



the MONITOR

News of the New York Section, IRE

VOLUME 1

MAY, 1954

NUMBER 9

HIGH FIDELITY— Wednesday, May 5, 7:30 P. M.

Joint Meeting with AIEE Communication Division

Engineering Societies Bldg., 33 W. 39th St., Main Auditorium.



HIGH FIDELITY by H. H. Scott, President, Hermon Hosmer Scott, Inc.

The term "high fidelity" has become generally used to designate the hobby or science of high quality sound reproduction. Since no definite limits have been standardized, the term has been loosely used by many manufacturers to designate equipment which in many cases is little, if at all, better than the preceding supposedly "low fidelity" models. We are, however, concerned mainly with those amateurs and music lovers who are interested in obtaining in their home the highest quality of sound reproduction which is possible in the present state of the art.

HERMON HOSMER SCOTT was born in Somerville, Mass., March 28, 1909. He received the degrees of B.S. and M.S. in electrical engineering from the Massachusetts Institute of Technology in 1930 and 1931 respectively.

(continued on page 2, column 1)

(continued on page 2, column 2)

PRE-MEETING DINNER—6:00 P. M., Midston Grill, 22 E. 38th St. Everyone welcome—no reservations necessary.

SOCIAL HOUR—7:00 P. M., just outside main auditorium. Light refreshments will be served.

MAY CALENDAR

- | | |
|--|-----------------------------------|
| 1—Quality Control Conference (page 3) | 13—PGED (page 6) |
| 11—Long Island Section (page 7) | 18—Mid-Hudson Subsection (page 6) |
| 12—Northern New Jersey Subsection (page 5) | 19—Monmouth Subsection (page 5) |
| | 24—PGEC (page 7) |

JUNE 2—"The History of Radio Communications" by Lloyd Espenschied, Bell Telephone Laboratories. Meeting will be held at Columbia University to commemorate Columbia's bi-centennial celebration.

BIOGRAPHY

(continued from page 1, column 1)

From 1931 to 1946, Mr. Scott was associated with the General Radio Company, first as Sales Engineer and Development Engineer and later as Executive Engineer in charge of audio frequency, acoustic, broadcast and related developments. From 1947 to date, he has been President and Director of Engineering of Hermon Hosmer Scott, Inc., Cambridge, Mass.

Mr. Scott is a Fellow of the Audio Engineering Society, the Institute of Radio Engineers, and the Acoustical Society of America, and he is a member of the American Institute of Electrical Engineers.

Author of numerous technical papers on the measurement and reproduction of sound and related laboratory measuring equipment, Mr. Scott holds both United States and foreign patents in these fields. He is the inventor of the dynamic noise suppressor and the common type of RC oscillators and RC selective circuits. His designs for sound level meters and associated equipment have won several awards. In 1951, he was presented with the John H. Potts Memorial Award by the Audio Engineering Society "for out-

standing achievement in the field of audio engineering."

Mr. Scott and his organization have also been engaged in research and development for the U. S. Navy, including the development of specialized sound measuring and analyzing apparatus.

HIGH FIDELITY

(continued from page 1, column 2)

Essentially, the high fidelity system includes a flexible high quality amplifier and a high grade loudspeaker, with suitable program sources which may be phono pickups, tuners or tape recorders. Except in those few large cities where high grade (usually FM) broadcasts are available, most high fidelity systems are mainly used for playing long-playing phonograph records.

The general problems involved in the selection, matching and operation of the various components required for a high fidelity system in the home will be discussed in detail. Particular emphasis will be placed upon the meaning, or lack of meaning, of various ratings now current in the industry, and also certain "tricks" and procedures desirable in matching the components of a complete system to obtain best overall performance.

NOMINATIONS FOR 1954-55

Annual election of officers for the New York Section will be held at the June 2 meeting. As with most professional societies, a nominating committee is appointed which selects a slate and presents it to the membership for approval. Officers serve for one year.

Our present chairman, Sidney Shamis, appointed the nominating committee, which is composed of H. T. Budenbom as chairman, with J. H. Mulligan and L. E. Hunt making up the remainder of the committee.

Mr. Budenbom reports that the following slate has been selected to serve for the 1954-1955 season:

Chairman—A. B. GIORDANO
Vice Chairman—A. C. BECK
Secretary—H. S. RENN5
Treasurer—J. S. SMITH

Additional nominations may be made from the floor at the June 2 meeting when supported by a petition signed by ten voting members qualified to vote for

the office of the candidate nominated.

