Among these are a set of By Laws and Operating Procedures, developed by Frank A. Polkinghorn with assistance from Al Hirsch and Jim Gordon. If next year's Executive Committee is to thank us for anything done this year, it will surely be for these worthy documents. Progress has also been made in achieving closer relations with the Student Branches in the area. We now have a Student Affairs Committee with three faculty and three student members under the guidance of Chairman Ben Blom, and we look forward to continually building up Section support to student activities.

Under the able leadership of Herb Blaicher, a PTG for Power has been organized and is enthusiastically planning for next year's activities. Our Membership Committee has been reorganized and augmented to deal more effectively with increased numbers and their wide geographical distribution. For this we are indebted to George Tanguay and Ragnar Nilsen. Other contributions to improved Section operations have been made by people too numerous to mention here but my appreciation of their efforts and loyal support is most deep and sincere.

To my fellow officers, Vice Chairman John Redmon, Secretary Steve Mallard and Treasurer John Van Duyne: many bravos for their fine work and loyal support. To all of our standing committee Chairmen, my compliments and sincere thanks for their outstanding performance and generous contributions of time and energy. It has been a pleasure and a great privilege to have served with all of you this past year.

Continued from page 6

pressway. Special signs bearing the Unisphere symbol have been posted throughout the New York area to guide motorists.

Subway trains on the IRT Flushing Line run from Times Square and Grand Central to the Fair Station at Willets Point in 20 minutes. Trains leave about every 15 minutes and the fare is 15 cents. Shuttle trains operate between Penn Station in Manhattan and the Long Island Railroad's World's Fair Station about every 15 minutes in each direction. Running time is 12 minutes and the fare is 50 cents.

Buses to the Fair operate from the George Washington Bridge Bus Terminal, from the West Side Airline Terminal in Manhattan, and from many other points in the Metropolitan area.

Excellent transportation within the fairgrounds is provided by Greyhound buses which circle the periphery and by "Glide-a-Ride" trains which cross the area.

Admission to the Fair is $2.00 for adults and $1.00 for children under 12. Gates open at 9:00 A.M.

Mr. Roger McSweeny, ITT Communication Systems, Inc.
60 South Route 17, Paramus, N. J.
(Telephone: 843-2400, Ext. 4223)

Please forward following for our visit to World's Fair, Saturday, June 20, 1964.
Badge for tours: (No charge)

Adults: .....

.....

*Children: .....

.....

.....

(Each name should be listed)

Ticket for lunch:

..... Adults @ $3.40 ..... — ..... *Children @ $2.40 .....

A check payable to "North Jersey Section — IEEE" for lunches is enclosed.

Mailing Address (Please type or print)

Name .....

Company .....

Street ..... Phone .....

City ..... State ..... Zip Code .....

(In addition to filling in your address on this coupon, please include a self-addressed envelope.)

*Less than 12 years of age.

PTG Automatic Control

New PTGAC Officers Elected

In last month's elections the members of the North Jersey Chapter of the Professional Technical Group on Automatic Control elected a new slate of officers. The PTGAC Executive Committee for 1964-1965 is:

Chairman:
Dr. Andrew U. Meyer
Bell Telephone Laboratories, Inc.

Vice Chairman:
Robert G. Sokalski
Key Electric Company

Secretary:
L. E. Sutton III
Gibbs and Cox, Inc.

The outgoing PTGAC Executive Committee members are George Marmar, chairman; Dr. Andrew U. Meyer, vice chairman; Robert G. Sokalski, secretary. This past year four chapter meetings were held. The topics and speakers were:

Developments in Modern Control Theory
Dr. Bernard Friedland
Aerospace Research Center
General Precision, Inc.

Information Processing in Nervous Systems
Leon Harmon
Bell Telephone Laboratories, Inc.

Probabilistic Control Theory
Prof. Rudolph Drenick
Polytechnic Institute of Brooklyn

The Unconventional in Inertial Instrumentation
Hugh Riordan
Kearfott Division
General Precision, Inc.

