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The IEEE
Newsletter
The Magazine of the North Jersey Section

Tuesday, May 5

PTGCP

Physics of Failure in Connectors
Roland B. Lawrence

8:00 P.M. — Island Inn,
Old Country Road, Westbury, L. I.

6:30 P.M. — Pre-Meeting Buffet

Tuesday, May 19

PTGAC

Inertial Instrumentation
Hugh Riordan, GPL, Kearfott

7:45 P.M. — North End School,
Cedar Grove, N. J.

Wednesday, May 13

Communication Satellites — History and Evaluation

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Associate Director ITTFL
Space Communication Lab

8:00 P.M. — ITTFL Labs.,
Nutley, N. J.

6:00 P.M. — Pre-Meeting Dinner,
Cooper Hood Restaurant,
Lyndhurst, N. J.

Tuesday, Wednesday, Thursday
May 19, 20, 21

PTGMTT

Microwave Symposium
International Hotel,
John F. Kennedy Airport, N. Y.

Thursday, May 21

PTGED

Electro-Optic Modulator
John D. Schlafer, General Telephone

8:00 P.M. — United Engineering Center,
345 East 47th Street, N. Y.

MAY 1964
Volume 10 / Number 9

It's Easy To Make 0.1% Measurements

with the Type 1608-A Impedance Bridge

Outstanding features are plentiful in this instrument. Basic impedance accuracy is 0.1%. High phase accuracy permits measurement of D down to 0.0005 or Q to 2000. C, R, L, and G parameters are indicated by an in-line digital presentation that includes automatic decimal-point location and display of unit of measurement — there are no multiplying factors to remember. Appropriate D and Q scales are indicated automatically. A concentric coarse- and fine-balance control makes possible rapid bridge balancing. Provision is also made for external biasing of components under test as well as for use of external generators and detectors at frequencies to 20 kc. In short, the 1608-A is the bridge that makes 0.1% impedance measurements easy.

Six bridge circuits provide complete phase coverage of the passive half of the impedance plane so that components, transducers, filters, equalizers, or other networks can be measured regardless of phase angle. A 1-kc oscillator and selective detector are built into the instrument as well as three power supplies which provide standard EIA test voltages for dc resistance and conductance measurements over a wide range.

SPECIFICATIONS

Ranges:
Resistance: 0.05 mΩ to 1.1 MΩ in 7 ranges (ac or dc)
Conductance: 0.05 nΩ to 1Ω in 7 ranges (ac or dc)
Capacitance: 0.05 pf to 1100μf in 7 ranges (series or parallel)
Inductance: 0.05 μh to 1100h in 7 ranges (series or parallel)
at 1 kc: D (series C): 0.0005 to 1 — D (parallel C): 0.02 to 2
Q (series L): 0.5 to 50 — Q (parallel L): 1 to 2000
Q (series R): 0.0005 to 1.2 Inductive — Q (parallel G): 0.0005 to 1.2 Capacitive

Accuracy (at 1 kc): ±0.1% of reading ±0.005% of full scale except on lowest R and L ranges and highest G and C ranges where it is ±0.2% of reading ±0.005% of full scale. D and 1/Q accuracy are ±0.0005 ± 5% at 1 kc for L and C; Q accuracy ±0.0005 ± 2% for R and G. At 10 kc, R, L, C accuracy is ±0.2%.
Residual Terminal Impedance: R 1 mΩ, C 0.25 pf, L 0.15 μh.
Power Requirements: 105-125 or 210-250 volts, 50-60 cycles.
Type 1608-A Impedance Bridge, $1300 in U.S.A.

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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

In the April issue, we put a calendar on this page. Let us know if it helps you. In this issue, we've gone a step further and added the page on which you can find more details.

This is our first opportunity to congratulate John Redmon (Vice Chairman of the North Jersey Section) who was in charge of the Annual Banquet Dinner Dance held on March 15 at the Robin Hood Inn. (We couldn't comment earlier because the April issue was hot off the press and in the process of being mailed). Everyone had a great time. There are pictures of the Newly Elected Fellows, Award Winner, Executive Committee, and some of the celebrants. What you missed!

Election time has come around again. The Nominating Committee (John Schwanhausser, Chairman) has prepared a slate for the 1964-5 year. On May 13, at the General Section Meeting, you will have an opportunity to vote for your candidate. Come down and meet your new officers for 1964-5.

