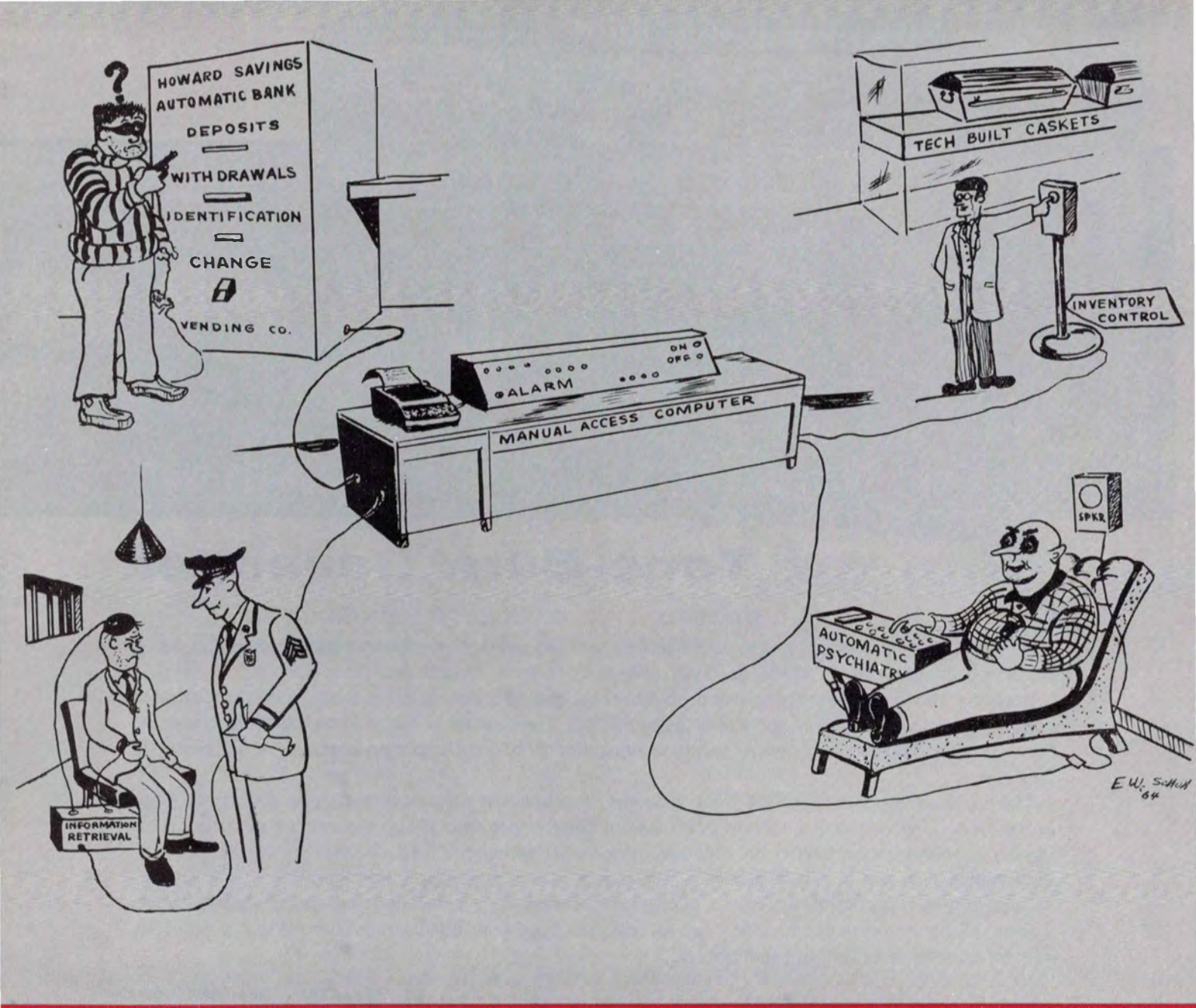

The IEEE
Newsletter
The Magazine of the North Jersey Section

Project MAC-Creative Computers

Garden State Plaza, Paramus, N. J.

Wednesday
October 21, 1964

Pre-Meeting Dinner: 6:00 P.M.
Cambridge Inn

Meeting: 8:00 P.M.
Garden State Plaza Auditorium

Make Reservations with Prof. John Redmon by October 19.

Volume 11 / Number 2 OCTOBER 1964

New Tone-Burst Generator

a coherent gate for any waveform

Tests with bursts of electrical energy — heretofore possible only with expensive specialized equipment — are now truly practical, thanks to the Type 1396-A Tone-Burst Generator.

