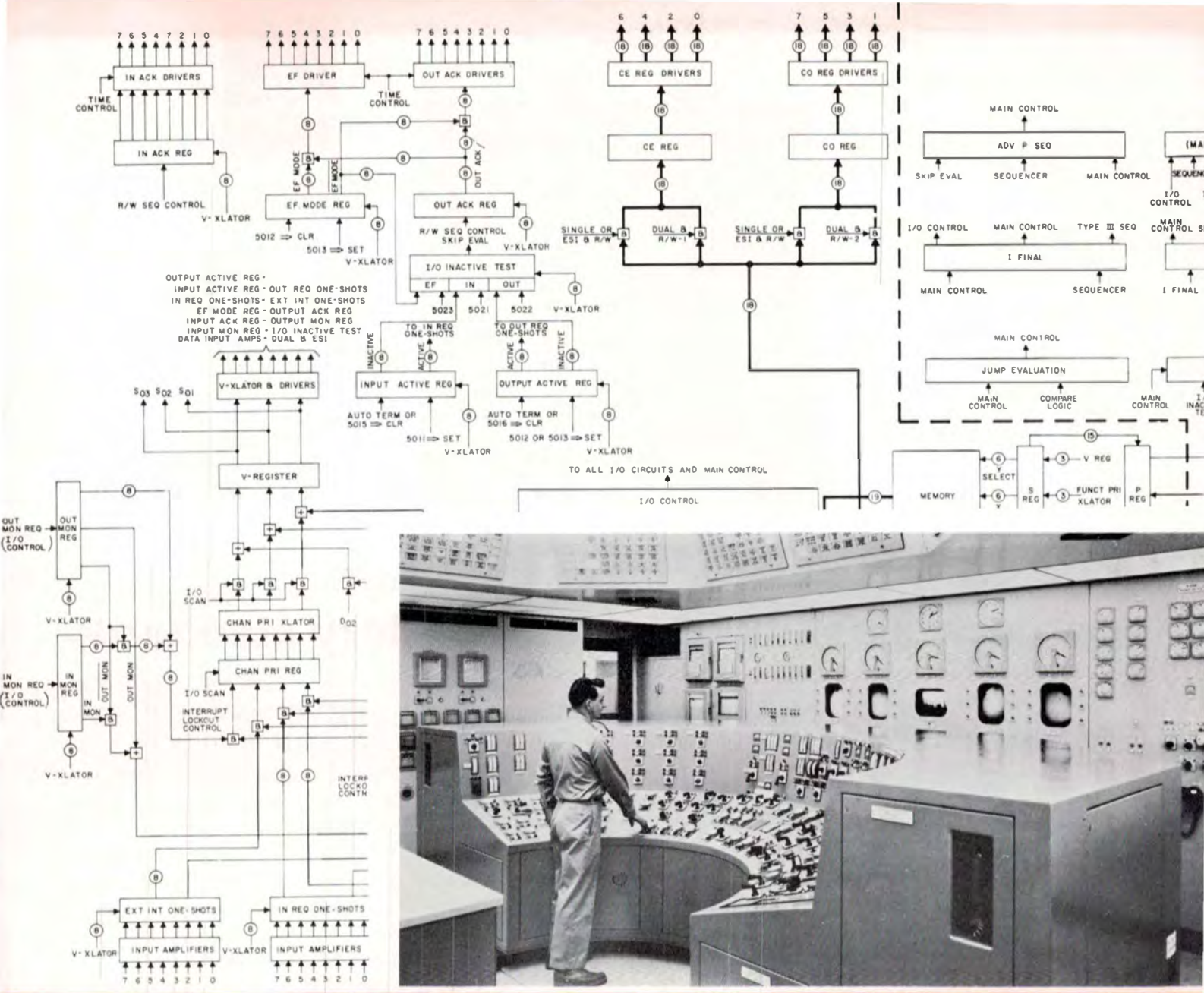


The IEEE
Newsletter
The Magazine of the North Jersey Section

VISIT and TOUR

Computer Controlled Turbo-Generator

and

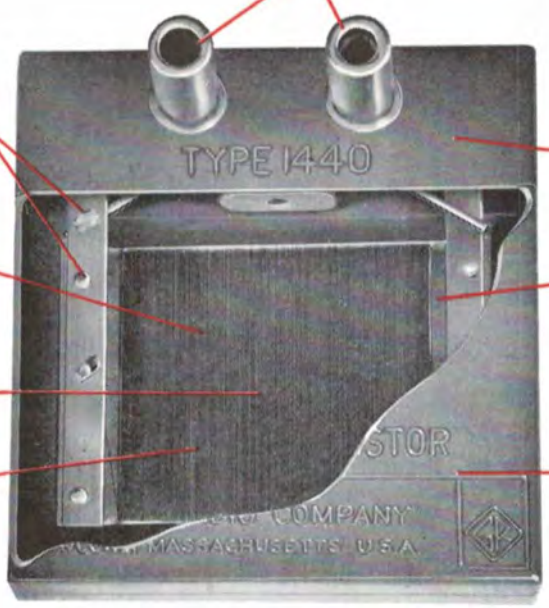
World's Largest Gas Turbine

at

Sewaren Generating Station
Public Service Electric & Gas Co.