Officers of Fairleigh Dickinson University's IEEE Student Branch 1964-1965

Chairman:
Ralph Guenther
149 Wessington Ave.
Garfield, New Jersey
Phone—201 GR. 2-6178

Vice Chairman:
Robert Titone
26 Randolph Ave.
Jersey City, New Jersey
Phone—201 HE. 3-7122

Secretary:
Peter Irwin
426 Main St.
Fort Lee, New Jersey
Phone—201 WI. 4-4291

Treasurer:
Louis Kaufer
3 Chapman Drive
Little Ferry, New Jersey
Phone—201 488-6719

PTG Power

Election Night

An election meeting of the PTG on Power has been scheduled for **Monday, June 22, 1964** at 7:30 P.M. The meeting will be held in the Punchbowl Room of the Jersey Central Power & Light Hdqtrs. Bldg. located at the corner of Morris Avenue and Punchbowl Rd., Morristown, N. J.

A nominating committee has submitted the following slate of officers for the 1964-65 business year:

Chairman:
Herb Blaicher — Jersey Central Power & Light

Vice-Chairman:
Carl Torell — Federal Pacific Elec. Co.

Financial Officer:
Jim Jones — Newark College of Eng.

Meeting & Program Sec'y:
John Diercks — General Elec. Co.

Corresponding & Membership Sec'y:
Charles Siegfried — Public Service Electric & Gas Co.

The term of office is one year. All interested members wishing to participate in the Power Group's activities are urged to attend this meeting. To become a member of the Power Group send $6 to Dr. Richard M. Emberson c/o IEEE Hdqtrs, in New York. Indicate your wish to join the PTG-Power.

"Know Your Extinguishers"

BELLEVILLE, N. J. — "Know Your Extinguishers," a new, four-color wall chart, specifies the appropriate extinguishers for A, B, and C classes of fire and combinations of these types. The chart describes each kind of fire and gives essential data on extinguisher operation and maintenance.

Designed for use where extinguishers may be required and to provide general safety information for all potential extinguisher users, the chart is printed on a durable card measuring 17 x 22 inches.

Copies of "Know Your Extinguishers, the ABC of Fire Protection," may be obtained without charge from Walter Kidde & Company, Inc., Belleville, N. J. 07109, or from Kidde agents listed in the Yellow Pages and international representatives.

NY Section Communication & Electronics

Conference
BASIC FAILURE MECHANISMS AND RELIABILITY IN ELECTRONICS

IEEE Basic Sciences Group and Professional Group on Reliability
Metropolitan New York Section

Monday, June 15, 1964

Place:
Weston Hall
Newark College of Engineering
367 High Street
Newark, New Jersey

Registration Fee of $15.00 (IEEE members) or $18.00 (nonmembers) should be sent to Dr. R. Misra, Newark College of Engineering, Newark, New Jersey. Registration after May 25, 1964, is $1.00 additional.

PROGRAM

Morning — 9:30 A.M. to 12 Noon

A. W. Rogers,
U. S. Army Electronics Command—Moderator

R. P. Misra
Newark College of Engineering
Basic Failure Mechanisms in Semiconductors and Dielectric Type Devices

Basic failure mechanisms in transistors and diode structures which are referred to as subsystems are discussed. It is further shown how the failure rate is not related in any simple manner to temperature without considering other very relevant factors.

Relationships of these mechanisms of failure with those that occur in capacitors and other dielectric type devices are shown.

D. S. Peck
Bell Telephone Laboratories
Transistor Failure Studies at Accelerated Levels

Considering various failure mechanisms involved, data will be presented regarding the usefulness and the limitations of life testing at accelerated stress.

Richard J. Millard
Sprague Electric Company
Reliability and Mechanisms of Failure of Solid Tantalum Capacitors

Using advanced failure mechanism analysis techniques in the study of solid tantalum capacitors, corrective actions are pointed out and reviewed. Significant reduction in failure rate using this information by process improvement is shown.

The improvement in reliability of solid tantalum capacitors and dependence of the failure rate on operating conditions is discussed.