Brief biographical sketches of all nominees will be published in the June issue of THE MONITOR. Plan now to attend the June 2 meeting, which is the annual business meeting of the New York Section.

QUALITY CONTROL CONFERENCE

The Long Island Subsection of the American Society for Quality Control is sponsoring a one-day conference on quality control to be held on the campus at Hofstra College, Saturday, May 1.

The main theme which is to be developed is the use of statistical quality control in the electronics and aircraft industries. In addition to the technical sessions, there will be several equipment exhibits of interest to quality control personnel.

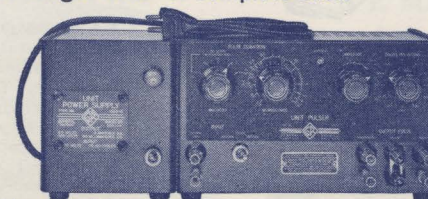
Information on the conference may be obtained from Ray Miles, Airborne Instruments Laboratory, or L. A. Wittlock, Fairchild Engine Division.

Announcing G-R's NEW Unit Pulser

Pulse Durations: 0.2 to 60,000 μ s
Repetition Rates: 0 to 100 kc
Rise Time: .05 μ s

Inexpensive... Small... Compact... Economical

A Laboratory-Quality pulse generator in the Unit Instrument price range. Write for complete data.



Type 1217-A Unit Pulser . . . \$195

shown with plug-in Type 1203-A Unit Power Supply . . . \$40



GENERAL RADIO Company

© 275 Massachusetts Avenue, Cambridge 39, Massachusetts

Branch Engineering Office in NEW YORK
90 West Street New York 6, New York

William R. Thurston

George G. Ross

- ☆ ADMITTANCE METERS
- ☆ COAXIAL ELEMENTS
- ☆ DECADE CAPACITORS
- ☆ DECADE INDUCTORS
- ☆ DECADE RESISTORS
- ☆ DISTORTION METERS
- ☆ FREQUENCY METERS
- ☆ F-M MONITORS
- ☆ FREQUENCY STANDARDS
- ☆ GEIGER COUNTERS
- ☆ IMPEDANCE BRIDGES
- ☆ MODULATION METERS
- ☆ OSCILLATORS
- ☆ LIGHT METERS
- ☆ MEGOHMMETERS
- ☆ MOTOR CONTROLS
- ☆ NOISE METERS
- ☆ NULL DETECTORS
- ☆ PRECISION CAPACITORS
- ☆ PULSE GENERATORS
- ☆ SIGNAL GENERATORS
- ☆ VIBRATION METERS
- ☆ STROBOSCOPES
- ☆ WAVE FILTERS
- ☆ U-H-F MEASURING EQUIPMENT
- ☆ VARIACS
- ☆ V-T VOLTMETERS
- ☆ WAVE ANALYZERS
- ☆ POLARISCOPES

SPECIAL COILS designed

and wound

to your specifications on a

wide variety of forms.

Variable Inductance Coils

- High quality mica-filled form
- Two extra tiepoint terminals

NOMINAL
INDUCTANCE RANGE
(MICROHENRIES)

| | |
|-------|-----------|
| 120-A | 2-3 |
| 120-B | 3-5 |
| 120-C | 5-9 |
| 120-D | 9-18 |
| 120-E | 18-36 |
| 120-F | 36-64 |
| 120-G | 64-105 |
| 120-H | 105-200 |
| 120-I | 200-500 |
| 120-J | 500-1000 |
| 120-K | 1000-2000 |



**NORTH HILLS
ELECTRIC CO., INC.**
246-32 54th Avenue,
Douglaston 62, N. Y.

nh

STUDENT ACTIVITIES DAY

Winners of the 1954 Student Activities Contests, held on April 3, have been announced by J. S. Smith, Chairman of Student Activities for the New York Section. Two separate groups of prizes were awarded—one for the Prize Paper Contest and the other for the Demonstration Contest. Winners are given below. It will be noted that two first prizes were awarded in the Prize Paper Contest.

Prize Paper Contest

FIRST PRIZES:

An Instrument for Time Phase Measurements by Thomas J. Brady, 563 Cauldwell Ave., Bronx 55, N. Y. (Manhattan College)

The Floating Grid Circuit by F. C.