For details, see page 4

Volume 12 / Number 7 MARCH 1966



*Reg. trademark of W. B. Driver Co.

New Precision Resistors approach stability of best laboratory standards

EXCELLENT STABILITY ±0.003% per year
OIL FILLED, YET SMALL SIZE 2¼, 2½, ⅜ in.

HIGH ACCURACY ±0.01% (±0.02% for 1Ω unit)
TWO-YEAR WARRANTY

Type 1440 Resistors (shown above) have low thermal emf, gold-plated copper binding posts and removable banana plugs and are excellent laboratory or production-test standards. Type 1441 Resistors have heavy wire leads, holes for horizontal mounting, and hardware for vertical mounting, which recommends their use in equipment that requires high-quality resistors.

These precision resistors, designed for use at ac as well as dc, exhibit minimum change in reactance as frequency is increased. Each unit is heat-cycled to reduce strains, then mounted in an hermetically sealed, oil-filled case to provide mechanical protection and to promote long-term stability. Critical connections are *welded* (not soldered) to ensure stability. Throughout assembly, repeated checks carefully reject any units that do not meet specifications. Stringent quality control is important because each unit must remain within its specified tolerance for at least two full years under GR's warranty.

Resistance	Max Current	Typical Inductance	Approx Frequency for 0.1% Resistance Change Series R	Parallel R	Type 1440 Catalog Number	Price	Type 1441 Catalog Number	Price
1 Ω	1.0 A	0.12 μH	300 kc/s	30 kc/s	1440-9601	$10.50	1441-9601	$ 6.50
10 Ω	310 mA	0.13 μH	1 Mc/s	300 kc/s	1440-9611	10.50	1441-9611	6.50
100 Ω	100 mA	0.20 μH	3 Mc/s	1 Mc/s	1440-9621	10.50	1441-9621	6.50
1 kΩ	30 mA	2.5 μH	2 Mc/s	1 Mc/s	1440-9631	10.50	1441-9631	6.50
10 kΩ	10 mA		200 kc/s	1 Mc/s	1440-9641	10.50	1441-9641	6.50
100 kΩ	3 mA		20 kc/s	100 kc/s	1440-9651	12.50	1441-9651	8.50
1 MΩ	1 mA		2 kc/s	10 kc/s	1440-9661	21.50	1441-9661	17.50

ALSO AVAILABLE — DECADE RESISTORS

New Type 1434 Decade Resistors connect high-quality resistors in such a way that only six per decade are required; this produces an excellent decade box at low cost. Five models are available: from 11,111Ω to 1,111,111Ω total resistance; 0.1Ω to 10Ω per step. **Prices from $99 to $155.**

Improved Type 1432 Decade Resistors with basic accuracy of 0.025%, low thermal emf gold-plated copper binding posts, and low zero resistance. 14 models: 111.1 to 11,111,100Ω total resistance; 0.01Ω to 100Ω per step. **Prices from $98 to $262.**

Write for complete information.

GENERAL RADIO COMPANY

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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 • Roger C. Parmenter
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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.

The IEEE **Newsletter**

Published monthly except July & August by the North Jersey Section of the Institute of Electrical & Electronics Engineers, Inc. Office of Publication: 9 Little John Road, Morris Plains, N. J.

Volume 12 **March, 1966** **No. 7**

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c/o Staff Associates
P.O. Box 275 — Morris Plains, N. J.
Telephone: 398-5524

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ABOUT ADDRESS CHANGES

REPORT ALL ADDRESS CHANGES TO:
INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS INC., 345 EAST 47th STREET NEW YORK, N. Y. 10017

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.

Executive Committee Meeting

at Verona Public Library — March 2

North Jersey Section IEEE Executive Committee

Section Officers

Chairman ..... Walter L. Glomb
Vice Chairman ..... Stephen A. Mallard
Treasurer ..... James W. Gordon
Secretary ..... Joseph O'Grady
Member-at-Large ..... Bernard Meyer
Member-at-Large ..... Herbert Blaicher, Jr.
Past Chairman ..... John K. Redmon

Standing Committee Chairmen

Awards ..... R. Chipp
Education ..... Earl Van Tassel
History and Procedures ..... Frank Polkinghorn
Membership
Nominations ..... A. G. Kandoian
Program ..... M. Irvine
Publications ..... Marcel Kozuch
Publicity ..... Harry Raven
Student Affairs ..... J. W. Earle
Group Coordinator ..... D. R. Campbell

CALENDAR

Wednesday, March 9

NORTH JERSEY JOINT SPONSOR AUTOMATIC CONTROL & ELECTRONIC COMPUTER GROUPS

7:30 P.M.—Sewaren Generating Station (Public Service Electric & Gas Co.) Tour at Cliff Rd., Sewaren, N. J. (near Woodbridge)

Thursday, March 10

N. Y. INFORMATION THEORY GROUP

8:00 P.M.—"The Lincoln Experimental Terminal"
I. L. Lebow, M.I.T., Lincoln Laboratory
At N. Y. Telephone Bldg., Little Theatre, 140 West St., N.Y.C.