Basically, the Tone-Burst Generator is an electronic gate that alternately passes and blocks a selected number of cycles of any input waveform (dc to 500 kc). The number of cycles in each burst is adjustable from 1 to 128. The interval between bursts is adjustable from 1 cycle to a maximum of 128 cycles or to 10 seconds.

The bursts produced by the 1396-A are coherent; that is, every burst starts and stops at the same point in the cycle. The frequency spectrum of a series of these bursts depends on the number of cycles in the burst, on cycles between bursts, and on the starting and stopping point, all of which are adjustable. Thus the frequency content is exactly defined — measurements are consistently reproducible.

Burst timing is accomplished with a binary scaler instead of a complex phase-locked timing system. The use of digital techniques together with all-solid-state design results in an instrument that is drift-free, easy to operate, compact, and economical.

The only commercial instrument of its kind

Invaluable in Measuring the Characteristics of Audio and Ultrasonic Devices

Transducers: In the testing of sonar transducers in a tank or microphones in a chamber that is not echo-free, tone-burst test techniques permit easy separation of direct and reflected signals — the masking effects of standing waves are avoided.

Amplifiers: In wide-band amplifiers, tone-burst tests allow straightforward evaluation of recovery-from-overload characteristics, and of peak (music) power levels. With narrow-band (sonar) amplifiers, tone-burst tests indicate directly the envelope rise and fall times as well as the distortion.

Filters: With tone-burst excitation, the envelope of the transient can be readily observed and measured. Ordinary pulse waveforms produce ringing, which is difficult to analyze.

Rectifying-Type Circuits: Efficiency and time constants of rectifier circuits are easily measured with tone-burst excitation. AGC circuits can be adjusted for proper response.

Low-Speed Digital Equipment: With square or rectangular waveforms applied to the generator, pulse words are generated at a bit-rate determined by the gate settings.

Room Acoustics: In the measurement of reverberation time, the duration of the exciting signal is important, and therefore, a tone burst of controlled properties is desirable.

Type 1396-A Tone-Burst Generator
. . . $490 IN U.S.A.

INPUT SIGNAL: Frequency Range: dc to 500 kc

EXTERNAL TIMING SIGNAL: Frequency Range: dc to 500 kc. **Triggering:** positive- or negative-going slope, level adjustable from −7 to +7 volts.

GATE TIMING: Open and closed intervals can be independently set to 2, 4, 8, 16, 32, 64, or 128 periods of timing signal. With the MINUS ONE switch, intervals can be set to 1, 3, 7, 15, 31, 63, or 127 periods. Gate-closed interval can also be set in one-period increments over a 1-millisecond to 10-second range.

OUTPUT: Gate Open: Maximum level is ±7 volts

Gate Closed: Feed through less than 140 millivolts, peak-to-peak, with maximum signal input. DC potential difference between open and closed conditions (pedestal) can be nulled out with panel adjustment.

Switching Transients: Less than 140 millivolts

Output Impedance: 600 ohms

Gating Voltage Output: Rectangular waveform (±12 volts) supplied for triggering oscilloscopes.

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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

Wanted

EXECUTIVE

Immediate opening for a top level position in an outstanding organization. Unique opportunity for an enterprising spirit who is seeking more than the comfort of a big company payroll. No resume necessary for application. No psychological tests will be administered. Very little, if any, experience needed. We train you. The job: Managing Editor of this Newsletter. Salary: Virtue is its own reward.

Calendar

Wednesday, October 7

ASME Course Starts

Thursday, October 8

Aeronautical & Navigational Electronics
Panel Discussion:
VOR/DME Navigation System
Status & Future
8:00 P.M. — Willkie Memorial
20 West 40th St., N. Y.

Tuesday, October 13

Automatic Control
Dr. R. Vichnevetsky
The Use of Hybrid Computers
8:00 P.M. — General Precision,
Plant 3 Auditorium
Little Falls, N. J.

Wednesday, October 14

Power Group
J. A. Casazza, A. S. Brookes
Public Service E & G
7:00 P.M. — Public Service Bldg.,
70 Park Place, Newark

Wednesday, October 21

Joint Sponsorship:
Communications Technology & Computers
Richard G. Mills
Project MAC — Creative Computer
6:00 P.M. — Cambridge Inn,
Garden State Plaza
Make Reservations by **19 Oct.**
8:00 P.M. — Garden State Plaza
Auditorium

Wednesday, October 21

Microwave Theory & Techniques
M. E. Hines, Microwave Associates
Microwave Solid-State Devices
8:00 P.M. — Arnold Auditorium,
Bell Telephone Labs.
Murray Hill, N. J.

Thursday, November 12

Electron Devices
7:30 P.M. — G.T.&E. Bayside, N. Y.