Unfortunately, we have not as yet been able to automate the production of "The Newsletter." Someday, I suppose, each group that has a meeting or function to publicize will tell all to a computer. While the information may be sketchy or skeletal, every memory that a computer can marshall will be called upon for the story. So, in a matter of seconds, the report will be ready for dissemination. We might go a step further, and have a printer installed in the members' homes and as each bit of information about forthcoming meetings comes in, he would be informed.

But that is in the future. We are now faced with the reality of the present. Each group that wants their activity publicized must get the information to the editor. Then this has to be set in type, proof-read, and arranged in some sort of page format, finally off to the printer. Of course there are all kinds of changes and amendments on the way.

Now the point of all this is, we are not as yet computerized. We require time to process your information for inclusion in "The Newsletter." We also need people to join the staff to work on your material.

CALENDAR

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8:00 P.M. — United Engineering Center,
345 East 47th St., N. Y.

Saturday, May 23

Student Branch IEEE
Second Annual Dinner Dance
Spring Rock Country Club,
Spring Valley, N. Y.
7:00 P.M. — Cocktails
8:00 P.M. — Dinner and Dancing

Executive Committee Meetings

at Verona Public Library

May 6
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 **May, 1964** **No. 9**

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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.

NEWSLETTER STAFF

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Associate Editor: Charles Husbands
Associate Editor: Paul Schwanenflugel
Advertising Manager: M. M. Perugini
Office Manager: A. J. LaRouche

PTG Component Parts

Connector Failure Physics

Meeting Notice

Date: May 5, 1964

Time: 6:30 P.M.

Place: The Island Inn, Old Country Road, Westbury, Long Island, (Cumberland Room)

Subject: Physics of Failure in Connectors

Speaker: Mr. Roland B. Lawrence

PROGRAM

6:30 P.M. to 7:45 P.M. — The Deutsch Company invites you to attend a pre-meeting buffet, at the Island Inn, Old Country Road, Westbury, Long Island, (Cumberland Room).

8:00 P.M. — A talk and question period on the Physics of Failure in Connectors.

Subject: Mr. Roland Lawrence will present a discussion and laboratory equipment will be available to give a demonstration showing the catastrophic effect of connector performance under various extreme environmental conditions. The demonstration will include the effects at high altitude, high temperature, cryogenic temperatures, arc resistance, Silicon vs. Neoprene, contact retention, and interfacial seal. Included will be a discussion on contact design criteria for electrical connectors, including subminiature types as well as the new Deutsch developed floating plate concept.

The demonstrations are intended to increase the observers' general knowledge of connectors, as well as pointers on connector design and material criteria during the discussion.

Speaker: Mr. Roland B. Lawrence had more than 20 years of experience in the electronic and electrical systems engineering field prior to joining the Deutsch Company as Director of Engineering and Research in 1959.

Mr. Lawrence is a professional engineer, and is a member of several societies and industry groups including the Electronic Industries Association, The Acrospace Electrical Society, The Society of Automotive Engineers and The American Management Association.

Today, as Vice President for Engineering and Research of the Deutsch Company's Electronic Components Division, Mr. Lawrence heads one of the largest groups in the world devoted exclusively to the development of materials, designs and products in the field of terminations and interconnection devices.

This will conclude the PTGCP series on Physics of Failures of Components.

GUESTS ARE CORDIALLY INVITED

Communication Satellites — History and Evaluation

The May 13 meeting of the North Jersey section of the IEEE will address itself to the subject of "Communication Satellites, History and Evaluation." The speaker, Mr. W. Glomb, Associate Director of the ITT Federal Laboratories Space Communication Laboratory, has been active in this field since its beginning. The meeting will take place at the auditorium of the ITT Federal Laboratories (see map) and will commence at 8 P.M. The pre-meeting dinner will begin at 6 P.M. at the Cooper Hood Restaurant, Lyndhurst. The meeting will be followed by an open house at the ITTFL Space Research Station for those interested.