Tuesday, March 15

NORTH JERSEY SPRING STUDY GROUP

7:00 P.M.—Critical Path Method "The Modern Planning Tool"
First of a series; see text for details.
At Public Service Electric & Gas Co., 80 Park Place, Newark, N. J.

NORTH JERSEY POWER GROUP

7:30 P.M.—"DC Transmission"
A. E. Kilgour, Allis Chalmers
S. A. Mallard, Public Service Electric & Gas Co.
A. S. Brookes, Public Service Electric & Gas Co.
At Jersey Central—N. J. Power & Light Co., Madison Ave. at Punch Bowl Rd., Morristown, N. J.

Wednesday, March 16

N. Y. COMTEC & TRANSPORTATION DIV.

7:00 P.M.—"Vehicular Traffic Control — New York City System"
N. Y. Traffic Commissioner Henry A. Barnes
Eugene J. Venaglia, Sperry Gyroscope Co.
At Carnegie International Center Bldg., 345 E. 46th St., N.Y.C.

N. Y. COMPUTER GROUP

7:30 P.M.—"Mass Storage Recording and Access Techniques"
Dr. Andrew Gabor, Honeywell Electronic Data Processing Div.
At IBM Bldg., 590 Madison Ave., N.Y.C.

Thursday, March 17

N. Y. POWER & INDUSTRIAL DIV.

7:00 P.M.—"Stock Market Techniques" (3-lecture series)
At Bache & Co., Inc., 610 Fifth Ave., 49th St. and Rockefeller Centre

Friday, March 18

N. Y. COMTEC GROUP

10:00 A.M.—Inspection Trip, Long Lines Dept., A.T.&T. Co.
At A.T.&T. Co., 32 Avenue of the Americas, N.Y.C.

Thursday, March 31

N. Y. ELECTRON DEVICES GROUP

6:15 P.M.—IBM East Fishkill Plant Tour
At IBM Corp., East Fishkill Facility, Bldg. 310, East Fishkill, New York

Tuesday, April 19

N. Y. POWER & INDUSTRIAL DIV.

7:00 P.M.—Underseas Exploration "The Manned Submersible — A New Tool For The Oceanographer"
E. H. Shenton, Westinghouse Underseas Div.
At Engineering Center Bldg., 47th St., N.Y.C.

NORTH JERSEY COMTEC GROUP

"Cable Communications"
F. T. Andrews, Jr., Bell Telephone Labs.
At Communication Systems, Inc., Paramus, N. J.

North Jersey Section Inspection Trip

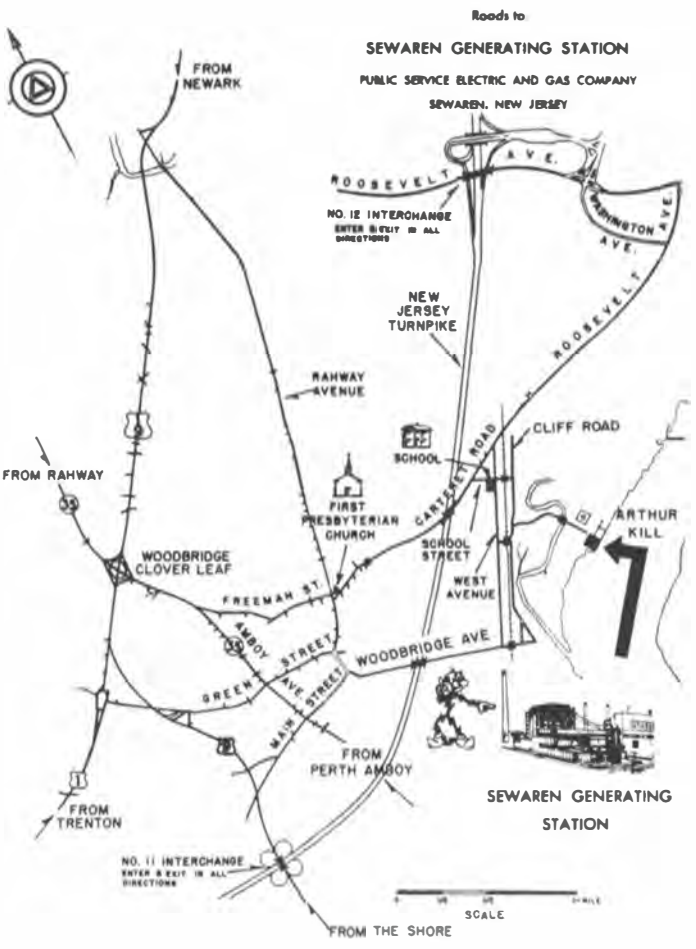
TOUR A COMPUTER CONTROLLED TURBO-GENERATOR & VISIT WORLD'S LARGEST GAS TURBINE

March 9, 1966 — 7:30 P.M.

The North Jersey Section will sponsor an inspection trip to the Sewaren Generating Station of the Public Service Electric and Gas Co. The tour, which is jointly sponsored with the Automatic Control and the Electronic Computer Groups of the Section, will highlight a visit to the world's largest gas turbine-generator, and an inspection of a fully automated computer controlled turbo-generator.