North Jersey Section IEEE Executive Committee

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Group Microwave Theory & Techniques (MTT) ..... B. Mindes
Group Power (P) ..... Herbert Blaicher

The IEEE **Newsletter**

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Volume 11 **October, 1964** **No. 2**

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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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Executive Committee Meetings

at Verona Public Library

October 7
November 4
December 2
January 6, 1965
February 3
March 3
IEEE Convention March 22-25
April 7
May 5
June 2

ASME
North Jersey Section

Introduction to Computers and Programming

Computer usage has grown greatly during the last two decades and is now employed in all fields. This course describes the general principles, basic methods, and applications of computers in the engineering field. The intention is to acquaint engineers with the basic concepts of computers and not to train experts. One session of the course is spent at a location where a computer is operating in order to best illustrate the subject.

Along with describing the elements in computers, the course discusses the language that a computer needs to operate. This is the subject of programming and it provides the means for the computer to accept information, solve the problem, and deliver the answer. Programming basics are examined and a discussion of the modern compiler system of FORTRAN is introduced.

10 Sessions: Wednesday evenings
October 7, 14, 21, 28;
November 4, 18, 25;
December 2, 9, 16.

Time: 7:00 P.M. to 9:00 P.M.

Room 3171A
Public Service Electric and Gas Company
Newark, New Jersey
(Corner of Broad Street and Raymond Boulevard)

Fee:
$25 to members of ASME, IEEE, SAM, NSPE, ASHRAE.
$30 to non-members, $5 of which is applicable towards ASME membership dues if applicant joins before January 1, 1965.

Texts:
Supplied by program and at no additional charge
a) Introduction to Electronic Computers
b) A Guide to Fortran Programming

Instructor:
Mr. H. E. Blaicher
Jersey Central Power & Light

Course Coordinator:
Mr. L. A. Sonzogni
Public Service Electric and Gas Company
Kearny Generating Station
Kearny, New Jersey
MArket 2-7000, Ext. 19249

Power

Power Group Meets

The first meeting of the newly formed North Jersey Power Group will be held at 7:00 P.M. on Wednesday evening, October 14, 1964 in the Home Service Auditorium, Public Service Terminal Building, 70 Park Place, Newark 1, New Jersey. All members of the IEEE Power Group and those interested in joining are cordially invited to attend.

Continued on Page 5

Continued from Page 4

Herb Blaicher, Chairman of the North Jersey Power Group, will be the kick-off speaker and will welcome members and guests.

A timely and stimulating program has been planned. The group is fortunate to have as speakers two IEEE members who recently returned from attending the 1964 CIGRE Conference in Paris at which 55 countries were represented. Guest speakers will be Mr. John A. Casazza, Assistant System Planning and Development Engineer, and Mr. A. Sidney Brookes, Underground Plant Engineer, both of Public Service Electric and Gas Company. Mr. Casazza and Mr. Brookes are members of CIGRE, an international organization of electrical engineers, who attended the conference as representatives of their company.

Messrs. Casazza and Brookes will discuss installations they visited. Also, they will comment on important papers presented at the meeting concerning generation and transmission developments throughout the world.

In addition, the talks will include an explanation of the structure and operation of CIGRE.

Aeronautical and Navigational Electronics

Meeting Notice

The October 1964 meeting of the New York Metropolitan Chapter of the Group on Aeronautical and Navigational Electronics (GANE) will be held as follows:

Date: Thursday, October 8, 1964

Time: 8:00 P.M.

Place: Willkie Memorial Auditorium
20 West 40th Street
New York City

Subject:

"The Status and Future of the VOR/DME Navigation System" (A panel of experts will discuss various phases of the VOR/DME navigation system with special emphasis on the application and expansion of the system to future air traffic needs. This is the first of a series of tutorial lectures to be followed in coming months by discussions on Marine Navigation, Space Navigation, and Air Navigation.)

Speakers: Mr. S. H. Dodington
ITT Federal Laboratories
Nutley, New Jersey

Mr. A. B. Winick
Bureau of
Research and Development
Federal Aviation Agency
Washington, D.C.

Mr. E. R. Hollm
Airborne Instruments Laboratories
(Division of
Cutler-Hammer, Inc.)
Deer Park, Long Island, New York

Joint Sponsorship of: Communication Technology & Computer Group

Project MAC Creative Computor

The October meeting of the North Jersey section will be co-sponsored by the Computer Group and the Communication Technology Group. Mr. Richard G. Mills of M.I.T. will describe and demonstrate "Project MAC", an experimental investigation of new ways in which on-line use of computers can aid people in their creative work. The meeting will be on Wednesday, October 21 at 8:00 P.M. in Garden State Plaza Auditorium.