The history of communications satellites started with the launch of the project Score satellite in 1959. While this was primarily a stored message type of communications satellite, it demonstrated the feasibility of receiving modulated radio transmissions from an orbital body. This was followed shortly by the Courier satellite which had both stored message and repeater capabilities. It demonstrated the feasibility of two-way microwave transmissions and essentially demonstrated the total communication repeater concept. Its useful life, however, was limited to seventeen days by the apparent failure of a command relay.

There followed a relatively long hiatus in communication satellite launches during which communication satellite designers pondered the problems of active satellite reliability amid controversies regarding the merits of passive versus active satellites. In this period a series of passive reflectors of the Echo family were launched and a number of narrow-band communication experiments were performed. The results of these tests and the related deliberations regarding active satellites indicated that the passive satellite could not perform an economically useful function in commercial communications. However, it did have special utility in other areas.

Concurrent with the Relay-Telstar efforts a feasibility model of a synchronous satellite, Syncom, was designed and built by the Hughes Aircraft Company under NASA sponsorship and was ultimately launched in February 1963. First launch resulted in communication system malfunction, presumably due to the mechanical rigors of launch. A second launch in August of that year was ultimately successful. This satellite, while of limited communication capacity, has demonstrated the feasibility of achieving and maintaining a synchronous altitude satellite.

The Speaker: WALTER L. GLOMB

Mr. Glomb received his BS degree in 1946 and his MS in 1948, both from Columbia University. In 1950, following a brief period at Paramount Pictures, Incorporated, where he was concerned with the development of theater television systems, he joined ITTFL. Since that time he has been concerned with communication systems design, integration, and analysis. His earlier efforts involve line of sight microwave systems for both commercial and military application. This was followed by equipment design and system engineering on early tropospheric scatter systems in both the UHF and microwave regions. Since 1959 Mr. Glomb has been directly concerned with integration and analysis of communication satellite system performance. During this period he has been primarily concerned with system analysis and ground station developments for Courier, Relay, Telstar, and Syncom satellites.

Mr. Glomb is a member of the Institute of Electrical and Electronics Engineers and of Tau Beta Pi.

MEETING NOTICE

Date:	Wednesday, May 13
Time:	8:00 P.M.
Place:	ITT Federal Laboratories Nutley, N. J.
Subject:	Communication Satellites — History and Evaluation
Speaker:	Walter L. Glomb
Pre-Meeting Dinner:	6:00 P.M. Cooper Hood Restaurant, Lyndhurst, N. J.

EXECUTIVE COMMITTEE REPORT

Leave it to the M-L

A. E. Hirsch, Jr., Member at Large

Scene: Any Executive Committee Meeting of the NJIEEE

Chairman: Gentlemen, I think that this calls for a study and a report back to the Executive Committee before we take final action. Would anyone care to *volunteer* for this important assignment?

1st Committee Chairman: I think that's a splendid idea but, of course, with our rushed schedule just now, I'm afraid we wouldn't be able to handle it.

2nd Committee Chairman: As you know, I'm preparing a paper for the convention so wouldn't have time . . .

3rd Committee Chairman: (biting tightly on stubby cigar) It seems to me, Mr. Chairman, that since the Members at Large don't have anything to do anyway, this would be an ideal job for them.

All: (Loudly) Hear! Hear! They don't have anything to do anyway!!

This popular notion is not quite true. At least it is not true literally since the adoption of the Section's newly drafted "Operating Procedures." In this important document, which supplements the By-Laws of the Section, the specific duties and obligations of all members of the Executive Committee are spelled out. The "Procedures" constitutes a guide for today's Committee and — more importantly — a guide for future Executive Committees. Your relatively transient Executive staff is now operating with the support of a relatively stable operating platform.

Looking to the "Procedures," one finds that "the duties of the Members at Large are primarily to give continuity to the actions of the Executive Committee," and that they "perform such other duties as are assigned to them by the Chairman." A liberal translation of this might be that the Members at Large are general factotums to the Section; they are advisors, consultants, and aides to the Executive Committee. During this post merger period, for example, they have acted to assure that the best of the parent societies is carried forward to the new society. In the future, the office may well serve as a training ground for positions higher up on the Executive Committee ladder. There can be no better training ground.

So, in a sense, it is true that "the M - L's don't have *anything* to do." To the contrary, they have *many* things to do. By doing them well, the Section benefits.