Sewaren Station, located on Cliff Road, Sewaren, New Jersey (near Woodbridge), is the largest generating station in the Public Service system. The six generators at the station have a nominal capacity of 938,000 kW. The gas turbine, which is rated at 140,000 kW, provides the Public Service system with a large block of remote capacity and can be started completely independent of any outside power source and brought to full load within four minutes. If conditions permit, visitors will witness a start-up of this unit.

Unit No. 5, which is a conventional steam turbine-generator, is currently rated at 344,000 kW at throttle steam conditions of 2,400 psig and 1100/1050F. This unit can be controlled in a conventional manner by an operator from the control console, (front cover) or by a high speed computer which can be superimposed on the conventional controls and sensing devices. The computer itself has a 65,000 word drum memory and a 16,000 word core memory in which data and instructions are stored. When in service, this computer supervises and adjusts the conventional control system of the unit for optimum operation. It is also capable of recognizing abnormal plant conditions and can quickly initiate corrective action as required. When fully operational, the computer will start-up the unit automatically, synchronize it to the transmission system, change generator loading as required, and shut the unit down in a preplanned sequence, including emergency shutdown if needed. The computer system is inherently self-checking to insure proper operation and in case of a computer malfunction, a diagnostic program is automatically executed. If the trouble cannot be self-corrected by the computer, all controls are left in their current position and the operation of the unit is returned to the operator.



During the tour, visitors will see various other aspects of a large power plant operation which utilizes many engineering disciplines to bring reliable electric power to the residents of New Jersey.

Following the tour, light refreshments will be served in the station cafeteria.

Owing to the nature of the tour, advance reservation is required so that Public Service can provide an adequate number of guides for those taking the tour. You are, therefore, urged to immediately send in the registration form printed below or telephone Mr. M. Irvine at the number shown on the form. Adequate parking is available for personal cars at the Station.

Tickets will be held at the main gate of the station for those who make a reservation after March 4, 1966.

Please send me ..... reservations for the tour of Sewaren Generating Station. (If more than one reservation, show names of other individuals. *Minor children cannot be permitted to take this tour.*)

Name(s) .....

Address ....., ...

Send reservations to Mr. M. M. Irvine, Bell Telephone Laboratories, Room 3E127, Whippany, New Jersey. Telephone Number TUcker 7-1000, Ext. 4141. Enclose a stamped self-addressed envelope for the speedy return of your tickets.

NORTH JERSEY POWER GROUP

DC Transmission

Speakers:
A. E. Kilgour, Allis Chalmers
S. A. Mallard
Public Service Elec. & Gas Co.
A. S. Brookes
Public Service Elec. & Gas Co.

Date:
Tuesday, March 15, 1966

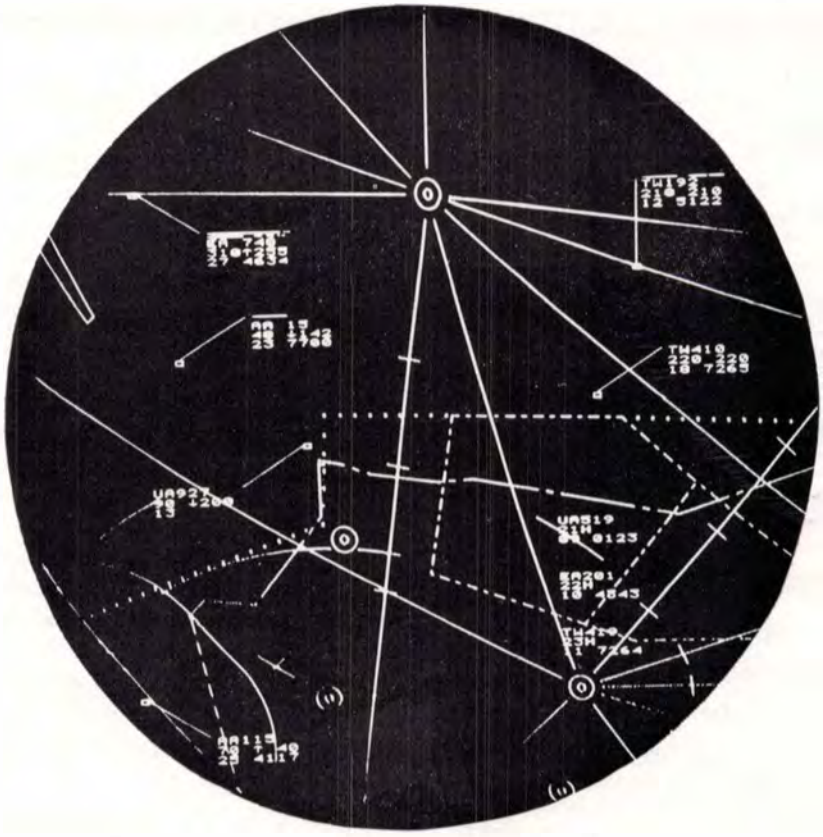
Time:
7:30 P.M.

Place:
Punch Bowl Room
Jersey Central—N. J. Power & Light Co.
Madison Ave. at Punch Bowl Rd.
Morristown, N. J.

The speakers will discuss the "State of the Art of DC Transmission." Mr. Kilgour will present the manufacturers point of view and Mr. Mallard the utility point of view. Mr. Brookes will discuss considerations relative to underground DC transmission cables.