An essential part of Project MAC is the development of a large, time-shared computer system that is accessible to a large number of people who communicate to a main IBM 7094 computer through remote teletype machine terminals.

The system goal of the project may be regarded as the development and operation of a community "utility" capable of supplying "computer power" to each customer where, when, and in the amount needed. Also of importance to the customers are the implications of the vast memory of the system. Each customer can retrieve programming aids, information about a variety of subjects, and of course his own files of data, either private or shared with someone else.

This work is generating new demands on computing equipment and procedures and on communications terminals and networks. A feature of the talk will be a live demonstration of the system using a teletype machine at the meeting connected with the MIT computer.

Meeting Notice

Subject: Project MAC

Speaker: Mr. Richard G. Mills
Project MAC, MIT

Place: Garden State Plaza
auditorium
(under the Mall
next to Bamberger's)

Date: Wednesday,
October 21, 1964
at 8:00 P.M.

Pre-meeting Dinner: 6:00 P.M.
at the Cambridge Inn,
Garden State Plaza

Make reservations for dinner by Monday, October 19 with Prof. John Redmon, MArket 4-2424 — Ext. 262.

Come and participate in this interesting program. You may soon be doing your engineering work — and balancing your checkbook — in this way.

Biography:

Richard G. Mills was born in 1931. He did his undergraduate work at MIT, receiving SB degrees in Electrical Engineering and Administration in 1954 and an SM degree in Industrial Management in 1960. Mr. Mills' work experience has largely centered around computer applications and he is presently Assistant Director for Administration of Project MAC at MIT.

Here is the

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Opposite meeting page — plus $40.00. Other positions quoted.

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Full size reverse plates or half tones must be anchored to the block and trimmed flush.

Plates and copy are due the first of the month preceding publication.

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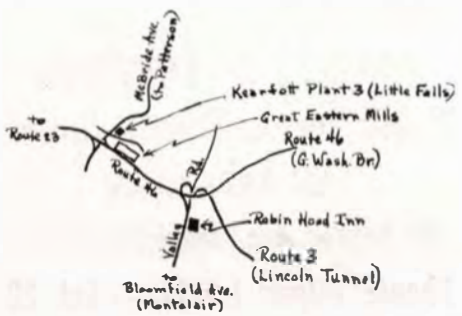
The Use of Hybrid Computers

Dr. Robert Vichnevetsky of the Research and Computation Division of EAI, Princeton, will speak at the October meeting of AC group. The meeting will be held at the Auditorium at Plant 3 of General Precision, Inc., Little Falls, on Tuesday, October 13, 1964 at 8:00 P.M.

Hybrid computers are being used extensively in the design and analysis of automatic control systems. These computers have both the capabilities of continuous integration of the analog computer, and the discrete storage, logic decision, and arithmetic capability of the digital computer. The computer simulation of automatic control systems usually requires the integration of sets of ordinary differential equations together with the mechanization of logical or iteration processes. This is particularly true in the case of optimal and adaptive control systems. Hybrid computers have proven to be adequate tools to perform these simulations. Applications of hybrid computers to the simulation of automatic control systems, together with a discussion of theoretical aspects, will be presented. These will include:

- Applications in the aerospace and process fields.
- Optimization methods and the simulation of optimal control systems.
- Perturbational methods and their application to adaptive systems.



Meeting Notice

Subject: The Use of Hybrid Computers in Automatic Control Systems Design and Analysis

Speaker: Dr. Robert Vichnevetsky, EAI Research and Computation Division

Place: General Precision, Inc., Plant 3 Auditorium 1225 McBride Avenue, Little Falls, N. J.

Date: Tuesday, October 13, 1964 8:00 P.M.

All AC members are invited to monthly executive committee meetings. If interested, call Mr. Robert Sokalski, at CA 6-4000.

About the Speaker

Dr. Robert Vichnevetsky is currently director of a group developing advanced computer applications in the Research and Computation Division of EAI, Princeton, New Jersey. He received his degrees of Bachelor of Science, Master of Science in Electrical and Mechanical Engineering, and Doctor of Science from Brussels University.

He has been associated with EAI since 1957 as a member of the technical staff, and from 1960 to 1962 as Director of EAI's European Computation Center. His activity in the field of analog, hybrid, and digital computation extends over the past ten years. For a brief period before rejoining the R&C Division in Princeton, Dr. Vichnevetsky was Manager of the Process Analysis Department of CAE (affiliate of TRW) in Paris. At CAE, he was responsible for developing real time and process control applications for digital computers. His experience includes the application of computers to the study and control of large industrial systems, the design and control of aerospace systems, and the development of basic mathematical techniques of electronic computation.