Afternoon — 1:30 P.M. to 4:00 P.M.
Dr. J. A. Morton,
Bell Telephone Laboratories—Moderator
M. Grosvalet
Compagnie Generale De Telegraphie Sans Fil, France
Mechanisms of Instability and Evolution in the MDS System of Insulated Gate Field Effect Devices

Allen Stansbury
Quan-Tech Laboratories
Noise Analysis and Failure Mechanisms in Electronic Components

The various types of noise generated in electronic components will be described, including those whose characteristics can be predicted as opposed to those whose characteristics must be measured. These latter types can be a valuable tool in locating and analyzing failure mechanisms in components. A description of the techniques used and their applications to resistors, transistors, and diodes will be given along with case histories where noise analysis has been used successfully to predict reliability.

J. L. Easterday
Battelle Memorial Institute
Analysis of Fixed Resistor Failure and Life Test Data

Data have been analyzed to determine the most common modes of failure of final resistors and the conditions which produce these failures. In addition, studies have been made of the degradation of parameters and of the change in the distribution of these parameters resulting from extended life tests.

These data provide a valuable input in reaching decisions as to the best part for specific applications.

Alonzo Bulfinch
Picatinny Arsenal
Unbiased Estimates of Non-Time Dependent Reliability

It is assumed that an item will not fail until the stress exceeds the strength. From this premise non-time dependent reliability is defined as the probability of the strength exceeding the stress.

It is assumed that reliability is created by building a margin of safety into an item during the development phase of the life cycle. Techniques for determining reliability through direct and indirect measurements of margins of safety are described. It is shown that unbiased estimates of reliability at any level can be obtained with small sample sizes. It is also shown that only the precision with which the reliability is known (not the accuracy) is dependent upon the sample size.

The difference between the reliability and the properties measured by classical quality assurance techniques is pointed out. A method for avoiding the dilemma of zero failures is described.

Volunteers Needed for Newsletter and Committees

PTG
Product Engineering & Production

8th Annual Conference
of The Institute of Electrical and Electronics Engineers
Professional Technical Group on Product Engineering and Production
At Pratt Institute
Brooklyn, New York
June 11, 12, 1964

New Techniques and Economy

Integrated circuitry, thin films, hybrid microcircuits, optoelectronics technology, high energy rate processes, electron beam processes and use of lasers in production are some of the subjects to be discussed at this eighth annual Conference of the IEEE Professional Technical Group on Product Engineering and Production. Theme of the two-day meeting is "The Engineering Approach to Design and Production for Economy".

The question "Can We Afford to Mechanize?" will be discussed by J. A. Hosford of Western Electric Company, Princeton Lab. at the luncheon on Thursday, June 11th. General Chairman of the Conference is Walter B. Ellwood of Bell Telephone Labs.; Ralph Batcher, consultant, is Program Chairman.

Eighteen invited papers will be presented during the two morning and two afternoon sessions. Papers will be available in Proceedings form so that the speakers will be free in verbal presentation and attendees can prepare questions for discussion in advance.

REGISTRATION:

Two lunches and copy of Proceedings included in Registration Fee

Members (2 days)	$20.00
Non-Members	23.00
Proceedings (after meeting)	8.00

Economy accommodations in Pratt Institute Dormitory, with free parking, are available to advance registrants (while they last). Price of single room is $4.50 per night per person; double occupancy is $8.00 per night. One floor is reserved for married couples. Subway to World's Fair Ground (15 cents). Stay over privileges for weekend.

For all advance registrations for Conference, contact: APEPC, 111 West 231st St., New York 63, New York.

TECHNICAL PROGRAM

Session I, Thursday June 11, 9:00 A.M.-12:00 Noon

Theme — *Thin Film Processes*

K. H. Behrndt, Bell Telephone Laboratories
"The Deposition of Thin Films, Evaporation, Sputtering and other Deposition Processes"

A. Stuart Tulk, Sylvania
"Vapor Deposition"

Coffee Break

J. W. Knoll and P. Margolin, Radio Corporation of America
"Three-Dimensional Integrated Circuit Modules"

W. D. Fuller, Electronic Space Laboratories, Lockheed
"Optoelectronics, a New Technology for Product Designers"

Luncheon — 12:15-1:45 P.M.