Nominations for Basic Science Division

Nominations for officers of the Basic Science Division of the IEEE are as follows: Chairman: Gerald J. Herskowitz, Bell Telephone Laboratories, Murray Hill, New Jersey; Vice Chairman: John G. Murray, Princeton University, Princeton, New Jersey; Secretary-Treasurer: Ralph W. Wyndrum, Bell Telephone Laboratories, Whippany, New Jersey.

Elections will take place in June 1964. Other nominations may be sent to:

Joseph Carluccio
Newark College of Engineering
323 High Street
Newark 2, New Jersey

Medical Electronics Film Available

Schools, universities, and other interested organizations may borrow copies of the film "ELECTRONIC INSTRUMENTS FOR CARDIOLOGY" for group showings, free of charge. Produced last year for Channel 13's "Science and Engineering Television Journal" in cooperation with the Instrumentation Division, New York Section, the 16-mm. sound film describes the use of new electronic instruments in diagnosing heart disease. In it, medical and electronics experts discuss anatomy of the heart, heart catheterization procedures and instruments, and a new instrument for measuring blood pressure; and review case histories which illustrate diagnostic procedures.

To obtain the film, contact Mr. Edward A. Cohen, Gulton Industries, Inc., 212 Durham Avenue, Metuchen, New Jersey.

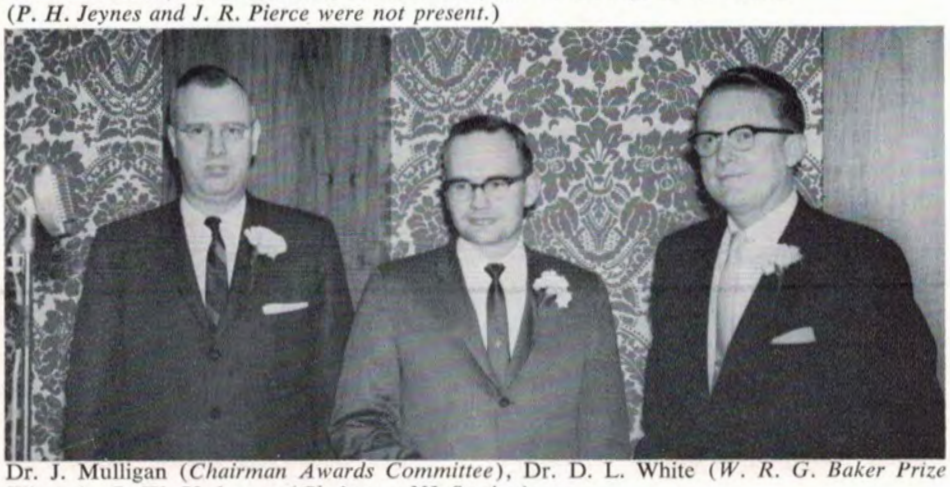
1964-65 Nominations

The Nominations Committee of the North Jersey Section of the IEEE presents the following slate of officers for 1964-65:

Chairman ..... John Redmon
Vice Chairman ..... Walter Glomb
Treasurer ..... Stephen Mallard
Secretary ..... J. W. Gordon
Members at Large .. John Van Duyne, Roger McSweeney

Election of Officers will take place at the General Meeting in May unless the Executive Committee decides that a special ballot is required.

Left to Right : New Fellows and Award Winner E. D. Sunde, L. M. Vallese, K. G. McKay, R. B. Blackman, B. E. Lenehan, E. C. Okress, H. W. Dudley, D. L. White.
(P. H. Jeynes and J. R. Pierce were not present.)



Dr. J. Mulligan (*Chairman Awards Committee*), Dr. D. L. White (*W. R. G. Baker Prize Winner*), C. W. Vadersen (*Chairman NJ Section*).

Left to Right: Members of Executive Committee J. W. Gordon (*Member at Large*), J. Redmon (*Vice Chairman*), R. Emberson (*PTG Secretary, IEEE Headquarters*), C. W. Vadersen (*Chairman*), S. A. Mallard (*Secretary*), Dr. J. Mulligan (*Chairman Awards Committee*), J. Van Duyne (*Treasurer*), J. O'Grady (*Publicity*).