IEEE-CONFERENCE NOTE

Minnesota engineers in Metropolitan New York area will meet 23 March 1966 12:30 P.M. with I.E.E.E.-Conference visitors at a luncheon to be held at the Henry Hudson Hotel — Crystal Room, 353 W. 57th St., New York. Address reservations to: *J. H. DuBois,* Box 259, Clifton, N. J. 07015, or phone area 201/473-4108.



There's more to Air Traffic Control than meets the eye.

Everyone will recognize this controller's scope.

But unless you're a Hazeltine engineer or an FAA employee you may not know that our Alpha-Numeric Generator is in the back room converting computer data into the symbols, characters, lines and vectors on the scope.

Our ANG is an important improvement in air traffic control—the positive association of aircraft identity and altitude information with the aircraft targets shown on radar displays. It is the latest of a long-line of Hazeltine contributions.

How it does it is a long and complicated technical story. We'd like to chat with you about it and similar projects across a desk. Particularly our IFF Systems, Radar Systems and Displays, ASW and Sonar Systems, Data Processing Systems and Spacecraft Imaging Devices.

If you like working in small groups on large electronic problems where unconventional approaches are called for, we have new openings now at Greenlawn, Little Neck, and Plainview, Long Island.

RADAR SYSTEMS RESEARCH
Study of systems using advanced pulse compression, research in multi-dimensional radar resolution, space object identification, ultra-high resolution systems. Experience in radar systems analysis and hardware implications desirable.

ADVANCED COMMUNICATIONS RESEARCH
Synthesis and advanced development of ECCM communications, navigation and IFF, including AJ, secure and concealed systems. Strong theoretical background with substantial experience in analysis and/or synthesis required. Additional background in circuit design and hardware development desirable.

SIGNAL PROCESSING RESEARCH
Investigation of problems in advanced pulse compression waveforms and signal processing, optimum filtering, multi-static radar data association. Both experimental and analytical backgrounds desirable.

CIRCUIT DESIGN
BS in EE (MS preferred) with 2 or more years experience in the design and development of solid state circuitry for military electronics systems. Assignments in diversified programs working from specification to prototype.

SYSTEMS ENGINEERING
Graduate EE required with several years experience in design of military systems involving RF, data processing and display components. Background in logic or equipment design and familiarity with MIL specs desirable.

RADAR ENGINEERING
Senior openings in Radar and ECM Systems design. Intermediate and junior openings in RF and IF solid state circuit design. Junior openings in general solid state circuit design.

FIELD ENGINEERING
Engineering representative at field sites where Hazeltine equipment is installed. BS in EE or Physics required, with one or more years practical experience in installation, maintenance or servicing electronic systems and equipment. Military experience in electronics preferred.

Openings in DISPLAY, RFI, and TEST ENGINEERING also available.

Write in confidence to Mr. W. A. Speer

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North Jersey Computer Group

N. J. Bell Telephone Co. Electronic Central Office Evening Inspection Trip

The trip will be to the New Jersey Bell Telephone Company's Electronic Switching Exchange at Succasunna, New Jersey, to inspect the No. 1 Electronic Switching System (ESS). The system has the potential to follow switching schemes of an almost limitless variety, depending upon the particular user's needs.

An animated movie of the features of the exchange will be shown. This will be followed by a tour of the facilities. Technical personnel from the telephone company will be on hand to answer questions. The meeting will start in the auditorium of the Succasunna Electronic Central Office at 7:30 P.M., Tuesday, April 12, 1966.

Attendance is limited to 40 persons and is by *advance* registration only. Please send your request to Mr. E. Byrne, Room 2E126, Bell Telephone Laboratories, Whippany, New Jersey, 07981. All requests will be acknowledged; in addition, maps with appropriate directions will be furnished to the first forty IEEE members requesting to attend.

COMMUNICATIONS TECHNOLOGY GROUP INSPECTION TRIP

A trip through some of the operations of the Long Lines Department of the American Telephone and Telegraph Co. at 32 Ave. of the Americas, N. Y. is being offered for March 18, 1966 at 10:00 A.M.

The trip, which will last about 2½ hours, will include a visit to the Network Management Control Center. In order to explain the operation of the Center, the visit will include demonstrations, slide talks and exhibits.

The trip is limited to 40 persons and advance registration is required. Requests for tickets will not be considered after March 15. To register, contact F. E. Sellinger, A.D.T. Co. Inc., 155 6th Ave., New York, N. Y. 10013

NORTH JERSEY SECTION SPRING STUDY GROUP

C. P. M. (CRITICAL PATH METHOD)

— THE MODERN PLANNING TOOL —

For the first time in our history, we are offering a Study Group tailored to those in planning, engineering and management. A powerful management technique has been perfected for planning, scheduling, and controlling all types of projects such as maintenance, installation, construction, and engineering.

This Study Group is intended for men in industry who plan maintenance, installations of equipment, construction and associated functions. Maintenance shutdowns that were planned with C.P.M. have made substantial savings in both dollars and downtime to industry.