Speaker — J. A. Hosford, Western Electric Company
"Production Problems of the Future"

Session II, Thursday June 11, 2:00P.M.-5:00 P.M.

Theme — *Planning for Production*

R. P. Claggett, Western Electric Company
"Philosophy of Mechanization"

A. Hanfman, Western Electric Company
"Accelerated Planning — A Mathematical Model and Examples"

W. L. Hack, Western Gold and Platinum
"Modern Brazing Practices in Electronics"

Coffee Break

F. P. Iles, Autonetics Division, North American Aviation
"Development of a Thin Film Microcircuit Facility"

A. P. Kingsbury, Photocircuits, Incorporated
"Designing Printed Circuits for Functional Economy"

Session III, Friday June 12, 9:00 A.M.-12:00 Noon

Theme — *Modern Packaging Techniques*

J. Goldstein, General Instrument Corporation
"Silicon Hybrid Microcircuits"

M. Auriana, Omatron Division, Burndy
"Design in Memory Matrix Planes and Their Interconnection"

Coffee Break

C. Greenwald and H. G. Nordlin, Federal Laboratories, ITT
"Application of Thin Film Technology to Microwave Equipments"

H. G. Renaud, Photochemical Products
"Integrated Circuit Packaging"

Luncheon — 12:15-1:45 P.M.

Speaker — L. H. Niemann, Department of Commerce
"Economy and International Competition"

Session IV, Friday June 12, 2:00 P.M.-5:00 P.M.

Theme — *High Energy Rate Processes*

J. Rothstein, LFE Electronics
"Survey of High Energy Rate Techniques"

D. J. Garibotti and L. R. Ullery, Hamilton Standard Division, United Aircraft
"Electron Beam Processing"

D. F. Brower, Magneform Division, General Dynamics
"Magneform Processes and Their Applications"

Coffee Break

L. Earcolino and J. Kennedy, Grumann Corporation

NY Section
Basic Sciences & PTG Reliability

A.T. & T. NETWORK MANAGEMENT CONTROL CENTER TOUR

A trip through some of the operations of the Long Lines Department of the American Telephone and Telegraph Company at 32 Avenue of the Americas, New York City, is being sponsored by the Communication and Electronics Division of the New York Section IEEE for *June 19, 1964* at 2 P.M.

The trip, which will last about 2 hours, will include a visit to the Network Management Control Center responsible for the operation of the vast communication network of circuits and switching equipment that serves over 81 million telephones and about 60,000 teletypewriter machines. On an average day, this network handles more than 3¼ million messages.

The trip is limited to *40* persons and advanced registration is required. Requests for tickets will not be considered after *June 15*. To register use the coupon below.

To: J. J. Grumblatt, 10th Floor
GT&E Service Corporation
730 Third Avenue
New York 17, New York

Please send me ..... tickets for the inspection trip to the Long Lines Department of the American Telephone & Telegraph Co. Please list the name and Company affiliation for each ticket requested.

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A field trip for IEEE members to IBM's Time-Life Data Center has been scheduled by the Communication and Electronics Division.

The tour can accommodate only 20 persons at a time, and, therefore has been scheduled for two days: Tuesday, *June 23*, and Wednesday, *June 24*. It will start on both days at *2:00 P.M.* The Place: Time-Life Data Center, Concourse Level of the Time-Life Building, between 50 and 51st Streets, Avenue of the Americas (6th Avenue), New York. It promises to be a good demonstration of equipment being described in the current Communication and Electronics Lecture Series 'The Digital Computer as an Engineering Tool.'

Due to the limited capacity, registration must be made before *June 16*. Complete the following and send to J. J. Grumblatt, GT&E Service Corporation, 730 Third Avenue, New York, New York, or call him at 212—551-1393:

Yes, I'd like to attend the tour of the Time-Life Data Center on:

- ☐ Tuesday, June 23 (only day I can make it).
- ☐ Wednesday, June 24 (only day I can make it).
- ☐ Either day will be fine.

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