The IEEE at NCE

by Matt Farley

The end of the fall semester in February also concluded one of the fullest programs of IEEE-sponsored events at Newark College of Engineering. Outstanding in the entire program, which was organized by Bert Dusche, was a series of technical talks by industrial representatives. The topic of MICROELECTRONICS was well handled on Oct. 25 by Mr. H. Pollack of the Kearfott Division of General Precision Co.. SWITCHING LOGIC was discussed by Mr. A. H. Budlong of Bell Telephone Labs on Nov. 22, followed three weeks later by Dr. Jacobs of the National Security Agency who revealed the secrets of SOLVING UNSOLVABLE PROBLEMS. Lastly, the newly developing field of MEDICAL ELECTRONICS was explained by Mr. B. Schwartz representing Gulton Industries.

Throughout the semester an average of one film per month was shown during lunch hours, featuring such topics as "THIS IS NEW JERSEY," in addition to technical films as "THE BELL SOLAR BATTERY."

The program concluded with two field trips, to WOR-TV in New York and the Public Service Sewaren (N. J.) Generating Station during the two weeks between the fall and spring semesters.

PTG
Electron Devices

Electro-Optic Modulators

A talk on "Microwave - Cavity - Type Electro-Optic Modulators for Single-Sideband Generation" will be presented by John D. Schlafer of General Telephone and Electronics Labs., Bayside, New York at the next meeting of the N. Y. Metropolitan Professional Technical Group on Electron Devices.

The meeting will be held on Thursday, May 21, at 8:00 P.M., at the United Engineering Center, 345 East 47th St., New York, N. Y.

Election of officers for the coming year will also take place. Those nominated are: Chairman: R. M. Folsom, IBM, Poughkeepsie, New York; Vice-Chairman: J. W. Gewartowski, Bell Tel. Labs, Murray Hill, N. J.; Secretary: R. W. McMurrough, RCA, Harrison, New Jersey.

Further nominations will be accepted from the floor.

Abstract of Talk

Single-sideband modulation of coherent light beams provides a communication mechanism with improved signal-to-noise ratio and conserved bandwidth. In addition, it provides a mechanism of shifting the inherently fixed frequency of a laser beam to increase its versatility.

MEETING NOTICE

Date: Thursday, May 21
Time: 8:00 P.M.
Place: United Engineering Center
345 East 47th Street
New York
Subject: Electro-Optic Modulators
Speaker: John D. Schlafer

This talk describes devices which produce single-sideband modulation at microwave frequencies of coherent light. These modulators consist of circular cylindrical resonant cavities, each operating in a TM_{011}-like mode, which contain crystals of potassium dihydrogen phosphate (KDP) along their axes.

The design considerations necessary to fulfill the phasing requirements for suppression of one sideband will be discussed. These include a particular asynchronism between the light and microwave velocities to give proper microwave phasing and specific crystal orientations to give the proper optical phasing.

Several such modulators have been constructed and tested at 3 Gc or 9 Gc. The experimental results will be presented, including optical spectrum analyses of the modulated beams.

The Speaker

John D. Schlafer received his BS degree in EE from Rensselaer Polytechnic Institute in 1961. In 1963 he received an MS degree in EE from Polytechnic Institute of Brooklyn.

He has been at General Telephone and Electronics Labs since November, 1963, where he is a Senior Engineer.

1964 Spring Stag Get-Together

Date: Wednesday, May 20, 1964
Place: 165th Regiment Armory,
Lexington Ave.
between 25th & 26th Sts.
Time: Cocktails & Socializing
6:00 to 7:00 P.M.
Dinner — 7:00 P.M.
Entertainment to follow
Tickets only $5.75

For tickets send check to:
John Floren
Long Island Lighting Co.
175 Old Country Road
Hicksville, N. Y.

Make checks payable to P & I Division, New York Section IEEE
Deadline for Reservations — May 15, 1964

PTG
Power

Shaping Up

The budding PTG-Power Group plans on scheduling its first meeting during May. An organization committee has written a set of by-laws and is presently drawing up a slate of officers. The meeting is being held to accept the by-laws and elect officers for the coming year.

Mr. Herb Bleicher requests those interested in attending the meeting to contact him at 539-6111 or Mel Nechterlein at Public Service in Newark, for the date and place.

Since only Group members are eligible to vote, those who wish to vote are urged to become a member by sending a check for six dollars to National Headquarters. Or he may send it to Herb Bleicher at Jersey Central Power and Light at Punchbowl Rd. in Morristown.