This important C.P.M. technique will be given in practical, easy-to-understand terms, numerous examples, case histories, sample problems, and questions and answers. You will receive a practical picture of what C.P.M. is and how to compute it. Other planning tools such as PERT will be discussed. Participation in this Study Group should enable you to offer savings and greater efficiency to your operation. No previous C.P.M. experience is assumed necessary. Our presentation makes this tool valuable in any management, engineering or foreman level.

REGISTRATION INFORMATION

TIME:	7:00-9:00 starting Tuesday, March 15, 1966 and ending Tuesday, April 19, 1966.
LOCATION:	Public Service Electric and Gas Company — Room 3171A, 80 Park Place, Newark, New Jersey.
REGISTRATION FEE:	$20.00 to Members IEEE, ASME, ASCE, AIME, etc. $25.00 to Non-members. For advance registrants (registration received at least one week before the first session) there will be a $5.00 discount reducing the cost to $15.00 for Members and to $20.00 for Non-members.

ADVANCED REGISTRATION FORM

Name ..... Position .....

Technical Society Affiliation .....

Company Affiliation .....

Location .....

Telephone ..... ☐ Member $15.00 ☐ Non-member $20.00

Send Registration Forms to and/or call the following for copy:

Mr. C. G. Engstrom
Public Service Electric & Gas Co.
90 Park Place Newark, N. J. 622-7000 — Ext. 2603

Please make checks payable to: *North Jersey Section IEEE*

N. Y. Power & Industrial Div.

Underseas Exploration

Subject:
"The Manned Submersible — A New Tool For the Oceanographer"

Speaker:
Mr. E. H. Shenton — Project Engineer for instrumentation with the Manned Submersible Group of the Westinghouse Underseas Division.

Place:
Engineering Center Building
47th Street, New York City

Date:
Tuesday, April 19, 1966

Time:
7:00 P.M.

The above meeting will be designed to appeal to each member's family — wives and older children. Members may invite guests.

Elections for the Power & Industrial Executive Committee for 1966-1967 will take place on the same program.

N. Y. COMTEC & TRANSPORTATION DIV.

N. Y. C. TRAFFIC CONTROL PROGRAM

Recently, a $5,391,973 contract was awarded to the Sperry Rand Corporation for the procurement of electronic equipment to computerize traffic control signals at 2693 intersections in N. Y. C. This is to be the first step of a program to electronically control traffic at some 9000 intersection in the city.

On *March 16, 1966*, starting at *7:00 P.M.* N. Y. *Traffic Commissioner Barnes* and *Eugene J. Venaglia* of Sperry Gyroscope Co. will address a jointly sponsored meeting of IEEE's N. Y. Section COMTEC Group and the Transportation Division at the *Carnegie International Center Building*.

N. Y. Information Theory Group

THE LINCOLN EXPERIMENTAL TERMINAL

Thursday, March 10, 8:00 P.M.

The Lincoln Experimental Terminal (LET) is a transportable X-band satellite communications terminal developed at M.I.T. Lincoln Laboratory as part of its program in space communications. It combines several techniques to achieve a high anti-jam or multiple-access capability with both active and passive dispersive satellites. It communicates a single vocoded voice channel with two multiplexed teletype channels.

Irwin L. Lebow received the S.B. and Ph.D. degrees at M.I.T. in 1948 and 1951 respectively, both in physics. He has been at M.I.T. Lincoln Laboratory since 1951.

N. Y. Power & Industrial Div.

Trip to United Fruit Company's automated banana handling facilities in Weehawken, N. J. Tentatively at 10:00 A.M., March 24, 1966.

For details contact Mr. S. J. Dolega, c/o Con Edison Co. of N. Y. Inc., E. 34th St. and Locust Ave., N. Y., N. Y. 10054.

Together these and many other heart and blood vessel disorders are your Number 1 health enemy.

They take 981,000 U.S. lives annually, more than 54% of all deaths.

You help fight *all* the heart and blood vessel diseases when you give to the Heart Fund.

Heart Fund dollars make possible the fight to control and prevent these diseases through programs of research, education and community service.

GIVE...so more will live
HEART FUND

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STUDENT AFFAIRS

NCE Students Revamp Program

Mimicking the practices of industry, the branch has embarked on a program of change in order to consolidate the experiences of the fall semester into working guidelines for the spring and next year. The four-man review committee has been periodically meeting since December to review activities and recommend changes to the officers and committee chairmen.

The Juniors, under the able leadership of Vice Chairman Bill Hnat, have now assumed responsibility for speaker programs and are still seeking assistance from the many highly qualified members of the Northern New Jersey Section. The programs at N.C.E. have undergone a shift in emphasis from the recruiting and industry scene to the more technical aspects in the engineering spectrum.

As a follow-up to the popular showing of "The Four Days of Gemini IV" in December, the regular program committee has organized a monthly movie series dealing with several space-oriented subjects.

P. E. Deadline Approaches

P. E. means different things to different people. For some engineers it means plant extension; others think of physical education. But for some 250,000 engineers in our nation P. E. is Professional Engineer—the legal recognition by state governments of their professional integrity and competency. As each year passes more graduate engineers become registered with their respective state boards.