Wilson, 89-29 185th St., Hollis, L. I., N. Y. (Manhattan College)

SECOND PRIZE:

Design of a Cable Loss Equalizer by Karen Frederick, 215 Alexander St., Newark, N. J. (Newark)

Demonstration Contest

FIRST PRIZE:

Cardioscope by G. Marks, 3111 Broadway, New York 27, N. Y. (Cooper Union)

SECOND PRIZE:

Cassandra by W. R. Nugent, 146-07 61st Rd., Flushing 67, N. Y. (Brooklyn Polytech)

THIRD PRIZE:

Improved Audio System by A. G. Jacobson, 1622 50th St., Brooklyn 4, N. Y. (Columbia)

NEW YORK SECTION OFFICERS

S. S. SHAMIS, Chairman

New York University
University Heights, N. Y.
LUdlow 4-0700, x73

A. B. GIORDANO, Vice-Chairman

Polytechnic Inst. of Brooklyn
85 Livingston St.
Brooklyn 1, N. Y.
TRiangle 5-6412, x120

A. C. BECK, Secretary

Bell Telephone Labs.
P. O. Box 107
Red Bank, N. J.
HOlmdel 9-7711
Call CH 3-1000 (ask for line)

B. F. OSBAHR, Treasurer

Tele-Tech
480 Lexington Ave.
New York 17, N. Y.
PLaza 9-7880

EDITORIAL STAFF

H. S. RENNE, Editor

Radio-Electronic Engineering
366 Madison Ave.
New York 17, N. Y.
MUrray Hill 7-8080

RALPH BATCHER, Advertising Mgr.

240-02 42nd Ave.
Douglaston, L. I.
BAyside 4-5092

SUBSECTIONS

Northern New Jersey

G. P. MCCOUCH, Chairman
F. A. POLKINGHORN, Vice-Chairman
W. R. THURSTON, Secretary
H. R. TERHUNE, Treasurer

At the May 12 meeting, Mr. Sidney T. Fisher will present a paper entitled "V.H.F. Radio Relay System in Northwestern Canada." The paper will discuss a 100-mc. multichannel system with 20 unattended repeater stations operating over approximately 800 miles of rugged terrain in Canada. Mr. Fisher will have colored slides showing some of the terrain and installations. The meeting will be held in the auditorium of the Federal Telecommunication Laboratories in Nutley, N. J. Pre-meeting dinner will be at the Riverview Inn, Delawana, N. J. No advance reservations are necessary.

Results of the membership poll regarding full Section status for the Northern New Jersey Subsection are now in. Of the 2126 ballots sent out, 1179 were returned, with 94.5% of those replying favoring full Section status. This represents 52.4% of the total membership of the Northern New Jersey Subsection.

Monmouth

O. D. PERKINS, Chairman
W. M. GOODALL, Vice-Chairman
E. MASSELL, Secretary-Treasurer

A paper entitled "Wave Guide Transmission" will be presented by Mr. Beck

FALSTROM

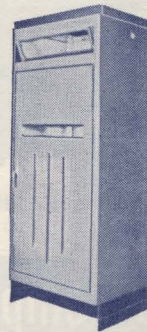
Custom-built

**ALUMINUM
and STEEL
ASSEMBLIES**

.. experienced **DESIGNING,
FABRICATING,
FINISHING!**



POWER SUPPLY FRAMES
TV TRANSMITTER CABINETS
BUSINESS MACHINE ASSEMBLIES
SPECIAL PANELS AND RACKS
ALUMINUM CABINETS
PLOTING BOARD CABINETS
RADAR SUB-ASSEMBLIES
GROUND-TO-AIR METAL PARTS



FALSTROM can supply your metal assemblies to specification quickly and economically. The complete service includes precision fabrication to your specifications or designing metal products to meet your requirements. Either way, you are assured of "craftsman quality" in metal products of steel, aluminum, copper, brass, stainless steel, or other alloys.

**FALSTROM
COMPANY**
63 FALSTROM COURT
PASSAIC, NEW JERSEY



NEW FALSTROM
BULLETIN #142
fully describes the complete service. Call or write for your copy.

QUALITY METAL PRODUCTS
FOR INDUSTRY SINCE 1870

ERCO RADIO LABORATORIES, INC.