Dr. Vichnevetsky is currently listed as Professor at Brussels University, Visiting Professor at Barcelona Technical High School, and Chairman of the Scientific Committee of the International Association for Analog Computation.

Dr. Vichnevetsky has written numerous papers on computation theory and methods and on control systems. Other contributions to the field of computation include sponsorship of seminars, chairmanships of committees and lecturing on advanced computation techniques.

Dr. Vichnevetsky will be chairman of one of the technical sessions at the Fall Joint Computer Conference, San Francisco, October, 1964 (Methods and Techniques in Hybrid Computation).

professional notices

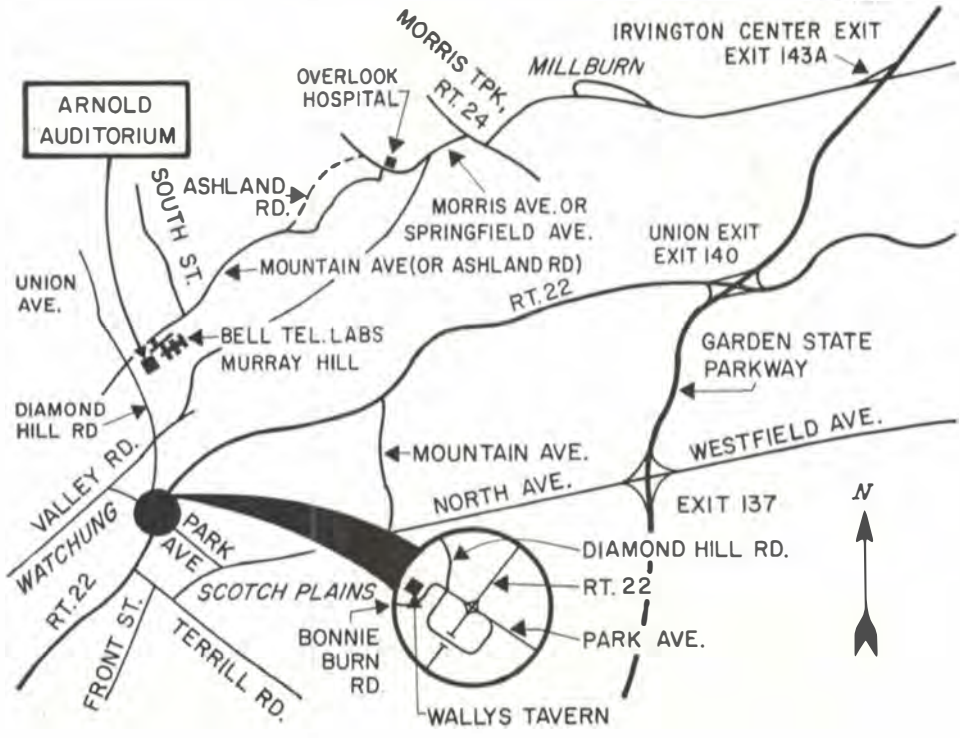
Microwave Theory and Techniques

Microwave Solid-State Devices

The Microwave Theory and Technique Group will present Mr. Marion E. Hines on Wednesday, October 21, 1964, 8 P.M. at Bell Telephone Laboratories at Murray Hill, N. J., speaking on Microwave Solid-State Devices.

The paper will be a broad review of the present state-of-the-art of newer solid-state devices used in microwave systems. Subjects to be discussed will include tunnel-diodes as oscillators and amplifiers; PIN diodes in switches, phase shifters, limiters, and attenuators, and varactor diodes in harmonic generators and other parametric devices. The role of such functional networks in new system applications will be emphasized.

Mr. M. E. Hines is a graduate of the California Institute of Technology. He received the BS degree in Applied Physics in 1940 and the MS in 1946. He served as a Weather Officer with the Air Force from 1940 to 1945. With the Bell Telephone Laboratories from 1946 to 1960, he worked in Research and Development of microwave tubes and storage tubes; parametric amplifiers; pulse transmission systems; and tunnel diode amplifiers and oscillators. At Microwave Associates, he has been most active in the development of harmonic-generator-type microwave sources and high power microwave signal control devices using diode switch elements. At present, he is Director of Research in Special New Products.



New Group Officers: 1964-5

Chairman	Barry Mindes, ITT
Vice-Chairman	Michael J. Thompson, BTL
Program Chairman	John Vogler, Microlab
Program Committee	Lawrence Varnerin, BTL
Secretary	Dean Mitchell Airtron

By-Laws to be approved at Oct. 12 Meeting at Garden State Plaza Auditorium

BY-LAWS OF THE NORTH JERSEY SECTION Institute of Electrical and Electronics Engineers, Inc.