Some engineers may still associate professional engineering registration with the field of civil engineering. Such thinking is no longer valid. In the case of electrical engineers registration offers these attributes: legal acceptance not allowed for non-registered engineers; approval of projects requiring a P. E. seal on behalf of one's employer or on behalf of one's own business when self-employed; legal freedom to represent oneself as an engineer when signing correspondence and reports or when advertising; greater potential for advancement, financial reward, and prestige acknowledgment from one's employer; greater company concern that their engineers be registered.

The deadline for applications to take Part III (PE Exam) or Parts I and II — intended for graduating seniors — is normally around March 15th in New Jersey. For additional information, contact the N. J. State Board of Professional Engineers and Land Surveyors at 1100 Raymond Boulevard in Newark by calling 648-2362.

Seniors intending to take this exam in June — and all should consider such action — must file an application with a photo and an application fee to the State Board. Three personal references one of whom must be a P. E. are required. Review of strength of materials, statics, and other general type courses is recommended for those intending to take the exam. Students having additional questions are invited to call Gene O'Brien, E. I. T., at 354-7244 in Elizabeth.

N. Y. COMPUTER GROUP

Mass Storage Recording and Access Techniques Explored by Expert

Dr. Andrew Gabor, technical assistant to the Director of Mass Storage Group of Honeywell's Electronic Data Processing Division, will headline the March meeting of the New York Metropolitan chapter of the Computer Group.

Dr. Gabor will draw on his long experience with research, development and design of magnetic tape equipment, random access memories and magnetic recording circuits for his talk.

The meeting is scheduled for *7:30 P.M.*, at the IBM Building, 590 Madison Ave., on Wed., *March 16*. Pre-meeting dutch-treat dinner at Schraffts, 58th St. and Madison Ave., at 5:45.

N. Y. SECTION

THE POWER & INDUSTRIAL DIVISION

OFFERS A 3-LECTURE SERIES ON A TECHNICAL APPROACH TO STOCK MARKET TECHNIQUES

Session 1 — March 17, 1966

1. **Introduction of The Technical Approach:**
2. **Market Cycles:**
3. **Line Charts:**

Session 2 — March 24, 1966

4. **Point and Figure Charting:**
5. **Trend Lines and Trendline Channels:**
6. **Support and Resistance:**

Session 3 — March 31, 1966

7. **Reversal and Consolidation Patterns:**
8. **Market Indicators:**
9. **Market Tactics:**

Open to the Public — Entire Series Course:
$10 for members ASME, IEEE, ASCE, AIChE, AIE, AIME, NYSSPE.
$15 for Non-Members.

Contact: I. M. Berger
N.Y.C. Transit Authority
3311 Giles Place
Bronx, N. Y. 10463
Tel. 852-5000—Ext. B4247

IBM EAST FISHKILL PLANT TOUR

This is a tour of the IBM East Fishkill Manufacturing Facility on March 31, 1966 from 6:15 P.M. to 7:30 P.M. at Building 310, East Fishkill, New York that is devoted primarily to the manufacture of the integrated circuit modules used in the IBM System/360.

To register, contact R. M. Folsom, IBM — East Fishkill Facilities, Department 238, Building 003-41, Route 52, Hopewell Junction, New York.

BEST ROUTES

1. From Northern New Jersey: NYS Thruway to Exit 17. Exit 17 to Interstate 84. East across Beacon-Newburgh Bridge to U. S. 9. U. S. 9 North to State 52 East. State 52 to IBM Building No. 310.
2. From NYC and Long Island: Taconic State Parkway North to State 52. State 52 West to IBM Building No. 310.

Approximately 1 hour and 45 min. driving time from Manhattan.

Self-Made

Prognostication is an art that is practised even today. All of us have at one time or another read the contents of fortune cookies and been struck by the aptness of the statements. Salada Tea Bags, not tea leaves, have added some of this to our present supply of reading matter.

A recent one: "Many men are self-made . . . but only the successful ones will admit it." In reading this, we were struck by the aptness, and the pertinency of the statement not only to members of the IEEE, but also the organization itself.

The IEEE has grown, self-made. It is the image of its membership. This image includes dynamic, energetic, far-thinking, planning members, as well as those who are static, lethargic, narrow minded, and short horizoned. In other words, Doers, Acceptors, and those in the middle.

Last year, an Ad Hoc Committee made a study of attendance at the many meetings sponsored by the North Jersey Section. The results, as anyone who has attended these meetings, showed that less than 1% of the membership of the North Jersey Section hoisted their anchors from home port.

If they were dissatisfied with the subjects of the meetings, did they make their ideas known? If they wanted other locations for meetings, did they speak up? The "reasoning" is pretty narrow. As always, they maintain that there is a clique, an inner circle, a closed group, that runs and operates all activities.

Yes, there is a clique. This clique includes those men who will admit that they are self-made, and strive to emulate the U. S. Post Office Motto (paraphrased): Neither rain, nor snow, nor sleet, nor dark of night will stay these self-made men from their appointed tasks for a dynamic, energetic, far-reaching, far-thinking, wide horizoned IEEE. They are making themselves useful.

How about you?