Fairleigh Dickinson University Student Branch IEEE Announces "Second Annual Dinner Dance"

To be held at
The Spring Rock Country Club
Spring Valley, New York
on
Saturday — May 23, 1964

COCKTAIL PARTY — 7:00 P.M.
Hot & Cold Hors d'oeuvres
Unlimited Drinks
DINNER — 8:00 P.M.
Melon Supreme
Tossed Green Salad
Fresh Garden Vegetable Soup
Sliced Filet Mignon
Baked Stuffed Potato
French Cut String Beans
Ice-cream Filled Eclairs
Dancing and Floor Show
in the Rotunda Room

All students, alumni and persons interested in the Student Branch are most welcome and encouraged to attend.

For Reservations send check or money order no later than May 13, 1964 to:
Paul Christianson
Electrical Engineering Dept.
Fairleigh Dickinson University
1000 River Road
Teaneck, New Jersey 07666

Enclosed find check/money order for $17.00 per couple. Please make a reservation for me to the F.D.U. Second Annual Dinner Dance to be held on May 23, 1964.

Name .....
Address .....
.....
Telephone .....

SYMPOSIUM ON MECHANISMS OF FAILURE

On Monday, June 15, 1964, a one-day Symposium on Reliability Problems in Electronics with emphasis on failure mechanisms will be held in the air-conditioned auditorium of Weston Hall of Newark College of Engineering in Newark, New Jersey.

Those interested in advance details may contact the following:

Professor R. P. Misra
Conference Chairman
Newark College of Engineering
323 High Street
Newark 2, New Jersey

Professor Joseph Carpuccio
Basic Sciences Division
Newark College of Engineering
323 High Street
Newark 2, New Jersey

BANQUET DINNER - DANCE

PTG COORDINATOR SPEAKS

John R. Gates

As in most executive jobs, the Professional Technical Group (PTG) Coordinator could be, and probably should be, thought of as an official arranger, meddler, and needler. He must try to coordinate subject matter, meeting dates, and finances among the many PTGs, as well as with the parent and cosponsoring IEEE Sections. In this, if he were doing his job, he would be meddling in the affairs of the various PTG Officers, the Section Treasurers, and the Section Chairmen of the Program, Education, Publication, and other associated committees.

He also has another, and possibly more clearly defined duty. This one has to do with initiation of the necessary steps for the creation of new PTGs. When it becomes apparent that there is need for the development of a PTG in a subject area not already covered, the PTG Coordinator must encourage and even arrange for interested persons to get together. They must clarify their purpose and set up at least a temporary organization. If a National PTG on the desired subject is in existence, then the new PTG Chapter need only secure local Section sponsorship or the joint sponsorship of several sections. If no national PTG on this subject exists then one must be started. This explanation has been a gross over-simplification but I believe it may serve to point up the "arrange" part of the PTG Coordinator's duties.

The number of PTGs already in existence is substantial. The PTG Manual published early in 1963 lists 29. At this writing, I am sure the number is greater. The North Jersey Section is the direct sponsor of 5 PTGs on the subjects of Automatic Control, Communications Systems, Electronic Computers, Engineering Writing and Speech, and Microwave Theory and Techniques. A sixth, Power, is in the final stages of organization. In addition, North Jersey co-sponsors several other chapters with the New York, Long Island, Connecticut, and Princeton Sections.

Why am I telling you all this? I am not trying to impress you with the size and importance of my job as Coordinator. The above is an idealized version of the job.

I would like to leave these two thoughts with any of you who have read this far:

First, if any of you have anything to do with supplying requested information to the Coordinator, please do it. He has a need to know. We wouldn't even turn down volunteered information, if you feel it would be of help.

Second, if I have succeeded in getting across the fact that this job needs to be manned by a person with good persuasive power, and lots of time to devote to the welfare of IEEE, please be on the lookout for him.

Again, volunteers are always of interest.

Are you applying?

PTG
Automatic Control

Inertial Instrumentation

Mr. Hugh Riordan of Kearfott Division of General Precision will speak on unconventional inertial instrumentation. The meeting will be held at the North End School in Cedar Grove on May 19, at 7:45 P.M.

This promises to be a most interesting and informative talk.