1. OFFICERS

The officers of the Section shall consist of:

Chairman
Vice-Chairman
Secretary
Treasurer
Junior Past-Chairman
Member-at-Large 1
Member-at-Large 2

2. EXECUTIVE COMMITTEE

The Executive Committee of the Section shall consist of the officers, the Chairmen of all standing committees listed in the Section Operating Procedures, and the Chairmen of the Professional Technical Group Chapters.

3. COMMITTEES

The chairmen of the various committees represented on the Executive Committee shall be appointed by the Section Chairman with the approval of the Executive Committee.

4. DUTIES OF OFFICERS AND COMMITTEE CHAIRMEN

The duties of the officers and committee chairmen are as listed in the Section Constitution and Section Operating Procedures.

5. CONDUCT OF MEETINGS

The conduct of business at the general meetings of the Section and the Executive Committee shall be governed by Roberts' Rules of Order, Revised, when not incompatible with the Constitution of the Institute, the By-Laws, or the Section Constitution.

6. ELECTION OF OFFICERS

The Nominating Committee shall present at least one nomination for each Section office (with the exception of Junior Past-Chairman) and the nominations shall be announced in the March issue of a Section publication. Additional nominations may be made by a petition signed by not fewer than 25 voting members of the Section and transmitted to the Secretary for submission to the Executive Committee not later than April 30th. The petition must certify that the persons nominated have agreed to serve, if elected.

7. TERMS OF OFFICE

The officers of the Section shall take office on July 1st and their term expires on the June 30th following with the exception that the outgoing Treasurer shall be responsible for his records until they are audited and the audit has been approved.

8. AUDITING AND BONDING

The Treasurer shall be bonded at the expense of the Section in an amount determined by the Executive Committee. His books shall be audited at the close of his term of office by an auditor approved by the Executive Committee.

9. REMOVAL OF APPOINTED MEMBERS

Any appointed member of a committee may be removed from his position by a two-thirds majority vote of the entire voting membership of the Executive Committee. Prior to such vote being taken, the member in question shall be notified in writing of the pending action and requested to present himself before the Executive Committee at a time and place, not less than 15 days in advance, designated in the notice for the purpose of showing cause why he should not be removed from the position.

10. AMENDMENT OF BY-LAWS

These By-Laws may be amended by a two-thirds majority vote of the full membership of the Executive Committee provided a written notice including the proposed amendment has been given to all members of the Executive Committee at least ten days in advance.

John P. Van Duyne
Member-at-Large

John Van Duyne is Engineering Manager at Boonton Radio Corporation, where he is primarily responsible for departmental administration and scheduling and for new product programs and ideas. Before joining Boonton Radio in 1958 he was associated with Westinghouse as Manager of TV Engineering. Prior associations were with DuMont Laboratories and Measurement Corporation.

Since his graduation from Rensselaer Polytechnic Institute in 1944 with a BSEE, he has specialized in circuit design and development.

Mr. Van Duyne's professional society activities include serving as Membership Chairman of the NNJ-IRE for 1960-1961 and 1961-1962; Treasurer NNJ-IRE, 1962-1963; and Member of the National Administrative Committee of the Professional Group on Instrumentation, 1960-1963. While a member of this latter group he served as Vice-Chairman, organized technical sessions for the 1961 IRE Convention. He now serves the PTGI as Chairman of the Nominating Committee.

Mr. Van Duyne is a member of Eta Kappa Nu, Tau Beta Pi, and Sigma Xi.

Roger McSweeny

Member-at-Large

Roger McSweeny is Director of Engineering Services at ITT Communications Systems. He holds a BSEE degree from Harvard University and was active for a number of years in the design and construction of large high frequency stations for international radiotelephone and telegraph services in Latin America. He specialized in antennas for these services. He also designed and installed microwave and troposcatter radio circuits in the West Indies. Prior to his present assignment he was assistant chief engineer of American Cable and Radio Corporation.

Mr. McSweeny is a past Chairman of NJ-PTGCS and of the Section Program Committee. He lives in Hackensack, N. J.

Engineering Writing and Speech

New EWS Group Officers for 1964

LaVern G. Lee of Saddle River, N. J. will serve this year as chairman of the North Jersey Chapter of the Group on Engineering Writing and Speech. Mr. Lee is a Publications Group Leader at ITT Communications Systems, Inc., Paramus, New Jersey. Prior to joining the staff at ICS, he was Supervisor of Technical Publications at Electronic Communications, Inc. His experience encompasses many phases of the preparation of military and industrial reports, handbooks, and instruction manuals that include original writing, editing, production, publication and supervision.