Radio Communications Equipment

Engineering - Design - Development -
Production

Our 25th Year in Ground to Air
Communications and Radio Beacons
Garden City - Long Island - New York

Roller-Smith Corporation

PANEL INSTRUMENTS, GOVERNMENT
APPROVED TYPES

NON-SEALED, SEALED, RUGGEDIZED

Send for Technical Data 4110

11 Park Place CORtlandt 7-5326

JOSEPH RACKER COMPANY, INC.

Engineered-Writing Consultants

Specializing in the preparation of
manuals to government specifications

140 Nassau Street New York 38, N. Y.
Worth 4-1463

WHEELER LABORATORIES, INC.

Radio and Electronics

Consulting — Research — Development
R-F Circuits — Lines — Antennas

Microwave Components — Test Equipment
Harold A. Wheeler and Engineering Staff
Great Neck, N. Y. Great Neck 2-7806

of Bell Telephone Laboratories at the May 19 meeting. The location will be the Little Silver fire house on Prospect Ave., Little Silver, N. J. Time of the meeting is 8:00 P. M.

There will be a pre-meeting dinner as usual at the Crystal Brook Inn. Advance reservations are necessary.

Mid-Hudson

D. SALING, Chairman
J. HICKERSON, Vice-Chairman
E. A. KELLER, Secretary-Treasurer

No formal May technical meeting has been planned, since May is the month for the annual social gathering. This year, the event will be held on May 18, in cooperation with the Poughkeepsie Section of the AIEE. Present plans call for a dinner dance to be held at the Covered Wagon in Poughkeepsie.

PROFESSIONAL GROUPS

The Professional Groups Chairman is Sidney Moskowitz, Federal Telecommunication Labs., Nutley, N. J. (Phone: Nutley 2-3600). If you are interested in forming a new Group, he will be glad to help you.

Electron Devices

Annual meeting of the New York Chapter, Professional Group on Electron Devices, will be held at 7:30 P. M. on May 13, at the General Electric auditorium, Lexington Ave. and 51st Street. Election of officers for the coming year will be held at that time. The nominating committee has selected the following slate:

Chairman—SIMEON WESTON
Vice Chairman—A. K. WING, JR.
Secretary—P. M. LALLY

A pre-meeting dinner will be held at the Child's restaurant in the General Electric building at 6 P. M.

Two technical papers will be presented at this meeting, as follows:

CHARACTERISTICS AND APPLICATIONS OF A POWER TRANSISTOR

by Mason A. Clark, Bell Telephone Laboratories, Inc., Murray Hill, N. J.

The electrical characteristics of a developmental power transistor will be discussed. As a switching element, 40 watts or more can be controlled, with the unit attached to a simple heat sink, such as a chassis. In linear amplifier service, a single transistor can deliver two watts, and a pair in push-pull Class B can deliver five watts, with these ratings somewhat reduced above 140°F ambient temperature. There is sufficient gain to allow use of a 50-milliwatt transistor as a driver.

Use of these transistors in a variety of applications will be described. Such applications include solenoid activation, magnetic amplifier preamplification, power conversion, regulation of power supplies, and audio amplifiers. Some demonstrations will be given.

POINT CONTACT SILICON TRANSISTORS by Harold Jacobs, Frank A. Brand, and Wesley Matthei, Signal Corps Engineering Laboratories, Fort Monmouth, N. J.

A new technique will be reported in which silicon can be formed to provide transistor action. A suitable impurity is arced at the surface of the silicon, causing the impurity to be diffused into a small region. Tests have been carried out using both n-type and p-type silicon with various impurities. Initial results showed voltage gains as high as 75 and power gains ranging between 15 and 60. Other characteristics such as variations in alpha with emitter current were examined and the mechanism of alpha was compared with the theories of Sittner.

Acknowledgment should be made to the late Dr. John E. Gorham for his encouragement of this project, and to Mr. Alexander Ramsa for his help in the construction of the equipment.

Aeronautical and Navigational Electronics

The next meeting of PGANE will be held on Thursday, June 10, at the General Electric auditorium, Lexington Ave. and 51st Street. Program information will appear in the June issue of THE MONITOR.

Electronic Computers

The next meeting of the New York and Long Island Chapter of PGEC will be at Remington Rand, 315 Fourth Ave., in the 16th floor auditorium. May 24 is the date, and the time is 8:00 P. M.

Program will consist of two talks and a demonstration of UNIVAC. The design features of UNIVAC, with major emphasis on input-output equipment, will be discussed by D. E. Keefer, and application problems will be discussed by Dr. H. F. Mitchell. The demonstration will follow the talks.