Abstract

Mr. Riordan will discuss among other things, gyros that operate without the use of fly wheels, and accelerometers that operate without proof mass. His talk will include current status and applications of these devices, as well as future growth potential. Finally he will indicate the trends that future inertial instrument development may be expected to follow.

The Speaker

Mr. Riordan holds a BME and MME from Rensselaer Polytechnic Institute. He has been actively engaged in Inertial Guidance and Missile Control since 1948. His background includes work on the first inertial guidance equipment developed in the U. S. at Curtiss Wright Columbus. The remainder of his career has been shared between Applied Physics Laboratory at John Hopkins and Kearfott.

PTG
Electronic Computers

ON-LINE REAL TIME SYSTEMS MEETING NOTICE

Subject:	Systems Engineering For On-Line Real-Time Systems
Speaker:	Mr. Samuel Levine, Assistant Vice President, The Teleregister Corporation
Date:	May 19, 1964
Place:	Arnold Auditorium, Bell Telephone Laboratories, Murray Hill, New Jersey
Time:	8:00 P.M.
Pre-meeting Dinner:	6:00 P.M. at Wally's Tavern on the Hill, Bonnie Burn Road, Watchung, New Jersey

The system design of on-line real-time data processing systems is concerned with such factors as peak rates, congestion points, fast response times, and data transfer, processing and storage requirements, as well as the input and output requirements at the man-machine interface. Approaches to the analysis of these requirements will be discussed and related to specific systems solutions.

Mr. Samuel Levine is Assistant Vice President and Director of the Systems Division of the Teleregister Corporation in Stamford, Connecticut. He has done significant work in the field of data processing, making major contributions in the conception, development, design and implementation of integrated on-line, real-time data-processing and data-communications systems for airline and rail passenger and hotel reservations, savings banks, and stock brokerage information systems.

Mr. Levine, author of a number of technical papers, is a Senior Member of the IEEE, a member of the ACM and AAAS, IEEE Computing Devices Committee, and Systems Science Committee, and is chairman of the Prize Awards Committee of AFIPS.

ECHO II PROJECT

A meeting of the Communications and Electronics Division of the New York Section IEEE will be held at 7:00 P.M., Wednesday May 13, in Room 125B of the United Engineering Center, 345 East 47th St., Manhattan.

"The ECHO II Project" is the topic of the evening and the speaker is Herbert L. Eaker, of the Goddard Space Flight Center, Greenbelt, Maryland.

Experiments using the ECHO rigid passive satellite are continuing at a rapid pace. Although the ECHO I, which was launched in August 1960, was unable to maintain its spherical shape in the extreme environs of outer space, the rather deep scintillations which were observed after the sphere entered the eclipse did provide significant data for experiments in radar, optics and communications.

Mr. Eaker will discuss the results of the experience gained with ECHO I and the second generation satellite, ECHO II. His presentation will review the new materials, including a three layer laminate, which have made possible a more rigid spherical shape that can be maintained over a long period of time in space. After considerable research and testing this material was used, in conjunction with a controlled inflation system of novel design, in the construction of the ECHO II, which was launched into orbit on January 25, 1964.

Mr. Eaker's paper will cover the laboratory investigation of balloon materials, inflation techniques and data gathered from two vertical launches of full size spheres using a Thor vehicle. Hangar tests of full scale balloons at Lakehurst, New Jersey have provided additional data on the stress and radio reflectivity of the sphere.

Back-scatter measuring techniques, developed for determining the reflectivity characteristics of the sphere at various pressure levels, have included frequencies in the L, S and C bands. Radar measurements of the orbiting sphere, made in the frequency range from UHF to the C band, have indicated some frequency dependence and scintillation level.

While definite conclusions concerning the results of the ECHO II experiments have not been drawn, a summary of the work to date will be outlined.

Mr. H. Eaker, in his capacity as Project Manager, is one of the team at the Goddard Space Center, Greenbelt, Maryland who have worked hard to make the ECHO II project a success.

He was born in Blair, Oklahoma in 1918 and graduated from Blair High School in 1936. He went to Central State and received a BS in Engineering from George Washington University in 1950.

He served in the U. S. Coast Guard from 1941-1946 with the final rank of Chief Radioman before joining the Goddard Space Flight Center in 1960 as a Senior Engineer.

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