Mr. Lee is a graduate (AB) of Western State College of Colorado at Gunnison. While in graduate school at the University of Denver, Mr. Lee was ordered to active duty in the Navy where he received additional training in Communications at the US Naval Post-Graduate School, Monterey, California. Additional courses in mathematics and management were taken at George Washington University and New York University. Mr. Lee served on the technical advisory committee for curriculum, Pinellas County Technical Institute, St. Petersburg, Florida.

Officers and Lecture Series

The Marine Technical Council, New York Section, of the Institute of Electrical and Electronics Engineers, announced the election held on August 20, 1964 of its Committee Chairmen for the year 1964-65, as follows:

General Chairman:
Gunnar Nelson of Fort Lee, New Jersey, an independent marine electrical consultant, who was re-elected for the fifth consecutive year.

Public Relations Chairman:
Egil Arnessen, President of Arnessen Electric Co., Inc., re-elected for a second term.

Education and Program Chairman:
James F. Convery, Jr. of J. J. Henry Co., Inc., who served as Co-Chairman and Education Chairman for the past three years.

Education and Program Co-Chairmen:
John Arendt of Gibbs & Cox and Irving Kassman of M. Rosenblatt & Son.

Field Activities Chairman:
Comm. William Aitkenhead, U. S. Coast Guard.

Secretary and Membership Committee Chairman:
Peter M. Roumeliotis of General Electric Co.

Jerry Eimbinder, EWS vice-chairman, is the Circuit Design Editor of Electronics Magazine, a McGraw-Hill publication. He joined Electronics earlier this year from D.A.T.A., Inc. where he was Technical Director. He has also been employed at RCA as both a publications engineer and an applications engineer.

Mr. Eimbinder received a BSEE from Pratt Institute and an MBA from Fairleigh Dickinson University. He also taught evening classes at Pratt Institute. Mr. Eimbinder, his wife, and two children reside in West Orange, New Jersey.

The Group's new secretary is Steve Scrupski, Senior Editor of EEE, the Magazine of Circuit Design Engineering, published by Mactier Publishing Corporation. Mr. Scrupski was formerly a Technical Editor at Electronic Design magazine and a Senior Engineer in the Microwave Department of ACF Electronics Division in Paramus. Before moving into industry, Mr. Scrupski was an instructor in Electrical Engineering at Newark College of Engineering from which he holds engineering degrees (BSEE, MSEE). He is a member of IEEE, Tau Beta Pi, Eta Kappa Nu, and Pi Delta Epsilon.

Gunnar Nelson, General Chairman of the Marine Technical Council, New York Section, Institute of Electrical and Electronics Engineers, announced the presentation of a 5-session Fall Educational Course on **"Fundamentals and Applications of Static and Solid State Control"**, starting October 15, 1964.

Arrangements have been made with the faculty of both Webb Institute of Naval Architects and the United States Merchant Marine Academy for the presentation of these weekly lectures.

Session 1
Thursday, October 15, 1964

Basic Concepts and Semiconductors
Lecturer: Prof. Thomas Bond
Webb Institute of
Naval Architects

Review of basic theory, including circuit parameters, conduction, types of rectifier circuits and amplifiers.

Session 2
Thursday, October 22, 1964

Vacuum-Tube and Transistor Amplifiers
Lecturers: Assistant Prof.
Robert Panuska, USMMA
Assistant Prof.
Wallace McDonald,
USMMA

Basic amplifier configurations and basic operating principles of triodes.

Session 3
Thursday, October 29, 1964

Magnetic Amplifiers
Lecturer: Prof. Charles Hubert, USMMA
Basic theory of operation and applications in control circuits.

Session 4
Thursday, November 5, 1964

Transducers
Lecturer: Prof. Thomas Bond
Webb Institute of
Naval Architects

Basic principles and applications of various methods of measuring or detecting heat, light, liquid flow, sound, voltage, current, vibration, speed, stress, torque, and acceleration.

Session 5
Thursday, November 12, 1964

Magnetic Static Control Systems
Lecturer: J. C. McMahon,
Navy and Marine
Application Engineer
Industrial Control Department
General Electric Co.

All lectures will be held in the General Electric Co., Lower Level Auditorium, 570 Lexington Avenue, New York City, starting at 6:30 P.M., running approximately two (2) hours.