LONG ISLAND SECTION

On Tuesday, May 11, a paper will be presented on "The Direct Conversion of Radioactive Energy to Electrical Energy" by Paul Rappaport, RCA Laboratories, Princeton. As usual, the paper will be presented at the Stewart Avenue School in Garden City, with the pre-

meeting dinner at Felice's, Post Ave. & Old Country Rd., Westbury.

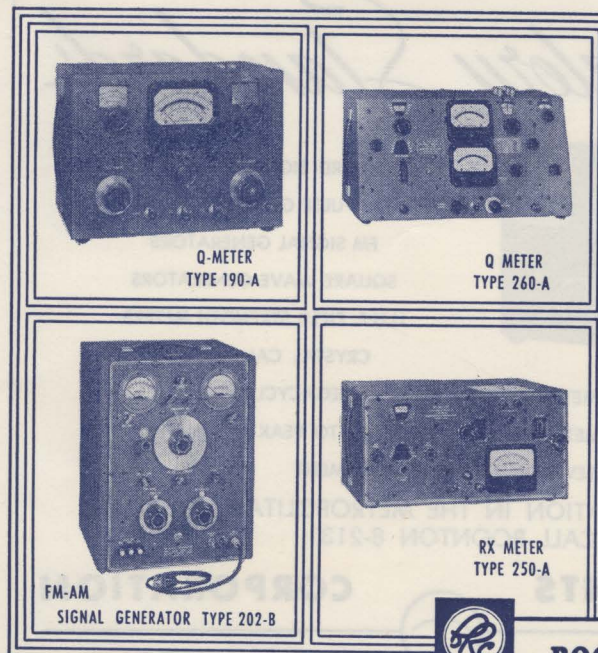
Election of officers for the 1954-1955 season will be held at this meeting. The nominating committee is composed of Hugh Webber, Chairman, with Charles J. Hirsch, Orville M. Dunning and Harold A. Wheeler as the other members. This committee has submitted the following slate:

Chairman—WILLIAM F. BAILEY
Vice Chairman—CLARK CAHILL
Secretary—PAUL G. HANSEL
Treasurer—CAROL VERONDA

EDITOR'S CONFERENCE

During the IRE National Convention, a group of editors of IRE Section Bulletins got together to talk over problems of size, shape, editorial content, etc. Although no definite decisions were reached, everyone agreed that the conference was of value, and should be repeated next year.

ELECTRONIC MEASURING INSTRUMENTS



RX Meter
Impedance Measurements

Q Meters
Low, Medium and High
Frequencies
Very High Frequencies

Signal Generators
Frequency and Amplitude
Modulated:
For Aircraft Navigation
Receivers
For Mobile Communications
Receivers

Univerters
Low, Medium and High
Frequencies

Write for complete information



BOONTON RADIO
BOONTON-N.J.-U.S.A. Corporation

H. S. RENNE
RADIO-ELECTRONIC ENGINEERING
366 MADISON AVE.
NEW YORK 17, N. Y.

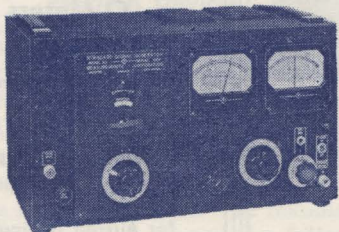
FIRST CLASS

"THE IRE"

At a recent meeting of Section Publication editors, George Bailey suggested that we refer to the Institute of Radio Engineers as "The IRE" rather than "The Institute," as it has frequently

been called in the past. The main reason for doing this is that there are many "Institutes" but only one "IRE." Also, our emblem is now trademarked, and whenever it is used, it should be accompanied by a small R in a circle, as shown on the first page of THE MONITOR.

Laboratory Standards



VACUUM TUBE VOLTMETERS

INTERMODULATION METERS

STANDARD SIGNAL GENERATORS

PULSE GENERATORS

FM SIGNAL GENERATORS

SQUARE WAVE GENERATORS

U.H.F. FIELD STRENGTH METERS

CRYSTAL CALIBRATORS

MEGACYCLE METERS

PEAK TO PEAK VOLTMETERS

TELEVISION & FM TEST EQUIPMENT

FOR INFORMATION IN THE METROPOLITAN AREA,
CALL BOONTON 8-2131

MEASUREMENTS

CORPORATION

BOONTON



NEW JERSEY