Bernard Meyer
Member-at-Large
Executive Committee
BERNARD MEYER

NORTH JERSEY

COMTEC MEETINGS

Date: Tuesday, April 19, 1966

Subject: Cable Communications

Speaker: F. T. ANDREWS, JR.
Bell Telephone Laboratories

Place: Communication Systems, Inc.
Paramus, New Jersey

Type RM564 TEKTRONIX general-purpose oscilloscope

with added feature of

STORAGE

SPLIT-SCREEN / permits simultaneous operation as a storage oscilloscope and as a conventional oscilloscope

■ presents stored or conventional displays—The Type RM564 presents full-screen stored displays or full-screen conventional displays. Or—with the split-screen—stored displays can be presented on either the upper or lower half of the crt with conventional displays on the other half.

■ saves film—The Type RM564 permits detailed waveform analysis and simplified waveform comparisons, in many instances, without resorting to photography. Just store and analyze—for periods up to one hour, with quick erase in less than one-fourth second.

■ trace photography is easier and can cost less—Stored displays can be recorded at one's convenience, without the need for high-speed lens or film.

■ accepts combinations of 20 plug-in units—The Type RM564 adapts easily to such applications as multi-trace, low level differential, sampling, spectrum analysis, others—including matched X-Y displays using the same type amplifier units in both the amplifier and time-base channels.
Plug-in units offer capabilities from 100μV/cm sensitivity (3A3) and 10MHz passband (3A1, 3A6), to 0.5 μsec/cm sweep rate (3B1, 3B3) and sweep-delay applications (3B1, 3B2, 3B3).

■ saves space—The Type RM564 occupies **only 7 inches** of standard **rack height**, yet has a full 8-cm by 10-cm display area.

■ operates simply and reliably—Although capable of many sophisticated measurements, the Type RM564 retains the operating convenience of a conventional oscilloscope.

Display shows ability of the Type RM564 to store single-shot events. Waveforms represent displacement of leaf springs due to imparted shocks given them during test. Split-Screen Facility—with independent storage and erase of upper and lower half of the crt—permits easy comparison of test waveforms to a reference display.

Type RM564 Oscilloscope	$960
Type 3A3 Dual-Trace Differential Amplifier Unit	790
Type 2B67 Time-Base Unit	210
18 other plug-in units available.	
Type 564 Cabinet Model also available with same performance specifications	875

U.S. Sales Prices f.o.b. Beaverton, Oregon
Oscilloscope prices without plug-in units

Tektronix, Inc.

FOR A DEMONSTRATION, PLEASE CALL YOUR TEKTRONIX FIELD ENGINEER

NEW INSTRUMENTS

HP OFFERS HIGH PERFORMANCE 1.5-MC INSTRUMENTATION TAPE RECORDERS AT LOW COST.

New 1.5-megacycle instrumentation magnetic tape recorders from Hewlett-Packard offer 15" reels, pushbutton selection of tape velocity, tape transport operation, and playback equalization, full metering of all recording functions as standard equipment, and pushbutton channel-by-channel front-panel system check-through, all for less than half the price of other IRIG-compatible recorders of comparable specified performance.

New Hewlett-Packard 1.5-mc Instrumentation Tape Recorder models in the 3950 Series are available with either seven or fourteen channels, in standard IRIG configurations.

Typical flutter, measuring all components from dc to 1500 Hz (cps), is under 0.2% peak-to-peak. Motional stability is attained in an easy-to-thread, open-loop drive, without the use of expensive tachometer servos, by meticulous application of mechanical damping to every velocity-influencing mechanism, and by careful selection of mass/compliance relations which avoid resonances under operating conditions.

Representative prices are less than $16,000 for the 15" reel 7-channel Model 3956A, and less than $20,000 for the 15" reel 14-channel Model 3957A. Call your local Hewlett-Packard Field Engineer for complete details.

UNIQUE VARIABLE-PERSISTENCE 'SCOPE IS ALSO STORAGE OR STANDARD TYPE.

Hewlett-Packard's Model 141A is the first variable-persistence oscilloscope, and it performs functions which were previously impossible. HP Model 141A behaves exactly like its conventional counterpart, Model 140A, until its PERSISTENCE or STORE knobs are operated. Then the new Model 141A will produce gradually-decaying traces whose persistence may be continuously varied from about 1/5 second to more than 1 minute. When switched to the STORE mode, Model 141A becomes a storage scope, yet retains the advantages of conventional 'scopes: dark background for contrast, long tube life, and non-glare internal graticule screen with no-parallax display. Waveforms may be observed up to 1 hour without degradation, and stored for days with the instrument turned off.

With continuous variability of trace fade-time, slowly-swept traces may be kept continuously on display, by adjusting persistence to match sweep time. Continuous swept-frequency displays may be made slowly for maximum resolution, with adequate visibility at all times. Successive sweeps may be superimposed, to observe trends in the behavior of the subject through a series of adjustments.

Model 141A is identical in size and shape to its standard companion the HP Model 140A, and accepts all of the latter's plug-ins. Model 141A is priced at $1275, without plug-ins, adding low cost to its list of advantages.

HEWLETT hp PACKARD

ELECTRONIC TEST INSTRUMENTS

236 EAST 75TH STREET, NEW YORK, N.Y. 10021/212-879-2023 ■ 391 GRAND AVENUE, ENGLEWOOD, N.J. 07631/201-567-3933