Registration will be from 6:00 to 6:30 P.M. on Oct. 15, 1964. It is suggested that advanced registration, by mail, be used to avoid possible delay for the first session. $10.00 Engineering Society Members, $15.00 Non-Members, $2.00 Students, and special group rates for Company and Group Sponsorship. Make checks payable to IEEE, mail to: James Convery, Chairman, Education, c/o J. J. Henry, 21 West St., New York, N. Y.

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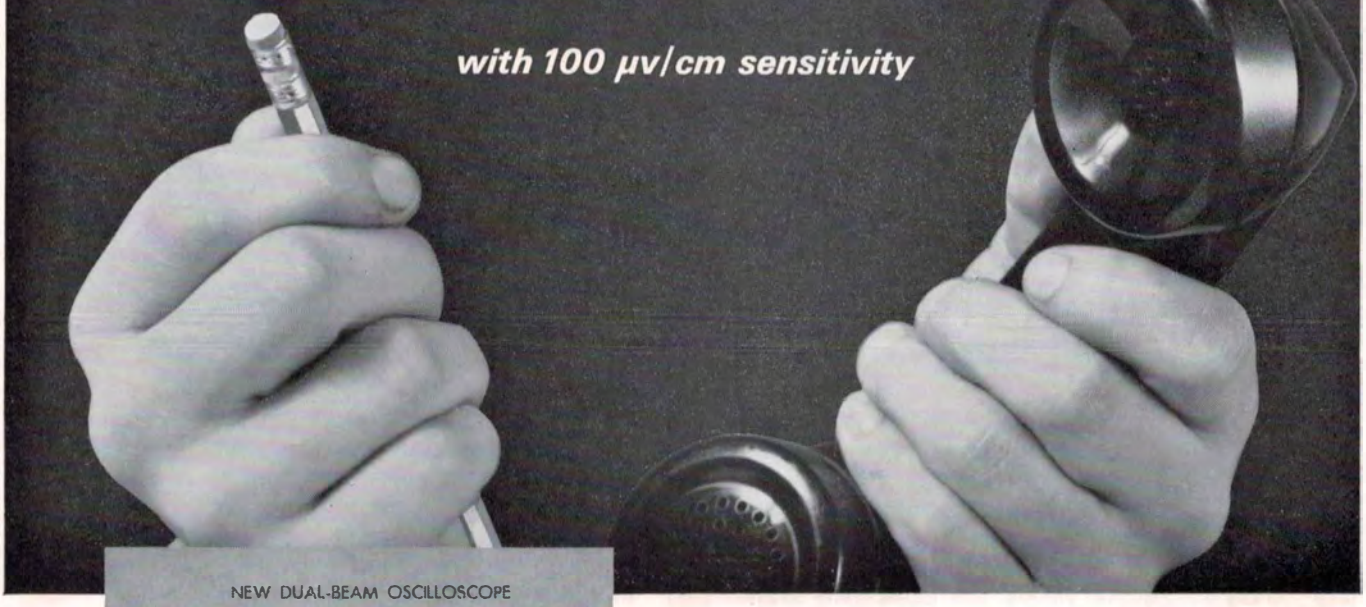

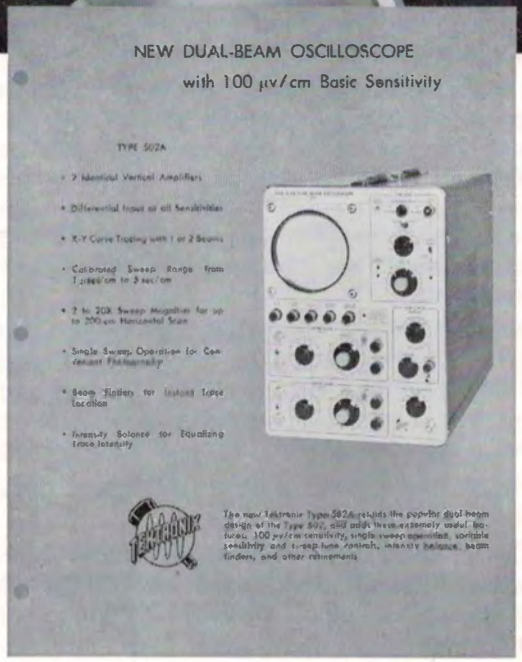

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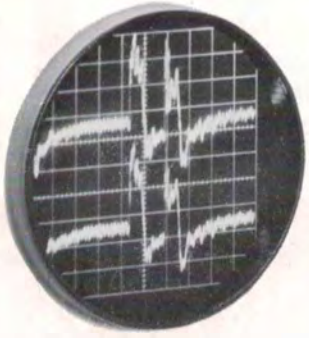

This oscilloscope display shows the output from a commercial transducer (upper trace) and the output from a developmental transducer (lower trace)—simultaneously.

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